GARDENING

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INDEX TO VOLUME VII.

COMPRISING

Numbers from March 7th, 1885, to February 27th, 1886.

LONDON:

37, SOUTHAMPTON STREET, COVENT GARDEN, W.C.

GARDENING

Illustrated. For Town & Country.

A Weekly Journal for Amateurs and Gardeners.

FOUNDED BY W. ROBINSON,

Author of "The English Flower Garden," "The Wild Garden," "Hardy Flowers," "Alpine Flowers," &c.
Founder of "The Garden" and "Farm and Home."

"YOU SEE, SWEET MAID, WE MARRY
A GENTLE SCION TO THE WILDEST STOCK
AND MAKE CONCEIVE A BARK OF BASER KIND
BY BUD OF NOBLER RACE: THIS IS AN ART
WHICH DOES MEND NATURE; CHANGE IT RATHER; BUT
THE ART ITSELF IS NATURE."—*Shakespeare.*

"CALL THE VALES AND BID THEM HITHER CAST
THEIR BELLS AND FLOWERETS OF A THOUSAND HUES."—*Milton.*

VOL. VII., FEBRUARY 27, 1886.

LONDON:
OFFICE—37, SOUTHAMPTON STREET, COVENT GARDEN, W.C.

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RAISING NEW PLANTS.

It is remarkable that in all branches of art the work requiring the greatest amount of time, care, and skill is the work that is least observed by the ordinary looker-on. And in nothing is this so true as in the art of the skilful plant raiser. Plants we regard as objects of universal interest. But how few of us, while observant of their functions as organised living beings, are led to look much beyond what we see in their present state of existence! We take it for granted that as we see them they are the work of Nature; that is, to use a trite saying, "Like produces like." That like always produces like is certainly true in all organic matter, and therefore it is equally true in an ordinary sense with regard to plants. But production, re-production, hybridising, and cross-fertilisation are not synonymous terms, and it is more than probable that, but for the skill and art of the florist, Nature's productions, even including natural hybridisation, could never have given us the grandest of our present types of florists' flowers, rarer fruits, and plants.

The labours of the plant raiser are founded on the knowledge of the fact that Nature ordinarily presents to us only her simpler and more natural forms; and that in order to possess and fully enjoy all her stores of wealth we must, by skilful manipulation and perseverance, bring out those features which she ordinarily denies. Cross-fertilisation, as this branch of the florist's art is called, has given us varieties that are more valuable because they are more beautiful, more rich in flavour or perfume, or more productive than their progenitors, and this increased value applies not only to our present types of florists' flowers, but also to most of our best types of fruits and of vegetables. Whoever feels inclined to dispute this fact needs only to be referred to such instances of the raiser's art as we see at all flower, vegetable, and fruit exhibitions. A few years ago it would not have been difficult to carry off a first prize with such a Pea as Veitch's Perfection, which was in itself a great improvement, but which is now somewhat outclassed. Again, notice some of the older types of Cucumbers and of Potatoes, and compare them with more recent instances of the raiser's skill. And this is equally true of our florists' flowers. Go back a few years to the original Fuchsia, which doubtless was a gem, but which would compare badly with such grand varieties as our modern raisers are now sending out. Compare our present leading Hybrid Perpetual Roses—our Queen of Queens, La France, Star of Waltham, and others—with the Roses of the first half of the present century. Contrast the modern varieties of Gladioli, Dahlias, Pansies, Carnations, and most similar garden flowers with those of twenty-five years ago. Look at the popular and modern Chrysanthemums, Primulas, Cinerarias, Coleus, Pelargoniums, and hosts of other greenhouse plants and flowers, which are all the results of careful and skilful cross-fertilisation, and which but for that art would have remained unknown; and consider the patience, perseverance, anxiety, and thought that must have been expended in attaining such results.

Who and what are the men who thus "hold up the candle to nature" will never be sufficiently known, for they work in such a quiet unostentatious manner that only by their glorious results do we hear of them occasionally, and then we are so much taken up with our admiration of their productions that we forget to notice the producers. That such men are rare is not to be wondered at when we take into account the knowledge, training, and education that they must possess to fit them for their labours. A thorough study of botany and entomology is indispensable to them. They must understand the economy of nature; the time and season of useful and injurious insects; the botanical names, native places, and modes of culture; seed ripening and seed sowing; periods of resting and of flowering; and with all this, which only years and years of study and of practical experience can give, they must be genuine enthusiasts in floriculture, taking unbounded delight in their books and flowers, and revelling in that sense of enjoyment which the cultured mind alone can fully appreciate. Such qualifications and acquirements place the skilful cross-fertiliser above the rank of ordinary gardeners, and greatly enhance his value to his employers.

And now let us take a closer view of the routine by which success is achieved. It is summer, and the expert has already spent six months in selecting and raising his stock plants for operating on. No profits yet; he cannot afford to sell. It may be new and improved varieties of Potatoes or Peas, or it may be some rare flowering plant that he has fixed on, and he will now be busy with note-book and pen, camel-hair brush and knife, comparing, sizing, conveying pollen, keeping off injurious insects, and tending and nourishing his stock. Then will come seed ripening, labelling—re-sowing only when the proper season comes; and thus the first year passes and the second year comes in. Now he will be fully occupied in developing his young stock, and from the first he takes a note of every sign of divergence and of dissimilarity that he observes—size of leaf, height of plant, size, colour, and dimensions of flower, and every feature and habit are duly noted. Then follows re-selecting and cross-fertilising for the coming year, separation of distinct colours and fresh propagation; ending, perhaps, after all by discarding, it may be, three-fourths of his new stock, and growing on the remainder. If he has been raising annual or perennial flowering plants it will now be within measurable distance of the time when he can hope for profits; but if his labours have been devoted to, say, the Potato, or the Amaryllis, or Vallota, he will yet have years to wait before he can hope for a profitable sale. But at last he has "worked up" his specimen plants; the show season comes round, and we see a dazzling display in something quite novel, or, at least, greatly improved, and the raiser is quite envied by the amateur crowd, who know very little of his trials, doubts, and difficulties, and who see only the crowning result of his labours as it stands before them in its wealth of flower, leaf, or perfume. But an enterprising seedsman or plant distributor, well aware of the cost of his labours, soon makes him an offer for all he can turn out in seed, cutting, or plant of his new and invaluable acquisition, and pays him a good price too, trusting to the good sense and liberality of his patrons and customers to be himself repaid, and so the business goes on. New things are scarce and dear, and no wonder! And though failures do sometimes occur, and purchasers of seeds or plants grumble when their specimens fall short of the high standard, the work of raising and cross-fertilising must not stop. The man who makes two blades of Grass grow where only one grew before is said to be a benefactor; and he who by his skill, patience, and care can bring out, and lead up to greater love and admiration of, the hitherto hidden beauties of nature, deserves to be called a national benefactor, and to be rewarded as such.

What would soon become of the greatest art in floriculture if the expert plant raiser were to succumb to adverse criticism? Where would have been our race of show and fancy Dahlias but for such men as Glenny, Standish, Edwards, and Williams? Where now our Roses but for Paul, Bennett, and men of their rank? Where our Begonias but for Laing and his *confrères?* What would the present race of specialists soon fade to if there were no enterprising and speculative firms ever ready to take up and circulate a good thing, whether old or new, that has passed through the hands of the intelligent cross fertiliser? R. Beale.

12762.—**Household pets in suburban gardens.**—I write to submit the plan I adopted when troubled with cats, hoping "J. W." may adopt it to his high walls with some advantage. My garden has not a wall like "J. W.'s," but a fence 5 feet high and close boarded. I procured some long laths 10 feet long, 1 inch wide by ½ inch thick, and some 1-inch shoemaker's rivets, which are finer than French nails, and have very sharp points. I drove the rivets through the laths and nailed the laths on the top of the fence, having the sharp rivets projecting through the lath about ½ inch; the rivets are ¼ inch apart in straight line. I am now nearly rid of the nuisance.—Joiner, *Thornton Heath.*

12840.—**Plague of woodlice.**—I have found boiling water very effectual where it can be used with safety. About a year ago my greenhouse was swarming with woodlice. I purchased a tin of Hardiman's London Beetle Powder, and a tin bellows supplied by the same. I applied the powder according to instruction, and after two applications my house was free of the pest. I have since occasionally seen, perhaps, half-a-dozen, but a little powder clears them off.—T. M., *Bridgewater.*

—— I would advise "J. P." to put a saucer with some turpentine in the vinery. A little salt added to the turps will make it more effectual. In the Mushroom house before fruit appears, place a saucer with vitriol to which a little salt is added. This is death to the pests.—Ivea.

OUTDOOR PLANTS.

ALLOTMENT GARDENING.

I have read with interest and with profit many of the articles in Gardening Illustrated for several years, but they mostly refer to those having greenhouses and frames. Allotment gardeners seldom have those conveniences, and, like myself, they have to do the best they can without them. Now most working men having a garden can grow vegetables well. There is a proof of that in the fine produce they take to exhibitions, but they do not all take an interest in growing flowers. My object in writing this is to encourage such to try, for it is a very interesting employment. For many years I have had a few plants of some kind; but when I first had my present allotment I began to grow a few Pinks, Primroses, Polyanthus, &c. Next season I had a few other sorts and I was obliged to extend my border, and the pleasure of growing flowers grew upon me so much that last season I had as much as ten poles all devoted to that purpose. Perhaps some working men may wonder what I found to put on so large a piece of land; for their information I will try to tell them:—Anemone, Hyacinth, Daffodil, Narcissus, Tulip, Ranunculus, Pansy, Pink, Carnation, Scabions, Candy Tuft, Antirrhinum, Sweet Rocket, Sweet Pea, Annual Chrysanthemum, French Marigold, Sweet Sultan, Zinnias, Phlox Drummondi, Coreopsis, Mignonette, Petunia, Aster, Stocks, Sweet William, Wallflowers, Helichrysum, Herbaceous Phlox, Sunflower (double and single), Pompone, and single Dahlias, Lilium candidum, Delphinium, Geranium, Bush Roses, Standard Roses, Heliotrope, Gaillardia, Columbine, and Chrysanthemum (late flowering). Now I think those are quite sufficient to make a good show when well grown. Having no greenhouse, hotbed, or ordinary frame, and many of them being half-hardy, it is a difficult job to raise them, so I gather all my old stocks and other rubbish and make them into a heap, put some good manure on, and top up with some good soil mixed up for the purpose. Then I fix some boards on the top, make a cover with some more boards and fine canvas (as a protection from rough weather), and under this I can raise such things as Asters, Stocks, Zinnias, Marigolds, &c. If any of these should fail, or if I want more than I can get, I go to the market or to the nurseryman for them—where there is no market to get them there is always an opportunity through advertisements in Gardening Illustrated. I have had to get them in that way myself, and they have always come quite fresh. Some may say (in fact some do say to me) that they cannot take that trouble with flowers; they want something they can eat. So do I, and I always grow enough for the family. If we cannot eat the flowers they can be turned into money as cut flowers, and most of them the more they are cut the better they bloom. I always buy the best seeds I can afford, both flowers and vegetables, to grow for exhibition, and I have never exhibited without having my share of success. At our show last summer I entered in 16 classes and obtained 15 prizes. I am quite aware there must be a good deal of waste in getting things ready, but when it is a hobby one must make up his mind to sacrifice a little to obtain the desired ends.

Bedford. T. S.

ARTISTICALLY FORMED ROCKWORKS.

Among the many rockworks with which our gardens are embellished or disfigured it is rarely we see one that shows any real taste, or any perception of the conditions under which alpine and rocky plants grow best, and of the way in which rocks naturally crop out of the ground. The waste of effort in this way is indeed sad, the result being often a hideous blotch of clinkers, or of some nondescript rubbish stuck in the wrong place, and ugly wherever placed. We give two illustrations here of a different kind of rock garden, one of the more ambitious sorts, and really well constructed. Our own idea is that in all small gardens it is best never to make the rock garden elaborate or pretentious. A bit of stony ground or a bank with two or three natural-looking rocks cropping out, and with their bases well buried in the soil, is often all one wants, and with such it is easy to grow many pretty plants. But, as people frequently do attempt something more elaborate, we think it is well to let them see a sketch or two of one of the prettiest rock gardens we have ever seen, and made by one who has a thorough knowledge of mountain ground and also of alpine plants in a state of cultivation—Mr. James Backhouse, of York. Let our readers note particularly, in cut No. 1, the perfectly natural and charming way in which the rock steps are formed. One often sees garden steps formed as stiffly as those of an area. In the angles of the steps here shown Violets and other alpine plants flourish as they do among the little boulders in the Alps.

No. 1.—Rock Stair through Rock Garden.

No. 2.—Passage in Rock Garden.

REPLIES.

12822.—**Double White Daisies from seed.**—The seeds should be sown in June in shallow boxes, containing good light sandy soil. After you have given them a good watering, place the boxes in a cool and shady position. The young plants will very quickly make their appearance, and when they are large enough to handle prick them out in the open ground, 2 inches apart, at the same time giving a good watering. Daisies love water. They grow rapidly; in a very little time become a solid mass, and can be taken up like turf. Then they should be taken up, divided, and planted in beds where required to bloom, from 4 inches to 6 inches apart. Early in February they will begin to grow, and by March will be in full flower, and will continue until May or June, when they can be removed to make room for bedding plants.—G. H. Mortimer, *Pimlico.*

12750.—**Artificial manure.**—To obtain a satisfactory result you must study the requirements of the plants and the nature of the manure applied, also the character of the soil. Guano and bone dust are natural manures. Superphosphate of lime has the same effect as bone dust, though it is more rapid. Guano is a powerful manure, being equal to thirty times its quantity of farm-yard manure, and is valuable where manure is required. In my opinion, guano requires to be thoroughly incorporated with the soil some time before the seed is sown, or the plants put in; 1½ cwt. to the acre is a good dressing. Nitrate of soda, when applied to wheat, has the effect of producing a large amount of straw, and has the same effect on a plant as a glass of brandy has on the human system. I do not advocate the mixing of manures, as a rule, as guano, for instance, contains all the requisite proportions and properties. I cannot understand your not finding any perceptible difference when the manure is applied, as I can see the effect where we sowed some guano over a Grass ground.—J. W.

12859.—**Plants for garden vases.**—You do not say if your vases are of iron, or marble, or stone. If the two latter anything you like will grow in them. You might plant Ivy to trail over and have an evergreen in the centre in the winter, and you might plant Nasturtium or Canary Creeper, and have Geraniums in the centre in the summer. If the vases are of iron you must put your plants in pots first, or the iron will kill them, and then place the pots in the vase and fill up with earth. Almost any flower or shrub will do in them, according to your own fancy.—C. F. D.

12776.—**Gas lime.**—This is of great service when used properly in the garden. Its ammonia makes it valuable as a manure, and the lime itself is in no way injured by the gas. It is also a fine insecticide and, when applied as advised by the Editor, will destroy wireworm, grub, &c. As it contains a large amount of sulphur, and other substances of a powerful nature, it must not be applied to growing plants, neither must it be spread too thickly before digging at this time of year.—J. W.

12748.—**Plants for towns.**—I have lived in Pimlico, with only a back yard, for 13 years, and since I made a piece of garden, six years ago, it has flourished and got on well. I have the walls and house covered with Virginia Creeper. The ground I always turn over in March, digging in a quantity of well-rotted horse manure, and afterwards I sow seeds of Sweet Peas in patches for training up ladders or sticks; also Convolvulus major for climbing up strings near the walls, at the back of which I grow a few tall Sunflowers and Dahlias. Seeds of Mignonette, Virginian and Ten-week Stocks, Lupins, and Nasturtiums thrive well. I also purchase a few plants of Carnations, Pinks, Pansies, Balsams, Sweet Williams, Wallflowers, &c., all of which form a pleasing and effective sight, and come up each year. The garden is situated in a very smoky and close part, yet, by well looking after and good waterings during hot and dry weather, I get a very good result, and I am sure "C.," with a little patience and trouble, will succeed well.—G. H. Mortimer.

12860.—**Growing Tropæolum tuberosum.**—Pot the tubers separately in small pots, using rich sandy soil, and plenty of drainage; then stand them in a sheltered spot

out-of-doors, plunging them in sifted ashes or Cocoa-nut fibre refuse. When they have grown a few inches high they may be carefully planted out where desired, in a sunny situation, and in dryish sandy soil. They must be carefully watched, as caterpillars are fond of them, and do a great amount of damage unless at once checked. In the autumn they may be taken up, if preferred, and stored away until spring, but in a position as described above, they are safe if protected with a layer of leaves in very frosty weather.—T. J. W., *Crouch Hill.*

—— With us this does well planted against a warm wall with a few feathery Pea sticks put in the ground for it to climb upon. I have also seen it rambling vigorously on a Privet hedge.—J. C. C.

12879.—**Plants for sunless house.**—You must not expect to do very much in an unheated house with a North-east aspect, and the most satisfactory thing to do would be to make a hardy fernery in it. If you must have flowering plants they should all be hardy. Most of the spring flowering bulbs, which blossom in the open, are amenable to pot culture; Auriculas too might be wintered and flowered in such a house. Among hardy plants I may mention the herbaceous Spiræas, such as S. palmata and S. japonica, as plants that like shade. The better forms of Aquilegias may also be grown in pots for such a house. The hardy Primula, cortusoides amœna, and its varieties would find an agreeable home there. Some of the better forms of the hardy Rhododendrons may also be tried. I should also try to grow Balsams in the summer, and other annual flowers. As to what success will attend any labour bestowed upon such a house a good deal will depend upon the amount of skill brought to bear upon it.—J. C. C.

12897.—**Plants for shady garden,** and 12907—**Flowers for border.**—One of the very best plants for such a position is Hypericum calycinum (the Rose of Sharon), as it has lively evergreen foliage and beautiful yellow flowers from July to September. Vincas (Periwinkles) will also do, and have blue, purple, or white flowers. The wild Hyacinth (Scilla nutans) makes a glorious show, and will take care of itself for ever if once planted deep enough. Try also Wood Anemones, Forget-me-Nots, Pyrethrum Tchihatchewii (I wish it had a better name), London Pride, Primroses, Snowdrops (when their season comes round again—viz., August), and in the lightest portion of the ground Day Lilies, Solomon's Seal, and some of the commoner varieties of Lilium speciosum. The above selection gives some chance of flowers as well as foliage for eight months or so out of the year.—T. J. W., *Crouch Hill.*

—— Try St. John's Wort, common Periwinkle, Lilies of Valley, Dogstooth Violet, Wood Anemones, Bluebells, Solomon's Seal. Ferns, or even Ivy, would be better than bare ground.—C. F. D.

12861.—**Salt to destroy weeds.**—Salt should only be applied to walks in dry weather when the barometer is high and there is a prospect of continuous fine weather, as then it dissolves gradually and has time to reach the roots of the weeds. We make it a point to give all our walks a dressing of salt in the month of March, taking care that the salt does not come nearer than 6 inches to line edgings, and we never have any trouble with weeds where the salt is applied. Salt not only destroys weeds, but keeps the surface bright. Lay on enough to just colour the surface, and if the weeds are large give a second application a fortnight later.—J. C. C.

12834.—**Sowing Geranium Vesuvius.**—About four years ago I saved the seeds of my Vesuvius, and, when ripe, made a good sowing; very nearly all the seeds grew. I saved six nice plants, which flowered the following year. One came a light scarlet, another a semi-double, exactly like Wonderful; the remaining four were true and good bloomers.—Geo. Beaumont, *Tadcaster.*

—— Certainly it would be useless to sow seeds from this plant and expect it to come true; not one seedling would be exactly alike. Plants that can be propagated from cuttings by hundreds and thousands need not be raised from seeds. The object of saving seeds from zonal Pelargoniums is to obtain new and improved varieties, and for this purpose the very best varieties should be intercrossed with each other.—J. D. E.

Lobelia cardinalis.—This is not quite hardy. I lost it, unprotected outside, in 1879, and again in 1881. I may be asked, why not keep it indoors, then? First, because it does not like that treatment; and next, there is no difficulty in protecting it against the severest winter. A pyramidal mound of coal ashes, Cocoa-nut fibre, tan, or even an armful of hay strewn over a bed of it, will be sufficient. Unless I consider the soil in the bed rich enough for another season's growth, I lift and divide, and readily make two or three beds out of one. Nothing in the flower garden will be more brilliant during the autumn, not merely in the deep velvety crimson of the floral racemes, but also in the dark red foliage, than L. c. fulgens.—W. I. M.

THE COMING WEEK'S WORK.

Flower Garden.

Bulbous plants, such as Hyacinths, Tulips, Narcissi, as well as hardy shrubs used for flowering in pots, do not require much forcing after this time, as they naturally come into bloom under glass without much fire heat; and where there is any deficiency of the ordinary spring-flowering greenhouse stock to keep up the requisite supply of bloom to follow the forced plants, a portion of bulbs and other hardy subjects may with advantage be kept back by giving them no more warmth than that afforded by greenhouse treatment. If fairly cared for, Tulips, Narcissi, Crocuses, and even Hyacinths answer well for outdoor cultivation. They should be turned out into a bed of prepared good soil in a frame, and if well attended to until their growth stands a chance of getting matured, they will do good service in after years planted where they are to remain.

Hardy shrubs.—Lilacs and Laurustinus, especially such of these as have been prepared for pot culture along with double Prunus, Ghent, and the mollis varieties of Azalea and Rhododendron, should have a place in a pit or any spare structure where their growth can be fairly matured before being exposed to the open air. Deutzia gracilis should, if room can be found, be kept in warmth, such as that afforded by a vinery at work, until the wood is hard and the next year's flower-buds visible.

Lilies.—Any of these that have been wintered in cellars and under plant stages should, immediately the shoots appear above the soil, be placed in a light position, or they will become drawn and weak, a condition that no after treatment can rectify. See that the soil is sufficiently moist, but not too much so. The different varieties of L. speciosum, L. auratum, and a few others, as soon as they begin to grow, do well in a cold pit where they can be kept near the glass. L. eximium, than which there is no more useful species, coming in as it does before the other kinds, should be grown by all who have a greenhouse. From this time forward it will bear a little warmth if its early flowering is desired. It is most serviceable when two or three good strong bulbs are grown together in a 7-inch or 8 inch pot.

Azaleas.—Such of these as have been forced to come in during the winter and have done blooming should immediately they are out of flower have the seed-pods picked off, as the production of seeds exhausts the plants even more than that of flowers. If they are at once placed in a little heat and kept growing until their bloom-buds are fully formed, the time of their flowering next season can be accelerated. In all cases care should be taken that the plants before being started into growth are quite free from their worst enemies, thrips. Tobacco water is the safest and best remedy out of the many I have tried for the destruction of these pests and their eggs. It is much better not to shift any plants that require potting until the young shoots have made some progress, as the roots of Azaleas do not begin to move nearly so early as the top growth. Plants required for late blooming, to come in say at the end of May and the following month, should now be moved to a north house, and kept as cool as possible without subjecting them to absolute frost.—T. B.

Bedding plants.—Where spring bedding is not practised and the beds are vacant, several kinds of hardy flowers may now be planted, each bed, as regards manure and digging or trenching, being given such treatment as the intended occupants demand to produce the best results. Violas, Pansies, Calceolarias, and Verbenas never thrive satisfactorily without abundance of manure and deep digging, but given these, failure is all but impossible. On the other hand, in rich soils many kinds of Pelargoniums, though they will grow like weeds, refuse to flower, and the same may be said of Ageratums, Heliotropes, Lantanas, and many others. But there are always exceptions to rules; for example, fine-foliaged Pelargoniums must have as liberal treatment as Violas and Calceolarias if they are to grow and colour to perfection.

Annuals and biennials.—It is now time to sow many of these, and especially those intended to be used in the general bedding arrangements. The endless varieties of good kinds of Pelargonium have pushed to the rear many good old annuals that twenty years ago did excellent duty on the parterre, foremost amongst which may be named Sanvitalia procumbens, compact and dwarf, with light yellows flowers having a black disc; Saponaria calabrica, similar in habit of growth but slightly taller; Brachycome iberidifolio, same habit as last, but having bright blue flowers; Portulacas of several colours, but all of low, dense growth, and alike suitable either for outer lines of beds or for massing in small beds; Silene pendula compacta, not unlike the Saponaria just named, but, owing to the habit of the plant being tufty, the effect produced by the two plants is very different; Tagetes signata pumila, bright yellow—in poor soil it is dwarf and keeps in flower for months. These may be relied on for summer bedding, and, if used in fair proportion to other kinds, will tend to obviate the charge of sameness often made against bedding arrangements. They should be sown now on a south aspect in the open garden. If lights can be placed over them till fairly well out of the ground, all the better; but after this the more they are exposed the more robust will be their growth. If sown thinly, no transplanting will be needed till they can be placed in permanent positions. Asters, Stocks, Zinnias, Phloxes, Indian Pinks, and Everlastings should also now be sown in frames; and Wallflowers, Antirrhinums, Sweet Williams, Larkspurs, &c., in the open air.

Roses.—Those who have not had their Rose beds dug and well dressed with manure should now lose no time in doing so. All Hybrid Perpetuals may now be pruned, leaving the Teas till later in the season. Such Roses as are grown in conservatories, or in any structure along with other plants, require especial care at this season to see that they are free from aphides. Where planted out, if needed, manurial assistance should at once be given, as on this mainly depends the successional crop of bloom. Where Hybrid Perpetuals are used in quantity for forcing they should now be introduced to the Rose house in succession; these will give flowers at a time when the Tea varieties that have been earliest at work are beginning to fall off more or less, but even in the case of the latter it is surprising how they will keep yielding a succession of bloom if they are regularly supplied with manure water from the time when they are first started; without this the after growth comes too weak to bloom strongly.

W. H. F.

Fruit.

Late vines.—Practical Grape growers who have to keep Mrs. Pince, Black Alicante, and Lady Downes fresh, black, and plump until new Hamburghs are ready, will not have to be reminded that the houses should now be closed and the buds fairly moving by the middle of the present month. If the roots have the run of external and internal borders resting upon ample drainage, the inside roots, previously watered with cold water, may now be mulched and copiously watered with weak liquid manure at a temperature of 90 degs.; and as well matured wood has a great deal to do with compact bunches, perfect fertilisation, and finish, a little extra fire-heat combined with early closing on fine days will enable the cultivator to steal a march upon the spring, and give more time to the colouring and finishing process, which should be complete by the month of September. When the buds begin to swell a higher temperature than that recommended for early houses may be indulged in; indeed, to have Lady Downes thin skinned, full flavoured, and capable of keeping fresh and plump until May, the vines should receive warm treatment until the Grapes begin to colour, when a cooler treatment will insure colour. Black Morocco and Gros Colmar, when properly managed and allowed a

long growing season, are valuable for use from January up to March, but they should be ripe in September. Gros Colmar should hang for some time on the vines after the leaves fall, and a few weeks in a warm Grape room will remove the earthy flavour, which makes badly ripened examples uneatable. A promising late Grape, Mrs. Pearson, is well worthy of a place in every autumn and winter vinery. As a grower it is quite as free as its inferior relative, the Golden Queen. It shows an abundance of handsome bunches which set well, and will keep for a long time and improve in quality after it is ripe.

Early vines.—When all the Grapes are thinned and the berries begin to swell away freely, give the inside borders another liberal supply of warm liquid manure, and maintain a healthy growing atmosphere by damping the walls and floors with the same. Let the night temperature range from 65 degs. to 68 degs., with a chink of air when practicable, and ventilate freely through the early part of the day to maintain the colour and texture of the foliage. A rise of 10 degs. by day when fire-heat is applied will be quite sufficient, but 85 degs. for a short time after the house is closed with sun-heat will add greatly to the size of the berries without distressing the vines.

W. C.

Vegetables.

More Peas may be sown. I like the round better than the wrinkled ones at this season. Pride of the Market is a thoroughly good Pea, and Telegraph is an excellent variety. Another sowing of Broad Beans may also be made. The giant class of Beans, of late so fashionable, I am not in favour of; I sow Early Mazagan and good Old Green Windsor. Few vegetables have come to the front more of late than Broad Beans, eaten when about the size of Peas. Our first spring Cucumber plants will be in their places in a few days. We grow the first lot on the top of a stage, where we place about a peck of soil in hillocks under each light, and as the roots come out some more soil is added. Always have some in the house warmed. Tomatoes should be staked at once to lead them up to the roof of the house; the latter should be kept at from 60 degs. to 65 degs. at night, and there should be a proportionate rise with sunheat in the day-time.

R. G.

Mummy flowers.—Dr. G. Schweinfurth gives an account of some botanical discoveries made by him in connection with the mummies of the twenty-first Egyptian dynasty, found at Deri-el-Bahan. In the floral wreath on the mummy of the Princess Ugi-Khouni were found folded leaves of a Willow, Salix safsaf, perfect flowers of the Corn Poppy (Papaver Rhæas var. genuinum), flower-heads of Centaurea depressa, and of Picris coronopifolia. The flowers of P. Rhæas appear to have been gathered unopened to prevent the petals from falling, and are in such good condition that Dr. Schweinfurth remarks that such perfect and well-preserved specimens of this fragile flower are rarely to be met with in herbaria. It is worthy of note, too, that the character of this variety of the Poppy, var. genuinum, although gathered more than 3,000 years ago, is identical with those of the same variety known at the present day. With respect to Picris coronopifolia, the author remarks that not a single peculiarity is apparent by which it might be distinguished from the recent small form with low spreading branches now so common on the outskirts of the desert. It has also been determined by capsules of the Linseed plant found in a Theban tomb of the twelth dynasty, 2200-2400 B.C., that the Flax used by the ancient Egyptians was derived from Linum humile, and that the mustard oil used by them was derived from one of the two varieties of Sinapis arvensis—viz., S. Allioni or S. turgida, which are still common in Egypt.

The use of worms.—I was once talking with my then vicar on his lawn when a man came and asked to be allowed to kill the worms. To him my vicar (who was as good a gardener and naturalist as he was a parish clergyman) replied—"But who is to do their work?" and explained their use, and went on to say that with a broom and the roller he found worm-casts a very good dressing for the lawn. His opinion also was that moles would not stop long in a garden when wireworm and their other natural food was no longer to be found.—Clericus.

FRUIT.

THE ORCHARD HOUSE.

There are few matters connected with practical horticulture that are more interesting to amateur horticulturists than the cultivation of fruit trees under glass. The variable character of our climate renders the use of protection of some sort necessary to ensure the production of fruit, and many structures have been erected, at a very moderate cost, in which the possessors have contrived not only to grow fruit trees but to produce very good fruit. The orchard house has great advantages over houses devoted to the culture of only one or two kinds of fruit, as it is by no means unusual to find cultivated in it Grapes, Figs, Peaches, Nectarines, Apricots, Cherries, Plums, and even Pears and Apples. When it is proposed to grow various sorts of fruit it is, no doubt, advisable to adopt the pot system of culture. A few words as to the construction and dimensions of the various erections that may come under the denomination of orchard houses may not be inappropriate. The term orchard house comprises structures exceedingly dissimilar as to form and dimensions, &c., from the smallest and most economical lean-to or glass shed, altogether innocent of anything approaching to ornamentation, to the expensive and handsome span-roofed buildings of large dimensions, all, however, sufficiently well adapted to the purpose in view—the production of good fruit.

The span roof has undoubtedly the advantage in many respects of the lean-to. In erecting a house of the latter form it is inadvisable to let the width exceed 12 feet, whatever the length may be, as this width, or even less, will allow a single row of trees, either planted out or in pots, to be placed on each side of the path, which ought to be in the centre of the house and not less than 2½ feet wide. If it is attempted to plant a double line of trees on each side of the path it will be found that as the trees increase in size they will be inconveniently close together, unless the width of the house very much exceeds 12 feet, and when it does the span-roofed form is preferable.

Fig. 1 will convey an idea of what may be recommended as a lean-to Orchard house, with a single row of fruit trees in pots on each side of the path, which is sunk a few inches under the ground level, in order to give increased head room and to allow the development of a Black Hamburgh or Muscadine Vine, trained to a single wire over the centre of the path, at a distance of 8 or 10 inches from the glass. The aspect of the house should be south or nearly so; the vine should be trained upon the spurring system, and each spur, with its single bunch of fruit, should be tied as close to the wire as possible so that the shade thrown by it upon the back row of trees may be reduced to a minimum, and it will be found not to injure them in the least degree. The width of the house is 12 feet (inside measure), 10 feet high at back, and 5 feet in front—that is, 2 feet of 9-inch brickwork surmounted by lights 3 feet wide, hung on pivots from the centre and made so as to open altogether (or in lengths should the house be long) by the turning of a 1 inch iron rod stretching along the front of the house. To this is fitted a rachet wheel with a handle sufficiently long to enable the lights to be shut or opened to any desired extent without pressing upon, or in any way interfering with the trees in the front row. There are no roof openings, nor are any required, as ample ventilation is secured at the top of the back wall by an arrangement similar to that at the front, by the action of an iron rod upon strong continuous wood shutters 2 feet wide, extending the entire length of the house.

The front border, on which the pots are placed, is 6 inches above the ground level, and the back border is raised 18 inches and retained by a 4½-inch wall or a few courses of brick in the bed. The border, to the depth of 18 inches or 2 feet, should be composed of properly prepared soil, and the vine to be trained to a wire over the pathway may be planted inside or outside the house, as found most convenient. The rafters of the roof should be placed 20 inches apart, should be about 4½ inches deep by 1½ in. wide, and should be glazed with 21-oz. glass 20 inches by 12 inches. They ought always to be cut to a curve, as water would then run down the centre of the panes and be drawn away in a great measure from the putty. By this means, also, breakage from the expansion of moisture retained in the laps (which should never exceed ¼ inch in width) would be prevented. A slip of ½-inch board should be nailed on the centre of each of the rafters, and this will leave some half-inch space on each side on which to rest the glass. When the front lights are fixed, the top shutters should be arranged so that they can easily be removed altogether when not required; and when the fruit has become nearly ripe the apertures must be at once covered with netting or similar material for the exclusion of birds and insects. During most seasons, and in nearly all situations, a protection of this sort is necessary for the preservation of ripe fruit of all sorts.

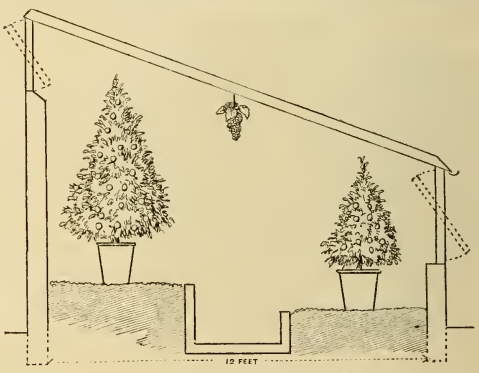


Fig. 1.—Lean-to Orchard House, with Vines on roof.

Fig. 2 is a transverse section of a span-roofed structure, 95 feet long, 20 feet wide, 12 feet high in the centre, and 6 feet high at the sides. The side lights are hung on pivots from the centre. The quadrant with its lever, placed on each side of the house, acts upon the iron rod attached to the lights, and opens or closes them to any desired extent. There are no roof-openings. The central bed or border is 6½ feet wide, and is occupied by Peach and Nectarine trees, trained in a pyramidal form, and planted in the centre of the bed at a distance of 5 feet from tree to tree. The side borders are 3 feet wide, and are occupied by a collection of pyramidal Cherry trees, planted 3 feet apart. The paths are 3 feet wide, upon the ground level, and the borders, which are raised some 6 inches or 8 inches above the level of the paths, are about 2 feet deep, including drainage. Trained to a single wire over the centre of the paths, at a distance of 1 foot from the glass, is the spurred stem of a Black Hamburgh, the roots of which are outside the structure.

P. G.

Canker in Apple trees.—If J. Hiam's theory, that this is due to insect life, is right, how is it that I have a fine lot of Pear trees against the walls, and not one of them is the least affected; also some Apple (espaliers) in same position not touched, while young trees growing 20 or 30 yards away from the wall are literally covered with it? The Pear trees are in the garden soil and the young Apple trees are in new soil made purposely for them. The canker is not found where the trees are sheltered, and that to my mind is proof that shelter is needed. I shall with the greatest of pleasure forward J. Hiam some of the cankered wood as requested, and shall look forward to the results of his observations in Gardening Illustrated.—H. W. H.

The bud in Black Currants.—Will you kindly allow me to say for the information of various correspondents that I have the samples sent me under investigation. In all cases I find the swollen buds teeming with insect life; what the insect is I cannot at present find out, and it will probably take some time to determine. I find that the insects are confined entirely to the buds, as there is not the least trace of them in any part of the shoots, and, as the infested parts are so easily distinguished, I think the pest might be eradicated almost if the trees were carefully gone over and all the infested shoots cut off and burned. I have made considerable enquiry, but am at present unable to hear of a case in these parts, and it would be interesting to find out how far south the plague extends. I have heard of none at present nearer than Sheffield.—W. E. Harper, *Maidenhead*.

REPLIES.

12889.—**Vine roots and Mushroom spawn.**—The Mushroom spawn will not do any harm to the vine roots. The spawn and the Mushrooms, too, will disappear as the temperature of the house increases, and if you give the border all the moisture it requires. As a rule, it is not advisable to leave the top dressings on vine borders after the fruit has been cut, because if the top dressing has been of any use it will have become exhausted, and be of no further benefit after the fruit is ripe.—J. C. C.

12833.—**Vines not fruiting.**—For lack of sufficient information it is difficult to say why the vines alluded to in this question do not fruit. Probably they are exhausted by over cropping. Some years ago I had to deal with a house of vines that had almost ceased to bear any fruit. It was a black Hamburgh, too, but the vine was not encouraged to make young wood, and the branches grown from the old spurs were overcrowded. I thinned the old wood out, and replaced it with strong shoots from the base, which soon brought the vine into a bearing condition. Encourage vines to make vigorous young wood, and give the leaves room to develop themselves, and there will be no complaint that they do not bear good fruit.—J. D. E.

12816.—**Melons.**—Hero of Lockinge is the best moderate-sized scarlet-fleshed, and Bailey's Green Flesh is not yet surpassed as a true green kind. Many of the new kinds are nondescripts, more white or pale green than a true green colour.—J. D. E.

—— Use for these a rather coarse fibrous loam with a fair quantity of well-decayed manure, and keep the pit up to an average heat of 75 degs. Good sorts, free bearing, are Scarlet Gem and Malvern Hall, both scarlet flesh, and Golden Perfection, A. F. Barron, and Beechwood, green-fleshed varieties. One or two fruits to a plant, or at most three, according to the size, is all that should be allowed.—J. P., *Lancashire*.

—— Hendre's Seedling and Blenheim Orange are two fine-flavoured Melons that fruit freely and grow to moderate size.—J. C. C.

12829.—**Fig trees in Essex.**—A west wall is one that gets the afternoon sun, and it is the second best position for Fig trees. Fruit will sometimes ripen in such a position, but only in very favourable seasons. The trees must not be allowed to become crowded with too much wood, and, as the fruit is borne on the young wood, the old bare stems must be cut out when they become too numerous. Some of the old stems must be left to carry the young wood to the top of the wall.—J. D. E.

—— Dig a trench about 4 feet round the roots and fill up with old mortar and garden mould. This will have a good effect.—Orion.

ROSES.

REPLIES.

12863.—**Budding on the Manetti.**—This stock should be budded on the stem about an inch under the surface, so that before inserting the bud you must remove the soil away from the stem. Cut away all the branches, and only leave 6 inches of the main stem above ground. You would be more likely to succeed with a young stock than with old ones, as the stocks you have should have been budded last summer.—J. C. C.

12821.—**Grafting Roses.**—Roses can be grafted in the early spring months on small plants of the Manetti in a forcing house. The best time to bud is in July. If the Manetti stock is used the soil must be scratched from the base of the plant, and the bud be put in just under the surface. If the seedling Brier is used as a stock, the buds must also be inserted very low. Standards and half standards should be budded on the current year's wood at the required height. The Manetti stock is a species of single Rose (raised in Italy by a Signor Manetti) which has been found valuable as a stock.—J. D. E.

Fig. 2.—Section of Span-roofed Orchard House.

12830. — **Cultivation of Roses.** — A change of manure is good for plants, as a change of food is beneficial to men. When we use stable manure to dig or trench into the ground before the Roses are planted we use liquid from cow manure to water with; and, as a change, half a pound of guano dissolved in six gallons of water. Standard Roses planted in December and January ought to be pruned in the spring, and they should also be cut well back; we prune to within three buds of the base of the young wood.—J. D. E.

12757.—**Banksia Roses.**—Does "K. A. J." cut the Banksia Roses? If so, they will not bloom, as they delight to run and ramble untouched by the knife. I have one—the yellow—on my house, and it has flowered every season since I left off cutting the shoots. I used to cut the one I have, and then it never flowered.—E. W., *Kingsworthy*.

12869.—**Cuttings of standard Roses.**—Yes; they will grow if cut now. Plant in open border and tread firmly in; put a little silver sand in the trench first.—C. F. D.

12842.—**Pruning and treatment of newly-planted Roses.**—The treatment so far is quite right. They will do famously on an old Grass field that has been used as a hen run. Cut them back to within three or four buds from the base of each growth. Amateur Rose growers often fail through lack of sufficient nerve to use the pruning knife freely on recently-planted Roses.—J. D. E.

THE VILLA GARDEN.

(Continued from page 646.)

The Broccoli.

In the winter and spring the Broccoli occupies the place filled by the Cauliflower in summer and autumn. Both, from climatal conditions, sometimes fail wholly or partially; the Cauliflower from heat and drought in summer open their hearts and become useless, and the Broccoli is occasionally killed during severe winters. But these, or somewhat similar risks, have to be run with all things. The varieties, or at least names, in the seedsmen's lists have become exceedingly numerous, and to the uninitiated are very perplexing; but no one, even for a large establishment, need grow more than six or eight kinds, and if rightly selected these will give a succession from November till June (subject of course to the weather), and fairly fill in the time between the late and early Cauliflowers.

Sowing the Seeds.

In most places the first week in April is time enough to make the first sowing. Some people make only one sowing of each variety—the early kinds first and the late sorts three weeks or a month later. It is best to sow in drills a foot apart; the surface can thus be stirred, and the plants gain strength by the partial isolation. Select for the seed-bed a nice mellow piece of land (in an open sunny position) that has been manured and laid up roughly for exposure some time previously. Sow when the surface is dry, and to give it firmness tread it once over. Then rake the surface smooth, and draw the drills half an inch deep. Cover with the feet. This is easily done by walking with one foot on each side of the drill, and as each is lifted in the onward motion, it is drawn along the ground lightly, so as just to push the loose soil into the drill. This is an excellent and simple way of covering seeds. The rake is then drawn over the beds to make all smooth. As soon as the seeds are fairly committed to the ground, the seed-eating birds, the sparrows, the linnets, and the finches, will be after them, and if they are not protected, or something is not done to alarm the birds, damage will be done. They are usually most troublesome just when the young plants are coming up, as then they can seize them by the stem, and pull them out of the ground with the seed clinging to the base. The best preventive is to protect with nets as soon as the seeds are sown. And in most gardens fishing nets are kept in stock for protecting fruit in summer, and made to serve a double purpose. If the seeds are dressed with red lead just before sowing, the birds will not touch them, and the lead will not injure the growing powers of the seeds. Birds are of a suspicious nature, and may sometimes be scared by straining threads of cotton across the beds at frequent intervals, and I have known a dusting of lime just as the seeds were coming up scare the birds away and save the crop; but in a general way nothing equals the plan of making all secure by covering the beds with nets. Some kinds, such as Carter's Champion, Cattell's Eclipse, and Sutton's Late Queen, may be sown as late as May, and a successional character can generally be given by planting out at different times and different aspects and situations.

Transplanting.

This should be done as soon as the plants are large enough; and if the land they are intended to occupy is not ready transplant thickly in any vacant border temporarily rather than permit them to remain in the seed-bed to get leggy. But generally most cultivators contrive to have the early sorts put out in good time from the seed-bed without any intermediary shifting, though it will benefit the late sorts which are expected to stand the winter if they are transplanted once before being settled finally. Transplanting has a tendency to increase the fibrous roots of a plant, and lends a firmer hardier growth, which is of advantage to a plant that is not quite hardy. The power to withstand an extra degree or two of frost may make the difference between life and death in a crop of Broccoli in our climate; and I contend that the cultivator has the power in his hands to influence growth to this extent at least. Another way of increasing the hardiness of a crop of Broccoli is to plant in firm land.

I have planted Broccoli when the ground was so hard that the ordinary dibble had to be discarded and the holes made with an iron bar, and such plants do exceedingly well. The hole is usually made by one man, another man and a boy following with the plants, filling in the hole with nice mellow surface soil and watering the plants in. Let the weather be ever so dry, the plants soon get established, and when rain falls they grow away rapidly, making short sturdy leaves and strong well-knit legs. Broccoli, especially the late kinds, are often planted too near each other, under the impression that they afford shelter to one another. But this is a mistake; thick planting really operates in the opposite direction. To receive full justice Broccoli should be allowed not less than 3 feet between the rows, and 2 feet from plant to plant. I have often planted large growing kinds 4 feet apart, and then had the leaves meet in the autumn. When planted too near, the bottom leaves are always weakly and poor; frequently they turn yellow and die for want of air, and when the cold weather comes the hearts and stems of the plants are left without the shelter which nature has provided for them.

Intercropping.

In small gardens where the most has to be made of every foot of land, the system of planting the Broccoli and other winter greens among the Potatoes is frequently adopted. I have planted a part of our stock in this manner for many years from necessity, and many of my friends do the same thing, and if the plants have plenty of room I don't think much sacrifice is made by so doing. It is in the early Potatoes only that patches of Broccoli are planted. They would not succeed among the large-topped, late kinds, and both crops would suffer. In the case of the early Potatoes, the crop would be lifted before the greens required the space. If the rows of early Potatoes are planted about 2 feet apart the Broccoli should be placed in every alternate row of Potatoes. The distance of 4 feet would, in the case of late kinds, be satisfactory. Just before planting the greens (I have treated Brussels Sprouts and other greens in the same way) the tops of the Potatoes which overhang the trenches where it is intended to plant them are carefully turned back. Sometimes the tops may require a little attention afterwards, but, as a rule, the trouble from this source is not great. When the Potatoes are lifted the Broccoli have all the space, and may be earthed. Some people say earthing up vegetables, except for the purpose of blanching, is of no benefit, but it is a support and shelter, lessens the force of the wind in spring, and increases the plant's power of resistance at all times.

Wintering.

The autumn and winter Broccoli, such as Veitch's Self-protecting and Snow's Winter (both of which are indispensable) must, of course, have protection, as frost will spoil the advancing hearts. The best way of dealing with these is to lift all the earliest at the approach of frost, remove a few of the bottom leaves to economise space, and plant them thickly in pits. Expensively constructed places are unnecessary, though, of course, where the first outlay is not grudged, permanency in such buildings is desirable. The next best plan is to lay the plants down thickly in some dry, sheltered border, burying the stems up to the leaves in the soil, and in frosty weather cover with mats, straw hurdles, or spruce branches. Sometimes the roots and stems of the plants are imbedded in soil in a shed, but I never found this plan had any advantage over laying them down in the open air with the necessary protection. I have tried a good many ways of keeping late Broccoli through the winter, with the view of discovering not only the best way of saving the plants but the most economical, especially as regards labour and protecting materials; and I have come to the conclusion that there is no better way than heeling them in or laying the plants down with their heads to the north in October—towards the end of the month in most seasons and localities. The check given in the operation has a beneficial tendency, as a plant whose growth has been built up firmly will pass through a lower temperature unimpaired than if luxuriance has been encouraged. The gross plants do not have the largest or the closest hearts. A certain maturing or ripening influence seems essential to all things, especially when the chief production for which it is grown is the flower or fruit, and though the check of laying down may, in the case of weakly plants, cause the hearts to be smaller, it is certain that these same weakly plants with soft tissues will perish if left upstanding during severe weather. I believe most people who grow their Broccoli well have no reason to complain of the size of the hearts obtained from heeled-in plants.

Saving Seeds.

In a general way, unless we have a very superior kind which cannot be obtained true from a seedsman, it is hardly advisable to save seeds. There is no difficulty about it, but in order to keep the kind true we must make sure that no intercrossing takes place with any other member of the Brassica family. Sometimes when anything very choice has to be kept true, the patch of seed-bearing plants is covered with hexagon or some closely-woven netting to keep out the bees, or else sulphur is scattered over the flowers, or something else done to them to make them distasteful to the bees. When the seed pods are showing signs of ripening, they should be cut and laid on a sheet of canvas in an open shed or some airy building, to complete the ripening. The seed may then be thrashed out and put away in a dry place.

Varieties.—The list I give below is arranged according to their season of turning in, and will follow in succession in the order given:—Veitch's Self-protecting Autumn, Snow's Winter White, Brimstone or Portsmouth, Frogmore Protecting, Leamington, Carter's Champion, Sutton's Late Queen, and Cattell's Eclipse. The purple sprouting Broccoli is a very nice vegetable, but there is a prejudice against the colour in most establishments. E. Hobday.

12702.—**Plants without earth.**—I have tried Ferns, Palms, Azaleas, and bulbs in fertilising Moss, and have found it succeed with all.—A Constant Subscriber, *Reading*.

SMALL LAWN WITHOUT BEDS.

This illustration shows a type of garden not uncommon in the neighbourhood of Paris—a suburban garden, we mean, in which a pretty little lawn is kept fresh and picturesque without any formal beds. To many this will seem desirable, as cutting up a pretty lawn into formal beds has not always a good result. This illustration will tend to prove that formal beds are not quite so good as various other ways of embellishing a lawn. The lawn view is a very important one from every side, and it is well to be able to keep it fresh and open at all seasons, and not liable to be disfigured at any particular time. In the lawn in question there is, as will be seen, one little mass of plants, which covers the ground completely—probably a tuft of isolated Ivy. There is a Pampas Grass and a standard Magnolia, while the trees around are not overcrowded (as they too often are with us), and are of well-chosen kinds. Room is easily found for the flower beds in other parts of the little place, where they can be equally well attended to, and where they look quite as well as they would on the lawn.

Small Lawn without beds.

The Burning Bush a "fudge."—The mention of this plant in a recent number of Gardening carries my mind back to some twenty-five years ago. I was then undergoing my gardening apprenticeship in a noted garden in Staffordshire, and was much interested in the study of a fine border of herbaceous plants, among which were the two varieties of Dictamnus Fraxinella. At the same time I was striving to acquire a little of the rudiments of botany. My text book was by Dr. J. Scoffern. In it he says "The Fraxinella is noticeable for the large amount of inflammable gas which it secretes, so that if in the evening of a hot day a flame be caused to approach a mass of these plants, the combustible atmosphere around them takes fire, the plants themselves remaining uninjured." Fancy setting on fire the atmosphere around a plant and the plant not injured! This was too much for my susceptible imagination; it was at once set aflame, and thenceforth I had a burning desire to try the experiment. Lights were got in readiness, and the first favourable opportunity taken advantage of. I tried with matches, with candle, and with oil lamp, on a hot day, hot night, by day and by night; but, alas! from some as yet unexplained cause I failed to satisfy my inflamed imagination. To come to more recent times, a gentleman observed to me one day—"I see you have a plant in the border there called Fraxinella. Do you know the tradition about it?" In answering him in the affirmative I also told him of my previous experiment and failure. He was anxious to see the experiment tried and to satisfy himself. Accordingly one very hot day lights were procured and a trial made, but the result was the same as in my previous trials—failure to set the atmosphere on fire. In the little work on botany previously alluded to, the author says the plant in question is indigenous to central France. Maybe it requires the volatile and huoyant atmosphere of that land and people to set it on fire. I cannot say. Certain it is I failed to create even a spark, let alone a flame, in this phlegmatic and unsympathetic atmosphere of ours.—J. K.

12552.—**Holly timber.**—The most likely place to obtain a good price would be at sawmills, where veneer is cut, as it is used for that purpose. A large quantity is cut into fretwork. I have seen it advertised for that purpose by such people as Messrs. Booth Bros., Dublin.—J. W.

—— Holly timber very rarely appears in the market. The price obtained is about 3d. or 4d. per foot; but at a recent sale ten large pieces were, it is stated, knocked down for 1s.—T. Y.

QUESTIONS.

Rules for Correspondents.—*All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Answers should always bear the number placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

All answers, with the exception of such as cannot well be classified, will be found in the different departments. Queries not answered should be repeated.

Naming plants or fruit.—*Four plants, fruits, or flowers only can be named at one time, and this only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

12920.—**Good Pompone Dahlias.**—I want about a dozen good double varieties. Kindly give me names of a few good ones, single colours and variegated.—EXON.

12921.—**Fuchsias for exhibition.**—Would any reader tell me the names of the twelve best Fuchsias for exhibition—six double and six single?—J. GIBSON.

12922.—**Roses for pots.**—Will someone kindly tell me the names of twelve good Roses for growing in pots in a greenhouse?—J. G., *Renfrewshire.*

12923.—**Using horse hoof parings.**—I have some bones and horse hoof parings; how can I dissolve them to use for stimulating purposes? How should they be applied, and to what plants or crops?—G. J. S.

12924.—**Cactus for suspension.**—I require half-a-dozen of the most interesting kinds of Cactus to suspend in my greenhouse, and should be greatly pleased to be informed of the best varieties for that purpose.—J. C. W.

12925.—**Cuttings from Carnations.**—I have some Carnations in a greenhouse—Miss Joliffe and Alegatiere. Will anyone tell me how to take cuttings from them? Will one flower stem make more than one cutting?—A. J. R.

12926.—**Plants among Roses.**—I shall be glad for information as to the best plants for putting between Roses in a south-west border, very hot in summer, 4 feet wide, planted with Roses 3 feet apart.—A. A.

12927.—**Cork dust as a fertiliser.**—I have been told that Cork dust is a very good fertiliser. Can any of your readers inform me if it is of any use, and also how it is used?—G. B.

12928.—**Barked trees.**—When a young tree has been injured by loss of bark at the base, is there anything that can be applied to the place so as to preserve the tree?—G. F. C.

12929.—**Old Moss Roses.**—I have several Moss Roses, old plants, which have been neglected for some years and not pruned. Will any reader inform me when and how to prune them and refresh them?—ANXIOUS, *Stourbridge.*

12930.—**Growing ridge Cucumbers.**—Can any-one tell me the best way to grow ridge Cucumbers?—ENQUIRER. [For sorts see answers to query 12814 in this week's issue.—ED.]

12931.—**Raising Lapageria from seed.**—I see in GARDENING that the seed of these plants can be got in Scotland. Will someone who has been successful in raising them from seed give information as to the method?—IVEA.

12932.—**Laurel trimmings.**—Could any of your correspondents tell me if in cutting thick hedges of Laurels, it is best for the plants that the cuttings should be left at the roots or cleared away?—R. C. G. B., *Stirling.*

12933.—**Vegetable Marrow.**—I sowed seed in heat in April and planted out when strong in good soil. The plants grew strong and flowered well, but never came to any fruit. Will anyone tell me how to grow them?—GOURD, *Andrie.*

12934.—**Ferns.**—I intend devoting part of a lean-to cool greenhouse to the culture of Ferns; would someone kindly give me a list of the best varieties and best method of shading? Is Elliott's Summer Cloud suitable for my purpose?—J. D., *Carlow.*

12935.—**Geraniums.**—Will any reader tell me the names of best varieties to be placed singly in large pots to ornament stone steps? Must be good bloomers and last long in flower.—MARY.——I should like to know the names of best Geraniums, six double and six single, for exhibition.—J. G. R.

12936.—**Heating a greenhouse.**—I should be glad to know whether a coil boiler, such as the "Aqua," or a boiler of the Loughborough type, would be best for heating a small span greenhouse, 12 feet by 8 feet. I should be very glad to receive the advice of any of your readers who have had some experience.—M. W. G.

12937.—**Arranging mixed border.**—I have blue and yellow Violas, Geraniums of different sorts, Pentstemons, Phloxes, Pyrethrums, Paris Daisies (both white and yellow), white Japanese Anemones, scarlet Lobelias, Schizostylis, red Gladiolus, Hollyhocks, Dahlias, and Sunflowers. I am anxious to arrange all these artistically as a mixed border. "We'll put them in lines," says the gardener; "each sort by itself, the little ones in front and the big ones behind." This suggestion does not recommend itself to me very much as being artistic. Will some of your correspondents kindly tell me how to do it?—C. B. B., *Limerick.*

12938.—**A Celery destroyer.**—I have just taken up a quantity of Celery from a good garden, and find that some are eaten through to the heart by what appears to be a worm. I cannot find any insect in the Celery. The hole is bored through to the centre, and is of a black colour on the edge of the Celery. What is it, and what is the remedy?—C. F.

12939.—**Plants for down garden.**—What herbaceous plants and what annuals will do well in a small garden on the top of a chalk down, by the seaside, and in full sunshine? Would yellow Asphodels, small Brier Roses, Wind Flowers, Eschscholtzia, and alpine plants be likely to succeed?—DIANA.

12940.—**Smuts from workshop.**—Close to my greenhouse there is a cabinet manufacturer's workshop, from the chimney of which a large quantity of smuts arise and blow into my greenhouse, covering the plants and shelves, and making a great mess. I have complained, but to no purpose. Can I take any steps to stop the nuisance?—A SUBSCRIBER.

12941.—**Vines and turpentine.**—Our early vinery had the mealy bug bad last year, and a novice was set on to paint them in July with turpentine. This year they have broken badly—one good eye with fruit here and there, and the other eyes quite dead. One vine, only part of which was done, has, where not brushed, broken and shown fruit well. Would some reader tell me if the failure is due to the turpentine?—J. S.

12942.—**Making skeleton leaves.**—I desire to make a group of skeleton leaves for a church bazaar, and should be very much obliged if any of your correspondents will give me full information on the doing. I want to know what acid to use, and the exact proportions of acid and water; also the length of time required for immersion, as well as the kinds of leaves most suitable.—ADELPHEE.

12943.—**Stocking small London conservatory.**—I wish to stock our conservatory, which is built over the ante-room at back of house (8 feet square, 10 feet high), and shall feel obliged if you will tell me the names of a few pretty hardy subjects which will make the place look cheerful; also any plants likely to flower in this rather smoky atmosphere. We get plenty of sun after 9 a.m.—WESTMINSTER.

12944.—**Sweet scented Geraniums.**—I am a collector of sweet scented Geraniums, and I have these following varieties: Prince of Orange, Lady Scarborough, Fair Helen, Citriodorum, Denticulatum, Filicifolium odorata, Pheasant's foot, Crispum, Shrubland Pet, Little Gem, Nutmeg, Oakleaf, Lady Plymouth, Quercifolium, Lothair, Peppermint, Quercifolium minus. Can you tell me of any more and where I can procure them?—SHAMROCK.

12945.—**A Cucumber enemy.**—Will some reader of GARDENING kindly tell me what to do with my Cucumber plants? As soon as they are up and the seed leaves well opened they are attacked in the middle of the seed leaf. Holes are eaten in them, and the edges of the leaves turn yellow and look as if they are scorched. The insects are white, and have two little horns. I have tried soft-soap water, with a camel-hair brush, Gishurst compound, flowers of sulphur, and fumigation, and these do not seem to do any good.—J. C.

12946.—**Classes of Pansies.**—I have read with avidity the articles appearing from time to time in your paper on the Pansy; but, among them all, I am terribly confused. I read of "Scotch Fancy," "Scotch Show," "Belgium Show and Fancy," and some other kinds, including the Violas. I am greatly desirous of growing the Pansy, but I do not know "which from which." Will some good friend tell me, as a complete novice, the difference between a Fancy and a Show Pansy; also between a Pansy and a Viola? I have a little pamphlet on the Pansy published some thirty years ago, but neither the Fancy nor the Viola is mentioned. Again, what is a "Hybrid" Pansy?—NOVICE.

12947.—**Spiræa japonica.**—Last year I had three clumps of Spiræa japonica, one twelve months old, and the others new. They were potted in due course, and grew well till they began to show flower, when, on one side of two of the plants, rot showed in the stems just below the leaves; consequently, I lost more than half my flowers and a great deal of foliage. They were in a greenhouse facing due east. This year I have four clumps in a greenhouse facing west, and two of them are beginning to rot off. Can anyone tell me the cause, and also the remedy? I keep the greenhouse pretty warm, generally from 45 degs. to 50 degs., and I live in South Staffordshire.—R. E. I.

12948.—**Moving established Marechal Niel Rose.**—Having a Marechal Niel Rose tree about six years old and a profuse bloomer I decided last autumn to move it. Before doing so I consulted a florist. He instructed me to cut off all the leaves, and, after replanting, to syringe well with cold water to throw the sap into the roots. I did so, but the result appears to have been disastrous, as up to the present there are no signs of its moving, in fact, the wood seems to be shrivelling. Can I look for its recovering the shift later on in warmer weather? An older tree in the same cool house, which I moved some six weeks earlier, without cutting off the leaves or syringing afterwards, is sprouting out in all directions, and in bud in several places. If any experienced Rose growers can explain the cause of failure they will greatly oblige—C. M., *Tottenham.*

12949.—**Climbers for house walls.**—I have two houses, the walls of which I wish to cover with climbers (either all evergreen or intermixed with deciduous ones), which when grown up will require least attention or cutting back. My first anxiety is to get the walls covered quickly; my next to obtain the most suitable hardy climbers for the purpose. If worth while or desirable I would plant some fast growers to cover the walls quickly, and between these plant those which might be of slower growth, but best adapted for my purpose eventually, cutting away the fast growers from time to time as required to give room for the permanent plants. House No. 1, south-east front, stone-brash soil, in Gloucestershire. No. 2, south aspect, rather stiff clay soil, in Sussex. Would some experienced person kindly advise me how to do this, and what climbers would be best adapted for each of the four aspects of each house?—R. J. W.

12950.—**Peach budded on Nectarine.**—Will a Peach do budded upon a Nectarine stock? I budded one on a Nectarine three years ago; it took and grew very strong, and bloomed last year. The fruit seemed to set, but never swelled, and withered when the size of a Pea. It has done the same this year. Can your readers give me any information as to the cause?—T. S. L. [Did you graft on a Nectarine that was already grafted on the Peach? If not, how did you get your Nectarine stock?—ED.]

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

12951.—**Sowing Cauliflowers.**—Would Veitch's Autumn Giant Cauliflower, if sown in gentle heat now and grown on in good ground, be ready for cutting by the beginning of September?—MORFYDD.

[*It is probable that they would; but much depends on the season.*]

12952.—**Plants for cold greenhouse.**—What plants will thrive in a cold greenhouse? No means of heating, southern aspect, back against a wall.—DIANA.

[*You will find a great deal of information in many of the back numbers of* GARDENING, *particularly in the papers by "K. L. D.," who is still writing, and will, we hope, continue to write for us.*]

12953.—**Hardy border Lilies.**—Will any of your correspondents kindly give me a list of hardy Lilies likely to succeed on a border facing south-east in a Lancashire manufacturing town? The common orange, yellow, and purple Turk's-cap Lilies do very well here.—W. S.

[*Most hardy Lilies will do in such a position if you give them the right soil. We have seen Lilies thriving almost in the heart of London.*]

12954.—**Orange tree.**—I have one about fourteen years old, 6 feet high, strong and healthy, in a 19-inch pot. Please say time for grafting and how I should proceed to obtain bloom.—EXON.

[*If you want bloom only it would, perhaps, be better to let your present variety grow on and to treat it well. Any variety will yield bloom, and, perhaps, a common one would yield it better than a more precious one for fruiting. Your pot seems small for the height of the plant.*]

12955.—**Grass seed for lawn.**—What is the best mixture of seeds for sowing down lawns and terraces, when to sow, and quantity per acre, &c?—E. W. C.

[*The best mixture of Grasses for an extra fine lawn sward is Crested Dogstail, Poa nemoralis, Festuca tenuifolia. A cheaper mixture is the following: Crested Dogstail, Poa nemoralis, Festuca tenuifolia, Festuca duriuscula, fine-leaved Perennial Rye Grass. Care should be taken that the Grasses are pure and well-cleaned. 50 lb. to 100 lb. per acre, according to the desire for a lawn at once or in the future; 100 lb. will give a good lawn the first season.*]

12956.—**Marechal Niel Rose.**—Will someone kindly tell me what is the matter with my Maréchal Niel Rose? It is in a heated conservatory; average temperature between 40 degs. and 50 degs. Fahr. during winter months. It is planted out in vine border, and I believe the house gets plenty of air. I think I have not applied any artificial manure. It was planted in border two years ago, is rather bare of foliage at present, but it was cut back last autumn rather close.—J. T. GRAY.

[*We cannot say what is the matter with your Rose. The foliage seems healthy, though it has the appearance of being produced in a too high temperature. If the house is hot and close lower the temperature and give more ventilation.*]

SHORT REPLIES.—**Growing Sparmannia africana** (*Erin*).—This is a plant of very easy culture in a warm or temperate house. Good lights, plenty of water, and the usual potting soil should give you a satisfactory result.——**Barking vines** (*G. F. C.*)—The most advanced Grape growers are now against this practice, which was almost universal some years ago. Where it is loose in flakes the bark may come off without injury, but the close scraping that was common is now thought a mistake.——**Hanging plants for window boxes.**—We know of nothing prettier than the common Creeping Moneywort.——**Sowing Cupressus seed** (*J. W. C.*).—Sow in a cold frame in April in pans or boxes. Prick out in pots out-of-doors when the plants are a few inches in height, and protect during winter until the plants get large.——**Paradise Stock** (*J. W. C.*).—Paradise Stock is propagated by layers.—**Eccremocarpus seed** (*Mary*).—We should sow in a frame, and plant out when strong. It seems to do well in ordinary garden soil. If sown now it would run over an arch this summer.——**Procuring Olive tree** (*Diana*).—We have never seen a plant on sale in this country, but it could, we should say, easily be procured in France.——**Pride of Market Pea** (*A. C. R.*).—This, when true, is a blue round second early Pea, and is said to be a first-class variety.——**Roses on south wall** (*Enquirer*).—We should take Gloire de Dijon and Madame Falcot, two excellent Roses for walls. If you want a third choose Cheshunt Hybrid.——**Starting vine on outside border** (*W. H.*).—The time of starting greatly depends upon the time you require your crop of fruit. If you want it in June the vines must be started now; if later, little artificial heat will be required—simply a gentle heat when the vines are in flower.——**Dwarf Nasturtiums for bedding** (*Constant Reader*).—Sow at the end of next month under glass in boxes; plant out in a border of poor soil, placing the plants about 1 foot apart. There are several first-rate sorts, Ruby Gem and King of Tom Thumbs being among the best.——**Seeds of Chenopodium Quinoa** (*Perplexed One*).—You ought to be able to obtain these of any of the large seedsmen in London.——**Plants for low shady wall** (*C. A. B.*).—We should try Runner Beans by preference. There is not sun enough for Tomatoes. Gooseberries for netting and keeping long would do.——**Raising Christmas Roses** (*An Amateur*).—They are increased by division and by seed; the former is the quickest and best way. You do not want either a greenhouse or bottom-heat. The flower may be found in many cottage and other gardens, and may now be bought in nurseries.——**Plumbago shoots dying** (*Tortoise*).—This is a plant that

should be cut in every winter. Nature is doing the work that you ought to be doing.——**Soil for greenhouse plants** (*L. R.*).—Your plants differ very much, but none of them will refuse to grow in what gardeners call a good, fairly rich, sandy loam, if your treatment in other respects is right. It is impossible in our answers to tell you the treatment of all the plants you mention. If you ask us for information as to one or two in respect of which you are most puzzled we will help you.——**Turf for heavy soil** (*A. M. B.*).—Such turf as you describe, and all similar vegetable material, will improve heavy soil.——**Arum Lily and Calla** (*R. G.*).—There is no difference, they are one and the same thing.——**Crossing plants** (*Nemo*).—This question cannot very easily be answered off hand. You had better apply for some practical instruction to a florist who carries on this work.——**Single Dahlias in pots** (*Dahlia*).—As a rule, Dahlias of any kind do not succeed in pots. You had better plant them out in the open ground in the middle of May.——**Hen Manure** (*A. M. B.*).—This is a powerful manure, and must be used with caution. If it is in a liquid state it should be very much diluted.——**Primula culture** (*Ixa*).—The details of Primula culture cannot be given in a few lines. Various articles have appeared in Gardening from time to time on the subject, and to these we refer you. See pp. 578 and 579, Jan. 17. No place is suitable for raising seeds, of any plant, that is not quite light. Seeds may be started in a dark place, but as soon as they are above ground it is essential that they should be exposed to light. See recent numbers also for information as to Cyclamen culture.——**Myosotis** (*Ixa*).—Seeds of this may be sown now in a cold frame, or a little later in an open border. By sowing at intervals you may procure a succession of bloom.——**Making manure water** (*Ixa*).—Put a small quantity of cow, horse, or sheep manure in a bag of loose texture, which immerse in water. About a gallon of manure would be sufficient for 10 gallons of water.——**Bone manure for Geraniums** (*Ixa*).—Mix the bone manure with potting soil. Please do not send so many questions at one time.——**Manure for Ferns** (*J. J. and Ixa*)—Ferns, as a rule, do not require manure, provided the soil is of the ordinary quality. A pinch or so of any of the artificial manures would not hurt the strongest growing among them if given during the growing season.——**Cutting Fuchsia gracilis** (*J. J.*).—It is generally cut down by frost in winter, but if not it should be cut in spring.——**Scale on Peach trees** (*X. Y.*).—It is indavisable to do anything to the trees, as they are far advanced in bud, but as soon as the leaves fall you should lose no time in ridding the trees of scale by the use of some insecticide, such as a solution of paraffin, or Gishurst compound. They must be gone over more than once.——**Book on window gardening.**—Try Mr. Hudson-croft's "Town Gardening," which is a very good and cheap book.——**Roots of Commelina and Mirabilis** (*C. E. H.*).—These are both hardy in dry soils. Place them in a warm border on the first fine day. There is no need for watering until they are growing vigorously.——**Chionodoxa** (*South Devon*).—The large plant is a new, beautiful, quite hardy bulb, which may be treated like the Scilla; of the two flowers you send the large one is of this plant, the other is Scilla bifolia.——**Varieties of Potatoes** (*C. R. A.*)—See Mr. Gilbert's article in this week's issue (p. 9) for varieties of Potatoes.

UNANSWERED QUERIES.

12665.—**Double-flowering Cherries and Plums in pot.**—Will some of your readers kindly inform me on what stock I should graft these trees, in order to grow them in pots, for greenhouse decoration?—M. D.

12666.—**Neilgherry Lilies.**—How should these be treated and planted? Should they be placed in greenhouse, and do they require heat?—Mrs. Cooly, *co. Dublin.*

12670.—**Woodgrubs and Cabbage.**—Will any reader of your paper tell me whether it is possible to prevent woodgrubs eating Cabbages? We have lost nearly all ours, and do not know what we can do to save the remainder.—A. H. S.

12671.—**Orange growing.**—Will any reader of Gardening who has lived in an Orange growing country tell me how long it takes an Orange, from the time of bloom, to ripen and be ready for the table in its native country?—Orange.

12675.—**Unhealthy looking Latania borbonica.**—I have a Palm, Latania borbonica, growing in a pot in a drawing-room, opposite the window, but at the other end of the room away from light. It makes new growth, but the last two new leaves are yellow and withered, dead-looking at the points, and the two previous ones have yellow spots about 2 inches from the tips. Will any reader tell me what is the cause of this and how can I remedy it?—M. C. B.

12687.—**Apple trees and mice.**—A Nonpareil Apple tree against a wall has had the rind eaten off from almost the last season's shoots, and some of the larger branches, 2 inches or 3 inches thick, have been entirely skinned. I strongly suspect this is done by mice, as several have been caught in the Strawberry bed close by. I should like to know if this is a common case, and what is the remedy? I fear the tree will be killed.—W. D. W.

12694.—**Plants for greenhouse.**—I have put up a lean-to greenhouse, 15 feet by 10 feet, which will get sun during the summer months from about seven a.m. to five p.m. I have very little knowledge of plants, and would be thankful if any reader would kindly advise me what kind of Geraniums, Fuchsias, and other kinds to begin with, and what kind of a stove or heating apparatus to adopt for it. I am only a working man, fond of flowers and other plants, and I want to do the thing as cheap as possible.—J. Short, *Blackley, Manchester.*

12817.—**Walking on frosty ground.**—"V. R. T." should use Blakey's ice nails, to be had of most bootmakers.—Orion.

Catalogues received.—*Garden, Flower, and Farm Seeds.* Tucker Bros., High Street, Crickhowell.——*Farm Seeds.* Webb and Sons, Wordsley, Stourbridge.

INDOOR PLANTS.

WINTER FLOWERING PLANTS.—VI.

AZALEA.

This is one of the finest and most popular of winter and early spring flowering plants, and a gorgeous show it makes when well grown. The improvement in the Azalea the last few years is very great, and we now have immense blooms, almost circular in outline, and of most exquisite colours and markings, in place of the old poor, pale, pointed, and flimsy things of ten or twenty years ago. It is a pity the Azalea cannot be produced a little more cheaply, or its present large sale would doubtless be trebled. Some of the growers for market deal largely in Azaleas, and just before Christmas and Easter, when the plants sell readily, long houses may be seen entirely filled with these exquisite plants, all apparently of one size, and all just bursting into bloom. The plants are received from Holland and Belgium, not in pots, but with a good ball of peaty earth, surrounded with Moss, and tightly bound with bass. They are immediately, on receipt, placed in pots as small as the ball can be forced into, with a little fresh sandy peat to fill up any spaces, and the whole pressed firmly in the pot. They usually arrive about August, and when potted are placed in a cool, airy, and somewhat shady house, where they are kept just moist at the root, and frequently syringed overhead, to assist them to retain their foliage. The cooler the plants are kept, until the time arrives for forcing, the better, so that frost be just kept away. Six or eight weeks before they are wanted in bloom they are placed in low, close houses, with plenty of heating power, and are afforded a gradually increasing warmth until a temperature of 70 degs. to 80 degs. is attained, with a moist but sweet atmosphere, and frequent syringings. This condition of things greatly assists the blooms to expand, and any naturally early flowering varieties, with well-set buds, are easily brought into bloom about Christmas. One of these houses, filled with plants just bursting into bloom, is a beautiful sight, and the change from the bleak outside air of a raw foggy December day to the warm, moist atmosphere, heavily laden with the faint sweet perfume of the Azalea blooms, is very striking to one not too much accustomed to it. When fairly open the plants are removed to a cooler house for a few days, and then taken to market. It is found, however, that plants that have been grown in pots for a year or two give much better results than those freshly imported; these last frequently drop some of their buds, and sometimes lose a good deal of foliage as well, whereas plants grown in England, if only for a year or two, force much better. Plants once forced, bloom naturally earlier afterwards.

After flowering, Azaleas should have all seed pods and dead flowers picked off, and have a place in a house at 65 deg. to 70 or 80 deg., with a moist atmosphere and slight shade from hot sun. This treatment, with plenty of water at root and plentiful syringing, induces a free and strong growth, which, if well ripened by exposure to sun and air, cannot fail to produce abundance of fine blooms. Of course the plants will do under cooler treatment, but even if grown in an ordinary cool greenhouse all the year round, the house should be closed early in the afternoon, with sun heat and plenty of moisture, to induce a free growth. This treatment should be continued for two or three months after the flowering is past, or until the buds can just be perceived in the points of the shoots. Air must then be admitted freely, and the temperature reduced. Some growers recommend placing the plants out-of-doors during the early autumn months—August and September—and if the air is perfectly pure this is generally advisable; but in or near the smoke of large towns the Azalea is better kept altogether under glass, though with abundant air admitted both at sides and roof. Of all things, beware of a dry atmosphere, particularly under glass, as this invariably produces that pest of Azalea growers, thrips, which will speedily ruin the health and appearance of the finest plant. If attacked, the only remedy is to lay the plants on their sides on some turf, and forcibly syringe the under side of the foliage with a decoction of Tobacco or soft soap. Persevere in this treatment until a cure is effected.

Soil.—The most suitable, in fact, the only soil for the Azalea is a nice sandy peat of good quality. Very large strong plants may have the addition of about a fourth of good fibrous loam, but pure peat, with a slight addition of silver sand, if at all deficient in this, should alone be used for small and medium plants. In potting the soil must be made quite firm, for the fine and delicate fibrous roots of these plants cannot obtain any hold of the soil unless this is firmly compressed about them. In practice a wooden rammer is used in potting by trade growers, and the soil packed in by its means as firmly as possible; good drainage should also be afforded. Small Azaleas, if healthy and growing vigorously, should be potted as a rule every year, but only if the pots are well filled with roots; and small shifts, or into pots not more than 1 inch or 1½ inch larger than the last size, are best. Large plants need potting only every second or third year; and in any case Azaleas are always better under than over-potted. After a shift, which should be given when the plants are just starting into fresh growth, they should be kept close for two or three weeks, and watered with the greatest care. Watering is a point that always requires constant attention, for, like those of the Erica, the delicate roots of the Azalea cannot endure the extremes of drought or moisture.

B. C. R.

FUCHSIAS.

Of all the window plants a well-grown Fuchsia is one of the prettiest, and it is so easily grown that it is brought within reach of all classes; for whoever has a glasshouse 2 yards square, or a window free from dust, and who will devote a little time and trouble to them, can grow them to perfection; one of their good points being their low price. To grow them to perfection a little skill is required, but mere genuine love of flowers is, I fancy, the chief element in growing Fuchsias. Cuttings should be inserted in silver sand and peat, filled up to within an inch and a-half of the top. Place over this three-quarters of an inch of silver sand, and level the surface to make it smooth; insert the cuttings, and, if you have a greenhouse, put them in about 50 degs of heat. If to be kept in the window cover them with a bell glass. In about three weeks they will be rooted, when they may be potted off in 3-inch pots, and shifted as they fill their pots into larger ones. The size of the pot must be regulated by the period when they are wanted for blooming. If in July, a 9-inch pot will suffice; if in September, a 12-inch pot will not be too large. They are rather gross feeding plants, and should have plenty of manure water. They should not be placed in the full sun, as this causes a tendency to run to leaf instead of flower. Never give them the slightest check by allowing them to flag for want of water. They are generally well suited for planting in beds upon a lawn, where they can be trained as standards or grown with wire hoop supports with legs, so that their branches may bend over. Many Fuchsias will stand our winters in the open ground, and all varieties can be preserved out-of-doors through the winter if covered over with ashes and cinders when the frost first comes, and care is taken not to remove them or cut off the dead branches until they begin to shoot in the spring. The soil should be well drained, and have plenty of peat in it.

The following are some of the best kinds:—Avalanche, tube and sepals carmine; corolla violet plum, double; Beauty of Swanley, tube and sepals white; corolla, bright pink; Mrs. Bennet, tube and sepals scarlet; corolla, white; Model, dark corolla; Wave of Life, tube and sepals scarlet; corolla, violet blue, leaves golden yellow. In winter they should be kept dry, and they should be watered only when they begin to shoot. One who Loves Flowers.

A winter window garden.—The admirable custom of placing beautiful objects in the way of plants in windows is one of considerable antiquity. Painted flowers and other objects preceded the use of real plants; still the use of the latter is of older date than has been generally supposed. Window gardening has taken such rapid strides and been so much in-

proved in our days, that we are too apt to assume that our fathers were wholly ignorant of the art of adorning their windows with the beauties either of Nature or art. It is, however, by no means needful to decry the past in order to appreciate the present, and that some of the past is well worthy of preservation the following example will show. In the centre of a window stood a large Lily of the Nile or white Arum in a tub with three fully expanded blooms and five other flower-spikes showing above the leaves. The latter were numerous, exceptionally fine, and without flaw or spot. On each side of this fine plant was one smaller one in a pot, also in bloom. In front of these were two large plants of Christmas Roses in pots, likewise in flower, the blossoms rising high above the green leaves—evidently old leaves, though numerous and fresh looking. That was positively all the garden in the window. It seems meagre on paper, but it was perfect to look upon. Almost severely classical in its simplicity, I have seldom seen a window more chastely or satisfactorily furnished. The plants, no doubt, owed something to the window curtains and other drapery; the former were crimson, with muslin over them, and so disposed as to form a background, with a small opening in the centre for the fine Arums at the back. No doubt the drapery helped to throw up and out with greater distinctness the beautiful leaf and flower form of the Arums. The window was a low one, rising from within a few inches of the floor, and the Arum was so tall as to reach to within a foot or so of its summit. The Christmas Roses in front also seemed almost as if they had sprung up out of the ground. Finally, though the window seemed fairly full, there was no overcrowding, the outline of each leaf and flower being distinctly seen, and there was obviously room enough between the foliage and blooms to admit sufficient light to render the room a useful place to work in or a comfortable lounge. The attempt to put too many good things into a limited space spoils many windows.—D.

Cool Orchids.—In answer to "J. W. W.," I may say that the culture of Mountain Orchids in greenhouses is yet in its infancy; and our knowledge of it is not sufficient to allow us to speak dogmatically upon it. Mr. B. S. Williams, of Holloway, is one of our greatest authorities on this subject; and in the last edition of the *Orchid Growers' Manual*, referring to the treatment of Orchids from the mountainous districts of New Grenada and Peru, he says:—"I do not recommend ordinary greenhouses for Orchids, for my belief is that very few Orchids will uphold that treatment long." And this was written with a full knowledge that collectors had found Orchids covered with a white frost in their native localities. I must say that I do not know anybody who has grown Orchids successfully in a greenhouse, with the ordinary low temperature in winter, and mixed with a miscellaneous collection of New Holland and Cape plants, as well as the ordinary run of soft-wooded plants. Mr. Smee, of Wallington, has grown Orchids very successfully out-of-doors in summer and autumn. They developed good growths, which produced better trusses of flowers in winter than examples of the same plants kept in a cool Orchid house. The specimen of Odontoglossum membranaceum exhibited by Mr. Smee at South Kensington to illustrate his success with partial out-of-doors culture was a very good one—as good as could be obtained under the most favourable circumstances. This subject is of the greatest importance at the present time, and I would like to make an urgent appeal to any readers of Gardening who have the least knowledge of Orchid culture in greenhouses all the year round, to send their experience or knowledge to the editor. For my part, I would willingly take a long journey to see the successful greenhouse culture of Orchids.—J. Douglas.

REPLIES.

12882.—**Culture of Violets.**—The best sorts of Violets for blooming in winter are Marie Louise, Czar, and Queen Victoria. By far the best plan is to grow them in a cold frame. They should be placed in the frame at the end of September in soil composed of turfy loam, rotten dung, and leaf-mould, and a little silver sand. Put the plants in rows close to, but not touching each other, and as near the glass as possible. When planted give them a copious watering, and in warm weather take the lights off during the day. Be careful to remove all dead or turning leaves. You can then have a supply of Violets from November till April. Even as I write this my room is sweet with the perfume of Marie Louise Violets, which have been grown as above. After they have done blooming the crowns should be separated and divested of the their runners. If "C. A. R." likes they can be grown in pots, which has this advantage: they can be removed into the room or hall at will. The proper sized pots for them are 7-inch ones; put one strong plant in each pot and use the same mould as for culture in frames, but remember to put bones at the bottom of the pot instead of crocks. Place the pots in the frame and give all the air possible. If hard frost seems likely to set in, the frames should be covered with a mat at night. For summer and autumn flowering runners should be put in pots in February, and planted out in April. Neapolitan Violets I have found do best out-of-doors on ground with an east aspect, where they can get the rays of the morning sun; in such a situation they escape the red spider. The ground should be rich and all weeds speedily pulled out; pinch off all their runners when they appear, and water them on hot, dry days. The common Violet, V. odorata, is found wild, both purple and white, and is a native of our own island. "White Violets," says Mrs. Lowdon, "are found in calcareous soils." Here (Leatherhead), where the soil is chalk, they grow abundantly, and in Norbury Park last spring I found a clump of red Violets. I do not know if the plants were dropped there, or if they are indigenous to the soil. I have never found any about here before or since, and lots of people seemed very surprised when I showed the flowers to them. They are about the size of a Neapolitan Violet, and they smell more like Raspberry jam than anything else. I transplanted them into my garden, and they have spread tremendously.—C. F. D.

12870.—**Wood ashes for plant in pots.**—Thoroughly mixed with three times its bulk of soil wood ashes may be used for plants grown in pots, but they will do nearly as well without it. The fact of the matter is that wood ashes retain the moisture too long when once made wet, and for that reason should only be used in small quantities. If you have a lawn or a kitchen garden you had better strew the ashes on the surface, and find a more suitable potting material for your Ferns, &c.—J. C. C.

12843.—**Late flowering Chrysanthemums.**—These sorts will answer fairly well, but the late flowering of a Chrysanthemum depends upon the way it is grown:—Incurved var: Alfred Salter, Barbara, Cherub, Golden Perfection, Guernsey Nugget, Hero of Stoke Newington, Josiah Wedgewood, Nil Desperandum, Refulgens, White Eve, Princess of Teck, Pink Perfection. Reflexed var.: Cloth of Gold, Mrs. Forsyth, King of Crimsons. Japanese var.: Bismarck, Dr. Audiguier, Ethel, Elegance, Fair Maid of Guernsey, Grandiflorum, Hiver Fleur, Meg Merrilies, Mrs. C. Carey, Père de Laux, Sarnia, Triomphe du Nord.—J. B.

12828.—**Saving Cineraria seed.**—When the plants have nearly done flowering place them in a sheltered situation out-of-doors, giving any special plant a position by itself. Mine I put among shrubs in a S.E. aspect, taking care to scatter some nice loamy soil round them and leave them to nature (the seed sowing itself), and in a short time almost any quantity of young plants may be taken up. These, of course, make a late crop, but the seed can be taken before it drops and be saved for early sowing another spring. This I find much superior to seed taken in the house.—S., *Warwickshire.*

——The best place to save seeds is in a greenhouse temperature, with the plants near the glass. The Cineraria does not like a warm temperature, but will not stand anything like frost. I have saved seeds easily in the north of Scotland and south of England, by simply keeping the plants in an airy greenhouse; no other position suits them so well.—J. D. E.

12835.—**Camellias.**—There is evidently something wrong with the roots. If they are examined many of them will be found dead. An over dry and heated atmosphere will cause buds to drop off; but this cannot be the cause in a house not heated. Probably the plants are in pots; if so, the roots are much more likely to be injured by bad management than if they were planted out.—J. D. E.

12831.—**Culture of Maiden-hair Ferns.**—To obtain a supply of fronds all the year round a goodly number of plants must be grown, and they succeed best in the hothouse to make their growth. The plants might be taken into the greenhouse for a week or ten days before the fronds are used, as the latter would then retain their freshness better.—J. D. E.

12832.—**Culture of Pancratiums.**—These are practically stove plants, and should be grown there. They may be allowed to rest in a cool house. Let them have a good season of growth; they will rest after, and subsequently flower.—J. D. E.

12864.—**Plunging bulbs.**—Yes; your method is quite right. Remove when the stalk is about 2 inches high.—C. F. D.

12737.—**Late white Chrysanthemums.**—Lady Selborne is the most beautiful of the pure white Japanese variety. It flowers well during the autumn, and is very effective when grown as a pot plant.—G. H. Mortimer, *Pimlico.*

THE KITCHEN GARDEN.

RICHD. GILBERT'S PRACTICAL PAPERS ON FRUIT & VEGETABLE CULTURE.

Peas.

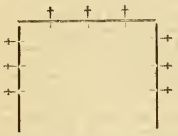
A difficult problem that an amateur gardener has to solve is that of "what to grow," and, looking through a nurseryman's catalogue, he gets more perplexed than ever. Beginning with Peas, I may observe that nine amateurs out of every twelve select the worst variety of Peas to suit his purpose. Small plots of land, which most of our amateur friends have, should be occupied by small or dwarf varieties of Peas. Among the many varieties my choice falls upon two—Laxton's William Hurst and American Wonder—the latter of which I look upon as a true type of Turner's Little Gem, sent out twenty-five years ago. The most economical system is to proceed as follows:—Assuming the land has been well manured and dug, wait until it works well, then, on a dry day, mark out an ordinary four-foot bed. Set the line 6 inches from the outside, and sow four rows in the bed, each row standing one foot apart. Sow the Peas thinly but evenly, any time in February. Immediately they break the ground cover them right over with coal ashes, which keep away the slugs. When well through the coal ash give them a good peppering with ordinary Pepper, and this will keep away the sparrows. When 4 or 5 inches high utilise Currant or any kind of prunings in staking them up. We are generally told that short Peas require no stakes, but this is a great mistake. When the Peas begin to fill they pull the haulm down on the ground, and it is a well-known fact that when the Peapods lie on the damp soil they get neither sun nor air, so that instead of tasting that fine, marrow-like flavour, we find them insipid and not agreeable. These two varieties of Peas make equally good late varieties, as well as early, so that by sowing a small bed every five weeks up to June our amateur friends may enjoy this king of all vegetables both early and late.

Potatoes.

If the difficulty of selecting Peas is great, that of selecting Potatoes is greater, because their names are legion. There are no Potatoes that suit amateur growers so well as the Ashtop section. These should be grown exclusively. The best worked land should be utilised for this crop, and the two best varieties to grow are those known by the names of Wilson's Selected Ashtop, and that grand old variety, Myatt's Kidney. If these Potatoes are not in the amateur's stock procure them at once. When they arrive set every Potato on end in old trays or boxes, and place them in a cool room or outhouse. The first week in April they will be found to have made good green shoots, unlike the great majority of Potatoes planted with small, weakly white shoots. The land should now be drilled, and the Potatoes laid in about 1 foot apart in the row, and 18 inches apart between the rows. The whole of the cultivation required is to keep the land well open by constantly hoeing it. When they get from 6 inches to 8 inches high, earth them up. I may be told that early Potatoes are the worst of all to catch the disease. For eighteen years past I have grown from one to one and a-half acres of these two varieties, and the disease has never yet caught me napping.

The great point is to keep the Potatoes well watched, and when you observe the slightest sign of disease on the leaf, which generally makes its appearance from the 15th to the 25th of July, lift them the same day if possible. Select the largest tubers for use, storing them in a cellar, dark but dry, and here they will keep, and be of the best quality for use, until Christmas. The second size should be preserved for seed. Our old and good proverbs are household words, but none speak more truthfully than the one which says "Plant Potatoes when you will, they do no good before April."

Protecting Peas.—The season being near for sowing Peas, allow me to recommend to your readers a plan which will be found the cheapest and most effective for preventing the depredations of sparrows, &c. Obtain a piece of board, rough or smooth, 10 or 12 inches in length, and about 8 inches wide. Drive into the edge, 1½ inches from the top, an ordinary nail to stand out about 1 inch; drive in another 1½ inches below that, and another the same distance below that; then place three nails in the opposite edge, then three or four



Board for protecting Peas.

more nails along the top edge. Two of these boards will be wanted for each row of Peas, one at each end. Push these into the soil, leaving 6 inches above ground, and make them pretty firm. These boards being placed, get a reel of black cotton; tie the end to one of the bottom nails, and twist the cotton round the corresponding nail in the other board, and then round the nail above it; return to the first board and do the same thing till there is a regular net over the whole row. No bird will visit them twice. The plan is perfect, and will keep the Peas safe till they are a good height. The boards will do for many seasons if they are taken care of; the only loss is the cotton. This plan takes a good many words to explain, but the boards being obtained a few minutes will put the thing in action.—Woodcote, *Harborne*.

Globe Artichoke.—This is a somewhat neglected vegetable, being grown sparingly in English gardens, and in many not at all, while with our neighbours, the French, it is a specialty. It is an excellent vegetable, easily grown, thriving in any exposed situation, and very productive, provided the heads are cut off and used as fast as they get ready; if left to ripen on the plant they exhaust it, and no more are produced that season. When cut regularly they are produced in succession for a good while. Heads are unfit for culinary purposes after the flowers expand; hence the indifferent opinion entertained of this vegetable through these being cooked after they have passed the proper stage, at which they are tender and delicious. In Scotland the young heads of certain Thistles are peeled and eaten in the same way. These Thistles much resemble the Artichoke, to which they are related. Globe Artichokes should be planted out in good soil, and about 4 feet asunder, and plantations should be frequently renewed by division of the roots or by seeds. Old plants produce the earliest crops, the spring plantation coming in a little later, and providing a supply in autumn. Seedlings raised in spring and planted out early in summer make the finest plants and produce the largest and most succulent crowns. We saw a plantation of seedlings last autumn that were about 7 feet high, the usual height of the plant being about 4 feet or 5 feet. The plants were, however, growing in deep and rich ground. An orchard is a good place for a plantation of Artichokes, and sufficient should be cultivated to provide a fair supply of crowns as they are needed.—J. S.

REPLIES.

12838.—**The Carrot grub.**—I have not used a weak solution of saltpetre myself, but know those who have with little success. I find the best way of getting rid of the grub is to make some thick lime water, adding a quantity of soot to it, and watering the crop of Carrots the moment the maggots appear. This application both destroys the maggots and strengthens the crop.—G. H. Mortimer, *Pimlico*.

12814.—**Cucumbers.**—To have fine fruit these must be grown under glass in a rich loamy soil, with plenty of thoroughly decayed stable manure and leaves. The best are Cu hill's Blackspine, Blue Gown (a Blackspine), Pearson's Long Gem (a good show variety), Kirklee's Hall Defiance (a white Whitespine), and Telegraph, good for either winter or summer use. Stockwood is the best Ridge Cucumber.—J. P., *Lancashire*.

—— The best Cucumber to grow for general use is Telegraph; for exhibition, Carter's Model and Blue Gown.—J. B.

—— Telegraph and Tender and True are the best Cucumbers for any purpose.—J. D. E.

ON THE TREATMENT OF PLANTS SENT BY POSTAL TRANSIT.

Without doubt, the Post Office, more particularly the recently introduced Parcels Post, has proved itself a most valuable means of communication between lovers of, and dealers in plants, flowering roots, and cut flowers of all kinds. In many thinly populated districts no florist is to be found for many miles. Local dealers have too often almost everything in stock except just what happens to be required, not to mention a tendency to ask extraordinary prices for very ordinary plants; while to those who prefer to take the "pleasing pains" of growing their own plants, the advantage of being able to procure a dozen healthy little scions of seedlings for the price of one fully grown plant, and of saving the expense of transit of weighty pot-plants, is by no means inconsiderable.

But there is very little doubt that—owing partly to the indifferent quality, and faulty and careless method of packing plants sent out by unscrupulous and so-called "cheap" tradesmen, and partly to erroneous ideas or imperfect appliances of purchasers, resulting in either case, in only too many instances, in gross mismanagement, and consequent failure and loss—this most admirable and useful mode of conveyance has fallen, at least to some extent, into disrepute. Within the past twelve months several cases have come under our notice in which people, really fond of flowers and gardening, have been so discouraged and disgusted by repeated failures as to declare they would have no more plants by post, but would either buy a good strong plant in the neighbourhood, or go without altogether. Now, it seems to us to be a great pity that for want of a little care or skill on the part of the sender and receiver so useful a means of communication should fall into disuse, and we sincerely hope that the following hints may prove useful, in rendering transactions through the Parcels Post more satisfactory and frequent in the future.

In the first place we feel sure that by far the greater part of the failures that occur are caused by injudicious treatment on the part of more or less inexperienced purchasers. As a rule, it is almost an impossibility for freshly struck, or in any way delicate "rooted cuttings" of Fuchsias, Petunias, or the like, to succeed or ever make satisfactory progress when potted on receipt straight into large, say 4 or 5-inch pots, too often in nothing but common garden soil, and stood on the shelves of and ordinary cool and airy greenhouse. This we have ourselves seen time after time, and, without doubt, something of the kind occurs in thousands of cases in the course of a year. Then one is asked, how it is that the plants do not grow. The wonder would be if they did! When the poor little plants, very likely fresh from the sweet, warm, and moisture-laden atmosphere of a propagating house, and tired and flagged by a long journey, begin to hang down their delicate heads from sheer inability to thrust their roots into the mass of heavy soil presented to them; the cause is immediately put down to want of water, and they are at once swamped thoroughly, and the last spark of life thereby extinguished. Now, if the plants were placed in small 2½ or 3-inch pots, even in ordinary soil, and if, instead of being drenched at the roots, were just sprinkled overhead with a little tepid water, put in a plain wooden box, just deep enough to hold them, and a sheet of glass placed over them to prevent evaporation and refresh the plants by absorption through the leaf glands, their chances of doing well would be vastly increased, and the proportion of failures greatly reduced. Everyone who is in the habit of receiving plants that have been "shaken out" of the soil in which they grew should, unless they possess a propagating house or close warm pit, provide themselves with either a handlight or two, or a plain wooden box, 9 inches to 1 foot deep, and 1 to 2 feet in length and width, with a square or two of glass large enough to cover it. Into this put an inch or two of fresh moist Cocoanut fibre refuse, and place it in the quietest and warmest, and, if possible, shadiest, part of the greenhouse. On receiving any plants unpack them carefully, and if at all small, delicate, or flagged, immerse them for ten or twenty minutes in tepid water, and when revived pot off carefully and singly into small pots ("thumbs" or "small 60's"), using some light, open soil—a mixture of equal parts of good loam, leaf-soil, and sand will suit almost anything—and placing several small bits of crock in the bottom of each pot. When all are done, dew them overhead thoroughly with a syringe, giving enough water to moisten the soil moderately as well as the tops; then place in the propagating house or pit, or under a handlight, or in the above-mentioned box—anywhere, in fact, where they can be closely shut up for a few days, and be kept fairly warm and shaded from hot sun. Next morning they will be all quite fresh and stiff, and in the course of a few days will have got hold of the fresh soil, and have commenced to grow again. If any signs of damping occur give a little air. Night is the best time to do this, and it is safer in any case. When fairly growing gradually remove the covering, and when strong expose to the full air of the house. As regards temperature, some things require more heat than others, but a mean of about 60 degs. will suit anything. Cinerarias and Calceolarias should be kept cool; they do not like heat, and except in winter a cold frame is the best place for these and similar subjects. Geraniums, Pelargoniums, Fuchsias, and most greenhouse plants properly so-called, will be all the better for the few extra degrees at first, though they will generally become established (but more slowly) in 5 degs. or 10 degs. less. Coleus must have 60 degs. at least to start, but these like plenty of warmth, and 70 degs. or 75 degs. would be none too much. Gloxinias, if received as young growing plants, must be shut up quite tight in an atmosphere at 70 degs. or 75 degs., and reeking with moisture, though dry tubers just starting into growth may be potted in small pots and sandy soil, and stood anywhere where there is a range of 60 degs. to 70 degs., keeping almost dry at the root until well in growth; but once in growth a thoroughly moist atmosphere must be maintained, or thrip will very shortly put in an appearance.

As the season advances less artificial heat is necessary, and by the middle of May most things will do well in a frame facing south, with a mat on a cold night. Asters and other half-hardy annuals for planting in the open borders should, if possible, be got in good time, and potted singly in small pots, or pricked out in shallow boxes and kept close in a frame until growing, then hardened a little, and transplanted, with good balls of earth, to where they are to bloom. If nice and strong they may be planted out at once, especially if the weather be showery; but this should be done in the evening, and, if the sun shines strong within a day or two, protect by placing a small inverted pot over each plant, and take care to keep them well watered for a time.

But too frequently the fault lies as much or more with the sender. We have seen Verbenas, Fuchsias, and such things sent away straight from the propagating bed directly they were rooted, the "plants" consisting of nothing more than a tender growing top, scarcely more than an inch long, with three or four roots about half that length. A good hand with a nice close house might get some of them to grow, but such plants would stand a poor chance in the hands of most amateurs. It is a shame to send out such rubbish under the name of plants, or rooted cuttings either, and the consequence is that the *bonâ fide* dealers suffer for the faults of the unprincipled portion of the trade. On the other hand, plants should not be too large when sent out in this manner. The check caused by shaking out and

repotting a really "bushy" plant from a 4-inch pot just when in full growth is very serious, and takes place just when the plant should be preparing to run up strongly, preparatory to flowering. Again, if a plant has been "stopped" some time previous to removal, and has produced a number of side shoots or breaks, it is probable that these, being tender, will be nearly all broken off in the packing, unpacking, and potting off again. Personally we prefer straight single stem plants, 3 to 5 inches high, with a good tuft of fibrous roots, and slightly hardened off before being dispatched. Plants from cuttings taken with a "heel" are better than those from tops, as a rule, as the roots are tougher, and the plants have more stamina; and those from single pots are better than those from cutting or store pots, as the roots do not get so broken in being shaken out. Again, there is a great deal in packing; how plants just wrapped in a leaf or two, then in cardboard or stout paper, and sent 200 or 300 miles, arrive as well as they sometimes do, is a mystery. Plants should always be sent in boxes and be surrounded by a layer of fresh, sweet, and damp (not wet) Moss. From a well-made box there is little or no evaporation, even in hot weather, and the plants arrive as fresh as when they left—if not crushed in packing, yet made just tight enough to prevent their moving. Packed in this way we have known delicate succulent seedlings, Dahlias, &c., to travel 200 or 300 miles, lie in the box a week, and after all make good plants, with a little care. Cardboard boxes are hardly trustworthy, as damp softens them; on the whole we prefer wood, as being sweeter and lighter than tin. They should be tacked, not glued together, and so tied in packing as to prevent the joints opening as they are apt to do in hot weather.

As far as possible, plants should be "got out" and packed either early in the morning or in the cool of the evening in hot-summer weather; if shaken out during the strong sunshine of a midsummer day, when the soil is probably dry, they flag almost directly. They should also never be sent away during severe frost, especially if at all tender or delicate. Once more, I strongly advise senders never to dispatch a plant straight from the propagating house: they should be exposed (gradually, of course) to a moderate amount of air for at least a week before being allowed to leave the premises when, if healthy, and of fair size, they are safe to do well, treated as directed above. One more hint. Owners of town gardens, where the air is heavy or smoky, should endeavour to obtain their plants from a good *urban* nursery, *not* from the country. This may seem strange, as country plants, being stronger, would be thought likely to do better. But it is the change that does the mischief. A change from impure to pure air is right enough, but a change the other way is very injurious to tender, young plants; they stop growing, always for a time, and often altogether, whereas town-grown plants are used to it, and, if healthy and well attended to when received, stand a much better chance of doing well. This is the result of a large experience, and will be found correct.

B. C. R.

BEES.

SEASONABLE NOTES.

The appearance of the Crocus and other early spring flowers revive the bees to activity, and the bee master begins to make preparation for another season. It is not, however, good policy at present to encourage the activity of the bees, because the supply of honey and pollen to be obtained as yet, although limited, is sufficient to encourage brood-raising in the hive. The brood circle is gradually enlarged and is covered by the bees to keep it at a proper temperature. Should cold weather now return the bees condense to a small compass and leave much brood uncovered, which perishes, and serious results in all likelihood ensue, chilled brood being a dangerous thing in a hive, sometimes leading to that worst of all bee diseases—foul brood.

Stimulative feeding.—Hives light in stores and containing brood must be fed, and the feeding carried on in daily increasing proportion until the natural supplies become sufficient, or the colonies will be in danger of starvation, on account of the inequality between the internal demand and the natural supply being so great. Stocks having abundance of sealed stores will not need stimulative feeding; all that is necessary in order to encourage breeding, is to uncap some of the honeycomb; this will induce the bees to remove the honey and store it anew, an act which will be sufficiently stimulative to them. Stimulative food should be made in the proportion of 3 lb. of sugar to 2 pints of water, boiled together for a few minutes, and a tablespoonful of vinegar added. It should be supplied to the bees by means of a feeder, consisting of a glass jar covered with a tin cap, which is inverted on a wooden block prepared to receive it. The tin top is pierced on one side only with five holes. The wooden block contains a diaphragm, one-half of which is composed of perforated zinc, and the other half of plain zinc. When the pierced side of the tin top is over the perforated side of the zinc diaphragm the bees have access to all the holes, but by simply turning the bottle round the supply of food may be reduced or cut off altogether, the index pin attached to the tin cap showing at a glance how many holes the bees have access to. For rapid feeding a simple and good way is to bore a hole, about 2 inches in diameter, in a small, square block of wood about 1½ inch thick. Fix a piece of perforated zinc over the hole, place the block of wood with the perforated zinc at the bottom, over the hole in the top of the hive. Put the feeding syrup into a common wide-mouthed pickle bottle, covering the mouth with a piece of muslin doubled, or cheese-cloth, and insert the mouth of the bottle in the block of wood, allowing it to rest on the perforated zinc.

Pollen.—Natural pollen, the fertilising dust of flowers, is gathered by bees and transformed by them into food, upon which to feed the young brood; but, curiously, pea flour is found to answer the purpose of pollen in brood raising and is eagerly collected by the bees for this purpose if it be provided for them. It may be sprinkled into the open Crocus flowers or placed in a sheltered nook near the apiary; this will keep up the necessary supply until natural pollen becomes abundant. When bees are observed seeking water in the early spring it is a sure sign that breeding has commenced within the hive, water being used in quantity, with pollen and honey, in rearing the brood. It is good policy to provide water close at hand, in shallow pans or other receptacles, having pieces of cork or wood floating in it, on which the bees may alight to drink. Bees often venture out in search of water during inclement weather, and becoming chilled, are unable to return to the hive, large numbers being ofteutimes thus lost; but by providing water close at hand this may in great measure be avoided.

Dampness in hives should be carefully guarded against at this season, damp floor-boards removed and replaced by clean dry ones, of which a supply should be kept ou hand. Sometimes the chippings of combs, dead bees, and other refuse which collect on the floor-board, will be found mouldy, and the hive damp, and in an unhealthy state in consequence. All causes of dampness should be removed as soon as discovered. Any quilts (the coverings of the bar frames) that have become damp must also be removed and their place supplied with warm, dry ones. Where the sides of hives rest upon the floor-board, dampness draws under, and spreads over the hive; by having hive sides made to fit outside floor-board this may be prevented. In feeding bees at this time of the year very great care is necessary to prevent the bees of other hives getting a scent of the syrup, for should they be attracted by any syrup having been spilled about the outside of a hive, robbing and fighting will be pretty sure to ensue. The entrances of hives that are being supplied with syrup should be narrowed, and the feeding-bottle should be covered up, so that stranger bees cannot get at it. If robbers are found attacking a hive the entrance should be closed, so that one bee at a time can enter; this will give the inmates a great advantage over their adversaries. A strong colony will sometimes attack and destroy several weak ones, and carry off the stores to their own hive. It is, therefore, of first importance to guard against robbing, the most effectual means being that of keeping all stocks strong.

S. S. G.

Boxworth.

QUESTIONS.

12957.—Bees.—I would feel obliged if any reader would tell me whether I can buy the 1-lb. all-in-one-piece sections wholesale; if so, where?—W. T.

12958.—Swarming.—Will any apiarist help me under the following circumstances: 1. I have a one-year-old stock of bees in a bar-frame hive. Would it be best to take an artificial swarm this season, or to prevent the bees swarming altogether? Please give directions how to proceed in each case. 2. The above hive has at present only six bars in it. I wish to put a super-crate of 21 sections in this spring, but find, on measuring, that the crate would project the width of three bars more beyond—*i e.*, nearer the back—the six. Can I hope to add three more bars this season, and also, if advisable, take an artificial swarm?—A Young Apiarist.

12959.—Dysentery in Bees.—Will "S. S. G., Boxworth," kindly explain the following? Sunday, 22nd, being a very mild day after several weeks of cold weather, my bees were induced to come out, and some hours afterwards I found a large number of them on the ground, and others clinging to blades of grass in an almost helpless condition. On a previous occasion I found a great number dead or dying. I should like to know why they remain out till they die? On this occasion I noticed they had soiled the alighting-board, and the outside of the hive, thereby indicating dysentery, I presume. Can I do anything to check this?—N. O. D.

12960.—Bee-keeping difficulties.—Will "S. S. G." take the trouble to help me under the following circumstances? 1. I bought a swarm of bees last year, and put them in a bar-frame hive. They have now six frames, with plenty of room for more. Would it be best for me to take an artificial swarm this spring, or prevent them swarming altogether? Will "S. S. G." give me proper directions in either case, so that I can do what is necessary? 2. I am desirous of placing a super-crate of twenty-one 1-lb. sections on the above hive next summer; but it having only six frames in, I find, on measuring, that the crate will project several inches beyond the frames. Could I hope to add enough frames (three) in the spring, so that the bottom of the crate will be entirely covered?—Young Apiarist.

12961.—Transferring stock to new hive.—My hive is an old-fashioned wooden one, consisting of four compartments, a central and three outer ones. The bees are confined to the former, which is nothing more than a square box turned upside down into an outer shell, with a passage cut through one of its sides. The only means of examining it is by lifting it bodily out of the shell and placing it on its side. I did this in September last, but owing to its being literally crammed with comb (which is built very irregularly), and the bees clustered on the bottom of the combs, my examination was very unsatisfactory. However, I acted on "S. S. G.'s" advice with regard to feeding with syrup, &c. Would there be much difficulty in transferring the stock from this old hive into a bar frame hive, as in a short time I shall have some new hives ready?—N. O. D., *Seacombe, Cheshire.*

12962.—Managing apiary.—Having just become the possessor of a bar frame hive of bees, I want to know the best way of managing them. To start with, the swarm was a weak one last spring, and therefore three bars were left out, and no honey taken last year. I have lifted the top of hive, and unsealed the cloth covering over the vacant part where bars should have been, and find the bar that can there be seen contains comb that is empty; also there are sundry pieces of comb attached to the inside of the roof, as well as the side, of hive. The hive seems swarmed with active busy bees, especially on fine days, when they they come home thick and fast, laden with different coloured pollen. I want to know now: (1) The best time and way to examine bars so as to ascertain if they require feeding; (2) how to distinguish brood from honey cells; (3) how to tell if they have a queen or not, and how to manage if they have not; (4) When should the three remaining bars be put in?—White Elephant. [We have inserted some of your questions; you should not send so many at one time.—Ed.]

POULTRY, RABBITS, &c.

DOES POULTRY KEEPING PAY?

The difference in value of poultry and their eggs is so great in various localities that it is almost impossible to give a correct estimate on this subject. We have evidence of this fact in the letters of your recent correspondents. The one who signs himself "Nil Desperandum" quotes the value of his eggs at an average of 1¾d. each; whereas, "West Dorset" states that eggs were selling in the month of January in his neighbourhood at 1s. per dozen, and can be bought at 7d. per dozen. The pick of poultry in a farmyard can also, he says, be purchased for 3s. 3d. per couple; and he adds that his experience is probably the experience of thousands who live in country parishes. This, certainly, is not the experience of those who reside in Cheshire, however remote from busy towns. We have here to pay at the rate of 1s. for eight fresh eggs in winter, and for a like sum we get fourteen eggs in summer; and fowls are worth from 4s. to 5s. per couple. I believe, taking the whole of England, these prices will be not much wide of an average.

Having kept poultry for a number of years and been successful both in their freedom from disease, economy of keep, and results obtained, I give you an account of my management.

Firstly, then, my stock is usually twenty hens and three cocks, and I rarely alter this number of full-grown fowls. Until lately I

usually had a cross between a Dorking and Brahma, but, having heard such a good account of Plymouth Rocks, I purchased two sittings from a well-known breeder of this class, and the result has been that I am so impressed with their good qualities that I purpose for the future to keep this breed only. I have a grass run of an acre, and to this I believe I owe all the success I have. As to feeding, about an hour after they are let out, each morning they have 2 lb. of Indian meal and 1 lb. of bran mixed together, well scalded with boiling water; to this is added the peelings of the Potatoes which have been used in the house the previous day, these having been well boiled and mashed. In the afternoon—say an hour before roosting time—each has a small handful of small round Indian corn, the measure for the total quantity holding 2¼ lb. This constitutes the whole of the feed, and with the full-grown fowl there is very rarely any change, except occasionally a few scraps, but, as two dogs are kept on the establishment, these scraps are of small amount.

Cost of Keep.—Indian meal being worth at present 15s. per load, the small round corn 14s. per load, and bran 12s. per load, of the weight respectively of 240 lb., the daily quantity as named above—14 lb. of meal (weekly), 10½d.; 7 lb. of bran (weekly), 4d.; 16 lb. of corn (weekly), 10d.; total cost, 2s. 1½d. A total cost for the year of £5 10s. 6d.

As to the credit side of my account, the value of the eggs and chickens are based on the estimate of their worth in this neighbourhood, the fact being that I never sell either eggs or chickens.

	£	s.	d.
The eggs in 1884 were 1,355, at 1½d.	9	13	2
36 chickens, at 2s., when fit for killing in the autumn	3	12	0
Less cost of extra food, at 1s., for rearing same	1	16	0
		1 16	0
	11	9	2
Expense of keep as above	5	10	6
Profit on year	£5	18	8

I usually rear from hatches of early March chickens, and my average is from nine to ten chicks reared out of each sitting of thirteen eggs. Should any of your readers (intending poultry-keepers) wish to know my method as to chicken-rearing, I shall be happy to write you again; but, for the present, I feel that I have already trespassed too much on your space. My average of eggs for the last three weeks has been three and a-half dozen per week; but I have four hens wanting to sit out of my stock. Possibly objection may be taken that, on the debit side of my account, nothing is charged for attendance; but, as the man who looks after the poultry would have to be kept for other purposes, I incur no extra expense on this head. I have only to add that had I not the advantage of a good Grass run, I should not keep poultry; as those I have usually seen fastened up in a small run have a wretched, unhappy look, require constant change of food, with greens; whereas the trouble with mine is at a minimum, and they are always in blooming plumage and health. Cheshire.

Fowls in confined spaces.—As showing that it is not absolutely necessary to insure a good supply of eggs that fowls should have a large space of ground to range over, I may mention that I had in 1883 one pure-bred and one cross-bred pullet, hatched June, 1882, which laid from March 8 to October 6, 195 eggs, of an average weight of 2 oz. each. They were kept in a house 4 feet by 2 feet, and were always in good health and condition. In fine weather they were let out a hour each day to scratch over the garden. In 1884 the same two fowls with five other cross-bred pullets, hatched April, 1883, laid from January 2 to October 9 682 eggs of the same average weight. These had a house 6 feet long, 3 feet wide, and 6 feet high, with run attached 18 feet by 3 feet. I replaced these October, 1884, with five cross-bred pullets hatched March same year. These have laid up to present date (February 3) twelve dozen eggs.—E. B.

QUESTIONS.

12963.—**Testing Eggs.**—Is there any means of knowing when the shells of eggs are too thin for sitting purposes?—Brahma, *Norfolk.*

12964.—**Brown Game Bantams.**—Would some reader kindly tell me where I could get a setting of Brown Game Bantam eggs?—Tommy.

12965.—**Eggs in autumn.**—Will anyone tell me from experience the best kind of fowls to lay during the moulting season?—R. M. J.

12966.—**Fence for poultry.**—Would someone kindly inform me what height of fence is necessary to pen in fowls in a run if not netted overhead?—E. W. C.

12967.—**Remedies wanted.**—What is the best thing for young pheasants and partridges having gapes or diarrhœa?—Inquirer.

12968.—**Keeping poultry in confined places.**—Can I successfully keep eight or ten fowls in an enclosed run 20 feet by 10 feet very open to the sun? One side of the enclosure is hounded by a thick Ivy hedge. Will the fowls eat the Ivy leaves or berries, and if so will they be thereby injured?—A. M. A., *Codicote.*

12969.—**Specks in eggs.**—When breaking eggs for household purposes I find several little brown specks about the size of a pin's head (sometimes larger sometimes smaller) in the whites. Could any of your readers say whether they have ever noticed the same thing, and whether it would be safe to put them under a hen for hatching?—M. M.

12970.—**Fowls with healthy bodies and weak legs.**—I have two hens (last year's pullets) laying, which were seized suddenly about a fortnight ago with what appears to be weakness in the legs, causing them to fall off the perch and to be unable to stand. I removed them from the others and put them in a coop by themselves, with plenty of hay, outside, but perfectly dry. They have continued to eat well and lay, though not so freely as when in the run; indeed, they look quite well as far as their bodies are concerned. There have been three others slightly affected within the same period, but two seem to have recovered. If any of your correspondents can name the disease, cause, and give a remedy, I shall be very much oblige!. My fowls are kept in a confined run, fed well, and their roosts are cleaned out every morning. They look very healthy and lay very well; and, although I have kept fowls for over three years, disease has been almost a stranger.—Querist.

12971.—**Poultry dying.**—I keep eighteen hens and one cock in an enclosure in which is a place where the garden rubbish and refuse is put. My servant put out in this place lately the entrails of six fowls, and also poured out the water and fat on it in which half a ham had boiled. The ham was not a very fat one, so the fat scum could not have been very salt, which is death to hens. Five of my laying hens have died, they were much purged, and their combs got a reddish purple, and all seemed to drink quantities of water; all the hens, with one or two exceptions, seem off their food, and very thirsty. I keep the other six hens and a cock, which are fed on the same food, only in a different run, and they are all right and healthy. Will anyone kindly tell me if the rabbit entrails could have poisoned these five and affected the rest? Could some of my neighbours be poisoning rats, and could they have carried the poison into my hens' court, when they come? The hens are black Hamburghs and Brahmas.—J. L.

REPLIES.

12709.—**Book on propagating.**—"Guide Pratique du Jardinier Multiplicateur," par E. A. Carrière, Librarie Agricole, Paris, 26, Rue Jacob.—Ombre.

12657.—**Fowls and wind eggs.**—The reason why Joshua Jackson's hens drop their eggs from the roost is probably because the perches are too high. For heavy breeds 18 inches is quite high enough, and for lighter birds should not exceed 5 feet, and only that in a house where there is plenty of room for the fowls to fly down.—M. A. E.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* GARDENING, *we do not give place to our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—Ed.

Forwarding letters (*J. T. and others*).—We cannot undertake to forward letters sent to us for correspondents. In many cases we have not the permission of writers of short notes to trouble them with questions by post, and it is better that the information desired should be given through the pages of Gardening, when it will probably be useful, not to one person only, but to large numbers of readers. Enquirers are also requested not to forward us stamped envelopes for replies.—Names of Roses (*Trying*).—Get the catalogues of one or two good Rose growers, and you will then see the divisions of the different classes. If the catalogues do not help you, we shall be happy to try and do so.—Roses in pots (*Trying*).—Roses grown in pots require good cultivation, and you had better have a lesson from some skilled gardener. The injury you speak of is probably not due to the worms, though if we saw them we should we able to speak more decidedly.—Kitchen garden pest (*Railway Boy*).—How can we advise you if we do not know the thing you are dealing with? It is probably wireworm, for which many remedies have been given in Gardening; but would it not be easy to send us a specimen of the pest?—Address (*W. C. L.*).—See "Garden Annual" for addresses of horticultural tradesmen. There are several of the name you mention in the list.—Fountains and propagating cases (*Triangle*).—Read our advertisement columns, or consult a local tradesman.—Making propagating box (*W. Davis*).—Instructions for making propagating frames have frequently been given in Gardening. The articles in the numbers for March 31, 1883, p. 58, August 6, 1881, p. 278, and March 6, 1880, p. 10, may assist you.—Recommending seedsmen (*T. E. R. and others*).—Correspondents should remember that we cannot admit recommendations to seedsmen or nurserymen in respect of goods that may be procured generally in the trade.—Procuring eggs for sitting (*Beginner*).—You should advertise, or consult advertisements.—Poultry-keeping (*J. L. P.*)—Thanks for your contribution; several articles of the same kind have been sent us, and some have been already published.—Contributions (*H. W. R., Wexford*).—Kindly read the rules for the guidance of contributors.—Moss litter and Corn Thistle (*L.*).—We are anxious to help our readers as much as possible, but we cannot answer a dozen long questions, having little, if any, relation to the subjects with which we deal. On any gardening matters we shall be happy to assist you, if you state simply what it is you wish to know, and if you follow the rules given for the guidance of correspondents.—Missing Rose (*H. G.*).—There are so many Roses, and the distinctions in many cases are so minute, that it would be impossible to identify the one of which you write, therefore we are afraid we cannot assist you, unless you can send us a specimen or a drawing.—Unhealthy Roses (*A. J. R.*)—You have apparently forced your Roses too strongly; but we cannot speak with certainty until we see a specimen. Send us a diseased flower and leaf.—Query (*J. A. Oxford*).—Your query was inserted last week.—Names of Flowers (*Guildhall*).—We know of no book that would exactly answer the description given by you; but Miller's "Dictionary of English Names of Plants" nearly approaches it.—Article on Window Gardening (*J. Russell*).—We will try to give you the information desired on the subject in an early number. There is much valuable information in past volumes, but the subject has many aspects, and is far from being exhausted.

Names of plants.—(*W. Green.*—Acacia dealbata, —*Kidderminster.*—Eupatorium Fraseri.—*S. H.*—Flamingo Flower; Anthurium Scherzerianum.—*Ella.*—Alonsoa incisa.—*Scolopendrium.*—1 and 6, Veronica speciosa (varieties); 2, V. decussata; 3 and 4, V. Andersoni variegata: 5, V. Traversi.

THE Old White Sweet scented NARCISSUS, Pheasant's Eye (Poeticus)—We have a large quantity to offer, owing to the ground being let for building. 100 good Bulbs free for 1s. 3d. Special prices for large quantities. POPE & SONS, King's Norton Nurseries, near Birmingham.

READ, MARK, and LEARN that TAYLOR & SONS are now offering the Cheapest and Best Collection of Vegetable Seeds ever offered to the public, price carriage paid, 5s.—viz., THE WORKING MAN'S COLLECTION, price carriage paid, 5s., which includes the following, viz:—½ pint Kentish Invicta Pea, 1 pint Yorkshire Hero Pea, 1 pint McLean's Best of All Pea, 1 pint Taylor's Broad Windsor Bean, ½ pint Canadian Wonder Kidney Bean, ½ pint Scarlet Runner Bean, ½ pint Beet, 1 packet Curled Cress, 1 packet Brussels Sprouts, 1 packet Cauliflower, 1 packet Cabbage (White), 1 packet Cabbage (red), 1 packet Cabbage, Savoy, ½ oz Carrot, 2 ozs. Mustard, 2 oz. Cress, 1 packet Celery, 1 packet Cucumber, (Telegraph), 1 packet Lettuce, 1 packet Leek, 1 oz. Onion, 1 packet Parsley, 1 packet Parsnip, ¼ oz. Radish (long and round), 1 packet Spinach, 1 packet Turnip, 1 packet Vegetable Marrow.

We undertake to forward, carriage paid, to any address in the United Kingdom, on receipt of P.O.O. for 5s., or half the above quantity for 2s. 9d. N.B.—The money returned if purchasers are not satisfied, on condition that we receive them carriage paid and untouched. Also, our Celebrated (Smithfield Market) Collection of Flower Seeds, containing 12 of the best hardy annuals grown, post free for 13d., with hints as to culture, &c.—TAYLOR & SONS, The Old Original Seedsman, Smithfield Market, Manchester.

ROSE TREES, about 3 Feet High.
Marechal Niel, Gloire de Dijon, Cheshunt Hybrid, 3 best Tea Roses, 4s.; General Jacqueminot, Victor Verdier, Boule de Neige, 3 best Perpetuals, 3s.; all about 3 feet high, carriage paid.—H. ENGLISH, Fairlee, Clevedon.

ORCHIDS.—A collector has flowering plants for disposal.—Apply to B. T. L., 65, Cambridge Gardens, Notting Hill, London, W.

CUCUMBER, large plants, 8s. doz.; Tomatoes, ditto, 1s. doz.; Iresine Sinadii, 1s. doz.; box choice flowers, 1s 6d. to 2s. 6d., post free for cash.—WALKER'S, Station Road, Snettisham, Norfolk.

CUCUMBER PLANTS, Rollinson's Telegraph (true), best variety for frames or greenhouse, 3 for 2s. 6d. free.—CASBON & SON, Millfield, Peterboro'.

CARNATIONS, mixed varieties, best sorts, transplanted layers, well rooted, from open ground, 6 for 2s. 6d.; 12 for 4s. 6d., free.—CASBON & SON, Peterboro'.

DOUBLE SWEET WILLIAMS.—Myriads of double sweetly-scented flowers, 12 for 1s. 6d.; 25 for 2s. 6d., free.—CASBON & SON, Millfield Nursery, Peterboro'.

DOUBLE WALLFLOWERS, finest imported, splendid strain, sweetly scented, 12 for 1s. 9d.; 25 for 3s., free.—CASBON & SON, Millfield Nursery, Peterboro'.

WALLFLOWERS.—Dwarf, golden, blood-red, Harbinger, and new Purple, 25 for 1s. 9d., 50 for 3s., free.—CASBON & SON, Millfield Nursery, Peterboro'.

CYCLAMEN, Covent Garden Strain, finest mixed varieties, 12 for 1s. 6d., 25 2s. 9d., free.—CASBON & SON, Millfield Nursery, Peterboro'.

NICOTIANA AFFINIS, sweet-scented, Bouvardia-like white flower, strong plants for early bloom; 2 for 1s 6d.; 4 for 2s. 6d., free.—CASBON & SON, Peterboro'.

SPECIAL CHEAP OFFER, Surplus Stock.—Geraniums, good sorts, named, 5s. 6d. to 8s. per 100; Fuchsias, Verbenas, Heliotropes, Iresines, Ageratums, Polyanthus, and double Clove Pinks, all at 4s. 6d. per 100; Wallflowers, Harbinger, and Golden Pyrethrum, 1s. 6d. per 100; Lobelia, best blue, from cuttings; yellow Alyssum and Antirrhinums, Sweet Williams, best strain, all 2s. 9d. per 100; Single Dahlias, from first-class collection, 6s. per 100. All good well-rooted plants, carriage paid. Perennial Phloxes, 1s. 6d. per doz. N.B.—Smaller customers at same rate.—JOHN NORFOLK, Gardener, Wilburton Manor, Ely, Cambs.

50 STRONG PLANTS, 10 kinds, 2s. 9d. free, for immediate effect, guaranteed bloom splendidly, this spring and early summer. 120, 12 kinds, 5s. 9d. free; smaller collections, 30 plants, 1s. 9d. free. (Sample of many excellent testimonials received.) A London gentleman writes: "Your plants are, without exception, the cheapest lot of good plants I ever purchased."

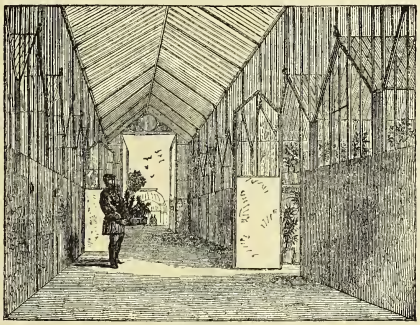
DOUBLE GERMAN WALLFLOWERS, single Wallflowers, assorted colours, including dark red, double Sweet William, intense crimson ditto, double Canterbury Bells, single Canterbury Bells, all colours, Foxgloves, pure white and spotted, Campanula Calycanthema, superb pyramids of bloom, Antirrhinums, 30 varieties mixed, dwarf Antirrhinums, gems for borders or rockwork, lovely blue Forget-me-nots, Mimulus, all imaginable shades, from open ground, adapted for shady borders, Brompton Stocks double, &c., &c.—JOHN R. FLOWERS, Floral Nursery, Ulley, near Rotherham.

GARDENING ILLUSTRATED.

Vol. VII. MARCH 14, 1885. No. 314.

CORRIDOR BETWEEN GLASSHOUSES.

This little illustration shows a passage or corridor between two important sets of houses, placed side by side, and opening into this central corridor. One of the drawbacks of our hothouses is the loose way in which they are arranged. In a great many cases, built one after the other and without any plan to begin with, they are scattered about in a very wasteful way. Those who have a variety of hothouses might do a good deal by grouping them all close together, and thereby would save time, bricks, and mortar, occasionally fire heat, and not unfrequently the health of the men who have to attend to them. In the case of this corridor, which is in a large Continental establishment for the growth of young and flowering plants, many men work without contact with the open air in winter for hours at a time. Hothouse plants can be changed from one house to another, and houses emptied for cleansing or other purposes, at any season without the slightest risk. Another very important point to notice is the great economy of heat. The houses on each hand are right against each other, the side wall serving for two houses, and being capped by a wide gutter, wide enough for a man to run along for the purpose of protecting the houses in case of very severe weather, or of repairing the glass. Though in small gardens things are never done on such a large scale, yet people with only a few houses or frames to arrange may often, if they think of it, place them much better than is commonly done. One point worth notice is the prominent, ugly way in which frames and beds in little places are sometimes found. The shape of such structures is such that they are rarely pretty, and a person of any taste would mostly cut them off from view of his lawn by putting them in some special place where they might fulfil their use without marring the beauty of the house or grounds, as they often do now.



View in a central corridor connecting two series of glasshouses placed side by side.

Flowers in nurseries.—I should like to say a word on behalf of seedsmen's illustrations. Amateurs should remember that they often devote a house to the cultivation of one sort of flower put under the care of a trustworthy man, and therefore flowers are cultivated with every advantage, and results secured that cannot be arrived at where several sorts are grown together. Still, I have Primulas larger than those figured in the seedsmen's catalogue, and Cinerarias equally satisfactory. Again, for outdoor things, climate and soil have to be considered, for even varieties of the same class of plants do not succeed everywhere alike—for instance, I grow half-a-dozen sorts of Strawberries very successfully, but I can do nothing with one or two approved sorts—I therefore think we should not find fault too hastily.—Clericus.

12873.—**Heating greenhouse by gas.**—I would advise "J. A., Oxford," to be extremely cautious how he uses a gas apparatus inside his house. I had a gas stove, one advertised for the purpose, fitted up in a small greenhouse, and found, to my sorrow, that it would soon kill, or at least was detrimental to, all vegetable life in the house. It seemed to me to do more harm than if I had used naked burners. As soon as it got heated up the fumes were quite stifling; so that, as far as my experience goes, the only way to use gas with safety would be to have the burners inside an air-tight chamber (air tight from inside the house) with pipes from the outside to supply air and carry off the fumes.—D. D., *North Surrey*.

12840.—**Plague of woodlice.**—To destroy woodlice place a damp cloth in their haunts. They will crawl under it, and may be destroyed by thousands in a pail of water.—Orion.

OUTDOOR PLANTS.

SPRING GARDENING.

I should like to add a few plants to those named by "J. G." (Jan. 17th, p 583). Oriental Poppies (Papaver orientale and P. bracteatum) should find a place in every garden; they are giants among spring flowers, easy to grow and to propagate. They should be planted in well prepared soil in the first instance, and be allowed to remain until they show signs of deterioration. Every piece of root will grow into a plant. The plants are handsome, and the flowers from six to nine inches across, brilliant scarlet, mostly, with a black blotch at the base of each petal. Pyrethrums are equally indispensable, and stand in the very first rank as late spring flowering plants. As the leaves on the flowering stems are comparatively inconspicuous, and the foliage dwarf, they may be planted amongst Primroses and Polyanthuses, with which their low tufts of dark green fern-like foliage contrast well. The flower stems rise about three feet, and the flowers resemble Chrysanthemums. German double Stock-flowered Wallflowers seem almost unknown in English gardens. They produce grand spikes of bloom, the individual flowers rivalling the finest double Stocks in size and doubleness. The colours are yellow, white, orange, and various brown reds and purples, contrasting well with the biennial Stocks. These last are also among the best of late spring flowers.

Amongst bulbs, Tulips should on no account be omitted. The early ones are well known, but one rarely sees the Parrots with their fringed petals. These do well as permanent plants, occasionally lifted and divided. The old florists' Tulips should be in every garden; few things are more showy in May, and their cultivation differs in no way from that of the earlier kinds. Polyanthus Narcissus are splendid spring flowers, which do well in light, rich, well-drained soil. Few things have a more lively effect in the spring sunshine than good clumps of these nodding over Pansies, Auriculas, Anemones, and Polyanthuses. All the kinds should be grown. Grand Monarque, Soleil d'Or, States General, and White Pearl are specially good. Crown Imperials are fine stately plants for a good border of light, well-drained soil. Jonquils, both single and double, are very useful, and may be dotted about in half-dozens in any spaces available. They look best in that way. Both single and double should be grown. Narcissus poeticus, double and single, the latest of the Narcissi, should always be grown in plenty; they begin flowering just as the Polyanthus kinds are over. Polyanthus Primroses are indispensable, as they bloom throughout the spring. They greatly resemble Primroses, except that the blooms are white or nearly so, and more of a cream than Primroses; some are sulphur of a deeper shade. The colours, however, vary. The first flowers are on long single stalks, but the latest crop of flowers are in bunches like Polyanthuses. Alpine Auriculas are very showy. A stock should be got up from seed and grown in well-made compost, and the strongest growing kinds propagated to make stock for the borders. Many fine kinds will not grow in ordinary borders.

Primula Sieboldii is one of the best and hardiest Primulas; named kinds are expensive, but a stock is easily raised from seed. Good kinds should be purchased and seed saved, and sown as soon as ripe. Nothing is easier to raise from seed or more hardy. I planted out a stock of minute seedlings in the autumn of 1879; they had barely begun to grow before winter set in. The ground was frozen hard for five or six weeks before Christmas, and for as long a time after. On trying to dig when the frost broke up I found that it had reached nine inches deep, at which depth the soil was quite hard. The Primulas were planted in heavy loam, and were quite small plants with three pairs of leaves. After that severe ordeal they all came up. To those who do not know the plant, it may be best described as a slender edition of the well-known greenhouse Chinese Primula. The foliage is very similar in shape and colour. The flowers are the same size, but without the large flower cup. The habit of the plant is that of the Polyanthus, the flowers being carried in bunches on tall, slender stems. It flowers in May; the flowers are various shades of pink, and rose, and white. The best soil is a light, rich one, mixed with rotted turf and leafmould. The plants should be well watered, and shaded, if possible, in summer. This Primula does not show any leaves until late in the spring, and is sure to perish in the gardens of those people who hoe, fork, or rake their borders, as it is a mere tuft of small brown root fibres in winter, which any of these implements is pretty sure to make an end of, if they come near it; but in beds and borders, where everything is allowed to die down in peace, and where leaves are allowed to accumulate as they fall and rot into leafmould amongst the plants, all weeds being pulled out by hand, there is no more beautiful late spring flower, and it seems quite as amenable to increase in size of bloom and brilliancy of colour as the Chinese Primula. Of the spring Phloxes, setacea and its varieties are very useful for rockwork. The broad-leaved Saxifrages or Megaseas are effective when some years established; they then make fine heads of bloom. J. D.

HERBACEOUS PLANTS.

A few experiences have been given recently on hardy plants, which are most interesting. A few specially good things have been singled out for comment, and as the season is at hand when many of us buy a few new things so as to keep up the interest of the garden and not simply look for the same flowers this year which we grew last season, any further light on these finer sorts may be welcomed.

In No. 302 (December 20), "Fides," writing from Ayrshire, notices a blue Salvia which stood the winter with him. I think there is no doubt this is S. patens, which hitherto has never been considered hardy. In a very fine old garden at Bridge of Weir, not fifteen miles from Ayrshire, a friend of mine tells me that he has grown this fine Salvia for years in the open border, only ere winter sets in

he covers the plant with a bell glass. Here, then, is another experience, which I trust many will follow this year, and it may be that a new charm will be added to many a garden from this time forth. My friend's garden is well sheltered on all sides, the winds of winter passing lightly over it. The soil is very rich—leaf-mould, I may add—and Lilium auratum grows grandly in it, sending up enormous heads of bloom yearly. If any of your readers who have gardens near the seaside would try this Salvia, or if "Roxburgh" (see No. 304) would try a plant of it out this winter and report progress in another year, we would all like to know the results. I have noticed that if a doubtfully hardy plant be put out in May, and if it grow well afterwards and the following winter prove a mild one, the plant gets established and becomes quite vigorous, sending its roots far down, so that even a severe winter cannot quite kill it. A friend suggests that it is probable that tender herbaceous plants may become acclimatised by cultivation year after year, till they get really hardy after a while, constitutioned, as it were, to the new conditions of life in which they have been placed. There is much truth in this theory, for any old hand receiving a plant which has been grown in a cool greenhouse, even though of a hardy kind, will for a time guard it from cold winds or frost till it has seen another year. "T. J." (on page 635) can please make a note of this.

Delphinium nudicaule is another good thing grown at Bridge of Weir, and does well yearly, having been wisely left alone and slugs kept from it when coming up in spring. I have tried this for years and failed every time, but will try again, as, like the British at Waterloo, a true florist should not know when he is beaten. In J. Wood, of Kirkstall's, admirable "Notes" on page 627, he says, "his slugs do not seem to touch the tuberous species" of Delphiniums. With this I cannot agree, for having bought a shilling packet of seed for years of D. nudicaule I always found the slugs left everything else—even their favourite French Marigolds—to get at this "scarlet lady" of our borders. Thanks to him for calling our attention to the Helenium grandiflorum, which we have not seen on this side of the Tweed as far as I am aware. On page 628 "T," in speaking of Yuccas, calls filamentosa a free flowerer. I have flowered it once in ten years, and my plant is quite vigorous now; therefore, if he would kindly explain the treatment he gives this shrubby herbaceous, so as to get it to flower freely, I will be greatly obliged. Can anyone settle the vexed question as to this Yucca being allowable in a stand of hardy flowers, "border herbaceous," at a show? Seeing it is really a shrub it ought not, I think, to be passed in the border flower class.

In common with several friends, I have tried this year a plant of Montbretia Pottsii, which is of high repute, but none of us have been able to flower it. I bought my plant in May—a very strong one, too—but though it grew vigorously no blooms appeared. Can any of our southern friends give a hint as to this plant and their success with it? [Is Scotland warm enough to flower it?—Ed.]

Last summer I grew a grand specimen of the Cow Parsnip, Heracleum giganteum. It was fully 10 feet high, with leaves like umbrellas. Many a gazer took notes of it, and often strangers sent in to inquire what it was. For a bold position and lots of room it is just as grand a foliaged subject as one could desire. I obtained a pint of seed, and will be glad to send some to any readers of Gardening who choose to send a stamped addressed envelope. The seeds can be sown now, outside, or in a pan under glass, and, after being pricked out and hardened, can be planted out in good, strong, deep soil, and, if well fed and watered, will bloom the following season, and give a new character to any lawn, shrubbery, or wide border that they may be grown in. Critics often say that florists are too much taken up with beauties so small that it needs a microscope to enjoy them, but in this plant the great serrated leaves and big heads of white flower, with Palm-like stem and habit of growth, will redeem a garden from the charge of pettiness, and by contrast enhance many other things which, by themselves, look common-place. [It may be a most dangerous plant to introduce, as it spreads and seeds about in a truly alarming way. One plant is enough, and it should not be allowed to ripen much seed.—Ed.]

Cathcart. A. Sweet.

ROCK FERNERY SUNK IN THE GROUND.

This is an illustration of a little fernery sunk in the ground so as to secure the necessary moisture and shade in a simple constant way. It is intended for the rarer Filmy Ferns which grow in cool and temperate countries, so that there is no artificial heat—the temperature of the ground suffices. The hole is covered over by a great slab of thick green glass, which lets in a modified light. The Ferns do beautifully in this place, and creep about in a most charming way. The kind of Ferns best suited for such a structure are the beautiful Filmy Ferns, Trichomanes, which grow in great variety and exquisite grace in New Zealand,

Passage in cool Fernery sunk in the ground.

Australia, and many other countries, and one of which is a rarer inhabitant of our own—the Kilkenny Fern. The smaller illustration shows one of these exquisite plants creeping up an imitation stem of a tree, made of terra cotta, and throwing forth its graceful fronds as it ascends. The place where the plants are cul-

A Creeping Filmy Fern on Terra-Cotta Stem (Trichomanes Luschnathianum).

tivated with the greatest success is Messrs. Backhouse's, at York, from where both of our illustrations are taken.

TOWN GARDENING.—I.

Much has been done of late years to improve the town garden, and much doubtless has been achieved; but to those readers of Gardening Illustrated who may not have access to what has already been said a few general remarks may not be unacceptable at the present season. The observant amateur will admit that there are still many gardens "in the stifling bosom of a town" which might be rendered more pleasant to the eye by an extended knowledge of the choice of suitable plants—what will thrive and what will not. Though, for instance, the Geranium is veritably an amateur's flower, it is too commonly the case that in many situations it does not succeed, throwing up only a sickly flower here and there, mostly discoloured at the edges; and, moreover, being a universal favourite, the unenlightened town gardener very often attempts a big display only to end in failure, as a casual peep "over the garden wall" will sometimes amply verify. Later I shall mention the merits of an admirable substitute for the Geranium; but the latter need not be discarded, being an admirable-foliaged bedder, and the bicolor and tricolor varieties being now procurable at a cheap rate, and almost flowers in themselves. In order to strike these when purchased in unrooted cuttings—the least expensive mode—a few barrowsful of fresh stable manure should be obtained; and, though the mention of the use of manure might cause many to reject this proposal, I can only repeat my recommendation, with the promise, by its use, of a kitchen garden crop in some out-of-the-way corner in return, should the forthcoming summer prove favourable.

Before proceeding further it may not be out of place to speak of a few, to my mind, delightful plants requiring no hot-bed. I mean Ivy, Primroses, and Ferns. The very mention of these would seem almost enough to transport the imaginative enthusiast at once into the woodland dell. That the common Ivy should be at home in the town garden is to the lover of plants a fact of no mean importance, and the man of taste will turn it to account. To a close observer, however, even Ivy, in the winter, wherever grown, bears a more sombre appearance than in its period of active growth, at which latter time it will thrive in town situations in all its freshness, gloss, and beauty as in its native haunts, throwing out its delicate pale shoots dotted with leaflets of shining emerald. Under the name of Irish Ivy, sturdy plants staked in a pot can be had from most nurserymen. This will afford plenty of cuttings and soon send up fresh growth. From now till next autumn Ivy will strike freely. An edging can soon be formed round a bed, and a stiff barrel-hoop or two placed firmly in the ground (previously well tarring or covering the ends with pitch to prevent decay) arch-shape across the bed, over which the Ivy can easily be trained, will form what is known as a basket bed—at once permanent, useful, and, as an edging, beautiful in itself. The millionaire has his basket beds of Ivy. Its use, then, cannot be on the score of cheapness. Ivy edgings require to be pruned occasionally. This will ensure a more bushy growth, and the portions removed may generally be used as cuttings for other work. Hanging baskets of Ivy are also very lovely to the cultivated taste, and a few hardy Ferns, though one will be sufficient, will enhance their beauty. Speaking of these, it is important to note that, if planted when in full growth as market plants to attract the eye, the fronds commonly die down, and the plants often perish outright. This never need be if planted in March before the fronds appear. They can then be purchased cheaply, or collected from their native haunts, where nestles the modest Primula vulgaris, or common—yet refined, delicate, and lovely—Primrose. This completes the trio of woodland favourites, all at home in the town plot. Native soil will increase the size of Primrose blooms, which generally are of less dimensions in the town garden than are those growing in their wild state. Old cow manure will do much to improve the flowers, which, however, without this aid will be found to grow numerously and brighten up the garden; and the old plants, casting their seed, soon multiply.

The Hotbed.—Sufficient stable manure can generally be had at a trifling cost, especially from stables, where this material is often in the way. It is, however, advisable to bespeak the quantity you require. The larger the bed the more lasting will be the heat. Stable manure can be kept some time before being required for use if scattered broadcast over a large surface in dry weather. The bed should be made in the most compact form, say 3 feet or 4 feet square, and of the same depth. It should be well turned over twice or thrice, and if rather dry watered. This process occupies generally two or three days, at the end of which time it may be put into use. By boarding up the sides the bed will be better protected from the influence of

cold winds should they prevail. The bed thus prepared should be ready, according to the season, from the last week in March to the second week in April.

Stamford Hill. A. E. A.

Prunus myrobalana as hedging.—In answer to "Sylvanus" (page 658, February 28th), I may say that I have used Prunus myrobalana as a hedge at our experimental garden at Oakwood, Wisley, and thoroughly believe in it; it is wonderfully little known by visitors to our garden. I have just had some put in at a field at Byfleet; it is quick growing. We had the plants originally from Ewing, of Norwich, and I believe the nursery is the head-quarters of the "Cherry Plum."—George F. Wilson.

—— In 1879 I planted two hedges of this on a farm in Somersetshire. It grows very fast, but as it must be cut back within a few inches of the old growth every year, it will not make a hedge sooner than White Thorn. It seems to form very few thorns, but I think the ground is too good, and that they develop into branches, as I have a plant or two on poorer ground which has abundance. Cattle and sheep are very fond of it, and I expect when the protecting fence is removed they will destroy it by continually cropping off the young growth. The young wood cut off in the autumn seems to strike as freely as a Currant. I tried some in a cover hedge, but the rabbits soon destroyed it. —Tetton.

REPLIES.

12901.—**Early white Narcissus**—The white Narcissi referred to in the question are supposed to have been introduced into the Scilly Isles either by the Romans or by the abbots of Tavistock, who founded an abbey at Truro in the tenth century. Previous to 1851 they grew wild in the hedgerows, but some persons more alive to their value than others collected and cultivated them for market, till now they are become one of the staple industries of the islands. They are grown by the acre. Some growers cultivate as many as 500,000 bulbs, and send weekly to market from 30,000 to 40,000 spikes of bloom. There are various other sorts extensively cultivated, as well as the white variety.—J. C. T., *Scilly Isles.*

12882.—**Violet culture.**—Violets do well in almost any rich, well-drained soil. The variety we find most useful for flowering through the winter is The Czar, from a bed of which we have been picking since November, and which is now (March 2nd) a mass of bloom. The treatment they get is very simple; in the autumn a plot of ground is selected for the next year's bed, and a liberal dressing of stable manure is dug into it, leaving the surface as rough as possible. In the spring, as soon as the old plants cease flowering, which is about the end of March, the new bed is planted. Sufficient ground is first forked over to allow of one row being planted; some of the old plants are then taken up, divided into pieces containing three or four small crowns each, and planted about 18 inches apart. The soil is pressed around the roots firmly, and the row is then well watered in. The next row is done the same, and so on until the bed is planted; the rows are 2 feet apart. By this method of planting and watering as we go, we avoid trampling the bed about, and also give it a neater appearance. After this no further care is required, except to keep the bed free from weeds, which is done by frequent hoeing, and the oftener this is done the better the plants seem to thrive. For frame culture we have found the new double Marie Louise to succeed better than the old Neapolitan, though the latter is still a great favourite. —F. B., *Southampton.*

—— Last year I grew a quantity of Neapolitan Violets in my garden, and they are unequalled for scent and free-flowering properties, also for early blooming. They will grow well in a shaded situation, and in any kind of soil, but prefer a rich light one, but not too light. Heavy soil may be lightened by the addition of a little leaf-mould and sand, and well-rotted cow-dung forms an excellent stimulant. They grow well in pots, and a few should be kept in every conservatory. The young plants should be potted about May or the beginning of June in small pots, plunged in a warm border during the summer, and well watered and kept clean until October, when they should be placed in a cold frame. Keep them near the glass and give plenty of ventilation. Violets are propagated like the Strawberry—viz., by offsets or runners. Violets are sometimes troubled with both green fly and red spider, but green fly is soon got rid of by gentle smoking. Red spider, which is caused both by the sun and the dryness of the roots, is easily remedied by a good dusting with flour of sulphur. The plants must be watered well during the summer months, and often syringed, and kept shaded from the sun. All that is required during the winter is to supply sufficient heat to keep the Violets growing and flowering gently all the time; and in order to do this the frames must be covered with mats during cold frosty nights. The frames must be so situated as to catch as much sun as possible during the winter months. Forcing is not required, for the less you push the plants the longer they will continue in flower.—G. H. Mortimer, *S.E.*

12897.—**Plants for shady garden.**—I have succeeded fairly well with a similar border and rather poor soil by using a variety of Michaelmas Daisies, Foxgloves, Monkshood, Italian Variegated Grass, Periwinkles, Tall Nasturtiums, Primroses, Polyanthus. All these did well, and made the border look bright and green. The Italian Grass was luxuriant, and sent the blossom stalks up 6 feet high, and lasted with the Nasturtiums, which I allowed to trail over the ground, well through the autumn. The Periwinkles, especially major, do well, even under the drip of trees, and the Foxgloves are invaluable. The common Flag Iris grows and sometimes blossoms fairly well. With these and a good soil a good show should be made, particularly if in a warmer locality. There is a large-leaved plant, the name of which I cannot at this moment recollect, which grows luxuriantly under the trees in Lincoln's Inn Fields.—J. P., *Lancashire.*

—— I would recommend "A Reader of Gardening" to make up a rockery or some kind of rustic work in the shady part of his garden. Some of our robust-growing native Ferns, if planted in suitable mould, would do well and keep green through the summer months, and if an evergreen is wanted, he may make use of the common green Periwinkle, which grows vigorously in shaded spots.—D. D., *North Surrey.*

—— You do not state locality. If in good air and trees do not overhang your garden, plant now Foxgloves, double red and white Daisies, Delphiniums, and blue Forget-me-Nots. A week later sow dwarf Nasturtiums and Mignonette, and plant hardy Ferns. About mid-May plant edgings of yellow Pyrethrum, and if weather is favourable, good plants of Vesuvius and any strong-growing single white Geraniums or white Vesuvius. Ice-plants also suit the position; also Mimulus and large-flowered Musk, Evergreens, common Laurels, Aucubas, Euonymus, the variegated and common kind; Veronicas, and V. Andersoni. The two latter are considered to be hardy in sheltered situations. Mine are uninjured, and have been exposed during the winter.—A. E. A., *Stamford Hill.*

—— On a damp north border, near a smoky town, I grew London Pride, Lily of the Valley, Arabis, Aubretia, blue and white Harebells. These last grow in nice clumps, and are very pretty in July when in flower. Ferns, Primroses, and St. John's Wort flowered well, and the plants lasted and did not die away for want of sun.—L. M.

12926.—**Plants amongst Roses.**—To flower in the spring among your Roses you may plant such bulbs as winter-Aconites, Snowdrops, Crocuses, Tulips, and Hyacinths; also Forget-me-Nots and Pansies; and for flowering during the summer Pelargoniums will be the best for a hot dry border. Is it necessary to have any other plants than Roses in your border? Where the Roses are only 3 feet apart you cannot expect to grow flowers and Roses in a satisfactory manner. In your other beds and borders, no doubt you are satisfied with one crop of flowers at a time, and if you want good Roses you must treat them in the same liberal manner.—J. C. C.

—— There is not much room in the bed for more plants; the best to put would be scarlet Geraniums, Vesuvius and Mrs. Pollock; yellow Calceolarias, Coleus and Iresine for coloured foliage, Gazania splendens, Hibiscus africanus, and Petunias. Make it a mixed bed, and, if space will permit, a row of Verbenas might be put in front as an edging, kept well pegged down.—J. P., *Lancashire.*

12920.—**Good Pompone Dahlias.**—The following I have proved by culture to be good varieties: Selfs (one colour)—Guiding Star (white), Prince of Liliputians (maroon), Pure Love (lilac), Northern Light (scarlet), Golden Nugget (yellow), Little Mistress (crimson), Lina (orange), Rosetta (purple, fancy, or variegated), Madlle. Falcome (white-striped purple), Glowworm (yellow-tipped scarlet), Little Hermann (red-tipped white), Osiris (lilac-tipped white), Minnie (salmon-tipped, rosy-purple), Dora (primrose and white), German Favourite (crimson, lake-edged). If more scarlet and yellow are desired take Triumph or Dr. Schwebes for the first, and Canary or Titania for the latter; and for crimson Little Bobby. A bed of these would produce a grand effect.—J. P., *Lancashire.*

12855 and 12858.—**Propagating Escallonia and yellow Jasmine.**—These are very easily propagated by taking fine young shoots of the current season's growth in the first week of October. They should be about 5 inches long, and be very firmly inserted in the open ground, leaving about 2 inches out of it. Choose a north border where the sun can come but little in spring, and if the soil naturally is heavy add plenty of sound leaf-mould and ashes, or anything capable of rendering it light and porous. Before winter the cuttings will callus, and during the spring, if the soil is not allowed to become dry, they will make roots. The majority of hardy shrubs can be increased in this manner.—J. C. B.

12855.—**Escallonia.**—These half-hardy evergreen shrubs may be propagated by cuttings, layers, or suckers. The cuttings should be made from half-ripened wood and placed in good garden soil, with a moderate proportion of sand well mixed together, and covered with a hand-glass in very slight bottom heat. They should be started when the growth of wood mentioned can be obtained. Layers must be partially cut at a joint, as in the case of Carnations, and pegged down. The suckers speak for themselves.—J. P., *Lancashire.*

12858.—**Cuttings of yellow Jasmine.**—If you mean the winter-flowering yellow Jasmine nudiflorum, you may put in the cuttings at once. Select strong young shoots and cut them into 6-inch lengths, then dibble them in in any ordinary garden soil in a partially shaded place. —J. C. C.

12862.—**Moving Carnations.**—This operation will depend very much upon the season and the locality. Here, in the north, it would be best to postpone moving the rooted cuttings until the middle of April; in the south it might be done a fortnight earlier. Layers would probably be more robust, and might be moved a week or ten days sooner. In either case they will be the better for a slight protection after moving. It should also be borne in mind that some varieties are much hardier than others.—J. P., *Lancashire.*

—— The cuttings rooted in the open border should be planted out without any delay in the beds where they are to flower. They must be lifted carefully, and planted without doing any unnecessary damage to the roots. If they are choice-named varieties it is better to winter them in frames. Each plant should be potted in a small pot early in October. Early in March is a good time to plant them out.—J. D. E.

—— I moved Carnation cuttings four weeks ago, and although we have had a fall of snow since, they look quite strong.—L. M.

12860.—**Growing Tropæolum.**—I find the best way to grow this is to plant it in a rather moist but cool situation. It flowers freely and is very effective during the autumn, provided it is planted so as to climb up some spring flowering shrubs, such as Pyrus japonica, etc., and in a good sunny situation. The plants are quite hardy. The tubers can be taken up, divided, and replanted in spring, and it will require no further attention.—G. H. Mortimer, *S.E.*

12875.—**Flowers for button-holes.**—If the flowers have to be grown out-of-doors it is an error to grow them in pots. They would succeed far better and give greater satisfaction if planted out. Pinks, Carnations, and Roses are amongst the best button-hole flowers. Scillas, Primroses of sorts, Snowdrops, hardy Cyclamens, and, indeed, many of the spring flowers that are seasonable out-of-doors are more valued for this purpose by some persons than the choicest exotics.—J. D. E.

12747.—**Pegging down single Dahlias.**—This is the most effective method of treating Dahlias in the flower garden. There are some sorts more fitted for the purpose than others. The section called bedding Dahlias are particularly suitable, and they can be supplied by most nurserymen.—W. G.

12736.—**Creepers for western aspect.**—I. M" should make a choice from the following: Smilax tamnoides, Stauntonia hexaphylla, Lardizabala biternata, and Ivies of sorts.—W. G.

INDOOR PLANTS.

THE SACRED BEAN (NELUMBIUM).

Here is a beautiful plant which in foliage and flower is one of the handsomest we know. Unfortunately, we fear it is not easily obtained, and everybody has not the opportunity of growing it. The Sacred Bean grows best in a hothouse where there are tanks for aquatics. However, there are various ways in which (in the necessary temperature) it is possible to grow aquatics without incurring the cost of the regular tank. Mr. Frank Miles grows a large number of aquatics of the finest and rarest kind in tubs, and he has the advantage of being able to move them easily by rail, should he wish to do so. The necessary amount of moisture can be given to the plants in their tubs. The Sacred Bean can be seen in the Aquatic House at Kew and in a few of the larger gardens (usually N. speciosum); but we may, we hope, look forward to seeing the plants more frequently in smaller gardens. A very beautiful species is the American yellow Sacred Bean (luteum), which we have seen flowering in the open air in a Paris garden, proving that it is sufficiently hardy to grow in a cool house—with plenty of sun, be it understood. The kind we figure is the Japanese Sacred Bean, a plant of great beauty, that occurs in a great variety of colours in its native place. This plant is not yet introduced into general cultivation, though we believe there are some to be had in this country.

HYACINTH.

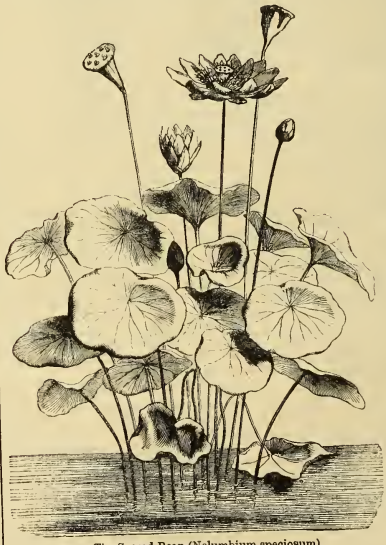
This delightful flower is now in warm greenhouses or sunny windows in full bloom, and few flowers equal it for variety of colour and fragrant perfume. It is equally at home in the conservatory or sitting-room, and is less dependent on pure air or the mysteries of gardening than almost any other exotic in cultivation, for in the most confined London slum one may see the Hyacinth blooming as grandly as if surrounded by the pure air and advantages of the country. It displays, to the delight of its city cultivators, charms which most other plants cannot in London be induced to reveal. It can be grown out-of-doors, in pots, in windows or greenhouse, in glasses, or in Moss or sand, at the sweet will of the grower. If grown out-of-doors the best time to plant the Hyacinth is the end of December or beginning of January. The soil should be deeply dug and well worked, if heavy; the bulbs should be surrounded with sand, and planted 3 inches or 4 inches under the surface. And when the summer occupants of the beds are ready to be placed there the bulbs should be carefully lifted, removed to a border, planted and left to ripen. The following has been found a good way to grow the Hyacinth in pots:—Pot the bulbs singly in 4½-inch pots, at the bottom of which place some crocks, and over that some rough pieces of turf to insure good drainage. Then fill up with turfy loam and silver sand to within 1 inch of the top. Place the bulb in the centre, but take care to leave the crowns uncovered. Stand them anywhere out-of-doors on ashes and cover over with ashes 3 inches or 4 inches thick. In six weeks the pots will be full of roots, and may then be taken into the conservatory. It is by far the best plan to grow them in pots if succession of bloom is needed, as by potting batches a fortnight later than the last lot one can have them in bloom from December to March or April. They are very nice for growing in water in glasses, provided the following simple rules are followed: Never use spring water if you can avoid it. Place the bulb on the glass, and let the water touch its base. Keep for three weeks in a dark place, and when the roots have grown 2 inches gradually expose them to the light, placing them in an airy situation; turn the glasses every day so that the blooms may come evenly. When grown in Moss or sand, I assume that a *jardinière*, or rustic basket, will be used. These, not having drainage, should have plenty of charcoal placed at the bottom. The bulbs must be planted thickly to make an effective show, and the vessel must be put in a pail of water three times a week to give sufficient moisture to the roots. I have found the following twelve good Hyacinths for glasses:—White: Alba Superbissima, Grand Vainqueur, Madame van der Hoop, Queen of the Netherlands. Red in shades: Emmeline, Ornament de la Nature, Robert Steiger. Blue of shades: Sultan's Favourite, Baron von Tuyll, Charles Dickens, Grand Lilas, Marie. The following are the best for pots:—White: Alba Maxima, Grandeur de Merveille, La Grandesse. Red of shades: Cavaignac, Lord Wellington, Norma, Prince Albert Victor, Blondin. Blue of shades: King of the Blues, Van Speyk. Ida, yellow; Prince Albert, black. C. F. D.

WINTER FLOWERING PLANTS.—VII.

Camellias

Come next, and, if healthy, produce an immense number of blooms, which often fetch from 6s. to 12s. per dozen in the market from Christmas to March, especially if of any pure white variety. Like Azaleas, Camellias are imported in large numbers from the Continent, but are generally brought over in pots, not taken up from beds. Imported plants, however, often drop most of their buds the first year. Camellias in pots do well under ordinary cool greenhouse treatment, and should have a fairly light and airy position, with the pots, if possible, standing on a damp, cool bottom such as a solid ash-bed, or on a layer of ashes or beach shingle, on a slate or wooden stage. The best soil is good fibrous, sandy peat from a high moor (not from low or marshy ground), used with a slight admixture of sand only for small plants, or with a third or fourth of light fibrous loam as well for large strong specimens. Give good drainage and pot firmly. These plants also should never be over-potted. After flowering the plants are kept in a rather high and moist atmosphere, with slight shade and plenty of water to induce a free growth. When the buds appear admit more air, gradually expose, and if the air is good stand in a rather shady place out-of-doors for a month or two in the early autumn. In towns keep under glass altogether. House in October, giving plenty of air, however, unless the weather is very cold. As the buds swell for flowering give an occasional dose of weak liquid manure, a very gentle warmth, and frequent sprinkling overhead, which will assist the blooms to expand kindly more than anything else. Beware, however, of hot pipes anywhere near the plants. Nothing is more productive of ill-health and dropping of buds than this. The pipes in a Camellia house should never be more than just fairly warm. Repotting should be performed just when the plants are commencing to make growth, usually towards the end of April or early in May. More pot room should not, however, be given unless really needed, as over-potting is highly injurious. If necessary only a small shift should be given. Turn the plant out carefully, remove the old drainage, and with a pointed stick pick off the surface soil, remove any decayed roots, and just roughen the surface of the ball which, beyond this, should not be disturbed. Ram the fresh soil well round the ball in the new pot with a piece of lath, taking care to leave no cavities or loose soil anywhere. The collar of the plant should always be left rather higher than any other part; if low, the water will settle there and decay probably ensue.

Camellias planted out in a proper bed of suitable soil give much better results than when grown in pots. The moisture at the root being more equable, the growth is stronger and more bushy, and a larger number of blooms is produced. The bed must be provided with abundant drainage, such as a quantity of broken bricks and charcoal over a properly-constructed longitudinal drain. Over the bricks place a layer of turves, turned grass-side down, then fill up with a mixture of about equal parts of free fibrous loam and good sandy peat, a small proportion of fresh horse droppings, and the same of bricks, broken to the size of a walnut, and crushed charcoal, mixed. Make the bed firm, and keep the house close for a month after planting and the soil only just moist until the roots begin to work in the fresh soil. There are such large numbers of good varieties now extant, that it is almost superfluous to give a list of sorts. Any respectable nurseryman will supply a good selection. White varieties are more useful for cut flowers, &c., than coloured blooms; of these there is nothing to beat the old alba plena; for freedom of bloom and purity of colour there are none to equal it. It is somewhat remarkable, but still an undoubted fact, that Camellias are capital town plants, and, with a fair amount of care, they may be grown with the greatest success in almost any part of London, or any large town. B. C. R.



The Sacred Bean (Nelumbium speciosum).

Clianthus Dampieri.—Your correspondent, "Englishwoman" (see page 621, February 27), is to be complimented for flowering the above plant under the circumstances, and I would advise all who possess a greenhouse or conservatory to give it a trial. It can be grown in a pot and will flower therein, but to flower to perfection it must be planted out in the conservatory border, or a place be made for its roots with bricks or slate slabs. Grown in a pot it never flowers so well as when planted out, and allowed to cover trellis on wall, or trained to cover a pillar. I planted one out some years ago and it soon reached the top of a pillar some 15 feet in height, and when in bloom was a sight worth seeing, flowering from top to bottom. It is a strong grower and dislikes to be cut back hard, but should be allowed to make plenty of wood without crowding; the shoots or growths should be tied loose to trellis or pillar, and to keep red spider away the syringe must be used freely all through the summer. The soil should consist of two-thirds good turfy loam, a third of good peat and dry cow manure; do not forget thorough drainage, for the plant being a gross feeder, water should be given in quantity during the growing season. —W. C. Leach, *Stamford*.

Late-flowering Chrysanthemums.—Several queries have lately been asked about these most useful flowers, and I will briefly describe the varieties and mode of growth that I have found to answer perfectly. Having a great demand for white flowers at Christmas and the early part of January, I last season procured cuttings of Ethel (clear white), Meg Merrillies (cream colour), Sarnia (blush, changing when fully expanded to white), Boumont (bronze), Gloire de Toulouse (bronze, very beautiful), Grandiflora (yellow), and Madame

Lemoine (pink). These were grown on in pots until May, when they were planted out in ordinary kitchen garden soil, and as soon as they had grown to 1 foot high in June they had their leaders pinched out, and beyond this had no stopping whatever. They were lifted in October and placed in pots and boxes in the shelter of a wall, mats were put over them when sharp frosts prevailed. They were transferred to a cool vinery in November, and by Christmas had hundreds of fully expanded blooms, the latest of which were cut in February. I believe most of the Japanese kinds may be kept back very late by cutting the plants down in June; but I can confidently recommend the above-named sorts, as they will give satisfaction. Ethel is especially useful for a clear white, and Sarnia is most floriferous—in fact, with plenty of these for cutting, the necessity for very early forcing of Azaleas and other white flowers is done away with, as they come in just at the time when it is most difficult to keep up the supply. Late Chrysanthemums, like late-keeping Grapes, are *bonâ-fide* gardeners' friends.—J. Groom, *Gosport*.

Rubus rosæfolius coronarius.—This is a useful greenhouse plant, very free-growing, and of a free-flowering habit. It may be said to flower all the year round, but is at its best during the early spring months. The flowers are borne on the ends of the young shoots, and every leaf on the stem gives rise to this shoot. The plant when well grown is compact, and close jointed, somewhat resembling a small growing Bramble, with leaves similar to the Rose. Its habit is erect. The flowers are well formed, pure white, and semi-double, but with a notable eye, which, in my opinion, detracts very little from its value; they are about 2 inches across. The most useful mode of growing the plant is in 6-inch pots, when they should be well fed with liquid manure. But to be grown to perfection it requires more pot room, the size of the pot being regulated by the size of the plant. I have at the present time a specimen in a 12-inch pot laden with bloom. The growths are formed annually, made one season, and flowering the next. The old shoots may be cut out after flowering, but not in too great a hurry, as I believe they, to some extent, support the young shoots springing from the base. The foliage is very abundant and effective—of a very pleasant green; although the old leaves become somewhat faded ere the flowers are produced. I have understood the plant to force well, but cannot speak upon this point from experience. The best period for potting is as soon as the plant has done flowering, and the young shoots commence to grow. Good fibrous loam, with good leaf soil and road sand, will grow it well; good drainage is needful, and it also requires large supplies of water. It is a native of the Himalayas, Burmah, &c. For cutting and decorative purposes it is invaluable; and is rapidly propagated by suckers from the base. It is very subject during the summer months to the attack of red spider, which, however, may be kept down by frequent applications of the syringe. It is a a plant which deserves to be more widely known and extensively circulated.—J. J. K., *Lynn*.

Culture of Lapageria.—A few words respecting the Lapageria rosea sent by this post. I think it a fine variety, and the plant a strong grower. As the Lapageria is a grand plant, I will tell you how I produce such blooms. I bought the plant five years ago, and kept it in a 12-inch pot four years out of the five in a house facing south; in this situation it did nothing more than live. I next planted it out in a bed a yard square and a foot deep, keeping the roots confined, in a house facing north, with a night temperature of 50 degs. through the winter, and 10 degs. higher in the day. In this situation it does first class, and sends up shoots like Asparagus. I have no small wood, the soil is three parts loam and one part peat and sand, so you see it gets a good heat and little sun, with plenty of water.—George A., *Tattenhall, Chester*.—[The flower sent is one of the finest we have ever seen, it being remarkable not only for its size but also for its richness of colour.—Ed.]

REPLIES.

12893.—**Heaths.**—The varieties mentioned are all free growing, and will bear a liberal use of the knife after flowering. We cut away about half or two-thirds of the previous year's growth according to the vigour of the plants. Artificial heat is not beneficial to Heaths, and should only be used to keep out frost. Judicious watering is the great point in getting these plants to start away nicely after being cut back; for until the plants have begun to grow away freely they require very little water, yet if allowed to get dry they will probably not break at all, and to keep the happy medium between wet and dry is not always an easy matter.—F. B., *Southampton*.

—— All the kinds mentioned, with the exception of Cavendishi and perspicua nana are of the soft-wooded section. The difference between hard and soft-wooded Ericas is this—the former make a soft, hard growth, and, consequently, naturally form themselves into shapely specimens, while the flowers of the generality of the soft-wooded kinds are borne on long spikes, which, if allowed to remain unformed, would, in a short time, cause the plants to assume a lanky habit. The custom with these is to cut them back just below the flowers, and to guard against over-watering until they shoot again. The time to shift them is when young growth some 2 inches long is made; and the next-sized pot should be used, as overpotting is fatal to the well-being of both hard and soft-wooded heaths. The compost must be the best fibrous peat, rejecting the dusty particles and adding quite one-sixth of coarse silver sand. There should be nearly an inch of crocks for drainage, and the soil must be made as firm round the old ball as the ball itself is. After potting keep rather close for a week or two until fresh roots are made; do not allow the soil to become quite dry, but water only when it is nearly so. In the course of a week they will be growing freely, and from that time must get plenty of air, even at night when mild, and after the middle of June they are best in the open air until the latter end of September. Hard-wooded kinds demand same treatment.—J. C. B.

12891.—**Raising Auriculas.**—The seed should be sown at once in pots or boxes filled with rich sandy soil. Make the surface as fine as possible, and cover the seed just so that it cannot be seen, then water with a fine rose and place the pots or boxes in your frame near the glass. The young seedlings will be ready to plant out or pot off some time in May. Any ordinary good garden soil will suit them if planted out, but they must not be exposed to the blaze of the midday sun. Should they be grown in pots a mixture of loam, leaf-mould, and a little sand suits them. In watering, a slight liquid manure occasionally would help them, and they must not be allowed to get too dry or waterlogged. Some of the forward plants may flower in the autumn, but they will not come to their best until next spring.—D. D., *North Surrey*.

12925.—**Cuttings of Carnations.**—If there are any short side branches on your plants they make the best cuttings. Cut them off close to the stem, and take away some of the lower leaves; then put each cutting separately in a small pot which has been previously filled with a mixture of silver sand and fine soil, equal quantities of each. Flower stems of Carnations will not grow if made into cuttings. If there are any long shoots which have not flowered, you may take the tops from them and make them into cuttings. The soil and sand must be pressed firmly round the cuttings. If you cannot give them the benefit of a warm hotbed or a close, warm house, you had better not put in the cuttings until the beginning of May, at which time they will be more likely to form roots in an ordinary greenhouse or cold frame.—J. C. C.

12611.—**Good indoor climbers.**—This question is not very clear. If a plant with plenty of foliage is trained over a vine the latter will probably suffer. A Tropæolum of the Lobbianum sections will make a handsome thing in a light house with some warmth in winter. The Clematis family will hardly be so suitable, though one of the large-flowered kinds might be tried. Fuchsias of the free-growing kinds are handsome plants for covering a pillar or rafter. Tacsonia exoniensis or T. Van Volxemi are fast-growing climbers, making plenty of foliage and flowering well in a light position. Cobæa scandens variegata might, perhaps, suit, as it grows freely and has good foliage. I have often used both this and the green variety for indoor decoration, growing them in pots, so as to be movable.—E. Hobday.

12894.—**Treatment of Oleanders.**—I was given an Oleander four years ago, covered with scale. I carefully washed every leaf with a solution of Fir Tree oil, and potted it in good fresh loam, with a little peat. It flowered well that year and better every year since. I have it in an unheated greenhouse with a west aspect, and this time of year repot it, and cut back any shoots that look untidy. From May I keep it standing in a deep saucer of tepid water, syringe it every morning and evening, and keep it dry from November. It is the picture of health.—L. M.

12895.—**Hyacinths in glasses.**—If "N. E. Prickett" has filled the glasses quite full, allowing the bulbs to touch the water, I should say he has given too much. The bulbs should on no account be allowed to touch the water before they have rooted, or it will cause decay. Again, if he brought them to the light before the glasses were well filled with roots, that would also have a great deal to do with his ill-success. Many bulbs will produce a great quantity of root in a fortnight, but all are not alike. As a rule the Hyacinths, when we get them from the seedsmen, have commenced to shoot; so that, if we put them in the light before the roots have well developed, the leaves will grow quite quickly, and, the roots not being able to keep the bulbs supplied with sufficient nutriment for leaves and flower, will monopolise the whole strength of the bulb. Like everything else in vegetable life, Hyacinths in glasses require plenty of fresh air. The room in which they are grown is another very important consideration. The perfect development of the flower depends upon a gradual growth, so that the room should not be too warm, and, although plenty of light is essential, they should not be exposed to a very strong sun. Windows having the full benefit of the midday sun should be avoided.—G. P. M.

12887.—**Epiphyllums.**—These are really stove plants, and ought to be placed in a warm house to make their growth. When they have finished flowering would be a good time to repot them. The soil should consist of loam, peat, and leaf-mould, with some pieces of charcoal mixed, and a good sprinkling of sharp sand. They should be placed in a warm house after potting and be moderately watered; they will make their growths during summer in a stove temperature, and afterwards should be rested in a greenhouse. A few at a time may be placed in heat to obtain a succession of bloom. A winter temperature of 55 degs. is sufficient; we bring them on to flower in heat and then remove them to the greenhouse, where the flowers last longer in good condition.—J. D. E.

—— These are most happy in a temperature of about 55 degs. in winter. If kept colder than this the leaves are apt to drop off. Few plants are easier to grow, as all they need during the summer and early autumn is plenty of sun and air. During the spring they should have a light position and get air on fine days. Shifting should never be done unless the pots are quite filled with roots. Like all succulents, Epiphyllums are impatient of over-potting, and old plants may be kept for years in the same pots, if given weak liquid manure in the growing time. Loam, with a little leaf soil and some powdered brick rubbish, is the best compound. Water only when the soil is very dry, too much water rots the roots.—J. C. B.

12665.—**Double-flowering Cherries and Plums in pot.**—Double-flowering Cherries should be budded on the stock of the wild Cherry. The double-flowering Plum does not require budding or grafting for pot culture, as if cuttings of the young growth are put in in the month of June they will quickly form roots. The plants so obtained should be grown in pots until next spring, and then planted out in a rich piece of ground for two years, when they may be taken up and put in pots. Unless these plants are properly managed and allowed plenty of pot room they are not good subjects for anyone to take in hand.—J. C. C.

12865.—**Treatment of Begonias.**—Cuttings may be taken of the young wood as soon as it has come fairly into growth—viz., about May or June. It is not advisable to take them off before, because the parent plant might suffer

a great check; and the operation should be performed before July, because if left later they will have hardly any time to form tubers of any size for the next year's growth. The best method of striking them is in pots of good compost of half leaf-mould and loam, adding a quantity of silver sand to make it porous. About May, when the old tubers begin to start into growth, shake them out and plant in a good compost of half leaf-mould, loam, and sand. Use pots only just large enough to contain the fibres, and it matters not if they touch the sides of the pots, because the great object is to cause these old roots to throw out fresh fibres, and these can readily be obtained when they are so situated that the soil around them cannot by any means become even slightly charged with moisture. In a very few weeks they will require shifting into larger pots, and it is just when they have grasped this fresh body of soil and commenced to derive some benefit from it that the cuttings may be taken, because it will then be free, and the plant will be sufficiently vigorous to withstand the slight check caused by its removal. In taking the cuttings you must cut off the young shoots to about three joints, and insert them in sandy peat, keeping the soil moist and the atmosphere clear until they have rooted.—G. H. Mortimer, *S.E.*

12877 — **Fernery**, and 12883—**Fern case.**—See answers to query 12466 in Gardening Illustrated, February 14, p. 638. "Amateur's" case, being only 4 inches deep, is too shallow. A few spores of hardy Ferns might be sown in such a case if placed in a warm window and shaded with a piece of calico. Keep moist only, using tepid water, as sodden soured soil is the result of overwatering under the false notion that Ferns require to be almost deluged. The humid atmosphere rising from the soil in a Fern or Wardian case, causes a moisture or "steaming" to appear on the glass. This moisture, it will be seen, again returns to the soil, and so assists in the process of watering. Drainage: A clean broken flower-pot, about 1 inch in diameter, should cover the bottom of the case, placing the hollow or concave side underneath; on this put a layer of smaller pieces, which cover with charcoal pea size. The whole now being about an inch from the bottom, place thereon the coarser pieces of soil, which should consist of about equal parts of light loam and peat, with or without a small quantity of silver sand. "Blyth" will do well to select three roots of hardy ferns, about the size of a pullet's egg; plant these in the form of a triangle, adding a root of the well-known Hart's-tongue for the centre. Hardy female Ferns may be known by the spores under the frond, which, detaching themselves therefrom will produce a number of small Ferns. In the autumn remove all decaying fronds, and towards winter withhold water gradually, at which time tepid water once a fortnight in small quantities will be found sufficient. Keep the case in a light position. Thus treated in your fireless room the Ferns mentioned will remain green the winter through. Plant between now and the first or second week in April.—A. E. A., *Stamford Hill.*

12609.—**Eupatorium odoratissimum.**—Yes; when well grown it is an excellent winter plant to blossom in a cool house. I have a number of large plants now only just going out of blossom, and they commenced to bloom in October. They are pruned hard back after flowering, and kept as cool as possible without freezing them, and planted out in May in a sunny spot. They get no other attention with us beyond cleanly culture, and are potted up late in September. I have some plants 5 feet high, and pretty well as much through, and they were white over with blossoms, but they are ten or twelve years old.—E. Hobday.

—— This is very easily grown, and blooms freely in a cool house (frost being excluded) during December and January.—J. Weaver, *Enniskillen.*

12621.—**Geraniums for winter-flowering.**—Eurydice, E. V. Raspail, Colonel Seely, Mr. Leavers, Dr. Orton, Mrs. Stacey, Captain Holden Improved, and Charles Darwin.—E. Hobday.

12864.—**Plunging bulbs.**—Ashes do very well to plunge the pots in; but this material will sometimes injure the bulbs if it comes in contact with the tender growths. Cocoa-nut fibre or leaf-mould is a better material to place over the bulbs. A small pot may be inverted over the crown of the bulb.—J. D. E.

12891.—**Raising Auriculas.**—Sow the seeds now in pots; they will vegetate freely in the cold frame. They will not flower until next year in April, and to get anything like a good display of bloom they must be well grown.—J. D. E.

TREES AND SHRUBS.

RHODOTYPUS KERRIOIDES.

This cut is a very good representation of a well-grown specimen of a new shrub that bears a very awkward name. In habit it reminds one of the old Kerria, and, therefore, it is sometimes called the White Kerria, and we find from Mr. Miller's "Dictionary of the English Names of Cultivated and Native Plants," that the Japanese name is Jamabuki. It seems a shrub of easy cultivation in ordinary soil, and as the flower is pure white, and it is good in form, it is a very pretty addition to our shrubberies.

The White Kerria (Rhodotypus kerrioides).

Tree Ivies.—In their early life tree Ivies are of rather slow growth, but after the first half-dozen years they become very effective, and as years roll on their lack of progress really becomes a virtue, as it is very convenient to have plants that never seem to get too large for their situations. The tree Ivies always have a cheerful appearance, but their most effective time is in winter, when all other things are dull and dreary. Tree Ivies, either as single specimens on Grass, or planted in the front of shrubbery borders, look well. They originated, I suppose, from sports. I have one selected from the the Irish Ivy some years ago. It made its first appearance as a stiff, erect branch growing out of a thick mass of creeping growth. This piece was taken off as a cutting, and it became a tree, and has never since shown any disposition to creep or climb. Others probably originated in the same way. They are specially adapted for suburban gardens, or, for that matter, small gardens everywhere, because there is no fear of their getting out of hand. The variegated forms, also, are very bright and cheerful.—E. H.

REPLY.

12746.—**Sycamore trees and green fly.**—No doubt your trees are in a somewhat delicate state, and the best thing you can do is to endeavour to improve their condition by surface dressing with good manure. Insects do not often infest trees in vigorous health.—W. G.

12740.—**Getting rid of ants.**—To get rid of ants place some sugar (brown I used) for them, either in greenhouse or open ground near their runs; it is a certain cure. I have tried many things but nothing cleared them entirely away but this. No matter how thick they may be this will soon get rid of them.—William Aspinall.

QUESTIONS.

Rules for Correspondents.—*All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Answers should always bear the number placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

All answers, with the exception of such as cannot well be classified, will be found in the different departments. Queries not answered should be repeated.

Naming plants or fruit.—*Four plants, fruits, or flowers only can be named at one time, and this only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

12972.—**Striking Honeysuckle.**—Will any of your readers tell me how I can increase Honeysuckle? [Kind net stated.]—MRS. B.

12973.—**Striking Jasmine.**—When should I strike white and yellow Jasmine, and what is the proper way?—MRS. B.

12974.—**Primulas done flowering.**—How should Primulas be treated when they have done flowering?—RENTAN.

12975.—**Dwarf bedded Roses.**—In planting dwarf bedded Roses should the union of stock and bud be a few inches below the ground?—W. D., *Lavender Hill.*

12976.—**Lime and soot for Roses.**—Will any Rose-grower tell me if lime and soot thrown freely over the ground among Roses will injure them?—W. D.

12977.—**Treatment of seedling Auriculas.**—How shall I treat seedling Auriculas, second year? One or two are trying to flower, but very poorly. The plants look well, but are small.—E. W. B.

12978.—**Perpetual flowering Carnations.**—Are perpetual flowering Carnations—such as Malmaison—hardy, and will they bloom in the borders during winter?—A. ROCHFORD AMATEUR.

12979.—**Peruvian guano for old vines.**—What quantity of Peruvian guano should be used at a time for old strong vines having roots outside border, and how frequently may it be applied?—M. H.

12980.—**Plants for Calcutta.**—Will any Indian reader of GARDENING kindly tell me the names of some suitable plants and bulbs which I can send to Calcutta to grow on a grave?—J. M. G.

12981.—**Blood manure for vine border.**—Would any reader who has had experience of blood manure tell me if it is good for vine border, and, if so, how and when it should be applied?—T. D. DAVIS.

12982.—**Sulphate of ammonia for Chrysanthemums.**—Will "J. D." inform me what quantity of sulphate of ammonia should be used at a time for Chrysanthemums, and how frequently it may be applied up to budding season?—M. H.

12983.—**Procuring netting for supporting Peas.**—Where can I get, in the neighbourhood of Manchester, tanned netting suitable for Pea supporting; sticks cannot be got where I live? Is tanned netting best, or is it better tarred?—JOHN WOOD.

12984.—**Border for vine.**—Having no turf at my command, what would be the best to make an outside vine border with? The soil is very light and sandy, about 18 inches deep, with a subsoil of sandy gravel. What should be the size of the border?—AMATEUR.

12985.—**Striking Roses in bottles.**—Will anyone who has struck Rose cuttings in bottles kindly give me some further particulars about the operation?—MRS. B. [Please read the "Rules for Correspondents" when you write again.—ED.]

12986.—**Mutisia decurrens.**—We have a fine plant here on the front of the house, and I am anxious to propagate it. I have been thinking of lifting it, and putting it in a warm house to propagate the young wood when it pushes to a couple of inches, but should like advice.—GARDENER, *Edinburgh.*

12987.—**Keeping Potatoes in winter.**—As I wish to grow my own Potatoes for seed, can any of your correspondents tell me what is the best way to keep them in winter, so as to protect them from severe frosts, and prevent them from throwing out their spikes prematurely?—LOUGH.

12988.—**Fuchsias and Geraniums in window.**—Will anyone tell me how to treat Geraniums and Fuchsias in a south window? Last year the flowers fell off the Fuchsias, and the Geraniums withered before they were quite out. What sort of liquid manure should be used, and how often? Should it be given when they are in flower?—E. P., *Derbyshire.*

12989.—**Heating small greenhouse.**—We have received numerous enquiries having reference to the article of Mr. A. King on "Heating Small Greenhouse," in our issue of Feb. 28th. Our correspondents desire to know the name of the particular stove with narrow top used, what is done with the end of the iron pipe (whether stopped or open), and what oil is used. Perhaps the writer will oblige our readers with information on these points and on others that may suggest themselves to him

12990.—**Dressing Seakale.**—Would any of your readers kindly tell me how to dress Seakale—especially how long it should be boiled?—A SUBSCRIBER.

12991.—**Hardy annuals for bedding.**—Would you kindly inform me how are the best hardy annuals to grow for bedding purposes? They must be fashionable and of decided colours (profuse early and second early bloomers preferred), such as blue, scarlet, rose, orange, damask, pink, white, purple, red, mauve, &c. I require about a dozen of the best sorts.—A ROCHFORD AMATEUR.

12992.—**Greenhouse for amateur.**—What kind of a greenhouse would be best for an amateur to have against a wall facing due south? The wall is only 6 feet high, and there is a corner of it (south and west) against which the house could be built, or it could be further along. A small one only is required, say from 8 feet to 12 feet in length. What would be the best way to heat such a house?—MASTER GUIDO.

12993.—**Plants for greenhouse.**—By Easter I shall have completed a greenhouse which I have been induced to erect through reading your paper. The size is 10 feet by 7 feet, and 7 feet 16 inches in the centre. It stands direct north and south, and there is nothing to obstruct the sun from rising to setting. I should like to be told the plants best fitted for cut bloom, and if it would be no injury to remainder of stock I should like to have two Cucumber plants at far end of the house. I shall not put any heating power in until the end of the year. How and at what time are Cucumber plants set going?—POOR AMATEUR, *Manchester.*

12994.—**Plague of sparrows.**—I would be glad to know of any remedy for a plague of sparrows. I live in town, and have five or six hundred Crocus bulbs planted out, which have come up well, but the flowers of which have been picked to bits by these birds. They are now even attacking the Daffodils. A public thoroughfare runs alongside my grounds, and it is not desirable to shoot at them, even if it is lawful, which I rather doubt, and to put up anything in the nature of a scarecrow is not pleasant, as the garden is just before the windows of the house. Neither would I like to do anything which would banish the robins, blackbirds, thrushes, &c.—HORTUS.

12995.—**The Cherry Plum.**—"MRS. M." wishes to make an enquiry about Prunus myrobalana mentioned in the last number of GARDENING, on page 658. The English name is given as Cherry Plum. A fruit, called in Yorkshire the Cherry Plum, comes into that county about August. It comes through Hull from Hamburgh, or some other northern part, and seems to be unknown out of Yorkshire. It is a small roundish Plum, bright Cherry red, with a distinct flavour, and very acid, and makes a most excellent preserve. Is this Prunus myrobalana? If so, will it thrive and bear fruit in England, and does it require any special culture? [An interesting question, which, no doubt, some of our Yorkshire readers will answer.—ED.]

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

12996.—**Double-spathed Nile Lily.**—A Nile Lily in my greenhouse has a large double bloom, like one engraved some time back in GARDENING. Could this beautiful variety be established?—A SUBSCRIBER.

[*No; it is merely an accident. Double-spathed Arums rarely perpetuate the character.*]

12997.—**Cytisus from seed.**—Will Cytisus raised from seed flower? I have several raised from seed sown in 1883, but they show no sign of flower. Will they in another year, or do seedlings not flower?

[*Wait patiently, treat the plants liberally, and you will be rewarded with abundance of bloom.*]

12998.—**Compost for Carnations.**—I have mixed a compost of loam, four parts, well-rotted horse dung, one part; the loam is rather heavy and not very fibry. I want it for very choice Carnations. Will you kindly say if it would be advisable to add a little peat, and should I pot hard, firm, or loose?—J. T.

[*Pot moderately firm. We should say that the addition of a little peat would improve the texture of the soil.*]

12999.—**Primulas getting shabby.**—I have a few Primulas, single, the second year of flowering. They have just ceased to flower, and are getting to look shabby and "flabby." How shall I treat them to be ready again for next winter?—E. W. B.

[*You had better raise a stock of new plants this spring. Grow them on during the summer and autumn, and next winter they will make fine sturdy plants for flowering.*]

13000.—**Propagation of Orange trees.**—Could any of your correspondents explain to me the manner in which Orange trees are propagated at the Italian lakes? You see the branches passed through small pots which are hung on the trees. Is the branch half cut through, or is there only an incision made in it, and is the pot filled with mould or sand? The bottom of the pot is, I believe, generally knocked out and filled up with Moss; is this sufficient for drainage? Would the same plan answer with Camellias? How long is it before the branch can be cut off from the parent tree?—C., *Oxford.*

[*The method you speak of is called layering. The shoots are slightly cut on their underpart and pegged into soil, in which, in course of time, they emit roots.*]

13001.—**Evergreens for bank.**—Could any reader recommend plants, shrubs, or creepers—evergreen preferred—to grow on banks, mostly shale, much infested by rabbits? The banks are from 30 feet to 40 feet high, and were made by excavations. A few self-sown seedling Beeches, Scotch Firs, and Gorse are growing on them.—DEVONIENSIS.

[*You cannot do better than continue the Gorse, for very little else will thrive on such banks. You could either sow Gorse seed in April, or put in young plants thickly. Other plants likely to thrive are St. John's Wort (Hypericum calycinum), Common Heather, and Periwinkle (if not too much exposed); but nothing will suit your purpose better than Gorse, and if you can plant the double-flowered variety the effect would be better.*]

SHORT REPLIES.

13002.—**Ivy-leaf Geraniums** (*E. W. B.*).—Cuttings will strike if placed in a hotbed or in any artificial heat.

13003.—**Dog's-tooth Violet** (*A Constant Reader*).—Dog's-tooth Violet is a bulbous-rooted plant.

13004.—**Sea sand for garden** (*E. T. H., South Devon*).—Yes; sea sand would in many cases be beneficial.

13005.—**Vine for amateur.**—The best vine for an amateur is Black Hamburgh.

13006.—**Planting Clematis Jackmanni** (*Bridgeford*).—This may be planted now.

13007.—**Gypsophila paniculata propagation** (*E. W. P.*).—It is increased from seed, and by careful division of the root.

13008.—**Time for moving Syringa** (*Green Lanes*).—Unless you can remove your plant within a week or so you had better wait until the autumn.

13009.—**Propagating Lily of the Nile** (*Young Gardener*).—These should be propagated in April or May. Pull off the suckers when repotting, and pot in rich soil.

13010.—**Creeper for trellis in dry positions** (*Warwickshire*).—Yes; Everlasting Pea would be a capital plant. Procure good plants, and place in good soil.

13011.—**Sweet Peas on vine border** (*Ignoramus*).—We think they would rob the border too much. A friend of ours grows them 10 feet high, and that means a good deal of nourishment taken out of the soil.

13012.—**Zonal Geraniums** (*M. B. T.*).—The time has now come when you ought to start these in fresh soil. The dust-dry treatment of the winter will suit no longer. Go gradually to work, however, as regards water.

13013.—**Cactus Dahlias** (*L. H.*).—The Cactus Dahlias do not require different treatment from other Dahlias, but they are worthy of the best treatment that other Dahlias get.

13014.—**Ashes for Conifers and Evergreen shrubs on clayey soil** (*G. B. F.*).—We should say ashes would be in all ways beneficial, but you must not mutilate the roots in applying them.

13015.—**Transplanting Wallflowers, Carnations, &c.** (*Clarendon*).—Transplant any time during the next few weeks, but do not carry out the operation on dry and cold windy days.

13016.—**Greenhouse and stove management** (*C. H. O.*).—Mr. Thomas Baines' book on stove, greenhouse, and fine-foliaged plants will be published at the office of GARDENING ILLUSTRATED.

13017.—**Dividing and replanting Chrysanthemums** (*A Constant Reader*).—They may be divided and replanted immediately, or at any time within the next few weeks.

13018.—**Small single Primulas** (*Clinton*).—Your small plants that flowered in February ought to increase in size, so as to be much better plants for next season's flowering.

13019.—**Double Primroses damping off** (*Clinton*).—These are, as a rule, delicate in constitution, and when not protected are apt to die off during winter, wet and cold being prejudicial to them.

13020.—**Cinerarias sown last year** (*E. W. B.*).—Repot your plants if necessary, and treat liberally through the summer; by autumn they ought to be good plants ready for flowering in spring.

13021.—**"Jersey Nugget" Chrysanthemum** (*Mrs. Atkins*).—We do not know a Chrysanthemum of this name, but there is a "Guernsey Nugget," incurved yellow. It is a show variety.

13022.—**Transplanting Hybrid Perpetual and Tea Roses** (*B. T. H., South Devon*).—As growth has commenced, you had better let them remain where they are at present, and transplant in autumn.

13023.—**Sowing Grass seed for lawn** (*W. G.*).—Grass seed can be planted now or during the next month. The usual quantity is 3 bushels, or from 50 lb. to 80 lb., to the acre.

13024.—**Heliotropes in bay window** (*Rentan*).—Your plants seem to have suffered from an excess of moisture, or they have been kept in too cold a place. Are you free from gas—a great enemy of plants and men?

13025.—**Treatment of Tulips after blooming** (*D. F.*).—Plant out in a warm corner of your garden. Tulips being so cheap it is scarcely worth while taking the trouble to keep them in pots through the year.

13026.—**Artificial manure to Ficus repens in vase** (*F. V.*).—A small quantity of artificial manure should be given at intervals of three weeks, or you may water it once a week with a weak solution of manure.

13027.—**Shifting Palms** (*F. V.*).—They should be shifted this month. The best soil for Palms is a good loam, with about one-third of peat and one-sixth of sand. Leaf-mould may be used if well decayed.

13028.—**Straggling and leafless Camellias** (*Ariom*).—Prune your plants rather severely, and afterwards give a moist warm atmosphere, so as to induce free growth from the bare branches.

13029.—**Dividing single Dahlias** (*L. H.*).—You can either divide the tubers carefully at the crown, if you wish to have some stock to give away, or you can plant them as they are, and put away those shoots you do not want.

13030.—**Treatment of Hyacinth bulbs** (*Rentan*).—Hyacinth bulbs are rarely of much value for pot culture the second season. The best plan is to plant the bulbs out in a warm border, preferably on at the foot of a warm south wall.

13031.—**Seedling Potentillas and Canterbury Bells** (*E. T. H., South Devon*).—Your plants are likely to bloom this summer, but if they are all crowded in the seed beds you had better transfer them next month into good soil, leaving ample room for each plant to grow.

13032.—**Getting rid of Moss on lawn** (*R. S. P.*).—Rake the mossy parts well over with an iron rake, so as to get off as much Moss as possible. If the soil is poor give a sprinkling of good soil, and sow next month a mixture of good Grass seeds pretty thickly.

13033.—**Shifting Camellias** (*J. C. T.*).—Repot after the plants have done flowering, and just as they are beginning to make new growth. Give them a liberal shift.

13034.—**Colours and classes of Roses** (*T. A. C. M.*).—Madame Knorr is a Hybrid Perpetual, rose colour; Mdlle. Emma Hall, Hybrid China, carmine; Catherine Bell, Hybrid Climbing, rose colour. The names of the others you mention are probably local.

13035.—**Present Treatment of Arum Lilies** (*E. W. B.*).—Keep them in a frame for a few weeks, and plant them out in a moist border some time during the latter part of next month. Then in autumn lift and repot.

13036.—**Evergreen climber for sunny and draughty situation** (*T. A. T.*).—There is nothing better than Ivy, particularly some of the less common kinds. One of the strongest growers, and the one that would be least injured by strong winds, is the Irish Ivy.

13037.—**Removing bulbs when growing** (*E.*).—It would be better if you could leave them until midsummer, when the new bulbs will have ripened. You could move them now if you took them up with plenty of earth around them, so as not to injure the roots.

13038.—**Treatment of Schizostylis coccinea flowered in greenhouse** (*M. K.*).—Plant out in a well-prepared bed of good soil in a sunny position, and then lift them again in August or September, so as to flower them in a conservatory in pots.

13039.—**Buds or Marechal Niel decaying** (*Arion*).—This is probably due to a close and damp atmosphere, which Roses dislike. Give more ventilation, and, as the days get longer, do not apply more artificial heat than is necessary to maintain a nice growing atmosphere.

13040.—**Fertilising Aucubas** (*A Subscriber*).—You need not trouble about artificially fertilising Aucuba blossoms, as, if a male plant is situated anywhere in or near a clump of female ones, the latter will be fertilised. The difference between the male and female plants can be learnt from any elementary book on Botany.

13041.—**Grapes not ripening** (*Clover*).—We agree with your suggestion. Forward the vines a little now by giving a gentle artificial heat. Do not tax them with a heavy crop, and take every means of ripening the wood after the crop is cut by fully exposing the vines to sun and air.

13042.—**Distinction between Erica and Epacris** (*C. A. B.*).—The former has the parts of its flowers in sets of four—thus, four petals and four stamens; while Epacris has its parts in fives. The leaves of the latter, moreover, are always rigid and pointed and otherwise different from those of Erica.

13043.—**Mignonette and Nasturtiums in boxes** (*Ignoramus*).—You might with confidence sow half hardy annuals in a box in place in the window-sill, but if you have any convenience in the way of a cold frame it might be a little better to let them spend the first few weeks of life with its protection.

13044.—**Planting Gladioli in single row** (*G. B. P.*).—As there is but one row you may plant closer than usual, say 3 inches apart, more or less, according to the number of your bulbs and the length of your row. In our opinion the sorts are very nearly of equal value, whether the spot be shady or not. A list can be found in catalogues.

13045.—**Unproductive Walnut tree** (*Romeo*).—In order to make your Walnut trees more productive try the effect of root pruning next autumn. This may be done by cutting a deep, narrow, circular trench about 4 feet or 5 feet away from the trunk of each tree, and filling in the soil. Thrashing Walnut trees proverbially makes them productive, the cause being the damaging of the young shoots, which induces them to throw out fruiting spurs. Thrashing is another name for rough summer pruning.

13046.—**Old Laurel hedge** (*Laurel*).—You can only improve by cutting down or cutting in closely and regularly. Of course, any dressing you give over the roots will be beneficial. Can you not get a prettier hedge than Laurel, of which, we think, there is far too much in the country? It seldom looks pretty when clipped. Holly is a much better evergreen hedge, and much hardier, because Laurel is killed in many parts of the country in severe winters. Fraser's handbook might meet your requirements.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—Ed.

Pans for raising seed (*Green Lanes*).—There need be no difficulty in procuring these, but we cannot recommend particular tradesmen.——Treatment of plant (*E. W. B.*).—You do not tell us what your plants are, and therefore we cannot advise you. If you do not know the name send us a specimen.——Query column (*G. B. P., Staplehurst*).—No charge is made for the insertion of queries in Gardening.——Vine culture in France (*B. F.*).—On this subject, which is somewhat out of our way, there are various books published in France. You could ascertain particulars from any French bookseller.——Maiden-hair Ferns dying off (*Nancie*).—It is impossible to help you if you do not state the conditions under which your Ferns are growing.——Trumpet Lily leaves turning yellow (*Nancie*).—They often turn yellow with old age, but as you do not say a word as to the conditions in which they are growing no one can help you.——Purchasing silver sand (*Subscriber*).—Consult advertisement columns.——The "Morel" (*Sub., Ireland*).—A few notes on the subject would be welcome, but we have no place for an illustrated article.——Fertiliser (*A Constant Reader*).—It may be applied to other plants, but you had better apply to the manufacturer. We cannot insert favourable notices of it or of any other patent article.——Winter Honeysuckle (*H. H. P.*).—Lonicera fragrantissima could be obtained at any of the large tree or shrub nurseries; any good nurseryman would procure it, and also Linnæa borealis, for you.——Back numbers and volumes of Gardening (*Mrs. B.*).—A good many of these may be had either through the news trade or from the publisher. They will assist you very much, and contain an immense amount of practical information on nearly every subject of interest to a gardener.——Procuring siftings of rock (*Iris*).—You should either advertise for these or consult the advertisements of those who wish to dispose of them.——Disposing of poultry (*M. F. Studdy*).—The best way to dispose of your birds is to advertise them for sale.——Mr. Gilbert's papers (*C. F. R.*).—The locality meant by "here" in Mr. Gilbert's papers is Stamford. Send on your reply.——Covent Garden Market report (*T. B. F.*).—We will give the report as soon as we have room for it. At present we are very much pressed for space.——Outside and inside vine borders (*T. D. D.*).—Generally, answers as to one will apply equally well to the other.——Procuring silvery-leaved Sunflowers (*Blackheath*).—Try Mr. Thompson, Tavern Street, Ipswich.——Work on alpine flowers (*A. E. P.*).—"Alpine Flowers" (John Murray) would meet your wants. The price is 7s. 6d., post free from this office, 8s.——Work on British wild flowers (*A. E. P.*).—Try Sowerby's "British Botany."——Insect on Crocus (*A Little Boy*).—Send us one of the bulbs affected, and we will try to advise you.——Potato "Vicar of Laleham" (*M. D.*).—This is a purple round Potato.——American Wonder Pea (*T. Hughes*).—Any seedsman will procure this Pea for you.——Artificial Manure (*J. M.*).—Patent manures must be advertised in their proper place.——Coloured Drawings of Rhododendrons (*H. M. M.*)—Some have appeared among the coloured plates of the *Garden*, but we know of no book that figures the varieties generally.——Obtaining Vines (*Rosalie*).—It must be apparent how invidious it would be for us to recommend any one nurseryman. Vines are supplied in all the standard kinds by every respectable nurseryman. Consult our advertisement columns or the Catalogues of any good houses.

Names of plants.—*T. C. T.*—Narcissus Tazetta papyraceus.——*Amateur.*—Pimelea spectabilis. Propagated by cuttings, but difficult.——*Paisley.*—Acacia dealbata. We do not attempt to name Camellias.——*Reuban.*—Erica hyemalis. Grow in greenhouse or frame; pot, if necessary, in peaty soil, and do not overwater it.——*Sub. (King's Co.).*—Common Sphagnum Moss. We are not aware that it possesses any fertilising properties. It is commonly used for mixing with soil for orchids.——*Edward.*—Leucojum vernum.——*G. W.*—Begonia Weltoniensis. Greenhouse or window treatment.——*Belvedere.*—Ophiopogon Jaburan variegatum.——*D. C.*—2, Asplenium bulbiferum; 3, Cyrtomium falcatum; Apple name next week.——*J. C. T.*—Leucojum vernum.——*Clover.* Californian Redwood; Sequoia (Taxodium) sempervirens.——*B. C. M.*—It is impossible to name accurately such specimens as you send. The large leaf is clearly that of the Common Wax Plant (Hoya carnosa). The other, we think, is a poor specimen of a New Zealand shrub, but we cannot tell you unless you send us a specimen in flower.——*Norman.*—The Algerian Iris (*I. stylosa*).——*C. E. M. F.*—The green one is the Artillery Plant (Pilea serpyllifolia); the blue flower is the common English Lungwort (Pulmonaria mollis). These plants do not bear berries.

THE COMING WEEK'S WORK.

Glasshouses.

All kinds of roots and tubers ought to be started into growth. Cannas are quickly increased by cutting up the roots into single eyes, and starting them in small pots in warmth. Part the roots of herbaceous Lobelias, and plant them out in frames having a temperature of 50 degs. Dahlias may be planted in the same way, but require greater heat if intended to produce cuttings. Those started a month ago will now afford cuttings, which strike quickly in a bottom-heat of 75 degs. The stronger the cuttings the longer are they in forming roots, and as they make no better plants than smaller ones it is not necessary to delay propagation in order to get strong shoots. Tuberous Begonias are gradually growing in favour for summer bedding; we tried a few some years ago, and they withstood the rain far better than Pelargoniums. Seedling sub-tropicals should be potted off before the roots get matted together in the seed pans, and seeds of the quick growing kinds, such as Tobacco, Castor-oil, Sunflower, Hemp, Maize, and Chilian Beet, should now be sown. In order to make room for slow growing and less hardy kinds, Lobelias, Verbenas, Ageratums, and Mesembryanthemums may now be planted out in cold frames. The soil should consist of loam and leaf-mould in equal proportions. Fine-foliaged Pelargoniums must still be kept in warmth, but the common and hardier varieties may be transferred to cold pits. Cuttings of the same struck during the winter will now be ready for potting off, and till re-established in the pots should be kept close and warm.

Propagating.—No more suitable time could be chosen for cutting back and striking Crotons than the present. When the cuttings are taken off insert them as quickly as possible, removing no more leaves than is absolutely necessary; take some clean 2½ inch pots, put a few crocks in the bottom, and fill up moderately firm with soil consisting of loam, peat, and sand in equal parts. After insertion give them a good watering and keep them close, when they will soon root. Tree Carnations that have been flowering during the winter will, from the warmth received during that time, have made good young growth suitable for cutting, and if put in now will make fine flowering plants by winter. A suitable soil for them is equal parts loam, and leaf-mould, with a good sprinkling of sand, the whole being well mixed together and sifted moderately fine. Let the cuttings be of as recent growth as possible. Remove the two bottom leaves, and shorten the others if they are of an unwieldy length, then insert them four or five around the edges of a 4-inch pot, and place them in a gentle hotbed. They will soon root, when they must be hardened off and potted singly in small pots. Cyperus alternifolius is frequently increased by division and treated as a stove plant, while if raised from seed now and grown on in a cool temperature till autumn the produce would be stout healthy plants, well calculated to resist the various changes of temperature to which, when used for indoor decoration, it is exposed. In order to obtain seed two or three old plants should be potted in large pots and allowed to flower, when seed in abundance will be the result. It should be sown as soon as possible after it is gathered, for if kept long it germinates much more slowly and irregularly. The variegated form can only be increased by division, for which the present is a suitable time. In preparing pots for all kinds of soft-wooded cuttings do not press the soil too firmly, as that retards rooting. All firm-wooded plants, such as Heaths, Camellias, Rhododendrons, and Coniferæ, require the soil to be made as firm as possible.—T.

Flowers and Plants in Rooms.

Arrangements of white flowers with substantial green foliage are always satisfactory. The broad glossy leaves of Japan Privet suit all white flowers and last long. A capacious glass bowl holds large twigs of this useful shrub, with white Hyacinths, white Narcissus, and Lily of the Valley; some fronds of the dark shining Cyrtomium falcatum stand well up among the taller flowers. Agreeably contrasting with the solid white and dark green of this bouquet is another, also white and green, but made of Spiræa japonica, Deutzia, and long sprays of Spiræa Thunbergi, with foliage of sweet Geranium Prince of Orange and Maiden-hair Fern put together with a light hand; the Fern is cut from a cool house and immersed in water for some hours before being used. A wide bowl is filled with red-tinted foliage of Berberis Aquifolium and broad-leaved Saxifrage; groups of yellow flowers are worked into this foundation, yellow Tulips, Jonquils, and pale yellow Hyacinths, with some rather long shoots of yellow Jasmine; the Tulips are without leaves, their glaucous colour not being suitable with the dark, warm-coloured foliage. In a large antique tumbler of engraved glass a few Iris reticulata are grouped with young shoots of the large variegated Periwinkle; these fresh green leaves with their broad markings of ivory white well set off the splendid purple of the Iris flowers. Deep dishes set in sunny windows hold masses of Crocus that open wide in bright weather. The dishes are first filled with small-leaved hedgerow Ivy, and the Crocuses worked in in bold groups. One dish has red and brown-tinted Ivy and yellow flowers; in the other the Ivy is green, veined with white, and the flowers are purple, lilac, and white, the colours grouped rather than mixed. Varieties of Azalea mollis, forced, are now useful house plants.

Flower Garden.

Preparing flower beds.—It is now time that the shrubs and other hardy plants with which the flower beds have been filled in winter should be transferred to their summer quarters. If planted later than this the probability is they will suffer from drought ere the plants have got established in the soil; to guard against the possibility of such a check, it is our invariable practice to mulch with Bracken as soon as they are in their places, and for neatness sake the mulching is removed after there has been a long spell of showery weather to start the roots into active growth. Small plants of some few kinds of shrubs we use in summer as "dot" plants in foliage beds, and these, as a matter of course, when they can be made to fit in with the

summer arrangements, are not transplanted at all. In order to better illustrate what we mean, we may say that we have a border consisting of oblong panels and circles alternately. In winter the oblong panels have had as a centre small bushy plants of Retinospora pisifera aurea, and the circles, small plants of Cupressus Lawsoniana erecta viridis. The winter groundwork of the oblongs was Heather, and that of the circles Sedum glaucum. All these shrubs will remain for the summer; the groundwork for the Retinosporas will be either Alternantheras or Ajuga reptans purpurea, and that for circles, Mesembryanthemum cordifolium variegatum. Beds that are vacant should be deeply dug, and manured or not according to the requirements of the plants to be used. All fine-foliaged plants require abundance of manure, but the ordinary kinds of bedding plants need but little. When the beds are on Grass (the best arrangement), the soil should stand well above the turf and be edged with some kind of dwarf, close-growing, hardy plant. The best for this purpose that has yet come under our notice is Herniaria glabra; all our beds are edged with it, and they always look neat, and give but little trouble to keep them in order. About thrice during the summer they need trimming with sheep-shears. Box does not look half so neat, and certainly needs more keeping in order.—W.

Herbaceous plants.—Borders of these are already beginning to look gay with Crocuses, Hepaticas, Scillas, and Primroses. All the kinds are now above ground, and gaps can be perceived and be filled up either by dividing some of the old stools or by fresh importations, or indeed by sowing patches of hardy annuals. Trim off all decayed stems, clear away mulchings, and where it is not practicable from fear of injury to the plants to dig in well-decayed stable manure, give a dressing of guano or of soot and wood ashes, and then surface fork the entire border.—W.

Vegetables.

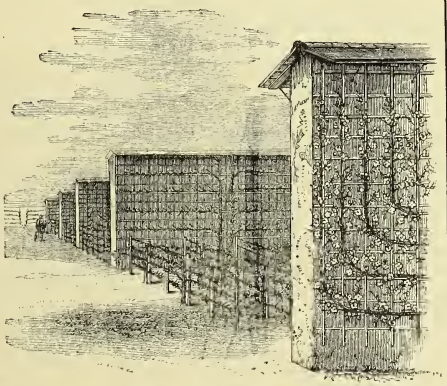
The main crop of Brussels Sprouts, Snow's Broccoli, and Red Cabbage, the last for cutting late, should now be sown on a slight hotbed under glass; also Veitch's Autumn and Self-protecting Broccoli, with a pinch of Paris Cos Lettuce. Onions and Carrot had better wait for ten days; when sown early the sharp spring winds turn them yellow, and I have had on two occasions to resow Onions. Parsnips may now be sown with advantage. The present is a good time to make plantations of Globe Artichokes. On taking up the old stools we found in one case many dead or crippled; we pulled away the young suckers and planted them in burnt refuse, a capital thing for many purposes; whenever I sow small seeds, outside or in, I always cover them with this material. Early frame Potatoes, Radishes, Carrots, and young plants generally should be duly aired. Prick off early Celery in small boxes for early work, and get manure well worked to make the bed which the main crop of Celery will occupy. Tomatoes may soon be sown; grow them on until they worthily occupy 6-inch pots, when they will be 3 feet high in May, and begin to flower and fruit at once. Little plants put out in May grow up to September before setting or ripening their fruit.

Cucumbers.—To maintain the supply through March and April, old plants which have been in bearing all the winter will take liberal supplies of warm liquid, for if once allowed to receive a check, early spring sown plants will commence fruiting before they can recover and will be of no further use. By this time the plants will have replaced the old foliage with young growths, which must be neatly tied down and stopped at the first joint beyond the fruit when it becomes evident that a foundation for a complete covering has been laid. Aim at a steady bottom-heat of 85 degs. from pipes and fermenting material combined. Let 70 degs. be the standard at night, and 85 degs. by day. Give air at 78 degs., and close early with atmospheric moisture, but avoid wetting the pipes when they are hot enough to generate scalding steam.

FRUIT.

FRUIT GARDEN PROTECTION.

Almost every owner of a garden is interested in fruit trees, and notwithstanding hard winters and bitter springs, and much disappointment, our country, throughout the greater part, is fertile in good fruit, if kinds suitable to the spot be obtained and fair culture be pursued. One reason why our wall fruit is not always satisfactory is the almost total neglect of protection of the trees in spring, during the dangerous season. A tree on a wall, if the wall is not coped, is often, in certain positions, in a worse state than a tree in the open, because, if saturated with sleety rains, the air and sun do not dispel them so quickly as from the open standard tree. We are accustomed to think our own climate much worse than that of France for fruit, and perhaps it is in certain districts; but it is a curious comment on the supposed advantages of France as regards climate, that throughout the whole of the north of France and the Paris region protection of the wall fruit-



Fruit garden in spring with copings to walls.

trees by simple inexpensive means is the rule. The little illustration that we give of a German garden shows the way the simple coping is fixed on the top of the wall—a coping of about 18 inches wide, made of light boards on slender iron supports. They are so arranged that, when the dangerous season is over and the fruit set, the whole of the temporary coping can be taken away, so that the trees can in all parts be refreshed and cleansed by the summer rains. The copings are then stored away in a dry shed or other convenient place, and are not put on again till the first moment of danger in spring. The object of the careful grower is, of course, to keep his tree quiet as long as he can, but the moment the buds are in danger of suffering from frost he puts up the coping. This is often made of straw on a light frame. In the London and many other good fruit growing districts it is common to see a fine wall of Peach and other valuable fruit trees without a shred of protection, and therefore we call attention to this simple and excellent contrivance.

Top-dressing fruit trees.—Poverty in the soil is the cause of a great many evils to fruit trees, and indirectly leads to the attacks of insects. To go on employing insecticides when the trees need food is of no permanent benefit. A good dressing of rich manure will be useful to many an old fruit tree. The surface of the soil, or part of it, should be taken off and renewed. After the top-dressing has been applied and the weather has become bright and warm, liquid manure may now and then be given.—E.

PEACHES AGAINST A GREENHOUSE WALL.

(answer to question 12583.)

If the trees have plenty of light they will succeed very well against a greenhouse wall. I presume the wall has a southern aspect. Of late years many of the best cultivators have broken away from the old plan of cutting young trees hard back, considering that it is not only a waste of time, but that it tends to weaken and debilitate them. A tree that breaks so freely as the Peach, does not need much pruning beyond thinning, till the space is covered, if light enough reaches the wood to mature it. When we take into consideration the immense number of both wood and flower buds which a Peach tree makes beyond its requirements, we may easily understand that a Peach shoot never need be cut back for the purpose of inducing the formation of more wood; indeed, injudicious heading back of young trees has been known to do harm by leading to grossness. Therefore, if the wood is ripe but little shortening back need be done; and that little should take place at the time the buds are swelling, as then the difference between the wood and the flower buds is very easily seen, and it is necessary in all cases to cut to a wood bud in order to have a leading shoot. The Peach very frequently has its buds in triplets, two flower buds with a wood bud between, and it is always safe and proper to cut to such a place. But the chief part of the pruning of the Peach should be done in spring with the finger and thumb when the growth has advanced but little beyond the bud state. The proper distance between the bearing branches of Peaches is 6 inches, and it is a very easy matter when the young shoots are half an inch long in spring to rub off all not required to fill the space with shoots, allowing 6-inch intervals between. This, in fact, is the most important thing to bear in mind in pruning Peaches under glass. Disbud early, and do not overcrowd; the wood will then ripen well, and the winter pruning is a matter of less importance. Any further thinning needed must of course be done then, and the smoothing away of any rough places or snags left in the disbudding must have attention. In a greenhouse temperature, with sufficient ventilation, the blossoms will set well without any assistance beyond a tap with the hand when the blossoms are fully expanded in the middle of the day, or when the pollen is dry.

The thinning of the young fruit should begin as soon as they are well set, as it does not add either to the certainty of a crop or their size to leave all on later than the time when the most vigorous fruits can be distinguished. And it is well not only to leave on the healthiest and strongest fruits, but also to see that they are well placed, to derive all the help possible from direct light and sunshine. It is not easy to define exactly what is a crop of Peaches, as the load should be suited to the tree, if the tree is to prosper and its fruit to be of superior excellence. Some people say one fruit to each square foot is enough, but a healthy, well-fed tree ought to carry more. At the same time, quality should not be sacrificed to mere numbers. A good deal must be left to individual judgment; but it may be said with certainty that covetousness generally defeats itself. The syringe must be used daily when the sun shines, scattering the water freely over and under the foliage. The flavour and size of the fruit depends upon keeping the leaves in health, as the functions they have to perform are of the most important nature, not only to the present crop but also to the future well-being of the tree. The water must be free from all impurities; rain-water is best. The soil most suitable for the Peach is a loam from the top of a common or sheep run, and it may either be used fresh, or laid up in a heap for three or six months. It should be of medium consistency — *i.e.*, not heavy nor yet light, if one has any choice, and it should be had preferably from a calcareous or limestone soil. If this cannot be had, mix a little old mortar or plaster with it. A few bones may be added also if the border is of small dimensions, but no other manure need be given, as more trees are thrown out of gear by the use of manures than from any other cause. It is a very easy matter to feed a heavily laden Peach tree, when more support is needed, by giving liquid manure and by mulch-

ing. The latter expedient should be adopted in any case, as it is a great saving of labour. The mulch could be raked off and taken away at the end of the season, as its presence in winter is unnecessary, and by keeping the air out of the border it tends to make it pasty and sour, which may bring on au attack of mildew. The greenhouse containing Peaches should be kept at as low a temperature in winter when the trees are at rest as is consistent with the health of the greenhouse plants, taking 40 degs. as the mean night temperature, and all Cape or Australian plants will succeed very well in this or lower, and ordinary bedding plants will do with the frost only just kept out. If the house is kept too warm the buds may start prematurely and fall. Another most important matter must have due prominence given to it—viz., watering the border. Peaches on the wall of greenhouse will probably have their roots altogether inside, and pains must be taken to keep the roots in a healthy state as to moisture, not only in summer but also in winter; and always when the training takes place in February examine the borders carefully with a fork, stirring up the suspicious spot, and moisten them thoroughly with liquid manure, adding warm water to take the chill off before applying it. As the trees advance in growth top dressings of turfy loam will be very beneficial, and some of the exhausted soil should be taken away occasionally. The growth made each year will soon tell us, if we are observaut, of its condition, and when more nourishment is required it should be given. I have given in such cases a little artificial manure with good results. It may be sprinkled on the border two or three times during the growing season, and be watered in. The quantity must be left to individual judgment, but a sprinkling all over the surface of the border will do no harm.

Insects and diseases.—In a stuffy house mildew is sometimes troublesome, but always yields to sulphur and better ventilation. The red spider must be kept out by using the syringe freely in bright weather. Green fly must be stifled on its appearance with Tobacco smoke. The scale (coccus) must be washed off and destroyed with a strong wash of Gishurst compound in winter. E. Hobday.

THE KITCHEN GARDEN.

Peas and vermin.—For preserving newly sown Peas from depredators, we find nothing so efficacious as a thorough dressing of soot. It helps us in many ways; it saves our buds from the birds, Turnips from the fly, Onions from the grub, Celery from the maggot, and bulbs, and roots, and seedlings from various destroyers. We sow and dress Peas with it as follows: After sowing the seed rather thinly and evenly in wide, flat drills, 3 inches deep, a good sprinkling of soot is scattered over them by hand; half the soil drawn out is then placed over the seed, another thicker coating of soot is dusted over that, and the remaining soil is levelled back over the row. The Peas are thus guarded by two distinct coatings—one enveloping the seed, the other half way from the surface. Rats and mice sometimes try to burrow out the Peas, but the first layer of soot is generally enough for them, and they go away discouraged. The quantity of soot used does not appear to have the least injurious effecton the Peas; on the contrary, it acts as a stimulant. We have to contend with surface slugs. The garden line is re-stretched exactly over the middle of the row, and along it is laid a small ridge of sifted coke ashes. With the back of the rake these are spread out several inches on each side of the line, and thus form a protective, nearly slug-proof, gritty band, in the middle of which the Peas come up. These, we think, form a better deterrent than coal-ashes, on account of their sharper, grittier character. These operations necessitate a good deal of treading, which, early in the year, when the ground is in a wet state, is undesirable. To obviate this, therefore, we keep a few thin boards, on which we work. After the ground is ready for the drills, and the line is stretched for the first row, the boards may be placed midway between that and the next; therefore at a distance apart, say of 5 feet or 6 feet, the two rows can be treated as desired without placing a foot on the soil or removing the boards till the whole is finished. Peas sown and treated in this manner involve no further trouble till well above ground, when occasional dustings of soot are necessary to save them from our most troublesome foe, the house sparrow.—A. M.

James's Intermediate Carrot.—Among old kinds of vegetables that have of late become very popular, few have acquired a more extensive use in gardens great or small than the Intermediate Scarlet; in fact it has well-nigh superseded the old Long Surrey and Altringham. The simple reason is that it is a superior vegetablo in all respects, and, although only intermediate in length, it produces an equal, or even greater, weight of roots on a given space than any of the very long kinds, and the roots, instead of running down tapering, are nearly the same thickness throughout their whole length. To grow a good clean lot of Carrots fresh manure must be avoided, a good dressing of sand or gritty soil being of more service than any kind of stimulant. In this locality the soil is naturally light and gritty, and good, clean, bright roots are grown with a minimum of attention. A thorough breaking up of the soil, so as to have it like an ash-heap, in which the young roots meet no obstacle to their downward course, is of the first importance, and the end of March is soon enough to sow the seed. Shallow drills one foot apart are drawn and the seed sown moderately thick to allow of thinning out; this is done by degrees, the young Carrots being most useful for culinary purposes as soon as they form roots as large as a quill—in fact, we use from the same bed the greatest part of the year, by drawing out after the manner of successional thinning as long as the growing season lasts, when the full-grown roots are pulled up and stored in sand. Although Carrots may not be classed as a first-rate vegetable, there are few that are sooner missed when not procurable; therefore, make preparation for a good sowing during the present seed-time.—J. G., *Gosport.*

REPLIES.

12867.—**Moss litter for Cucumber plants.**—I have used this both for Cucumber and Melon plants, and find it answers very well indeed. When used for a hot-bed the heat is very violent, and it is also soon over. It was also tried for Mushroom beds, but, so far, has not answered our expectations. I am told it ought to be mixed with a third of its bulk of loam, and that it will do well for Mushroom beds in that form. It is an excellent manure for flower borders.—J. D. E.

12933.—**Vegetable Marrows.**—A somewhat similar question was asked a few weeks back, based on the same kind of failure. Usually very successful in the growth of Vegetable Marrows the result of my labour last year was but little better than "gourds." Plants under glass blossomed, but did not fruit at all. Those out-of-doors in open cold frame blossomed well, and gave me half-a-dozen or so Marrows. There was something wrong, that the blossoms did not get properly fertilised. The culture is easy. Raise the seed in pots in heat. When about 6 inches high plant out middle of May on ridges of very rich soil, nearly all manure, and protect with hand glasses.—J. P., *Lancashire.*

12670.—**Woodgrubs and Cabbages.**—I know of no better plan of getting rid of these grubs than to catch them and kill them. This is best done by placing between the rows of Cabbages pieces of fresh cut turf about the size of one's hand. Lay these down at night and examine them every morning, and destroy what grubs there are beneath. The grubs find all the shelter they require under the turf, and therefore do not bury themselves in the soil, as they would do if they had no other shelter.—J. C. C.

12878.—**Broad Beans.**—For several years I have grown "Harrison's Giant Long Pod" for exhibition purposes; they are the longest podded Beans I ever saw. I compared with the longest in a show last year and found mine exceeded any in length there by nearly 1½ inch. My ground was manured, when dug before planting, with well rotted stable manure; when I have no manure I make the drills 3 inches deep, plant the Beans 6 or 7 inches apart in the rows, and the rows 2 feet apart, scatter some soot over them and cover them up. Then when the plants are about 2 inches above ground I give another dressing of soot on a wet day, so that the rain may wash it off the plants into the ground; this treatment I find to answer remarkably well, especially if the hoe is well applied. I rather like the ground a little stiff, as it does not suffer quite so soon from the drought. Now is the best time to sow this sort, as I find they do not like much frost.—G. Hatcher, *Surrey.*

—— The Early Long Pod and the Seville Long Pod are both excellent varieties and very prolific, the pods of the latter often reaching 7 or 8 inches in length, and containing five, six, or seven (frequently very large) Beans. I have grown both varieties myself on a field in Camberwell with perfection, and the soil is very heavy and the exposure open; but the only manure I can manage to give it is old decayed vegetable refuse and a little stable manure, which seem to answer admirably well.—G. H. Mortimer, *S.E.*

12896.—**Insects on Peas.**—If "C. T." will get some bitter Aloes and dissolve in warm water, and put his Peas in for a time before sowing, or if he will soak the Peas for a time in water, and put the Aloes in a powdered state before sowing, no insect will touch them. This is also a preventive against mice. I have never know it fail after 30 years' experience. Proportion, ½ oz. to one quart of water.—J. G. A.

ROSES.

REPLIES.

12874.—**Pruning Roses.**—It is very difficult to teach this by merely writing about it; but it is, nevertheless, an important part of the cultivation of the Rose. An experienced Rose cultivator will first ascertain the name of the Rose, and he will thin out the wood or cut back the young growths, in reference to the general characteristices of the particular variety. As a rule the strong-growing varieties must not be cut back so freely as those of a more weakly habit. Those varieties that have a tendency to form a thicket of young wood should be disbudded during the summer; this allows a full development of leaf and growth with the consequent production of Roses of a much superior quality. Hybrid perpetual, and Moss Roses should be pruned very much alike. The young growths ought to be cut back to within three or six buds from the base. Very weak growers, such as Madame Norman, may be cut back to two good buds.—J. D. E.

12869.—**Cuttings of standard Roses.**—It is almost too late now to put in cuttings of Roses. Of course it does not matter whether the cuttings are taken from standards or dwarf plants. They have now started to grow, and if the cuttings are put in, either in heat or out-of-doors, the growth will continue, but no roots will form, and when the stored-up sap is exhausted the cuttings will collapse. It is best to put them in during the month of October. They form roots slowly but surely at that time.—J. D. E.

12929.—**Old Moss Roses.**—No one can say how much your Roses should be pruned without seeing them. If they are very thick you should thin out some of the old stems and shorten back some of the longest of the young shoots. Moss Roses, as a rule, do not like hard pruning. As you say yours have been neglected, no doubt they would be benefited by some manure. Take off the soil round the roots and put a layer of rotten stable manure in the trench, and then put the soil back again on the top.—J. C. C.

12922.—**Roses in pots for greenhouse.**—As you do not say whether you require Tea-scented or Hybrid Perpetual Roses, I give you the names of six Teas and Noisette varieties and six Hybrid Perpetuals. Teas: Catherine Mermet, Devoniensis, Marie Van Houtte, Madame Falcot. Noisettes: William Allen Richardson and Celine Forestier. Hybrid Perpetuals: A. K. Richardson, Madame Lacharme, Jules Margettin, Charles Lefebvre, La France, and Edward Morren.—J. C. C.

12948.—**Moving established Marechal Neil Rose.**—The advice given you to cut off all the leaves of your Rose tree before removing it was bad. In all probability the plant will die; but you may leave it a few weeks

longer to see if it will revive. All you can do to it now is to cut all the branches back to within 3 feet of the stem. This may induce it to send out shoots from the main stem, but it will not do so if the roots are dead.—J. C. C.

12868.—**Budding on Manetti stock.**—It is not usual to bud on the side branches when this stock is used. The right way is to remove some of the earth from the neck of the plant, and insert the buds just under the surface of the ground. Very small plants ought to be planted now and budded next July. The plants, if they have been growing a season, should now be cut back.—J. D. E.

BEES.

FLOWERS FOR THE BEE GARDEN.

It is a great advantage, especially in the early spring, to provide near the apiary a good pasturage of honey and pollen yielding flowers. During the summer, when bees can range the fields and woodlands, garden plants are not so much sought after by them, but the case is different in the spring, as long flights cannot then always be taken with safety, owing to the variableness of the temperature. Numbers of bees that leave the hive on early foraging expeditions never return; if, however, good plantations of bee flowers be made near at hand, the bees in their early flight have an opportunity of obtaining provision as soon as they seek it, and the necessity of long flights in great measure obviated. Arabis alpina is one of the earliest bee flowers and should be largely cultivated; it admits of any amount of subdivision, and cuttings are easily struck if made just after the plants have done flowering. Well-rooted plants should be allowed a foot apart each way. Much pollen and some honey may be obtained from the flowers of the Crocus, which in early spring receives great attention from bees. A bee flower of undoubted value, contributing greatly to the support of bees during the early spring months, is the early variety of the yellow Wallflower; plantations of these may still be made for spring flowering. Cardamine rotundifolia, with its profusion of early white flowers, is again very valuable in the bee garden. Limnanthes Douglasi is one of the most valuable of honey-yielding plants, and is very hardy. Rooted plants may be put in now or seed sown later in the spring. Borage, which blooms from May to November, yielding a constant succession of flowers, is of first importance to the apiarian. It is constantly visited by bees, its drooping blossoms yielding honey even in damp weather, when other flowers are charged with moisture. The following also produce large quantities of bee food. They are of easy cultivation, grow luxuriantly on almost any soil, and their appearance in masses is so pleasing as to render them worthy of consideration for beds and borders apart from their value as bee forage: Sweet Sultan, Trifolium suaveolens, Pulmonaria mollis, Melilotus, Phacelia congesta, P. alba, Honeyworts, Anchusa gigantea, Sunflower (dwarf), Alyssum maritimum, A. saxatile, Candy-tuft. Among early-flowering shrubs visited a good deal by bees may be mentioned Laurustinus, Berberis Aquifolium, and the red-flowering Currant. The winter Honeysuckle is also very early in flowering, and continues to bloom longer. The flowers of Apple, Pear, and Plum trees yield large quantities of honey, and are visited with unmistakable eagerness by the bees on every available opportunity. Gooseberry and Currant trees also afford honey in great abundance and in large quantities. The various kinds of Willow afford in the early spring abundance of pollen. Ivy is one of the best late sources of honey supply, as is also the Giant Balsam, which comes into flower in August and September, affording the bees an opportunity of replenishing their cells with stores for the winter at a time when many other plants have ceased to yield honey. During the month of July Lime trees afford abundance of stores, being then in flower. Wood Sage is a useful and hardy bee-plant, yielding a mass of bloom late in the season. Flowers of the Turnip, Cabbage, and all the Brassica tribe are much visited by bees, as are the flowers of the Field Mustard or Ketlock, a weed abounding in some districts, frequently covering the corn-fields with its yellow flowers. More honey is obtained from plants grown on warm, well-drained soils than from those grown on cold, heavy lands, and hilly, exposed bee pastures are better in showery weather than low, sheltered ones, because in exposed situations the flowers quickly dry, enabling the bees to resume work upon them with little loss of time, whereas flowers in low, sheltered places remain damp for a length of time. Although the Clover and Bean-fields, as well as Lime trees, in their season, afford immense supplies of honey, there are times when such sources of obtaining food are unavailable. The efforts of the bee-keeper should, therefore, be directed to secure an uninterrupted succession of flowering honey-plants to enable the bees to fill up intervals between the field crops.

Boxworth. S. S. G.

AQUARIA.

AN ATTRACTIVE AQUARIUM.

Some of your correspondents seem in trouble about fish-keeping. I have never found the smallest difficulty in managing my aquarium, and my fish are in perfect health. Twelve months ago I put a green glass roof on a useless lean-to shed, in place of the tiles which had previously covered it. The shed faces north, but slightly inclining to west. A 4-inch hot-water pipe runs through it from the greenhouse. The fish-tank, which stands in the midst of the rockery bed, is built of bricks laid flat—*i.e.*, 4½-inch work, cemented inside, and the front is a piece of plate glass fitted into a channel cut in the front of the brickwork, and set in red lead. The dimensions are 4 feet long, 1½ feet deep, and 1½ feet wide. For this tank I made a rockery of coke, soaked in liquid Portland cement, and built up with stiffly mixed cement. It was built over a well-greased smooth bamboo stick, to form a passage for a fountain pipe. When finished, the piping—common composition gas-pipe—was fitted, and the rockwork cemented to the bottom of the tank, the piping being made to communicate with a cistern on the upper floor of my house. This fountain acts most perfectly, though the water has to come from a considerable distance.

The bottom of the tank is covered with well-washed gravel and shells of various kinds. I have some common aquatic plants growing in it—weeds which I gathered myself in wet ditches. In this tank I have about three or four dozen fish—gold, silver, minnows, sticklebacks, and one or two others, with a lot of water snails as scavengers. A gallon or two of water is drawn off from the tank daily for the Ferns, and it is filled up by the fountain being set to play; otherwise the water is not changed. I occasionally throw a pinch or two of vermicelli on the top of the water, and very amusing it is to see the fish darting at it as it gradually sinks. I do not give any other food. No fish can be more healthy or look more happy. They may often be seen eating the young shoots off the weeds, or the insects which they contain.

As regards the fernery in which the tank is built, I may add that the back and sides of the shed are packed with live Moss, which is kept in its place by 2-inch wire netting, fastened to the walls with long staples. At the back of the Moss is from 2 to 3 inches of soil — peat, loam, and sand. The Moss, though it has been up for a year, is as alive and green as when it was gathered. In it are planted a variety of Ferns, and here and there a Begonia Rex, the richly-coloured leaves of which are very effective. Everything flourishes luxuriantly, and I find that the Ferns on the Moss-covered walls do, if possible, better than those in the sloping rockwork beds. As regards live Moss-covered walls for Ferns, let me strongly advise anyone who adopts them (and who that knows their beauty would not?) to leave 3 or 4 inches behind the netting so as to allow space at the back of the Moss for a good store of well-packed compost, and what suits the Ferns will suit the Moss. A daily syringing, of course, is necessary, and then the Moss will grow and remain green for years.

Crondall, Farnham, Surrey. J. Edwd. Vaux.

Catalogues received.—*A Book of the Farm.* F. and A. Dickson and Son, Chester.——*Garden Seeds.* Albert Morris and Co., Carlow.——*Farm Seeds.* Little and Ballantyne, Carlisle.——*Grasses and Clovers for Permanent Pastures, &c.* Hogg and Wood, Duns, N.B.

Book received.—*Official Journal of the Royal Society of Horticulture (Tuscany).*

POULTRY, RABBITS, &c.

QUESTIONS.

13047.—**Food for pheasants in confined run.**—Can "Andalusian" or anyone tell me the best food for pheasants in a confined run for laying purposes?—Inquirer.

13048.—**Feathers c[illegible]ng off Pullets.**—Could "Andalusian" or other r[illegible]ers give me reason of feathers coming off lump of pu[illegible] after they have been laying about six weeks, and [illegible]me if they will come on again early? Would it do t[illegible]et them? I have eight pullets in a pen about 10 feet square and have given greenstuff nearly every day.—Burton.

REPLIES.

12623.—**Points of golden pencilled Hamburghs.**—"Hamburg."—You will find this the easiest of all the various kinds of Hamburghs to breed up to show form; but do not run away with the idea that you have only to purchase a few good stock birds and commence hatching to ensure success. The parents must be very good and judiciously mated. The desired richness of colour is very difficult to obtain, and it is only by crossing a cock of a deep red bay with hens of a rich golden bay that good birds are to be obtained. The cock should be very bold and upright in carriage, well shaped, with short back, and rather prominent breast. A large but not coarse comb is most important; but it must be even in shape, and gracefully tapering to a point at the back. It should likewise be firmly fixed on the head. Spotless white ear-lobes is another great point, and should they be stained with red it is a great disqualification. They should likewise be smooth, and as round in shape as possible. Legs moderately long, and slate blue in colour, with four toes only. He should have a well-arched neck, covered with abundant hackle of the desired rich deep bay colour, and free from pencillings. Full tail, with long broad sickles, carried rather upright, but yet gracefully, and not what is termed "squirrel fashion." The side feathers of the tail should also be arched and in keeping with the sickles. In colour the feathers of the tail are black, with the sickles and side feathers evenly edged with red-brown. This edging should be sharply defined. For the other parts of the plumage of a golden pencilled Hamburgh cock, the head, hackle breast, saddle-hackel, and thighs should be of the desirable deep red bay, without pencilling or marks of any kind. In the wing the inside web of the flight feathers is black, and of the secondaries barred with black, every separate feather having a black spot at the end. The parts between the thighs and towards the vent should be covered with brown-red plumage, every feather being distinctly pencilled or barred with black. Many of these points apply to the hen. The hackle on the neck must be a clear golden bay, and the whole of the remainder of the plumage golden bay evenly pencilled on each feather with black; the markings should be as clear and distinct as possible, and should seem to stand out from the ground colour. A well pencilled tail is very difficult to obtain. The breast also is often very faulty in markings, being light and "mossy," or patchy. Spotted hackles also are very common, and are grave defects. The comb of the hen should be neat and firm, small, square in front and tapering to a spike at the back, and presenting the appearance of a piece of coral with numerous little spikes throughout. A comb hollow in the centre is not to be allowed. The wattles should be small and well rounded.—Andalusian.

12625.—**Preserving eggs.**—Ten quarts water, 2 lb. salt, 2 oz. saltpetre; boil these well, and when cold add eight good tablespoonsful of powdered quicklime. Let it stand three days, stir each day, when it will be ready for use. Drop in the fresh eggs as gathered. Treated in the above way, last year my eggs lasted till near the end of February, and I had not one bad.—E. P.

Age of fowl.—A. Pulford.—The fowl (a cock), whose feet you send, would be, we should say, quite four years old.—Andalusian.

BIRDS.

REPLIES.

12621.—**Canary.**—Do away with bread, Potato, and salt, feed the bird on canary seed, and mix a little Hemp seed and hard-boiled egg with it; fix a lump of sugar in the cage and give Watercress, Grass, and fresh, clean water, with a piece of rusty iron at all times in it. A sandy floor (I use sea sand) should also be provided.—R. R. E., *Aberdare.*

—— Do not give the bird salt; let him have garden earth or river sand in the bottom of the cage, and, I think, the feathers will grow.—L. M.

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"The most useful Pea I have ever grown; particularly satisfactory both as regards quantity and quality.—J. SMITH, Surrey."—*Journal of Horticulture.*

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Per Quart 2/6
"The most distinct of all the tall Peas; it is to me quite a new type, and produces the finest sample I ever grew. The pods are marvellous for size, and excellent quality."—Mr. CHAS. ILOTT, Gardener to Major Allfrey, Wokefield Park.

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Per Ounce -/6 Post Free
"Earlier and of better shape than the old variety; has proved to be the earliest of the long Radishes; matures very quickly, is of rich crimson colour, very crisp and sweet, and is valuable for forcing."

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"This variety is now in perfection. For fruitfulness and beauty there are few, if any, superior. The dense raceme-like clusters of oblong red fruit are very handsome, hanging from the stems like monster bunches of grapes."—*Gardener's Chronicle*, September 20, 1884.

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GARDENING ILLUSTRATED.

Vol. VII. MARCH 21, 1885. No. 315.

INDOOR PLANTS.

ROLLISSON'S UNIQUE PELARGONIUM.

This is one of the most distinct, beautiful, and useful of the whole family of Pelargoniums; and yet, strange to say, but few people grow it. Of its origin, all that is known is that it came up amongst some seedlings of other Pelargoniums about forty years ago in Rollisson's old nursery at Tooting. It is, therefore, probably not a hybrid, but a seedling from the old P. Gloryanum, which it much resembles, and which about that time was extensively grown as a decorative pot plant. Be that as it may, however, "Unique" still maintains its name, for there is nothing like it, and for covering a back wall or pillars in a greenhouse or conservatory it cannot be surpassed. It grows freely and blooms profusely, and its leaves are delicately fragrant; even during the winter months dozens of its beautiful purplish-crimson trusses of flowers may be cut for indoor decoration, while as a bedder the effect which it produces is striking in the extreme, if the shoots be kept pegged down; indeed, in whatever situation it is used, it is sure to give satisfaction. H. G.

Rollisson's Unique Pelargonium.

Arum Lily (Calla æthiopica).—This is an invaluable plant for amateur gardeners, for it is of the easiest culture, and is at all times fit for the greenhouse or conservatory, as the foliage is so handsome that even without its large pure white flower spathes it looks well mixed with flowering plants. There are many ways of cultivating this plant; some grow it as large many-crowned specimens, while others find it best to keep to single crowns; and for general decorative purposes, it is advisable to have a portion of the stock treated according to both systems, as large masses of flowers and foliage make an imposing effect for setting in entrance halls, or for other room decoration purposes, and they withstand the subdued light and dusty atmosphere better than most plants. For growing single-crowned specimens (which produce the finest flower spathes) we select the strongest crowns and divest them of all small suckers, potting them in 6 or 7-inch pots in a mixture of loam and cow manure, and after the flower spathes begin to come up plenty of liquid manure is given—in fact, this Arum may be treated as an aquatic plant with great success, and anything approaching dryness at the root must be avoided at all times if verdant foliage is desired. To grow large bushy specimens all that is needed is to pot the plants on into larger pots, leaving all the suckers or offsets entire, for with liberal culture they soon develop into flower spikes. Plants that flower at Easter are planted out in good kitchen garden soil in June, and lifted again in September; they make splendid plants for winter and spring decoration, being easily hastened or retarded in flowering by the temperature they are kept in.—James Groom, *Gosport.*

Orchid culture in greenhouse.—In reply to a question addressed by Mr. Geo. Smith, I may say that the best species to begin with are Masdevallia Harryana and Lindenii, Maxillaria venusta, Cypripedium insigne, and varieties of it; Odontoglossum crispum, O. triumphans, O. Bictonense, O. Edwardii, O. Hallii, O. nebulosum, O. Pescatorei, O. Rossii, O. Cervantesii (membranaceum), Oncidium macranthum, O. cucullatum, O. ornithorhynchum and Pleione humilis. They would do well with a minimum temperature of 45 degs. or even 40 degs. The best way would be to place them in a corner by themselves where they could be close to the glass, and the ventilators where they are growing should be closed to exclude cold winds. They like a good supply of rain water. I generally try to encourage the growth of live Sphagnum Moss on the surface of the compost. When this can be done the plants invariably succeed.—J. Douglas.

NOTES ON MY COOL GREENHOUSE.

The following notes and suggestions may, it is thought, be of practical use to those readers of Gardening Illustrated who have greenhouses from which frost is only just excluded during the winter months:—

Crassula lactea is one of the best of winter-flowering succulents for the cool greenhouse or window. A strong plant in a suspended pot, bearing 26 spikes of bloom, began to open its white, star-shaped flowers early in December. The flowers are individually small, but grow in branching heads or panicles, and these, being freely produced and lasting long in perfection, make it a valuable decorative plant throughout the winter, while it gives no trouble with regard to culture. It only requires to be set in the open air, in full exposure to sunshine and rain from June to October, to ripen its growth and induce vigorous flowering during the winter. The milk-white Crassula grows freely from cuttings, but my experience is that these take some time to reach a blooming or rather an effective size, as the charm of the plant depends upon the number and strength of its flower-heads more than on their individual merit. Like many other succulent plants it is long-lived, and the older the specimen the more valuable it becomes. Small bushes of

Coronilla glauca in 8-inch pots have been in flower for the last few weeks, and are at present, and will remain for some time longer, in perfection. Cuttings should be put in early to ensure vigorous young plants, and the old ones should be moderately pruned in as soon as flowering is over. It is better to keep up a succession of young plants, and to plant out the old after the third season in any spare sheltered corner to take their chance. In Devon, Cornwall, and the Isle of Wight, Coronillas are fairly hardy, and would scarcely be considered worthy of house room; but in exposed gardens in more northern localities they cannot be bloomed without the shelter of glass, and seldom survive even a mild winter out-of-doors. In such circumstances they make desirable pot plants. Rooted cuttings, as soon as they are large enough to take care of themselves, will grow into fine bushes by being planted out in the open border, and lifted carefully and potted in the autumn.

Gnidia simplex.—This little shrub has been full of flower for several weeks past, and though by no means showy is pretty, and not to be despised as a winter bloomer in a cool greenhouse. The culture is simple. After blooming the plants are cut in hard. Old plants should remain for a time under glass, where they will break freely, and after the first growth has fairly started they may be repotted, if needful, in sandy peat. At the end of May the pots should be sunk in ashes out-of-doors in a rather shaded position, where they may remain throughout the summer. It may very possibly be necessary from time to time to shorten some of the rampant growths, otherwise the plants need no further care than an occasional watering until October, when they should be removed to the greenhouse or window. With such treatment I find that Gnidias bloom in January without fail. There are several species, but G. simplex is that which I have myself proved to be amenable to cool treatment.

Daphnes are valuable as winter and early spring-flowering shrubs for the greenhouse. It is noteworthy that early in December last I saw a fine plant of Daphne indica, well set with bloom-buds, growing in an ordinary window. Daphnes are general favourites on account of their fragrance. Those who are looking for good plants which will flower well with a low temperature, should make a note of the Japanese Spurge Laurel (D. odora Mazeli). This fine species begins to open its sweet pink and white blossoms as early as November; consequently when growing out-of-doors these are often injured by frost, which spoils the beauty of the hardiest plant, and therefore the shrub deserves the protection of glass. It belongs to the evergreen section of Daphnes, like the common Spurge Laurel of our woods, which, though native, is more generally to be found in shrubberies and plantations than actually wild. But the other British species, D. Mezereum—the Mezereon of our cottage gardens—makes no mean ornament of the cool greenhouse, and the white variety is actually rare. In former days Mezereon used to be frequent as a wild plant in Cranborne Chase, a fine tract of woodland and coppice extending to the New Forest, and upon the borders of which the remote Dorsetshire village whence I write is situate. Now it is to be found in most of the cottage gardens of the neighbourhood, but is

lost as a native, not only hereabouts but in most other southern localities. I doubt whether it is even as generally grown now as when Cowper wrote in his "Winter's Walk at Noon"—

"Mezereon too,
Though leafless, well-attired and thick beset,
With blushing wreaths investing every spray."

Certainly it is not often, if ever, to be seen under glass, yet many a less ornamental plant finds its way into our greenhouses. Seeds sown as soon as ripe vegetate quickly, and are not very slow to form nice little bushes. The flowers open naturally from February to April according to the season, but it might be coaxed into bloom, a month or six weeks earlier than it otherwise would, under kindly shelter. There is also an autumn blooming variety which begins to flower naturally in November; it is larger flowered, and also retains its leaves longer than the common species. We lose a great deal of pleasure by not making such use of hardy winter blooming plants.

Here, during the last six weeks, there have been but few days when the garden presented any enjoyable feature. Scarcely ever has there been so backward a season, or so great a dearth, out-of-doors, of hardy winter flowers. But under glass, with the thermometer never falling below 37 degs., the lowest temperature marked this season, and with due forethought and preparation, there need be no lack. On one of the few sunny days a colony of the

Italian Periwinkle (Vinca acutiloba) was found struggling to bloom. There were numberless buds well set which could only open into stunted flowers, instead of, as they should, into large shapely blossoms nearly the size of a crown piece. Here, then, is a good subject for the cold greenhouse. Well grown as a basket plant, what could be more ornamental? Some pots full of cuttings of double blue and variegated Periwinkles, taken late in the autumn, are now full of buds on a shelf in the vinery, while not a bud shows as yet on the parent plants in the garden. Had these been established plants they would have been much further advanced. Periwinkles are so charmingly pretty and so distinct in colouring that a small unheated greenhouse might well be furnished with the different varieties of this one hardy plant. The following are some of the best for pot culture or for hanging baskets:—Golden-edged, with white flowers; silver-edged, chiefly desirable from its variegated foliage; small single blue and single white, double blue and double puce-coloured, with the white-flowered Italian species above-mentioned. I once saw the large blue Periwinkle (V. major) grown as a bush, with all its trailing growths well shortened in. It was so handsome and full of flower, and withal so uncommon-looking, that I have ever since had a very different notion of the capabilities of this every-day plant in its different varieties, which are as beautiful in their way as the white and rose-coloured tropical species grown in our stoves.

The Christmas Iris (I. stylosa) is another hardy plant which, under certain treatment, succeeds well, but, like many other bulbs and tubers, it seems that, to do well in a pot, it must be left undisturbed as long as the pot will contain it; and the more its thick, creeping root stocks or rhizomes are roasted out-of-doors during the summer the better it blooms. These force themselves up to the surface of the pot or pan in which it is grown, and, being a native of Algeria, no amount of English sun-heat can be too much for them. This beautiful Iris is perfectly hardy, and blooms out-of-doors throughout the winter in favourable situations; but it is capricious, and if winter storms do not destroy its lovely flowers, slugs and snails assuredly will—therefore, I like to bring a potful at any rate under glass to ensure its safety. It may surprise some readers who know this Iris to see it mentioned as a "stemless" flower; but, in fact, that which appears to be a stalk, and which sometimes reaches a height of 6 inches, is no less than the tube of the flower itself. While on the subject, it may be well to refer to two or three more winter-flowering Irises which have been introduced, or at any rate have become abundant in our gardens of late years. The best known of these is the fine Netted Iris (I. reticulata), so called from the netted coats of its bulbs. No one can fail to admire the rich purple and orange of its slender flowers, but they are not very lasting, and this species does far better in the open border than in pots. When the stock is large, however (and it soon doubles and trebles when once planted out), it is well to pot up a few strong flowering bulbs in September, returning them to the border again when done with, after due hardening off; for, unlike the Christmas Iris, they do not do well in pots a second year. The Persian Iris (I. persica) is another bulbous species, which is hardy in some few soils and situations, but I have never been fortunate enough to find it so. This is a very old inhabitant of English gardens, and is quoted in most of the bulb catalogues, and, therefore, easily to be obtained. It is very beautiful when well bloomed, and distinct in colouring; but as a pot plant, also, I have found it somewhat disappointing. An interesting species, with pale yellow flowers, is the Caucasian Iris, which, on the contrary, does extremely well in pots, growing stronger and stronger each year, and, though not showy, is precious in the winter greenhouse. This is, perhaps, the least known of the group. Two others, the Lebanon Iris (I. histrio), and the long-tubed Iris (I. alata), both "stemless" species, are exceedingly beautiful and desirable winter flowers, both of which, we will hope, may get more abundant as time goes on. When well grown all of these, in their way, make interesting additions to the cool greenhouse, and are of easy culture. In any case, with difficult but desirable plants, "success through failure" is a good gardening motto.

K. L. D.

WINTER FLOWERING PLANTS.—VIII.

Abutilons.

Abutilons are very useful, producing a quantity of bloom about Christmas if grown in a warm or intermediate house with abundance of light. In a confined or smoky atmosphere the buds too often shrivel and drop instead of opening, after about November; but in pure country air Abutilons are very productive of bloom at midwinter. I have seen a plant of the white variety, Boule de Neige, planted out in the end of a warm house, bearing literally hundreds of fine blooms at Christmas, when they were, of course, of great value for cut flowers. This variety is one of the most useful of all, either as pot plants or for cutting. The growth, when made in full light and a nice airy atmosphere, is very short and branching, the blooms are produced in great profusion, and they are moreover perfect in form and purity of colour. Cuttings struck in good time in spring, potted into 48's or 32's, and grown in sound, rich loam, with plenty of light, air, and water while growing, a little liquid manure, and a genial warmth as winter approaches, will form beautiful bushy plants, laden with pure white flowers, by Christmas, or a little earlier, and will continue to afford more or less bloom all through the winter.

Abutilons are very readily propagated by means of the growing tops, or, better, nice stubby side shoots, green at the points, but with a slightly hardened heel at the base. Insert these round the sides of 4-inch pots half filled with drainage, in soil consisting of loam, peat, Cocoa-nut fibre, and sand in nearly equal parts, and place in a house at 60 degs. to 65 degs., at any time from September to March, and if properly attended to scarcely one in a dozen will be lost. In late spring and summer rather softer growths should be utilised, and the cutting pots kept close in a rather warm, moist, and shaded house, frame, or pit, till rooted. When well established, pot off singly into 60's, and from these into 48's or 32's, and yet again into larger pots if fine specimens are required. In a small state any fairly good open and sandy soil is suitable, but for flowering plants nothing suits them like sound turfy loam, with a small part of leaf soil or old hotbed manure, and just a dash of coarse sand. Abutilons must at all times be kept well supplied with water at the root, or the plants lose their leaves, and in bright weather frequent syringings are desirable; this will encourage growth and keep down red spider, which is sure to appear if the plants suffer from drought to any extent. They should be potted quite firm, and fairly good drainage be given. Some varieties attain a great height in a very short time, being strong in growth. Of these are the fine old variety, Duc de Malakoff and Anne Boleyn. These should be cut down when they attain an inconvenient height, but they never bloom satisfactorily if kept down too much. These tall growing sorts almost invariably produce blooms with long footstalks, which are, of course, more useful for cutting than the dwarf sorts, with short stalks.

A few of the finest and best varieties are: Anna Crozy (deep lilac pink, veined white, dwarf and bushy), Boule de Neige (pure white), Canary Bird (bright yellow, similar in growth to Boule de Neige), Chrysostephanum (a very fine kind, with very large bright yellow blooms, the stamens of unusual length, foliage bold and handsome), Darwini robustum (rose, veined purple, dwarf, and free), Darwini majus (fine orange yellow, extra good), Emperor (purplish-crimson, large blooms), Firefly (bright red, very dwarf, and free), Lemoiuei (very fine clear yellow), Purity (pure white, good), Purple Emperor (very fine), Princess of Wales (pink, very pretty), roseum carminatum, striatum splendidum, Violet Queen, and venosum (a very handsome species, with very strong, palm-like growth and foliage, and fine large flowers, grand for table plants). A. Darwini tessellatum and Thompsoni are two very desirable variegated varieties, the foliage of both being very beautifully marked with bright gold and a sort of yellowish-green. The former of these has, in addition, nice flowers of a cinnabar red colour; the latter is very strong in growth, with large leaves.

B. C. R.

Substitute for wooden stages in greenhouse.—In a recent number of Gardening "B. C. R." wrote strongly against the use of wooden stages in greenhouses, and recommended the substitution of soil, surfaced with ashes, and retained by a brick wall. The advantages which he claimed for this form of stage are the more congenial temperature which surrounds the plants, and a considerable reduction of trouble in watering, &c. This latter consideration had a peculiar charm for me, and I think of trying "B. C. R.'s" plan if he can satisfy me on the following points: First, my greenhouse is built of wood, and that not very thick; is there any fear of the weight of soil or ashes bringing it to grief, or will a light structure, such as it is, be quite strong enough to retain them? Secondly, I have no heat whatever in winter. Will the moister atmosphere caused by the ashes be too damp for winter even with reduced watering? I have managed to pull through the past season with comparatively little loss, although on several occasions there were 2 or 3 degs. of frost in the house. Thirdly, instead of filling up with soil and topping with ashes, will it do equally well to fill with soil right up from floor?—Tam Glen, *Glasgow*.

Cheap substitute for hand lights or bell glasses.—For protecting young plants or cuttings I use inverted flower pots with glass bottoms. These answer the purpose well, and can be easily made by any handy amateur gardener. Select one of those pots, which, instead of being flat, have a projecting ridge at the bottom. Begin at the hole in the centre, and with a small hammer chip out the whole of the bottom, leaving only about the eighth of an inch all round on which to rest the glass. The only troublesome part of the operation is cutting the glass to the required shape. Out of stout pasteboard or thin wood cut a circular piece ¼ inch less than the glass required, put a small dab of cobbler's wax in the centre, and while warm stick it on to the glass. Round this as a guide cut your circle with an American glass cutter, and at several parts cut from this circle to the edge of the glass. This will enable you to break off the superfluous glass, and any little bits that remain can be nibbled away with a key or broken off with pincers. To fix the glass bottom on the flower-pot I use cobbler's wax softened before the fire or with a hot iron, but no doubt white lead, plaster of Paris, beeswax, or varnish would do as well. Putty does not stick well. If pots of a uniform size are used, the pasteboard shape will answer any number of times. Should your plant after being covered require protection from the sun, just sprinkle a pinch of earth over the glass. The cutter, which costs only a shilling, will be found

a most useful little instrument, and in unpractised hands much easier to work with than the glazier's diamond.—W. F. M., *St. Andrew's, Fife.*

Late flowering Chrysanthemums.—In acknowledging the reply by "J. B." on late flowering Chrysanthemums (March 7, p. 9), I should like to state how I managed mine last year. As "J. B." says "the late flowering of a Chrysanthemum depends upon the way it is grown," so it does to a certain extent, I own. The cuttings were put in in January in a house with Geraniums, &c., potted off into 48's in April, placed in a cold frame to harden off, and kept rather dry. In July they were put into the blooming pots, 7-inch and 9-inch; they were stopped twice during that time, and brought into the vinery in October. Elaine, Cossack, Lilac, Venus, and Mrs. George Rundle flowered about the middle of November, Antoinette at the end of November, and another that I do not know the name of at Christmas, being one that I mentioned in No. 311 of Gardening. I also had the same sorts planted outdoors, but the late one did not flower at all. It grows about 4 feet high, with a pinkish blue flower.—L. L., *Pevensey, Hastings.*

REPLIES.

12702.—**Plants without earth.**—I have been trying the fertilised Moss for the last two years or more with very satisfactory results. The plants that succeed best in it with me are Aralia Sieboldi (small-sized ones), Fairy Roses, Ophiopogons, or Japanese Hyacinths, small trailing Campanulas, and other little drooping plants. I have grown zonals and other Geraniums in it, and for striking cuttings of these it is very useful, but those already rooted do not seem to make good progress in it. Some of the ivy-leaved ones struck in it did very well and flowered profusely. I use the little cheap Japanese pots with perforated sides for some of my plants, merely making others into bundles by winding black thread round them, and can thus with very little trouble carry my garden away with me when I leave Dublin every summer. I have tried a few bulbs and succeeded well with Roman Hyacinths.—T. A. T.

12894.—**Nerium Oleander.**—When I was in Sweden some years ago I saw a woman potting an Oleander very much covered with scale. She put into the bottom of the pot (to about one-fourth) the grounds of Coffee (after the Coffee has been used), and assured me that the plant would become perfectly clean. There is scarcely a house there without small Oleanders in the windows, looking generally very healthy, and blooming profusely. She told me they always treated them in this way for scale. I have not had occasion to test it, but it is worth a trial, and the result ought to be communicated to you.—H. W.

12891.—**Raising Auriculas.**—The best time to sow the seed is as soon after it is ripe as possible. Some prefer sowing in spring, and "Brum" had better get his seed in at once. Auricula seed germinates so slowly, and at such uncertain times, that there is no chance of getting plants in blossom this year from seed sown now. Some of the seed may show in a month, most probably not for six or nine months. Half fill a few shallow boxes or pans with coarse soil; on the top place fine, rather sandy, soil; press it down pretty firmly, and water before sowing; sprinkle the seed thinly over the surface, and cover it with sand; place a sheet of glass over each pan and put them in the frame. When the seedlings are large enough to handle, prick them off into pots of sandy soil, and further on singly into thumb-pots, and if tolerably successful they will blossom in about fourteen months.—J. P., *Lancashire.*

12943.—**Stocking small London conservatory.**—Most of the spring flowering bulbs succeed well, particularly Hyacinths. The Polyanthus Narcissus and Tulips also do well. Shrubby Calceolarias grow very freely and make a brave show. Callas, Fuchsias, and zonal Pelargoniums do well in the summer. Abutilons grow and flower well. Some of the scented-leaved Geraniums and the large-flowered Pelargoniums do well; but any plants that are very subject to the attacks of green fly should be avoided in such a place. The sweet-smelling Tobacco (Nicotiana affinis) seems to do well. Heaths, Azaleas, and other plants of this kind are not satisfactory.—J. D. E.

12826.—**Azalea leaves turning brown.**—It is not uncommon for Azaleas to cast some of their leaves at this season, just before the new growth comes; but this defoliation, when excessive, denotes weakness, and probably sluggish root-action. Azaleas, like Heaths and all fine rooted plants, want very careful watering, to give just the quantity required at the right time, as any irregularity, whether it leans to the side of dryness or excessive damp, cuts off the circulation, and leads to defoliation, and ultimate debility and death. The drainage should always be kept perfect. If the defoliation is caused by the plant being pot-bound, a little artificial manure strewed on the surface and watered in will help the plants.—E. Hobday.

12895. — **Hyacinths in glasses.** — I strongly disagree with "G. P. M.'s" advice (see p. 17) not to let the water touch the bulbs. It appears to me to be a question of degree. If the bulbs are immersed half an inch deep, doubtless they will rot; but I purposely tried last autumn the effect of keeping the water an eighth of an inch below their bases, and I found they showed no signs of rooting after about two weeks. Then I filled up so as to let the water just, and only just, touch, and they all began to root vigorously, and are now in fine flower. I allowed the water to evaporate as the roots lengthened, keeping it after that about a quarter of an inch from the bulb. The test

Yellow Fumitory on wall (Corydalis lutea).

completely satisfied me that the roots issue quicker for a slight contact with the water, and I shall always proceed in the same way in future.—T. J. W., *Crouch Hill.*

12925.—**Cuttings from Carnations.**—The process of propagating by layers, which is the best and most certain way, is fully described in Gardening Illustrated for January 24th this year (page 596). If "A. J. R." desires, or is obliged, to take pipings (or slips), they should be taken the end of June or early in July. Shoots showing flower-stalks must be avoided; the shoot must be cut off just below the third joint from the top, and some of the lower leaves removed, the rest topped off square. Plant the shoots in flat earthenware pans of sufficient depth, filled with light, rather sandy, soil. Place the pans on a gentle hot-bed, and keep them shaded and moist until the pipings are rooted, then transplant into small pots and shift into larger, as necessary, for keeping in the greenhouse, or until the plants are bedded out.—J. P., *Lancashire.*

—— The varieties named in this question belong to the perpetual-flowering group. The small side growths from the main stem should be slipped out from the axils of the leaves, and be put in as cuttings. They root freely at any time if the pots in which they are inserted are plunged in a gentle bottom-heat, either in a hotbed or a forcing-house.—J. D. E.

12921.—**Exhibition Fuchsias.**—*Single White:* Queen, Miss Welsh, Star of the West. *Single Dark:* Mars, Wave of Life, Elegance. *Double White:* Enchantress, Miss L. Finnis, Edelweiss. *Double Dark:* Avalanche, Tower of London, Viceroy of Canada. These I consider all first-rate sorts.—J., *Kilmarnock.*

OUTDOOR PLANTS.

YELLOW FUMITORY.

This is a delightful little plant, well-known to many of our readers, because there is scarcely an old cottage garden on which it may not be found growing on a wall or stony spot; and it is valuable from its wonderful grace of habit, constant verdure, and constant blossom. Among all the plants we know it bears the palm for never showing fatigue—in wet or dry, heat or cold, as far as we have seen it in Europe, from Naples to Edinburgh, it is always the same patient little plant, fresh as a Fern in early summer, and flowering like an annual at all times. Few things are better fitted for planting in an angle of a wall where scarcely anything will grow. Where anybody is wise enough to indulge in a little wall gardening it should be one of the kinds used. It is easily increased by division.

TOWN GARDENING.—II.

Edgings.—The edgings of town gardens can be made as gay as those in "an unadulterate air," by using the now justly popular yellow Pyrethrum. To have a liberal supply of these plants is half the battle. A dozen pots should be filled with fine soil and watered, of course being previously well drained with broken oystershell or "potsherd." An hour after watering sow the seeds very carefully, evenly, and thinly. Cover merely with a dusting of light soil sufficient to hide the seeds. These should be kept moist with tepid water, and while on the hotbed will, if covered with hoards, germinate quickly, and the young plants appear in about nine days. When large enough to handle—say, half-an-inch high—they should be placed in shallow boxes in fine soil, and again returned to the bed. Though hardy—that is to say, those plants of mature growth—the seedlings should be gradually hardened off until planting-out time arrives, say the second week in May. As before mentioned, this bed might also be used for striking cuttings of variegated Geraniums for foliage effect. That known under the name of Silver Nosegay is worth a place, with many others of variegated foliage, such as Mrs. Pollock, Mrs. Rundle, and more recent kinds. Eight or nine in a 4-inch pot will strike root in a week, and if sheltered by a few boards will suffer no injury from slight spring frosts. Mesembryanthemum cordifolium variegatum might also be increased by placing cuttings in sandy soil and giving a little bottom-heat. This edging plant has always succeeded with me in the town plot, sending up its minute Lilac blooms. It combines well in effect with Pyrethrum, producing a most brilliant edging. This and the fore-named should be planted 4 inches apart. Echeveria retusa is a most desirable plant, perhaps more familiarly known under the name of "Houseleek." A few of these produce a good effect, either as edging or bedding plants, sending up spikes of delicious orange and scarlet bloom which form a decided contrast to the bluish tone of the plant. Can be increased by side shoots, which soon appear in good soil.

Sedums are a desirable class of plants for town air. Sedum aizoideum variegatum, of white or cream-coloured and green leafage, is a pretty, bright, easily-propagated variety, suiting the situation admirably. In place of Geraniums I advise the free use of Lantanas, especially if the situation be a fairly sunny one. They certainly will fully recommend themselves to the town gardener. Of branching, robust growth, they require no attention beyond watering, and will soon cover 20 inches of ground with orange and scarlet trusses of brilliant bloom. In short, a plant little known and grown, the Lantana still crouches 'neath the vision of the town amateur, ready to surprise and delight him at his bidding. It is perennial. Mimulus, or Monkey Musk, bears free-blooming, variegated flowers, most desirable. Lavender will send up a fair number of spikes, and soon make a bushy plant. I have indeed known it to do better in town soil than in heavy clay ten miles from London. As these can now be had in strong plants very cheaply—for a shilling a dozen—a fair show of healthy growing plants for so small an outlay is a desideratum. The popular yellow variety of Calceolaria blooms in nearly every town

situation, and is well worth a place. Fuchsias are most desirable, as are Heliotropes and Verbenas. Turned out of pots, the above will give better satisfaction than if purchased in very small plants. The Verbena sends up numerous pure blooms, but is not a robust grower in town air. Mignonette, Convolvulus minor, Asters, Balsams, King of Tom Thumb Nasturtium, and Collinsia bicolor are all desirable. March-sown Mignonette is generally of more robust growth than that sown later. The second or even the first week in March, according to the season, is a suitable time for sowing the seed. Be careful to thin out the seedlings to 2½ inches apart, as good bloom and vigorous growth will result thereby. As a pot plant, six in a 4-inch pot will do better than a dozen. Seeds of Balsams are the better if sown in heat—the bottom-heat afforded by the hotbed will suffice. When 3 or 4 inches high, pinch out the top to induce a branching growth. These afford fair blooms in town gardens. Asters I have generally found send up good flowers, which, however, are not numerous, though fresh-looking, and of good quality. Young plants can be had cheaply, and if planted out in June in richly-manured soil will require nothing but watering occasionally with manure water, which will increase the vigour of the plants and quality of the flowers.

Chrysanthemums need little comment, and as a town flower are perhaps without a rival, save the Dahlia. Young plants can be had cheaply in choice varieties. During the growing season manure-water twice a week will much benefit the plants. During the season of bloom the flowers should be protected from strong winds and rain. Dahlias might almost be regarded as a formidable rival to the Chrysanthemum. The tall and dwarf kinds bloom equally well. The second week in May strong plants from "thumb" pots should be planted out, covering with an inverted pot in case of frost. The double varieties, I venture to say, far outshine the now fashionable singles. A fortnight after planted out stout stakes should be carefully placed against the Dahlia as a support. In tying with bass allow sufficient room for growth of the stem. During active growth remove the soil to a depth of 3 inches, and a distance of, say, 6 inches around the stem. Fill up the vacuum with rich old manure, the oldest the hotbed will afford, replacing some soil to cover the manure. A judicious trimming out of the branches and removal of some of the numerous small buds will enhance the size and quality of the blooms it is intended should remain. The former continually appear till cut down by frost, and so never mature, but only weaken the flowers. Dahlia stakes should be 4 feet high for the tall kinds—½-inch "quartering" from a timber-yard is the very thing. Palms, green Dracænas, and India-rubber plants all do well. These, of course, should be returned to the dwelling-house at the end of the season, and quite in time to escape frost and autumn rains. There are many other subjects which may give satisfaction in town air, but I have made mention only of those which may be ventured upon without fear of failure. Many popular favourites I have not mentioned, as they are quite unsuitable.

Vegetable Marrows grown in some sunny position will yield a good return even in town air. The hot-bed should be scattered, and made, say, 2 feet high. Place 4 inches of fine soil therein. Two plants turned out of a pot will be quite sufficient. A good authority says, "Let Marrows grow as they will;" but a careful stopping of the shoots I have never had cause to regret, and in the town garden have grown them a foot long in warm seasons. By a town garden I mean a space of garden ground surrounded by buildings to the extent of four or more miles on all sides.

Stamford Hill. A. E. A.

12779.—"Fairy rings."—I remember reading some years ago that "fairy rings" were often noticed to occur in pastures where cocks of hay had been allowed to stand in wet weather. The rain running down the sides of the cocks carried with it some properties contained in the hay, that after some time induced the growth of certain fungi, which sprung up in more or less of a circle corresponding to the size of the haycock.—R. A. D.

THE GIANT LILY (L. GIGANTEUM).

This is a very noble Lily, the largest of the race, and a most desirable plant; but it is not common in gardens, as it is considered difficult of cultivation. This is not the case; on the contrary, its culture is simple, provided the plant is put under the proper conditions at the outset. It should, in the first place, be effectually sheltered—nothing suits it better than a cosy nook, surrounded by evergreen shrubs, and when planted in such a position the shrubs serve as a back ground to show its noble flowers to better advantage. When well grown it is as much as 10ft. in height, although it will flower in a much smaller state. The blossoms are about six inches long, and are borne in the manner shown in the accompanying wood-cut;

The Giant Lily (L. giganteum).

they are creamy white, with a few dashes of deep red on the interior sides of the petals. It continues to flower for several weeks during late summer. L. giganteum is one of of those Lilies that do not flower until the bulbs are thoroughly matured, and therefore the grower should not despair if for three or four seasons together he sees no flower. The bulbs will continue to increase in size year by year, if they are in a suitable condition, and in the proper soil. The foliage is large and handsome, and the plant would be worth growing for that alone; when the flowering bulbs begin to push up their gigantic stems, the lower leaves begin to die off, and eventually decay, and the flowering exhausts the bulb; therefore, it is necessary to keep a stock of successional bulbs planted in the same bed, so as to have a flowering plant each season.

When a special bed for this Lily is being made, the soil should be taken out at a depth of three feet, and a good layer of rubble—say about a foot in depth—should be placed at the bottom. On this place the bulbs, to keep the soil from interfering with the drainage. Then fill up with a mixture of peat, sand, and fibry loam, with a dash of decayed leaf-mould. This bed will last for years, and in it the Lily will develop its finest proportions. It may be grown to less perfection in the ordinary Rhododendron bed, but it is such a noble plant that it is worth all the extra trouble that one can give it.

PLANTS FOR CHALK DOWN GARDEN.

(Answer to Question 12939.)

Some years' experience on the chalk downs near Caterham, in Surrey, enable me to offer the result of my experiences to "Diana." My garden was at first little more than the hard chalk rock, with here and there a few niches of soil on it; but, with the aid of the pickaxe and some turf from a neighbouring hill, I succeeded very well with the following:—Campanula carpatica, Œnothera taraxacifolia and macrocarpa, tall Phloxes (plenty of manure for these), double Potentillas, Pinks and Carnations, Golden Thyme (an especial favourite with me, but often lost on the clay here), and Delphiniums. These last are very beautiful, especially Belladonna and formosum. They require rich cultivation, and must be protected from slugs; and a good way to do this is to cut strips of perforated zinc, an inch and a-half wide, and put in little circles round the plants, filling in the centre with wood ashes or soot. Violets, also, by all means—all the Violets I get now are raised in frames, but, visiting my old home a few weeks since, I could, and did, gather them out-of-doors in unlimited quantities and of the most delicious fragrance; indeed, the dry soil and clear air seem especially to develop the perfume of all sweet-scented plants and flowers. Lupines, both perennial and annual varieties; Violas too, do well, but they like a little shade; Spiræa japonica also, in a shady place, I found to grow and flower well, although I had always thought it a marsh plant; hardy Fuchsias are showy and give little trouble; of slow growth are Gentiana acaulis and Helleborus niger, but well worth waiting for, they also like half-shade; Tritomas will be quite at home; Primroses are natural to the soil, but the coloured varieties are worth growing from seed. I never tried Asphodels, and although I have no doubt they would do perfectly, I see they are condemned as poor in "The English Flower Garden." Small Brier Roses and all other Roses will do perfectly, but the deeper the soil, and the more manure they have, the better they will thrive; they will also want plenty of water in the summer. I jealously devoted all the house slops to the Rose beds. The mature conclusion forced upon me with regard to Roses was that it was almost impossible to get the substance of flower attainable on other soils, but that the clearness and brightness of colour and exquisite fragrance could not be surpassed. The Manetti is the best stock, Briers are short lived, but own-root Roses are best of all. Let "Diana" be assured of this that for some families of plants she is in a most favoured situation; the countless varieties of plants that come under the three heads of Sedum, Saxifraga, and Sempervivum, would be alone sufficient to make a garden. Most of them are green winter and summer, the Saxifrage making the most beautiful green carpets when all else is dried up. They will resist the direst drought and the severest cold; the wind, one of "Diana's" greatest enemies, has no power over them. They flower at various times throughout the year, Sedum spectabilis being quite late in autumn, while the Saxifrages bloom in the earlier spring. No one can thoroughly appreciate the beauty of the common Stonecrop who has not seen it a band of gold 1 yard wide and 100 feet long; then the common London Pride, as an edging of about 1 foot wide or more, is a most lovely thing when in bloom, so feathery and graceful. Do not forget Sweet Arabis, which flowers in spring, and on the chalk has a most lovely almond scent, but here on the clay the flowers have a most peculiar earthy odour. I should be glad to know if others agree with my experience in this.

Clematis Jackmani—have as many plants of this as you can make room for. It is a most glorious thing, climbing a wall or a trellis, over a hedge or rootwork, or pegged down in a bed. Chalk is its natural home, but give it plenty of good food. Then a bush or two of Lavender and Southern-wood—a garden is not perfect without them. In addition to the above (although I did not grow them in the chalk, I believe they would do well there) are shrubby Veronicas in great variety—Veronica longifolia subsessilis (I wish it had a shorter name), a herbaceous plant, and exquisitely beautiful. It must be divided every three years (at least it is so here on the clay), and Rudbeckia Neumanni, admired by all who have seen it in my garden. With regard to annuals I had practical experience of the following all doing well:—Mignonette (always first), Petunias, Zinnias, Phlox Drummondi, Scarlet Flax, Annual Lupines, minor Convolvulus, Sweet Peas, dwarf Tropæolums. These make a grand show for the first year, while other things are growing. Wind flowers are best raised from seed yearly, and Eschscholtzias will only need a first introduction, and they will never submit to be turned out again. Almost all bulbs find a congenial home in the chalk. "Diana" will find her great trouble to be the want of depth and the extraordinary dryness of the soil; and the best way to overcome this is to lay down a thick covering of manure around the plants requiring more moisture than usual. Above all, avoid Rhododendrons and Ferns and other peat-loving things—the chalk is rank poison to most of them. I wish that ten years ago some one had given me this advice gratis; it would have saved me considerable expenditure. The above list of plants, &c., crowd upon me as I write, but if "Diana," having tried these, requires further aid, I shall be happy to afford it.

Crouch End. V. C.

THE BEST HARDY ANNUALS.

From the multitude of varieties of these offered in the seed catalogues it is difficult for the inexperienced to select those which are the best and most suitable for beds and borders. In large gardens a great variety can be grown, but where space is limited a severe selection has to be made. The following are worthy of being associated with the best flowering plants of any class:—

Dwarf plants.—Leptosiphon roseus, a beautiful shell pink, free-flowering plant, requiring to be sown early. Silene pendula compacta, and compacta alba, well-known neat plants, best sown in autumn. Saponaria calabrica, very neat in light soils. Kaulfussia amelloides, a pretty blue Daisy. Nolana atriplicifolia, a plant with blue and white flowers, which creeps along the ground; good for rockery. Nemophila insignis grandiflora, an improved form of the well-known plant. Omphalodes linifolia, pretty white flowers. Whitlavia gloxinioides, a neat plant with bell-flowers, blue, with white throats. Bartonia aurea, a very showy yellow annual. Yellow sweet Sultan, best sown in autumn. Viscaria of several kinds, pretty annuals, with white and pink flowers. Erysimum arkansum, a good yellow annual, and E. Peroffskianum, orange.

Taller kinds.—Vilmorin's Rocket Candytuft has fine massive spikes of white flowers. Crimson Flax is a very showy crimson. Lupins are fine if well grown; all are good, but Hartwegi, Menziezi, subcarnosus, and hybridus atro-coccineus should always be grown. Godetias are amongst the most satisfactory of annuals of medium height. G. Whitneyi, G. Duchess of Albany, G. Lady Albemarle, G. Princess of Wales, and G. Lady Satin Rose, are all good; G. The Bride is also a very useful kind. Clarkias are useful annuals, flowering quickly. There are two distinct races—Clarkia elegans, producing flowers in the axils of the leaves nearly over the whole plant, and Clarkia pulchella, with flowers in bunches at the tips of the shoots. There are pure white and double varieties of both. All are worth growing. Convolvulus minor is a good blue annual for clumps. Annual Chrysanthemums, single and double, are indispensable. Coreopsis is a useful annual for all positions; the stems and foliage are so inconspicuous that the flowers seem waving in the air. Centaurea Cyanus, the common blue Cornflower, is one of the best annuals, and does well in smoky towns. Poppies are showy things for large borders. The Opium Poppies are very showy, but are soon over. The Ranunculus flowered kinds last much longer in flower, and are extremely brilliant. These should be sown early or in autumn. Papaver umbrosum, and its varieties, Danebrog, Victoria Cross, and Mephisto, are showy annuals. Larkspurs are a fine series, the stock-flowered varieties being specially good. Sweet Peas are favourites with everybody, they should be sown early, when they produce a long bloom, if prevented from seeding. Tropæolums are good for poor soils and in hot positions. The Tom Thumb King varieties, of which there are many, are very showy; they are short-lived, but a succession can be started in small pots and planted out when large enough. This is the best way to grow them as they have weak stems at the surface of the soil, and break off there in windy weather. Planting out from pots with the balls rather deep takes them down to a stronger part of the stem. The new Compactum section last much longer in bloom. Bedfont Rival, Beauty of Malvern, and Octoroon are kinds of which seed may be had.

The soil for annuals should be in good heart, but is better without manure; any kinds that require better feeding can have liquid manure or surface dressings. Failures with seeds are generally owing to the soil in which the seeds are sown not being sufficiently fine in texture. Early sowing is a great advantage; but it is better not to sow when the soil is damp or still cold from frost. Sowing in small pots is a good way where the trouble is not objected to. Thinning out is very important. Every plant should have room for full development. Crowded annuals produce small blooms, and are soon over. The great thing is to get a good sized plant before blooming begins. If a plant begins blooming in too small a state it is a good plan to pinch out the bloom buds as they appear, and give good feeding and water if dry, so as to encourage the production of leaves instead of flowers. This postponement of the blooming season generally ensures a better bloom when the plants are large enough. All flowers should be picked off as soon as faded.

Salisbury. J. D.

REPLIES.

12937.—**Arranging mixed border.**—The first consideration is to arrange your plants so as to get the proper contrast or harmony of colour; the tallest must go at the back, but might, now and again, be brought forward, so as to avoid straight lines, and by placing two, say Dahlias, at the back and one in front, or three Hollyhocks at the back, two Dahlias in front, and then one in front again, the bed would be as it were divided into several semicircular parts. Put, then, the Hollyhocks, Dahlias, and Sunflowers in that way, mixing amongst them the red Gladioli; in one recess plant mixed Pentstemons, Phloxes, Pyrethrums; in another Paris Daisies (white and yellow), with the scarlet Lobelias; those arrangements might be further varied by keeping plants of a kind together. Keep in the front the Geraniums, blue and yellow Violas, which, however mixed, will look well. By this arrangement all formal lines will be avoided, and a constant bloom thrown over the whole bed until the frosts of winter come.—J. P., *Lancashire.*

12836.—**Destroying sparrows.**—One writer asks for a suitable poison for this purpose, another tries a plan for frightening them away. Here we like to keep both sparrows and Crocuses, and are doing so with great satisfaction, by spreading tempting breakfasts every morning in our window boxes, and not a single Crocus is touched, but the other food disappears very quickly. Of course it would be troublesome to try this on a large scale, but where Crocuses grow in abundance a few can be spared without much disfigurement.—T. A. T., *Dublin.*

12818.—**Artificial asphalt for garden path.**—The following will make a good cheap path: Take 4 bushels of very dry lime rubbish, such as is to be had from the pulling down of old buildings, and 2 bushels of ashes. Both should be sifted fine, and all must be dry, and the day fine and bright. Place on a dry spot, make a hole in the centre of the heap, and pour in as much boiling coal tar as will make it into mortar. Then spread it three inches thick over the prepared surface as far as it will go, sprinkle some dry sand or Derbyshire spar over it, and roll down firmly.—E. Hobday.

12972.—**Striking Honeysuckle.**—I once quadrupled my Honeysuckle, the common one, by the following plan: It was about 12 feet high, and had three main stems trained to the wall. About half-way up I put a good-sized deal flower-box with a cork front to embellish the wall, and, to do so, notched the back edge of the bottom of it (it had no back) to fit over these stems, which then appeared to be growing out of the box. Having occasion to move the box after a few months, I found large bunches of roots springing from each stem, which I therefore cut through, just under the box, and planted out the good-sized plants thus obtained into a fresh position. Much the same can be done on a smaller scale by suspending a pot against the wall and pegging down a branch into it, covering a joint with soil. New roots are soon emitted, when the branch may be cut off and planted out.—T. J. W., *Crouch Hill.*

—— All Honeysuckles strike freely in sandy soil, or may be propagated by layers.—C. F. D.

12973.—**Striking Jasmine.**—Yellow and white Jasmine will strike freely any time of year in sandy soil covered with a bell-glass.—C. F. D.

12991.—**Hardy annuals for bedding.**—Why not try German Asters in variety, Chrysanthemum tricolor (yellow and white), Eschscholtzia crocea (orange), Godetia (pink and red), Helichrysum (various), Larkspur (various), Nasturtiums (brown, cream, and orange), Myosotis sylvatica (blue), Evening Primrose (yellow), Sweet Pea, Phlox Drummondi (scarlet), Poppy (carnation)?—C. F. D.

—— "A Rochford Amateur" should try Ten-week Stocks, Asters, Phlox Drummondi, Verbenas, Petunias, Zinnias, Sweet Peas, Pansies, Indian Pinks, Godetias, Nasturtiums, Larkspurs, Antirrhinums, Lupines, French Poppies; and Everlasting Flowers are also extremely useful. From the above selection flowers of almost every colour may be obtained all the summer and autumn, and they are very easily grown.—Cora Brea.

12978.—**Perpetual-flowering Carnations.**—Malmaison Carnation is perfectly hardy, but will not flower in the border during the winter; it would in a greenhouse or warm pit.—C. F. D.

12944.—**Sweet-scented Geraniums.**—"Shamrock" does not appear to have any Uniques; the old scarlet Unique has very good flowers as well as powerfully-scented leaves. I have seen the common Mauve growing as a big bush in Guernsey, and it could probably be obtained from the nurseries there.—A. B. T., *East Anglia.*

12914.—**Pampas Grass not flowering.**—Probably "R. H. C." has got the strong, coarse growing, broader-leaved variety, which is a very shy and late bloomer. He should get the variety with narrower leaves and less stiff growth, which flowers a full fortnight earlier and is much more prolific.—W. M., *Kent.*

12920.—**Good Pompone Dahlias.**—The following include a good selection of colours, and comprise both selfs and tipped forms: Amelie Barbier, Cupid, Dove, Favourite, Dora, Garnet, Gem, Little Duchess, Little Princess, Mabel, Grassan Wien, Lady Blanche, Louis Rodani, Princess Sophie, Sophia, and Litania. Any dozen selected from above will give satisfaction.—J. D. E.

12974.—**Primulas done flowering.**—Unless "Rentan's" Primulas are double varieties, or something superior in colour, the old plants are not worth keeping, new ones being better in every way. Seed should be sown this spring and the plants grown and potted on through the summer and autumn, all flowers being picked off as they appear until they are wanted for a display.—Cora Brea, *Portsmouth.*

12824.—**Hardy Heaths.**—If the plants have become weak and straggly from unsuitability of soil or position, pruning will not help them much. Still, some of the largest straggling shoots may, with advantage, be pruned back pretty close, though I should rather top-dress the bed with fresh peat, and put the long straggling shoots into it to give them a new start.—E. Hobday.

12946.—**Classes of Pansies.**—If "Novice" will send me his address I will send him sketches in Indian ink of the Show and Fancy Pansy; he will then see at a glance the difference, which is the blotch. A Show Pansy has a small blotch, the Fancy a large one—the larger the better.—Geo. J. Henderson, *Halam, Southwell.*

12686.—**Double Orange Wallflower.**—I see a question in a recent number from "X., Youghall," as to where the old double Orange Wallflower is to be had. It is propagated by cuttings of the young growth which follows the flowering. I have a good plant and will be glad to give "X." cuttings at the proper season, if a stamped addressed envelope is sent me.—Mrs. Wedderspoon, *Cheam, Surrey.*

12827.—**Soap-suds with soda for manure.**—Soda is of a caustic nature, and if used in excessive quantities would be hurtful to vegetable life; but the quantity usually present in soap-suds coming from a laundry will never do any harm. At any rate, I have been using it for a good many years without finding any injury resulting therefrom. When very strong the liquid should be diluted.—E. Hobday.

PICTURESQUE PLANTING OF WATER-SIDE.

This week we publish two illustrations to show the way—or, at least one way—in which the margins of our garden water, or what is called ornamental water, may be treated. We think they contrast sufficiently with the common stiff, hard, monotonous margins that are too often the rule in gardens. If artificial water be not well placed, clear, and artistically treated, it had much better be drained and the hollow used as a fernery or American garden; but we think the illustrations we publish show how prettily such things may be treated. They show two different scenes, one in which the lake is bordered with trees, single and in groups, the Grass spread out into little lawns in the distance, and in the immediate foreground are a close clump of Firs and other shrubs, with a tuft or two of Burdock. Such variety may be had to almost any extent in similar positions. The next cut shows how well certain types of hardy herbaceous plants, such as Irises, may be used near the waterside, against which also some of the commonest Ferns are quite at home. With such a choice of trees, herbaceous plants, and graceful shrubs—such as some of the Willows—that may be had for this purpose, one might have a good effect in all parts, and much variety around the margin of a most extensive sheet of water.

As regards the actual water plants that grow near the margin, the important thing is to prevent certain of the very common types from establishing themselves all around, so as to create a monotonous, if now and then attractive, vegetation. The water plants native in each district are rather apt to do this if not controlled. In such situations as these no one should forget the Bog Bean (Menyanthes), the flowering Rush (Butomus), and the blue American Pickerel weed (Pontederia).

Picturesque planting of water-side.

Iris, Ferns, &c., by brook-side.

The Burning Bush.—Permit me to assure "J. K." that the inflaming of this plant is no "fudge," though the explanations sometimes met with can scarcely be termed correct. Dictamnus Fraxinella is highly odorous in foliage and flower, and will impart its perfume to the hand if lightly drawn up the stem and among the leaves, which feel "sticky," the stickiness being due to a balsamic exudation that is highly inflammable. On a summer's evening about flowering time my children gather about me to see the plant "blaze." To accomplish this interesting feat is an easy matter, as a match struck near the ground close to the stem instantly ignites this exudation, and a bright fizzing flame travels upwards over the whole plant, passing in puffs from branch to branch. The character of the flame very closely resembles that of powdered resin. I have not succeded in this experiment more than once during the season, as with me the plant seems unable to exude sufficient of the inflammable matter till the following year.—W. J. B., *Portobello, N.B.*

AQUARIA.

FORMING AND MAINTAINING AN AQUARIUM.

The position of the aquarium having been determined, we shall now describe the best method of forming a suitable foundation in it for enabling the plants to thrive. River sand should be procured and washed until the water in which it is being cleansed is perfectly clear; then it should be placed in the aquarium, and upon the top of the sand there should be placed a quantity of fine gravel, which must also be first thoroughly cleansed. When the gravel has been thus arranged above the sand, about an inch or more in depth a bed will have been made for the roots of the plants to be grown in, and also for the aquatic animals to burrow.

To fill the aquarium with water without displacing either the sand or gravel great care is necessary, and it can be accomplished as follows:—Place a jug, already filled with rain water that has been allowed to stand until it is clear, in the middle of the aquarium, and then pour more clear rain water on to the already filled jug, so that it may trickle down the sides. This will enable the water to cover the bottom without displacing the materials already in it. If poured into the aquarium in any other way a very different appearance will be assumed by the sand and gravel, which doubtless some of our readers are aware of. If the aquarium is filled in the manner described not a stone is found to be disturbed, and it appears to have a natural formation of sand below gravel. The aquatic plants can now be planted in it and they should be allowed to grow for at least a week or two before any animal life is introduced. In fact, it is better to prepare the aquarium for the life intended to be placed in it. The best plants to commence with are Willow Moss, Anacharis, and Vallisneria spiralis, all of which are always to be purchased of those who sell the animals suitable for an aquarium. Here we think it necessary to caution beginners not to be persuaded to buy any other but the above-named aquatic plants, as they are certain to be asked to buy some which do not so easily grow, and which soon die down, filling the water with loose, dying leaves and stems.

Of course it is a better plan to collect the plants from the ponds and streams instead of purchasing them, therefore a book upon aquatic plants might be studied, so that the appearance of the Anacharis and Willow Moss may be known. Vallisneria spiralis, not being indigenous to this country, must be purchased; it has the appearance of Grass, and grows to the very top of the glass, giving a charming appearance to the aquarium. Strive to render the aquarium natural by placing a few larger pieces of stone in it here and there. Procure some with holes, into which place pieces of the Anacharis. This will enable the plant to send its roots through the stone into the gravel down into the sand. The Willow Moss should be planted in a similar way. Observe the ponds and streams in which the plants are growing, and arrange the aquarium so as to imitate nature. Do not place any objects in your fresh-water aquarium which naturally belong to a salt-water one. N. R. G.

ROSES.

REPLIES.

12929.—**Old Moss Roses.**—They ought certainly to be pruned, and now is the time to do it. Probably the wood is too thick, and in that case it should be thinned out, cutting away the oldest portion, and cutting back the remainder. It would be undesirable to use the pruning-knife too freely; it will be enough to cut back any long growths to half their length, and also make a point of getting the bush into good form. Some short rich manure should be forked in among the roots, and later in the season a dressing should be laid over the surface close to the roots.—J. D. E.

12922.—**Roses in pots.**—It would be best to grow six Hybrid Perpetuals and the same number of Teas. Of the first-named I would select Abel Grand, Antoine Ducher, Captain Christy, Dr. Andry, Duke of Edinburgh, and La France. The best six Teas are Belle Lyonnaise, Catherine Mermet, Hon. Edith Giffard, Madame Falcot, Niphetos, and Souvenir d'un Ami.—J. D. E.

—— The following are very good for pot culture: Niphetos (white), Safrano (apricot), Perle de Lyon (deep yellow), Rubens (creamy white), Boule d'Or (yellow and buff), Madame Bernard (salmon rose), Catherine Mermet (salmon rose), Jaune Deprès (bronzy yellow), Madame Angèle Jacquier (yellow), Adam (blush rose), President (rose), Souvenir d'un Ami (pale rose).—C. F. D.

12825.—**Roses and soapy water.**—Soft soapy water often repeated does injure the roots of Roses and other plants. When it is necessary to syringe them to destroy green fly lay the plants on their sides until the soapy water drips off.—J. D. E.

12935—**Striking Roses in bottles.**—I have very successfully struck Roses in bottles. My cuttings were taken about June, put in wide-mouthed bottles, and stood on a high shelf in a greenhouse. As the water evaporated the bottles were refilled, but the roots not disturbed until the plants were ready for small pots, about August. They are now nice little bushes, just showing buds. I am now trying some cuttings taken last week from last year's wood, but although they are shooting I do not expect them to root so well as those taken later in the season.—Cora Brea, *Portsmouth.*

12975.—**Dwarf bedded Roses.**—Yes; the union of stock and bud should be 2 inches under the surface; be sure to press the soil firmly up to the stem.—J. C. C.

QUESTIONS.

Rules for Correspondents.—*All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Answers should always bear the number placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

All answers, with the exception of such as cannot well be classified, will be found in the different departments. Queries not answered should be repeated.

*** *No charge is made for the insertion of queries.*

Naming plants or fruit.—*Four plants, fruits, or flowers only can be named at one time, and this only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

13049.—**Soil for Pomegranate.**—Will any reader kindly tell me what is the best soil for Pomegranate?—H. W.

13050.—**Hawking garden produce.**—Will someone kindly tell me if a cottager gardener can hawk his own garden produce without license outside a municipal borough or not?—Macduff.

13051—**Epiphyllum leaves becoming crinkled.**—Will "J. D. E." or "J. C. B." kindly inform me what is the reason of the leaves of these becoming crinkled, and the remedy to prevent it?—Showler, *Stroud Green.*

13052.—**Vegetable seeds germinating.**—Will any of your readers tell me the average time that seeds of vegetables, such as Onions and Carrots, remain in the ground before germination takes place?—G. Williams.

13053.—**Best sorts of Rhubarb.**—Will some reader kindly tell me the very best sorts of Rhubarb?—(1) Two of the very best earliest sorts; (2) two of the very best mid-season; (3) two of the very best late sorts.—An Amateur.

13054.—**Annuals for clayey soil.**—Will "J. D.," or some of your correspondents, kindly tell me what annuals nice for cut flowers will grow in stiff clay soil? Gladioli do very well. Would Pinks or Carnations suit?—F. G. S., *Upper Tooting.*

13055.—**Black Alicante and Lady Downe's Grape.**—Will any correspondent be kind enough to tell me if Lady Downe's and Black Alicante Grapes will do in one house, and if they are profitable to grow for market; or what of Black Hamburg?—W. T.

13056.—**Carpet for dry position.**—Can anyone suggest some plant to cover a sloping border, 6 feet broad? I have Hyacinths, &c, in spring; but nothing I have tried can stand the dry, hot position, as a Hawthorn tree prevents any rain getting to the ground.—Warwickshire.

13057.—**Best manures for flower garden.**—Which one of the following manures is best for general use in the flower garden, and how much per square yard should be used?—(1) Blood manures; (2) dissolved bones; (3) super-phosphate of lime; (4) bone manure.—O. W.

13058.—**Raising winter Carnations from seed.**—"Marjory, Southampton," would be glad if any reader would give her a few hints on raising winter Carnations from seed, when the seed should be sown, the treatment through the summer, soil, &c, and if they would bloom in a cold greenhouse facing south?

13059.—**Profitable market gardening.**—Will any reader kindly advise me as to what I should grow for the market? My garden consists of about three acres of pretty good soil, and sheltered from the east winds; it lies south and south-east. I have two cold frames, or rather pits, where I intend putting Cucumber plants and other things.—A Young Beginner.

13060.—**A scented Camellia.**—Will anyone inform me if there is such a flower as scented Camellia? I was told the other day that there was, but, never having seen one, and having always considered the want of perfume the one objection to that otherwise beautiful flower, I should like to know whether my informant is correct.—Doubtful.

13061.—**Plants for large bed.**—Could any reader recommend two kinds of plants for large flower beds, which, when intermixed, would produce a shot effect, like shot silk? Last year we had a bed of Nasturtium (orange), and Gnaphalium (grey), and one of Geranium Manglesii (pink), and Verbena venosa (purple). We shall have them again this year, as the effect was beautiful; but I want the names of plants for two more similar beds.—Devoniensis.

13062.—**Camellias for high situation.**—I should feel it a favour if "Cambrian," who recommends the culture of Camellias out-of-doors, would, through the medium of Gardening Illustrated, name half-a-dozen varieties best adapted for that purpose, and state whether he thinks they would do well in a midland county, situation rather high, but nicely sheltered on the cold sides, and about thirty miles south of the Trent.—Samuel Cooper.

13063.—**Perennials for garden facing north.**—Would some reader kindly suggest what perennials would be likely to do well in a small garden facing north, about four miles from Dublin, much enclosed with trees and houses, and getting little sun? The soil is heavy, and has not been worked for some years. Would Aquilegias, Anemones, Lupines, Foxgloves, Geums, Pentstemons, Delphiniums, Pansies, &c., do?—Hibernia.

13064.—**Filling small greenhouse.**—I have a small lean-to greenhouse 6 feet by 5 feet (adjoining kitchen fireplace), gets sun from 8 to 12, not more, during summer. I use oil stove in frosty weather. I have been growing Geraniums and Fuchsias. I wish to cultivate some other kinds. Could any of your readers inform me what would be suitable? I should prefer plants that would not require a lot of attention and expense.—Amateur, *Farnworth.*

13065.—**Gillingham's Heat Radiator.**—Will anyone who has one of Gillingham's (6 feet corner) Heat Radiators in use say if they are able to keep an even temperature with it, as several times during the winter the thermometer has fallen below freezing, the lamp having been lighted when it stood at 40 degs., and three times all the Ferns and plants in the conservatory have been covered with soot. I cannot find out where my mistake is as I have closely followed the directions sent with the lamp. The conservatory in which the radiator is used is 14 feet by 5 feet, and opens from a room.—Roger.

13066.—**Unsatisfactory Camellia.**—I have a fine white Camellia tree, about 10 feet high, planted in a border, and trained on a trellis in my conservatory. Last year it began bloom in December, and continued till April. At first the flowers were very fine, but about March the centres began to fall out, sometimes even before the bloom was fully open, and the blooms were small. It had no heat last year. This year, finding it was very backward, I put heat on the beginning of the year, and have kept it since; but the blooms, though there are a great number, are small, and the centres fall out before coming to perfection.—Lt.-Colonel.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13067.—**Garden paths.**—I have an old garden grown over with Grass. I want to make paths and flower beds, but do not know what to do with the Grass turf. Is it any good, or should I get rid of it?—C. E.

[*Keep as much as you can of it, and make no more walks than are absolutely necessary for your convenience.*]

13068.—**Ivy for Rhododendron bed.**—I have a bed of Rhododendrons only, raised in the centre. As the soil looks bare under them, I wish to cover it. Will Ivy do, letting it trail on the ground; if so, what sort or sorts?—G. B. P.

[*Ivy would do, but it might prove too gross in time without care. A much prettier way would be to cover the bed with Hepaticas, Christmas Roses, or any green and useful plant you are fond of.*]

13069.—**Treatment of bulbs.**—I have received from Cape Town a present of bulbs, of which I append a list, and should feel it a great favour if I could receive instructions how to treat them, what temperature is required, how deep these bulbs (seed) must be planted, and the kind of soil to be used? The list is: Lapeyrousia azurea, Acidanthera sp., Morea Pavonia, Lachenalia rubida, Freesia odorata, Watsonia Mariana, Ornithogalum aureum, Gladiolus angustus, Ixia conica, Ixia alba.—Lucy.

[*All these must be grown in pots. The soil should consist of a mixture of fibry loam, peat, and sand, and the drainage must be good. Plant the bulbs about an inch beneath the surface. If the soil is moist when potted do not give water until the bulbs begin to show signs of sprouting. A frame facing south, or a warm greenhouse shelf, would suit them. When in full growth water can be supplied liberally.*]

13070.—**The virtues of herbs.**—Will some reader give me the name of a good book on herbs, and one that will tell me all their virtues and how I must use them for different diseases, where I can buy one, and the price?—Anvil.

[*Happily the day is passing away when wise men suppose that diseases are cured by herbs. The true way of health is to avoid all decoctions, and to live simply and rightly. We believe there is some rubbishing book of recent date about herbs, but for most of the books you would have to go to the old booksellers. Not only are the nostrums of the old herb doctors not believed in now, but the leading scientific physicians dispense with all but very few drugs. People have such a rooted notion that they are to be cured by something out of a bottle that the intelligent doctor is often tempted to give them some harmless dose in that vessel; but a scientific London doctor told us the other day that very few drugs were now considered essential, and by another generation they will have received their* coup de grace.]

13071.—**Edging for lawn.**—I shall be much obliged if you or any of your numerous readers would tell me what would be the best edging for the borders of our back lawn. There is Grass in the centre, then the gravel walk, and then the borders. Box does not do at all; it does not thrive. I should like something that would not harbour vermin, not be very expensive, and that would last well.—J. A., *Edinburgh.*

[*The best and prettiest edging known is stone that splits naturally into convenient thicknesses. These stones would occur frequently in certain of our counties. We have no doubt that in a stony county, such as that near Edinburgh, there can be no difficulty in obtaining them. They should be set at about half their depth in the ground, the thickest edges down. It would take a good many lines to explain the advantages of this over most other edgings. Tiles are not nearly so good because they are so hard and artificial-looking, and require regular setting, which the natural stones do not. Do not try to get them too regular, but accept them as they are.*]

13072.—**When to sow Grass seed** (*Ignorance*).—Sow any time between now and the end of April.

13073.—**Planting Tuberoses** (*E. S. O. R., Putney*).—Covering them with an inverted pot can do no harm, but we do not think it is essential.

13074.—**Frost-nipped Roses** (*Macduff*).—We fear that there is no remedy for nipped Roses, and that all you can do is to wait until they sprout again.

13075.—**Pruning Marechal Niel Rose** (*E. M. F., Cornwall*).—You can prune it now if shoots have not begun to expand. It is now late for pruning Roses.

13076.—**Shifting Fuchsias** (*Ignorance*).—Pot them now and keep in a house or frame for a few days, then gradually admit air.

13077.—**Hardy Creeper for sunless situation** (*Amateur, Wilts*).—Virginia Creeper, Ivies, Mountain and other hardy Clematis.

13078.—**Wilson Junior Blackberry on wall** (*M. H. V.*).—We should say it would grow trained up a wall, but we much doubt whether that is the best way of growing it.

13079.—**Grafting Japanese Maple** (*W.*).—Variegated Japanese Maple should be grafted in spring on the green-leaved Maple. Laurels cannot, of course, be used for stock.

13080.—**Stalky Geraniums in window** (*R. A. D.*).—Cut off the tops of the plants now, and treat as cuttings. The present is a good time to give your autumn-struck cuttings separate pots.

13081.—**Spent Hops** (*J. J.*).—We doubt whether you will find the Hops of any material use to you in Chrysanthemum culture. You had better secure a good loamy soil.

13082.—**Arum Lily leaves turning yellow** (*Oakleigh*).—This is only natural; young leaves will take the place of the old ones, which must be cut off as they decay.

13083.—**Preventing blight on Roses** (*Ignorance*).—You can do nothing to prevent this except getting your trees in a vigorous and growing condition. When the pest comes you must take the best measures to get rid of it.

13084.—**Creeper for back wall of vinery** (*F. M., Northumberland*).—Camellias will do well, or, if you prefer fruit, try the Guava. If the house is not much shaded you can grow Tomatoes.

13085.—**Aerides in low temperature** (*F. H. L.*).—The leaf you send us bears evident signs of having been produced in a low temperature. This is a warm house Orchid, and never succeeds in a greenhouse.

13086.—**What is a cottager?** (*A Constant Reader*).—If you live in a cottage you are undoubtedly a cottager; if you live in a large house and keep servants you would most likely be classed as an amateur. The good sense of the committee and judges usually determines this matter.

13087.—**Culture of Tropæolum tuberosum** (*F. M., Northumberland*).—This requires a warm light soil, and when growing strongly it will run over low bushes. Obtain tubers and plant now. We have no experience of its succeeding so far north as Northumberland.

13088.—**Aspect for garden** (*Elijah Monk*).—It would be better to put your garden quite at the back of the house, which would give a southern exposure. An easterly exposure is bad, and you should choose any point rather than east or north.

13089.—**Ivy clippings as mulching** (*J. W. T.*).—We fear the clippings of Ivy would be of very little good for mulching. Short stable manure is much better. After you have burnt all the garden rubbish put the ashes on the soil.

13090.—**Peruvian guano** (*Amateur*).—The amount of Peruvian guano that should be put into a gallon of water depends upon the use to which it is to be put. About 1 ounce will be sufficient for most things. Mix it up, let it settle, and use the clear liquid.

13091.—**Filling Fern case** (*J. J.*).—Directions such as you require have frequently been given in Gardening, and several questions like yours have been answered quite recently. See replies to query 12466, February 14, p. 638; and to 12877 and 12883, March 14, p. 18.

13092.—**Raising plants from Blue Gum tree seed** (*Lucidus Ordo*).—Sow the seed now in a frame in ordinary potting soil. The seeds will most likely be a long time in germinating. Keep the soil moist and the temperature moderately warm.

13093.—**Transplanting Snowdrops** (*R. T. R.*).—Wait until the foliage is quite decayed, say about June. You would then have no difficulty in finding the bulbs, and at that season there would be less harm done to them in moving. Take the bulbs up bodily with soil.

13094.—**Sowing lawn seed and planting Hollies** (*J. W. T.*).—Any time during the next month would do for planting the Hollies, after which the lawn seed may be sown. The best time for sowing the lawn seed and for moving the Hollies is after showery weather, when the ground is moist.

13095.—**Growing Holly' from berries** (*W.*).—Holly berries do not germinate until the second year after sowing. Sow now in ordinary garden soil in the open. If you intend to sow a quantity the better plan would be to mix the berries with soil, and leave in a heap in some convenient place, then sow a year hence.

13096.—**Cytisus out of flower** (*E. S. O. R., Putney*).—It must be cut in and grown on for another season's bloom. Whether it wants repotting or not depends on the size of the pot and the state of the roots. Probably it does. It should not be planted out in the neighbourhood of London.

13097.—**Saucers for pots** (*Amateur, Hammersmith*).—The drawback in the use of saucers is that the soil in the pots is apt to become too sodden, but they may be used for plants that require a great deal of moisture. If you place the pots on crocks, so that the soil is not in actual contact with the water itself, the plants would take no harm.

13098.—**Hardy annuals in washhouse** (*C. E.*).—A good deal depends on the windows of the washhouse. You had better put the boxes out-of-doors (making the soil firm and an inch lower than the edge), and put a pane of glass flat over the whole. When the seeds begin to sprout gradually admit air.

13099.—**Plants for river bank** (*H. E., Surrey*).—Evidently, from what you say, your hope is in bold groups of perfectly hardy plants in easy, natural-looking masses near the river's edge. Irises will do, a variety of them—tall kinds, be it understood; the Bog Bean will make a nice fringe in the water, and the handsome, tall, deep-coloured Loose-strife (Lythrum) will suit. The Flowering Rush and the Arrow-Head you will, of course, also have in the water. We have seen the Flame flower, or Tritoma, do beautifully on the edge of a lake, and so do the Day Lilies, Hemerocallis.

13100.—**Carnations in conservatory** (*E. C. G.*).—You doubtless allude to the old Clove Carnation, which abhors being stifled in a greenhouse. Plant them out now in a good border of soil, and take care that it is well drained. This kind of Carnation does not succeed well in pots.

13101.—**Amaryllis treatment** (*E. W. B.*).—The bulb you sent is evidently an Amaryllis, which requires warm greenhouse treatment. Treat liberally throughout the summer, and slightly dry off during the winter. Judging from your bulbs, we should say they will flower in about two years' time.

13102.—**Manuring Tulips** (*Oakleigh*).—You have done wrong in giving your Tulips manure. Bulbs, particularly Tulips, and such like, require little, if any, manure. To get Tulips in flower early you must submit them to a gentle heat, but never to a strong heat. Forced Tulips are in flower now, and have been so for some weeks.

13103.—**The "Ginger Beer Plant"** (*Constant Reader*).—The only plant in or near your letter was a Freesia. Will you tell us more about the making of ginger beer from the plant? We think its manufacture is facile enough already, and are not over-pleased at the idea of any garden subject lending itself to the art of the ginger beer manufacturer.

13104.—**Taking mulching off Roses** (*Macduff*).—Mulching for Rose roots is somewhat like flannel on the human body—it had better not be taken off too soon in spring. We believe some people let it wear off, and this is certainly the best plan in the case of the mulching, which, when decayed, forms a very nice top-dressing, and prevents drought.

13105.—**Plants beneath staging of greenhouse** (*Amateur, Hammersmith*).—There are very many plants that would flourish in such a position, particularly Ferns, Lycopods, and large-leaved Begonias, the chief essential being that the soil should be well drained and of good depth. Any of the small-growing greenhouse Ferns would suit the place.

13106.—**Greenhouse plants and foggy weather** (*Oakleigh*).—The advisability or otherwise of opening the windows on a foggy day depends upon what the greenhouse contains. If the plants are hardy the admission of air throughout the winter would not harm them, but if tender you must ventilate carefully, and the admission of foggy air would be detrimental.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—Ed.

The Four O'clock plant (*Gardenia*).—Plants from abroad are seldom worth raising, unless gathered by some intelligent collector who knows that they are new. Raise it in the stove or hothed, and let us see what it is. ——Pink and white Begonia (*M. G.*).—It is impossible to name the plant from the vague description you give.——Mouse trap (*J. S.*).—Thanks for your contribution. We fear it would be unintelligible without the diagrams, and they are hardly distinct enough.——Procuring American Wonder Pea (*J. C. L.*).—Any nurseryman will get it for you.——Procuring Everlasting Pea (*M. J. A., Edinburgh*).—Any good hardy flower nurseryman should supply you with Everlasting Pea and the other plants you name. There are several such in the city from which you write. ——Lilium auratum (*E. C. G.*),—Directions as to the culture of this and other Lilies have been published in Gardening from time to time. See among others Nos. 241, 244, and 252. For back numbers apply to the publisher. ——Fruit not setting (*C. A.*).—We cannot advise you unless you give us particulars of the way in which your trees are growing. It seems strange that Cherries should flourish and the other fruit be such a failure. If you describe the details of the soil and the treatment we may be able to assist you ——Volumes of Gardening (*Dr. M.*). Yes; bound volumes of Gardening can be obtained with indices.——Lobelia cardinalis (*Mrs. H.*).—Any nurseryman growing hardy plants will supply you. Readers who ask us where to obtain plants and seeds supplied by every nurseryman should refer to our advertisement columns, in which scarcely a thing wanted by gardeners may not be found.——China Asters (*Rutherglen*).—Any good seeds man ought to supply you with the best strains of these. The German varieties are the most noted.——Junions value of Auriculas (*F. M. K.*).—If you possess really good seedling Auriculas we advise you to send them to the flower show of the National Auricula Society, to be held during next month. The committee there would give your their opinion.——Obtaining Travellers' Tree (Ravenala) (*R. H. T.*).—This plant is rare, and few people have the means of growing it. We have no doubt you could get it from the large London hothouse nurserymen, but it is hardly worth getting unless you have a winter garden as big as a field. It would not do in a cool greenhouse.——Queries in Gardening (*Miss G. M. S.*).—See "Rules for Correspondents" at the head of the query column.——Index to Gardening (*Miss Steele*).—A general index to Gardening is published every year in March.——Procuring Peas and Potatoes (*York*).—The Williams Hurst Pea and Select Ashtop Potatoes mentioned by Mr. Gilbert may be procured from Mr. Laxton, seed grower, Bedford ——Address (*J. T. S.*).—Mr. Sweet's address was given at the foot of the article—Cathcart, Glasgow.

Names of plants.—*F. H. S.*—Cypripedium venustum; yellow one is Narcissus Bulbocodium.——*W. C. F.*—1, Habrothamnus fasciculatus; 2, Fiepeltis peltatum; 3, Polytichum aculeatum.——*M. L.*—Withered beyond recognition.——*W. Johnson.*—1, Saxifraga sarmentosa; 2, Lysimachia Nummularia (Creeping Jenny); 3. Send in flower; 4, Abiplum Mas cristatum.——*Vera.*—Tradescantia repens.——*Mrs. Salway.*—Dogwood (Cornus Mas).——*T. Harvey.*—Eupatorium ageratoides.——*W. F.*—Apparently Narcissus Jonquilla.——*J. J.*—Pteris serrulata; Adiantum cuneatum.——*Crondall.*—Apparently a Hypolepis, but cannot be certain without seeing fertile fronds.——*Elmo.*—Lonicera fragrantissima.

ILLUSTRATION COMPETITION.

We now propose what we hope will be an interesting and what will in any case be a harmlesss competition among our readers. The purpose is to get pretty or suggestive pictures of any gardening objects of interest, whether from the open garden, the hothouse, greenhouse, or room decoration. The best photographs or drawings in black and white of objects of gardening interest that are sent to us during each month will be engraved as soon as possible in the most fitting manner for publication in Gardening. That is, perhaps, the best honorarium we can bestow upon the winners, but the senders of the chosen pictures will also be entitled to receive not less than one guinea's worth of books, useful for garden reference or practice.

Photographs of the outdoor garden should be taken with a lens adapted for the purpose—some photographers use lenses unfitted for landscape work. All photographs sent must be clear, the subject intended to be shown in good focus, and of a size to be distinctly seen; imperfect photographs will not be admitted to competition.

Figures of men or women, barrows, vases, and all similar objects, should, as a rule, be omitted from all photographs.

Photographs or drawings should be addressed to the Editor of Gardening, and marked "Illustration Competition." The name and description of each object sent should be distinctly written on the back of every photograph or drawing.

The photographs may be those of objects in one's own possession or cultivation, or of any others that may be obtained, but the source whence they are derived should be stated, and none sent the copyright of which may be questioned.

Unmounted photographs will do as well as mounted.

Drawings and photographs for the first competition must reach us by April 25th.

FRUIT.

PLANTING UNDER FRUIT TREES.

We sometimes see the practice of growing vegetables and fruit together on the same piece of land condemned; and there is not the least doubt that in laying out a new establishment, where economy of labour and size and quality of the produce are prime considerations, having separate compartments for the two kinds of garden produce is much the better management. But there are often other and more weighty considerations that influence the occupier. His principal motive in having a garden may be the pleasure he expects to enjoy in viewing and walking over it, and a garden on the plan recommended might be to him tame and uninteresting. Again, in many old establishments the needful drastic alterations to carry out the plan under consideration would necessitate the doing away with many valuable fruit trees which it would take years to replace. Moreover, many occupiers are but tenants, and cannot do as they like with regard to making alterations. To those upon whom any of the conditions just enumerated have a deterring influence a few words of advice as to what is best to be done under the circumstances might not be unacceptable.

That good wall fruit can be got where the borders are cropped with vegetables, I think no one can deny, and that heavy crops of fruit can be secured from standards under which the ground is yearly dug close up to their base, I have myself seen scores of instances to prove; and anyone residing in the country, in his walks abroad at the proper season, if he makes good use of his eyes, must have observed the same thing. But doubtless many readers of Gardening have noticed that while some trees under the circumstances in question are fruitful and vigorous, others on the same situation are unfruitful, and some are stunted, cankered, or otherwise diseased. The proper remedy for this state of things is a careful selection of varieties, heading back the unfruitful varieties, and regrafting with such kinds as will do well on the soil, and under the circumstances in which they are required to grow. The cankered trees should also, if not past remedy, be cut down below the diseased part and re-grafted. The subsoil in my neighbourhood is a stiff clay. Many of the trees are cankered and unhealthy, especially the old espaliers, where the necessary restrictive pruning lowers the vitality of the tree, and renders it less able to resist disease. Some also are unfruitful, but there are about half-a-dozen varieties that have all the valuable points requisite in a fruit tree—viz., fruitfulness, immunity from disease, and vigour of growth in the tree, with quality of fruit. Root-pruning, as is well known, will, where barrenness is accompanied by luxuriance, bring a tree into bearing. It checks the luxuriance by cutting off the supply of sap, and it causes fibrous roots to be formed nearer the surface. But though these conditions produce fruitfulness it is done at the expense of a part of the vitality of the tree, and roots are too often enticed to the surface to be dried up by the summer's drought. We see that deeply placed roots and over luxuriance go together. Now, the same conditions that in one tree will cause barrenness will in another tree of the right stamp enable it to produce heavy crops of fruit without materially impairing its vigour. I think we are now come to the reason why digging under fruit trees, when we have the right sort, does not perceptibly injure the trees nor impair their bearing capacity, very deep seated roots being an accompaniment of vigorous growth. After all it is the deep lying roots that the fruit tree has to fall back on in the time of its greatest need—in time of drought, in the latter part of the season when it is most heavily taxed to support the maturing fruit.

Although I have witnessed innumerable instances where heavy crops of fruit are obtained from land planted with vegetables, I have seen but very few cases where even fair crops of vegetables have been grown under fruit trees. The causes of failure are generally insufficient manuring, planting the wrong kinds or the wrong varieties of vegetables, and not allowing sufficient space for the plant to make up by leaf expansion what that organ loses in impaired functional activity from deficient light. Early Potatoes will do fairly under trees. They can be planted earlier than in the open, the branches of the trees giving shelter from early frosts. Then the plant will have extra time to make up for slower growth. Late Broccoli do well under trees, as they do their principal growing whilst the leaves are off the latter. The branches afford them shelter. Early Turnips will do very well too, and salads in the summer time. Here the Violet bed can be made. Black Currants do well under trees. We get some excellent White and Red Currants in the same situation, and also very fine Gooseberries, but they ripen much later than in an open situation.

The following statement might be interesting and encouraging to some readers of Gardening. It proves what can be done where gardens are too small to admit of vegetables and fruit being produced in separate quarters. In the autumn of 1881, I saw in a cottager's garden a clean, good-shaped Beauty of Hebron Potato dug up within 15 inches of the north side of the bole of an Apple tree, about 16 inches in circumference. A little farther away, not beyond where the tree cast its shade, nor beyond where its roots extended, a larger one was lifted, but this was badly shaped. The first on being weighed was found to be 1 lb. 3 oz., the other was exactly 2 lb. in weight. At the other end of the garden I was shown the spot—between two Apple trees which alternately during the day shaded it, and both of which must have occupied it with their thin roots—where the winter previous a Parsnip was lifted $16\frac{3}{4}$ inches round, and 22 inches in length. The Parsnips were drilled 18 inches from rank to rank. This was the second year of the man's occupation of the garden. The garden was 9 rods, and it was about 40 yards in length. Lengthways through the centre of the plot, at irregular distances, stood nine Apple trees, with stems averaging about 18 inches in circumference. When he took the house and garden a neighbour told him that the garden was of no use, as it would bear neither fruit nor vegetables. He asked his landlord about it, and the latter told him that all the garden required was manure

and proper management, and it would bear anything. He said that his last tenant had not put any manure to the land the whole time he was in occupation (eight years). Thus encouraged our cottager set to work. He got four loads of stable manure. He bastard-trenched the whole of the garden, and laid the four loads of manure on the top of the bottom spit. The subsoil was a stiff clay. At planting time he top-dressed the surface with three sacks of soot. He headed back and regrafted two of the Apple trees. He thinned the branches of the other seven to let light to every part, and also to let more light through to crops growing below. He had scarcely any Apples during the first year, but the second year five of the trees bore good crops. The first year his largest Potato was 1 lb. 2 ozs., but it was an Early Vermont, which does not grow to so large a size as the Beauty of Hebron. The second year he did not apply any stable manure, but he put a heavy top-dressing of soot. He forked between the Potatoes as soon as they were up in ranks, and kept the ground scrupulously clean from weeds.
Newport, I. W. L. C. K.

The cut-leaved Birch (Betula alba laciniata).

REPLIES.

12984.—**Border for Vines.**—Turf is not absolutely necessary for your vine border, and, assuming that you do not intend to make a new border altogether, you cannot do better than get some good heavy loam and mix with your sandy soil. This loam need not be the top spit (as gardeners call it), with the turf attached, but a heavier material altogether, that can sometimes be got from old hedge banks. This material, mixed with an equal part of your staple soils, will make a fairly good border, especially if the surface can be mulched over every spring with a thick layer of half-rotten manure. If you must plant the vines in the soil in the condition it is now in, you must rely on rich surface dressings and frequent applications of liquid manure during the season of growth to give sufficient strength to your vines to enable them to make good growth. Put on a rich surface dressing early in April, and directly the manure is spread on the surface give it a good watering, which will wash some of its manurial qualities down to the roots. Peruvian guano, at the rate of ½ oz. to 1 gallon of water, makes an excellent stimulating liquid, that in your case would require applying once a fortnight from the beginning of May until the end of August, allowing at each application 2 ozs. of guano to every square yard of ground. A width of 8 feet is as little as you can expect vines to do in, but if you can add another 4 feet so much the better. The depth of your soil is sufficient, and the gravelly subsoil of your garden is better than a clay one.—J. C. C.

12819.—**Washing fruit wall.**—Unless it is desired to effect a difference in the appearance or colour of the wall, there is nothing better or cheaper than soft soap in solution at the rate of 4 oz. to the gallon, applied with a brush, at a temperature of 130 degs., brushing it into all the crevices. A little sulphur or Tobacco powder may be added; but the soap alone is a most efficient wash.—E. Hobday.

12841.—**Culture of Blackberry.**—There is probably a brilliant future before our common Blackberry. The plan usually adopted in Blackberry culture (and I think a good many people are turning their attention that way) is to plant in lines, and train to a wire or some other fence; but I don't think this is so good a plan as planting on mounds. The deeper the soil the better, and by forming mounds from 6 feet to 8 feet apart, and planting on the top, the plants attain luxuriance and the wood ripens well, and an all round sort of character is given to the groups which just seems to meet the wants of the Blackberry. The Blackberry will go a good many years without much pruning. Drive a stout pole into the ground, plant the Blackberries at the foot, and train up the shoots till they form a conical-shaped mass, when the quantity of fruit which may be gathered will be immense. The American Blackberries may be treated in the same way; but, under cultivation, it is probable our own native will be as valuable.—E. Hobday.

12979.—**Guano for old vines.**—As you say your vines are strong, I do not see the necessity of applying stimulants. If they bear freely and regularly now such applications will not increase their fruitfulness; on the other hand, if they make good strong wood, but do not give many bunches, it will be far better to lift the roots in the autumn and replant, taking advantage of the operation to give the roots some fresh soil.—J. C. C.

Gooseberries and caterpillars.—As much has been said lately in Gardening on the subject allow me to say that I have tried the following plan and found it successful: About the end of February, or the beginning of March, I well strewed the ground with wind-slaked lime, and forked it in. I have tried the above for about seven years, and have never known it fail.—*J. L., Cornwall.*

12941.—**Vines and turpentine.**—The result has proved conclusively that the turpentine applied with a brush has killed the vine eyes. It is very undesirable to practice on vines with such dangerous substances as the above, paraffin, &c. The best dressing for vines at rest is made thus: Dissolve 4 ounces or 5 ounces of soft soap in a gallon of water, add to it a pint of Tobacco liquor, and thicken it with flowers of sulphur; a little soot added is desirable. Work this well into the vines with a stiff brush.—J. D. E.

TREES AND SHRUBS.

THE CUT-LEAVED BIRCH.

We hope our readers, in planting their lawns and shrubberies, will never forget to give a good place to this charming tree—planting it not merely so that it is crowded up by other things, but, if possible, singly, or in a small group where it can show its beauty. It is worthy of the most prominent and conspicuous position on the lawn; although it is a rapid grower and attains to a considerable size, it is equally well adapted for large and small grounds, and wherever planted always contributes towards rendering a landscape charming and effective. Were we limited to a single ornamental tree we should have no hesitation in selecting this in preference to any other. It is most graceful, and deserves to be better known and more widely disseminated. Young's Weeping Birch and the Weeping White Birch (Betula alba pendula elegans) are also good varieties. M. G.

REPLIES.

12928.—**Barked Trees.**—If the bark has been removed all round the base or main stem of the tree, whether old or young, nothing will save it; there is no artificial composition that can be made a substitute for the natural bark, and perform its offices. I have just lost three young trees, the bark on which was removed all round the stem rather later than this last year; the sap had risen and they threw out their leaves, but this spring they are as dead and dry as rusty door nails.—J. P., *Lancashire.*

— — If the tree in question is not entirely ringed, as is sometimes the case from hares eating the bark round, it may be cured by shield grafting. Cut the edges of the wound even, then from another tree of the same age and family cut a slice to exactly fit the wound, cover the edges with grafting clay, and bind

with straw bands. It is not necessary that the tree should be of the same kind; thus a shield of Plum may be applied to a Thorn, of Poplar to Willow, and, as the grafted piece retains the character of its parent, curious effects may be obtained by inserting shields of different sorts.—A. B. T., *East Anglia.*

THE COMING WEEK'S WORK.

Glasshouses.

Achimenes and Gloxinias.—As soon as Achimenes started early have made an inch or two of growth they should be placed in their blooming pots or baskets, whichever are used. A few more ought now to be started, and a portion reserved to be brought on later, for if it is deemed desirable to have them in bloom for a lengthened period they must be started at different times. Some of the old bulbs of Gloxinias should now be potted and placed in a brisk heat, but as soon as the tops begin to move they must be put as near the glass as possible. If not already sown, a little seed should be put in.

Eucharis.—Now that the season is coming on when the sun may be expected to have a good deal of power, see that these plants are not too much under its direct influence. Many persons fail to grow them through an inability to keep their leaves in a healthy state. The most frequent cause of this is exposure to the sun, to which, unlike almost all other cultivated bulbs, they have the greatest dislike unless they are placed far from the roof. Plenty of pot room is essential to quick growth and free flowering, and if small specimens are deemed the most desirable they should be divided, and the bulbs placed three or four together. If by any chance the plants are strong and do not flower so freely as they ought to do, the shaking out and separation needful for their being put in small pots is almost sure to have the effect of throwing them into bloom. Soot water made moderately strong will usually free the soil from worms. If the plants are at all affected with scale or mealy bug, the sponge ought to be well used before the higher temperature causes them to increase more rapidly.

Calceolarias. — Comparatively few soft-wooded subjects are more useful or effective for conservatory or greenhouse decoration in spring than shrubby Calceolarias, and, considering the small amount of trouble with which they can be had in good condition, it seems strange that they are so little grown. By cutting them back each summer when the flowering is over, like Pelargoniums, but not shortening the shoots so close as in the case of those plants, they will last for a number of years, attaining a large size, and blooming so profusely as to all but hide the leaves. Old examples, fairly well wintered, if given a shift now into rich soil and kept in a temperature of from 40 degs. to 45 degs. in the night, and quite free from aphides, will form strong bushes full of flower by the beginning of May. Among yellows the old bedding variety, aurea floribunda is one of the best; the darker coloured kinds succeed equally well. Young plants now in their blooming pots should be kept a little warmer than ordinary cool greenhouse stock if they are wanted in bloom early. Herbaceous Calceolarias also ought now to be accommodated with a little warmth, set close to the glass, and given plenty of manure water. The most essential matter in the cultivation of these plants is to see that they do not get injured by aphides.

Fuchsias.—See that everything needful is done to keep Fuchsias struck last summer moving freely, as any check as regards want of pot room, or keeping them too cold, will throw them into a premature flowering state, after which little progress in size is possible.—T.

Humea elegans.—This old-fashioned plant deserves a place wherever room can be found for it. It is not only elegant in growth, but it has the additional merit of being at its best at a time in summer when there is usually a scarcity of conservatory stock. To have plants of it in good condition they must now be moved into large pots, as if cramped for root space they will be deficient in size and the lower leaves will not keep fresh. Aphides must be regularly sought for.

Flower Garden.

General work.—Mowing must now begin, for negligence in this matter results in coarse Grasses and a sickly coloured sward throughout the summer. Plently of rolling, a dressing of soot or wood ashes, and early mowing ensure a fine velvety turf at all times. It is time that lawn Grass seeds were sown; level and rake the surface fine, sow on a still day, rake the seeds well in, and roll frequently, but particularly after a frost, which upheaves the ground. Edgings of turf not yet trimmed should be so without delay, as they will soon be too dry to be operated on neatly. Walks, too, should ere this have had all necessary repairs done, and have received surfacings of fresh gravel, and rolling should be repeated after each heavy rainfall, till they are hard and firm to the tread. Walks under trees are apt to get Moss-grown and discoloured; in all such spots apply a sprinkling of salt; this will remove the discolouration, and add brightness to the gravel. Laurel and other shrub pruning should be completed forthwith, as should also any planting that yet remains to be done. Vacant beds and borders should be dug or trenched, and, with the view of lessening the pressure of work at the general planting-out time, all kinds of plants that can now be put out with safety should be planted.

Fernery and rock garden.—Most kinds of Ferns are now throwing up new fronds, and before they get so much advanced as to be injured by working among them, all old fronds, weeds, and new plantings, or rearrangements, should be completed as early as possible. Remove the mulchings and give fresh soil to any plants needing that attention. This is the best season to plant out Ferns; therefore any new additions to this department should be furnished forthwith. Plant carefully, make the soil about their roots firm with the hand; after that give them a good watering to further consolidate the soil, and unless the weather proves exceptionally dry no further artificial watering will be necessary. An immediate furnished effect may be had by intermixing with the Ferns a few compact growing shrubs, such as Thujas, Retinosporas, and Irish Junipers. A free use of mossy Saxifrages and Sedums as a carpeting for Ferns is both appropriate and desirable, as they furnish the ground until the Fern fronds have become fully developed. The rockery is now beginning to look gay; Aubrietia Campbelli, Phlox verna, and Lithospermum fruticosum are one mass of blossoms, and others are fast unfolding. Many kinds may still be planted, and if when the stock of plants has become exhausted there are still vacancies, these may be filled in by sowing Mignonette, Silenes, Virginian Stocks, and in fact any of the dwarfer spreading annuals.

Fruit.

Vines.—Disbud, tie down, and stop succession houses as the vines advance, and remove all surplus bunches from free setting kinds as soon as the most promising for the crop can be decided upon. Early Muscats having plenty of fresh active roots working in inside borders may also be divested of ill-formed bunches, provided a fair percentage of the best are left to choose from after the Grapes are set. Draw the points of the bunches up to the light when in flower, fertilise with Hamburgh pollen, and let the heat range from 70 degs. at night to 85 degs. by day, and 90 degs. when solar heat is available. Grapes now swelling must have a liberal supply of moisture charged with ammonia, and as keen easterly winds with bright sunshine frequently prevail in March, guard against checks from draught by shutting off fire-heat early on fine mornings, by timely ventilation, and by early closing, with sunheat at a temperature of 85 degs. to 90 degs. As the stoning process approaches, allow a free and easy growth of laterals, stimulate the roots with warm diluted liquid, and aim at a steady night temperature of 65 degs. to 68 degs. with a little air. When this strain upon the vines is over, sharper forcing may be indulged in if it is really necessary, but the figures just named are quite high enough for all Grapes that do not come under Muscat treatment. Endeavour to give late vines as long a growing season as possible by shutting them up with strong sun heat; syringe the rods several times a day, and maintain a moist atmosphere by damping the mulching material every evening. Vigorous young rods which have never borne fruit will require dexterous handling to get them to break evenly, particularly where the young beginner has been led or misled into leaving his canes long enough to carry a crop which his vines cannot finish; but much may be done by tying down the points and elevating the dormant buds over heaps of fermenting material placed on the borders.

Hardy fruit.—See that all mulching is well done to newly-planted trees before they suffer from the effects of drying winds and bright sunshine. Tread the soil firmly if it is dry before the manure is put on. Where in low damp gardens the topping of Raspberries is put off till spring, cutting back may be performed in March, and if well mulched early in the autumn a hand-weeding will complete this part of the garden for a long time. Lock over Strawberry beds, remove all weeds, spread down the mulching and rake off before the crowns become too prominent.—W. C.

Vegetables]

Fill up blanks in Cabbage and Lettuce quarters, and keep the soil well cultivated between the rows. This is about the very best time to make a selection of Broccoli for seed. Some seeds of Brussels Sprouts should now be sown. It is well to make sowings of this vegetable twice—at the present time and again later on; the later sowing will form Sprouts late in the autumn that will stand better through the winter than those sown earlier, but the latter furnish the finest produce. A little Cauliflower seed should also be sown at the same time. It is advisable to coat the seeds with red lead as a preventive to the attacks of birds. A little sweet oil used in place of water before the powdered lead is dusted upon the seed will cause it to adhere better, and prevent it being removed either by wet or by coming in contact with the soil.

Potatoes and Peas.—More early and second early Potatoes should now be planted. For the earliest in most soils Kidneys are preferable to the Round varieties, being much better for the table in a young state. Peas sown in turves or boxes should now be planted out; give them a sheltered situation in the driest part of the garden, and choose a day when the soil is tolerably dry; where it is so moist as to become compressed by treading upon boards should be used. As soon as the Peas are planted draw a little soil to them, and at once stake them with small sticks, placing outside these a few branches of Evergreens to protect them from cold windr.

Forming a rookery.—"A Subscriber" asks for information as to the best means of forming a rookery. The following plan recommended some time ago in the *Field* has, it is said, been very successful:—"Let seven or eight young ones be taken from the nest and brought up by hand, their food being soaked dog biscuit, rough meat (but not stale or salted), worms, grubs, and a little bruised Hemp seed. When they can feed themselves they must ultimately be put into a wire aviary with perches kept clean, but not handled by any means from first to last. Supply them with soft water. About a fortnight before the nesting time commences (in the following spring) these birds must be kept rather short of food during the day, and placed under the trees or under baskets, so inclosed that the wild birds cannot possibly see them, as this event would mar the project *in toto.* The continual cawing of the tame birds is all that is aimed at. I have seen a rookery of sixty nests created in the first season after this experiment. I should decidedly recommend that half-a-dozen compact old nests be secured after flight time. These, tied by a knowing hand in the topmost crutches of the trees, about the 20th of February, will add tenfold to the attraction. Of course the said nests must be carefully taken down and preserved and tied in their places in spring. A couple of circular bands of soft string interwoven judiciously through the texture of the nest will effect this object. The birds must never have their liberty. In summer a little fruit and Potatoes, and in autumn Walnuts and Acorns (cut up) will form an agreeable change in their diet."

THE KITCHEN GARDEN.

INTERCROPPING.

I READ the article on this subject in a recent number of GARDENING (see March 7) with some interest. As an amateur gardener I have paid some attention to this useful course, and its results have been exceedingly satisfactory. The point to be aimed at, it seems to me, is to make every square foot of ground as productive as possible, and this object is, in my opinion, best accomplished by a vigorous application of the principle of intercropping. As my experiments in this direction have been much more extensive than anything that appears in the article to which I refer, I venture to indicate a few of them for the benefit of your readers. I plant early Cabbages and early Cauliflowers on the strictly orthodox plan as to distance, &c., and when these have made fairly good growth I proceed to run a row of late plants between each row of early ones. As fast as the first crop is cleared out I am at work with the spade "earthing back" upon the newly-planted crop. The frequent and deep ridging which this method involves I find to be of immense good to the earth itself. My ground, which is naturally stiff and heavy, is considerably more mellow than that of my neighbours. An experiment, which I tried last year for the first time, and which was very successful, was this: Between the rows of Broad Beans, early Peas, and dwarf Kidney Beans I planted winter vegetables extensively. The second crop in this case consisted of late-flowering Broccoli, Savoys, and Daniel's Colossal Sprouts. In each case I cleared the ground at the earliest possible moment, and ridged the earth up for the benefit of the new venture; and in each case I had the satisfaction of raising a second harvest of the highest merit. I recommend this course especially with regard to Sprouts, as all experience tells me that these plants must be well-grown early in the season if an adequate crop is to be realised. If the young plants are put between rows of Broad Beans they are practically "forced" by their own efforts to get to daylight, and all they require when the Bean-stalks are removed is to have a liberal supply of earth for the purpose of strengthening and supporting them against the strong winds.

An essential feature for the success of intercropping is manuring on common-sense principles. My own method is this: I never in any case put manure into the hole in which a Cabbage is planted, because in a week or two the roots have got outside the supply and are feeding upon the bare earth. When my ground is roughed over in early spring, a good coating of manure is thrown on and allowed to saturate the entire ground. As soon as gardening operations commence a second coating is added, and on this foundation the seeds are sown and the plants inserted. This principle has this important advantage—there is not a single inch of soil into which I cannot plant anything without feeling absolutely certain that the earth is in every respect equal to the work I expect from it. I have never grown a second crop between rows of early Potatoes, because I believe it to be more profitable to use that ground for late Turnips. Early Turnips I never grow, for the simple reason that when they are coming in nobody cares a great deal for them, because there is at that time such an abundance of vegetables of a more attractive character. A good crop of late Turnips is, however, an immense advantage in winter. I may add that my little garden is at the foot of the Peak "Hills," and that I have to contend with climatic and atmospheric conditions which are by no means the most favourable. Industry, combined with acquired experience, however, enables me to conduct operations to such good purpose that my gardening is a decided financial success, plus the advantage of a wholesome supply of seasonable garden stuff all the year round. I am consuming my last year's Parsnips and this year's Rhubarb; meanwhile waiting patiently for an early Cabbage.

PEVERIL.

Tomatoes in pots.—Now that Tomatoes have secured such popularity in this country it may interest some of your readers to know that really good crops can be grown under pot culture. In the large majority of villa gardens small glasshouses exist, which, employed principally for the storage of bedding plants, are in a great measure unoccupied through the summer months. In such houses there is generally no accommodation for planting out, but that is no hindrance to successful Tomato culture, as by employing pots large enough, and generously feeding the plants from the time they come into blooming, a larger amount of fruit can be grown than might be thought. Vigorous young plants should be put into 8-inch or 12 inch pots, and be placed in the sunniest position in the house. They will be sure to fruit, the root restriction making them bear freely. A plant in an 8-inch pot will carry a dozen good fruits, providing the plants are fed liberally from the time they begin to swell. Good loam should be used for potting, and the compost should be made firm. Either the shoots may be turned up the rafters or the plant may be tied to a stake. It little matters in which way the training is done—the size of the house and the space between the stage and the roof must determine this.—J. CORNHILL, *Byfleet.*

REPLIES.

12930.—**Growing ridge Cucumbers.**—The course to adopt in growing these and Vegetable Marrows is much the same. Sow the seed the beginning of April in 4-inch pots filled with good rich light soil, putting two or three seeds in each pot, and covering the seed about ¾-inch. Place the pots in gentle heat, and keep the soil moist. The plants will soon show, and, as they grow, gradually harden them by placing the pots on the surface, and then on a shelf in the greenhouse. Get your ground ready for planting out by the beginning or middle of May, according to season and locality. This is done by digging out a barrowful of soil and filling the hole with well-rotted manure, slightly raising it with a mixture of fine soil above the level of the ground. These, for Cucumbers, should be placed about 4 feet apart, and one pot of the seedlings plunged in each mound. If preferred, a continuous ridge may be adopted. The Vegetable Marrows should be plunged 6 feet apart. Protection with a hand-glass at first will be benefieial. Occasional stopping of long shoots will be necessary. The plants should be pegged down to keep them steady, and well watered in dry weather.—J. P., *Lancashire.*

12681. — **Celeriac or Turnip-rooted Celery.**—I have cultivated this for years, with every care and attention, on the plan advised by "A. A. E. A." and "J. C. C.," with no better result than the miserable root I send you by Parcels Post. This is entirely different from the fine large bulbs I have bought from German shops in London at 6d. each. I have got my seeds from the people advertising themselves as seedsmen to emperors, kings, and princes. It is a very delicious vegetable, and well worth cultivating if tubers like those imported could be had.—ELLCEE. [The specimen sent is sweet and sound, but certainly leaves much to be desired as regards size. Will "Ellcee" state if he gave it as much manure and moisture as common Celery gets? We have seen people planting this without a particle of manure or any of the special and great attention that every grower gives to Celery, and yet expecting it to do well. We quite agree with "Ellcee" that it is a most delicious vegetable as grown and cooked on the Continent, and there is nothing to prevent us enjoying the same vegetable here. If none of our readers can tell us how to get roots as big as those imported, we will ask some of our Continental friends to do so.—ED.]

12933.—**Vegetable Marrows.**—The treatment given was quite right. Sow in a little heat in April, and plant out about the end of May. If the plants grew freely, but did not fruit, the only reasonable suggestion is that the variety was not a good one. We grow Moore's Vegetable Cream, and find it grows freely, and bears plenty of good, well-shaped fruit.—J. D. E.

12945.—**A Cucumber enemy.**—If "J. C." would place that much despised friend of gardeners, the toad, in the house or frame where his Cucumbers are grown, he he would find the enemy speedily disappear.—J. R.

12987.—**Keeping Seed Potatoes.**—The best plan to keep Potatoes from unduly sprouting is to spread them out on the floor of a cool dry shed, where frost cannot reach them.—J. C. C.

HOUSEHOLD.

VEGETABLE COOKERY.

AMONG the numerous branches of the great subject to which the pages of this journal are especially devoted few can be more important and interesting to its readers than that which we now propose to treat of in this and succeeding chapters, viz., the selection and preparation of the bountiful provisions of nature in the vegetable kingdom for use as the food of man. Without accepting the advanced theories of those who maintain that vegetable foods only are necessary to sustain a healthy and vigorous strength, and that to partake of animal food is pernicious and contrary to the laws of Heaven, we must readily admit that vegetable foods are absolutely necessary to a healthy condition in man, and a total abstinence from animal food is less likely to result in injury to the system than a rigid adherence to any dietary which does not include a large proportion of vegetable products.

The endless variety of this class of food not only constitutes one of its greatest charms, but adds immensely to its economical usefulness in the production of physical energy; for if one thing is better established than any other in the recent researches upon diet it is this—that a continual change of food is essential to health. And, with the recurrence of the different seasons, nature provides us with a constantly changing and abundant supply of vegetable foods, palatable and nourishing, which afford opportunity for a continual and agreeable variety, sufficient to satisfy the most exacting appetite. The exercise of a proper discrimination in the choice and preparation of vegetable food will result in the maintenance of good health with all its attendant advantages. Much disease may be averted, and many doctors' visits rendered unnecessary, to say nothing of minor ailments and indispositions, by a judicious use of the various kinds of vegetables procurable in our ordinary markets. The salts and other constituents of fresh green vegetables especially tend to cleanse and purify the blood, clear the skin, and complexion, regulate the process of digestion, and add fibre to the muscles, and substance to the bones.

An important element in the selection of vegetables is the consideration of what may be "in season." The flavour and all the good qualities of a vegetable are at their best when it has grown on a natural soil, without forcing and has been ripened in its proper season. Those ambitious people who think it an achievement, because of its costliness, to furnish their tables with food "out of season" as an illustration of their reckless extravagance in entertainment, succeed only in exhibiting their own ignorance and folly, for they would produce infinitely greater satisfaction to their guests by confining themselves to the less expensive and more enjoyable dishes "in season." Another point which should never be lost sight of in the choice of vegetables is to see that they are as freshly gathered as possible. Everyone who has had the opportunity to judge knows the immense superiority of the fruit or vegetable which has been plucked or gathered immediately before it is served. But it is not given to everyone to possess a kitchen garden, and the majority, especially town-dwellers, must go to market for their fruit and vegetables; roots will keep good for a long time after they are dug, but the freshness and delicacy of their flavour are lost as they become dry and cannot be reclaimed. Green vegetables should, when it is necessary to keep them, be placed in a dark room and upon a cold slab until they are required for use, and then the stalks only should be immersed in fresh cold water, as you would a Rose, for three or four hours, and until the leaves become stiff and fresh. Then dip the vegetable, head downwards, into fresh cold water containing one tablespoonful of vinegar—the acid will draw out any slugs, insects, &c., that may be secreted between the leaves and yet leave no ill effects. The old custom of adding salt to the water with this object is now seldom or never adopted, because, although it will effectually remove the slugs, &c., it leaves a slimy unpleasant effect which the best of cooking will fail to overcome. When vegetables are to be served with meat, and form part of the same dish, they should, if possible, be cooked

in the same saucepan. Most green vegetables should be boiled with plenty of water, in which a handful of salt has been dissolved, and with no cover upon the saucepan, and this latter should always be scrupulously clean. As soon as the vegetable is sufficiently cooked it will sink to the bottom of the pan. All vegetables should be served as soon as they are cooked and dished, as both standing and re-heating will considerably impoverish the flavour.

Cabbages are now in full season, and the varieties are numerous, including Cabbages, Savoys, Greens, Brussels Sprouts, Cauliflowers, Broccoli, &c. These vegetables are unfortunately, however, often found to be difficult of digestion, and should consequently be quickly grown and eaten young and fresh. When in the least old or stale it is a good plan to partially cook the vegetable in boiling salt and water for twenty minutes. Then drain it and plunge again into boiling salt and water, and allow it to boil very fast until the stalk is quite tender. Should any species of this vegetable at any time become frozen, do not plunge it into hot water, but place it in a vessel with enough cold water to cover it, and leave in a warm atmosphere until completely thawed. Then treat it as a fresh vegetable. The Cabbage, although it contains a large percentage of water, is rich in gluten or flesh-forming matter. When eaten with Potatoes the combination thus formed very nearly resembles wheaten bread in its constituent parts, and is an exceedingly nourishing food.

To boil a Savoy.—This is a kind of Cabbage distinguished from the winter species by its close heart and wrinkled leaves; it is always more tender and sweet after a frost. Put a large pot of water over the fire and allow it to boil at least one hour before putting in the Savoy; this is in order to soften the water. Remove the stalk and all discoloured leaves from the Savoy, out it in halves if a small vegetable, but into quarters if large; cut away the hard stalk, and after the Savoy is well washed let it lie for ten or fifteen minutes in fresh cold water containing a little vinegar; from this plunge it into boiling salt and water, and let it boil without a lid on the pan for thirty or forty-five minutes, according to its size. Pour all into a colander, press away as much of the water as possible, and it is ready to serve. The serving of this vegetable may be varied as follows (the above-mentioned method is most suitable when the Savoy is to be eaten with hot meat):—If to be served as a separate course, drain the Savoy when it is thoroughly cooked, chop it small, season highly with pepper, salt, and a little vinegar; melt a piece of beef dripping in an iron saucepan over the fire, add the Savoy; toss or stir with a fork until hot through, pile in a hot vegetable dish, and it is ready; or, drain and chop the Savoy, season highly, grease a deep pie dish, put a layer of the vegetable, then a little melted dripping, with a few slices of cold meat, more vegetable, and so on until the dish be full, taking care to have vegetable last; pour over this a little melted dripping, and then cover entirely with fine bread crumbs. Place the dish in an oven to become hot through and brown on the top, but, if more convenient, this may be accomplished in a Dutch oven before the fire.

Kol-cannon.—Take equal quantities of cooked Potatoes and Cabbage (say ½ lb. of each), a piece of dripping about the size of an egg, 1 tablespoonful of milk, pepper and salt to taste, and a few bread crumbs. Crush the Potatoes smoothly, so as to leave no lumps; chop the Cabbage small; melt the dripping in an iron saucepan; then add the Potatoes and Cabbage. Beat briskly with a fork until the mixture is quite hot; stir in the milk, pepper and salt. Have a pie dish carefully greased; pour in the Kol-cannon; strew a few crumbs over the top, and brown it either in the oven or before the fire, and it is ready to serve. This dish may be varied, and made a tasty morsel, by the addition of 2 oz. of finely chopped cheese in the mixture after it has been boiled with the milk, and a little cheese sprinkled over the top with the bread-crumbs.

To boil Brussels Sprouts.—Cut the young Sprouts from the stalk, and pick away all the yellow or decayed leaves; throw them as thus prepared into plenty of cold water, and let them remain in it for twenty minutes or so. Drain them in a colander or sieve, and then put them into a saucepan containing salt and boiling water; let them boil very fast without a lid on the pan until they are quite tender, which, if they be young and fresh, will be in about ten or twelve minutes. To preserve the bright green colour with these Sprouts you must keep the water boiling very fast during the whole process, and have plenty of it. When cooked turn them into a colander to drain, but do not press them, or you will spoil their appearance, and each Sprout should be perfect in its shape as a little Cabbage. Sprinkle over pepper and salt, and they are then ready to serve. Annie M. Griggs.

12942.—**Making skeleton leaves.**—I have made skeletons of many leaves for groups, with good success. My plan is to gather the leaves about midsummer when they have attained their full growth, steep them in plenty of soft water until the outer skin becomes loose, which will probably be in two months. Then wash them well in fresh water, and very carefully remove all the green part. Next steep the skeletons in a very weak solution of chloride of lime until they are quite white, which process occupies about five hours. After this rinse them in clean water, place them between sheets of blotting-paper, and press them with an iron not very hot. For fixing them on stems use isinglass, dissolved in a very small quantity of vinegar. I have found the leaves of Ivy, Poplar, and Pear the most easy to manage.—S. G.

—— I have been very successful in making skeleton leaves, and any leaf that has a little substance in it, like the Ivy, Magnolia, Sycamore, and Holly is easily done; also seed-pods, such as Poppy, Thorn, Apple, Chinese Lantern, and a few flowers. There are two ways of doing them—one by natural decay, by keeping in water for a month or so, and the other by boiling for twenty minutes or so in a liquid composed of a tablespoonful of chloride of lime to a pint of water. Bleach in chloride of lime and water much stronger than that in which it is boiled, but be sure to well wash in clean water afterwards, else it may decay the smaller fibres.—Miss B., *Gloucester*.

—— The following will, perhaps, meet "Adelphee's" requirements (I have found it to be a first-class process, although rather tedious): First dissolve 4 oz. of common washing soda in one quart of boiling water, then add 2 oz. of slacked quicklime, and boil for 15 minutes. Allow this solution to get cool; afterwards pour off all the clear liquor into a clean saucepan, put the pan on the fire, and when the solution is at boiling point, place the leaves carefully into the pan, and boil the whole gently for an hour; boiling water ought to be added occasionally, but sufficient only to replace that lost by evaporation. Try the leaves after they have been gently boiling for an hour, and, if the cellular matter does not easily rub off between the finger and thumb beneath cold water, boil them again for a short time, and when sufficiently softened rub them separately and very gently beneath cold water until the perfect skeleton is exposed. They are of a dirty colour at first, but, to bleach them, make a solution of one large teaspoonful of chloride of lime to one quart of water. If a few drops of vinegar are added, so much the better, for the chlorine is liberated. Allow them to remain in the bleaching solution about fifteen minutes, not longer, or the leaves will become brittle, and cannot be handled without being injured. After they are bleached dry them in white blotting-paper, beneath a gentle pressure. The best time to gather outdoor leaves is from July to September. If indoor specimens, choose the healthiest and ripest leaves. Never collect them when they are damp, and none but perfectly-matured leaves, otherwise failure will be the result.—J. G. Wilkinson.

12861 and 12892.—**Destroying weeds.**—Salt may be used with advantage at any time; but the best time to apply it is on damp days, when it is not exactly raining. Just sprinkle it over the weedy parts of your walks. I may add, in respect to query 12892, that salt is quite equal to either arsenic or soda as a weed destroyer. It is cheaper, will not injure the roots of hedges, and it leaves no ugly marks where it has been applied.—D. D., *North Surrey*.

—— In reply to "E. H. F." arsenic and soda would be of no permanent use in keeping down weeds on gravel walks. The arsenic would be rendered more soluble by the alkali, and would, therefore, be washed away more rapidly by rain. Arsenic, or rather the arsenious acid of commerce, to which "E. H. F." refers, is frequently used as a dressing for Wheat before sowing; it does not impair the germination of the grain, and unless used in an extraordinary quantity it would be still less likely to injure the weeds. My garden paths are made with refuse gravel obtained from a lead mine. This material is of a light slate colour and very heavy, it dries rapidly after rain, and makes the best possible path for garden with which I am acquainted. My paths are several hundred yards long, in first-rate order, and have cost less than 5s. per annum in maintenance during the last five years. No weed of any kind will grow in it; but I advise no one to import it upon any portion of his premises to which poultry have access, as the birds pick out the lead, which is quite as destructive to them as it is to plant life.—Robert King. [We fear many of our readers cannot avail themselves of this excellent means of doing away with weeds.—Ed.]

—— I have much pleasure in stating that I tried arsenic and soda for gravel walks as late as September, that being a hot month; it has killed every blade of weed, none appearing from that time to this. No doubt May is the best time, but I was from home. I can highly recommend it as a certain cure.—T. H. Woolland.

HEATING GREENHOUSES.

(See Questions 12885, 12936, and 12989.)

In reply to your correspondent "M. W. G.," No. 12936, as to heating a small greenhouse, I beg to say his house is very nearly the same size as the one I have, and that a heating apparatus of the same size and construction would answer his purpose exactly by using larger pipes than I have. In a former note to you, which was published in Gardening a few weeks ago, I said the cost of fuel would be less than 6d. per week. The actual cost is as under:—On November 3rd I got half a ton of gas coke, cost 5s. I kept the fire constantly going day and night from that date to January 16th. November, 27 days; December, 31 days; January, 16 days—74 days; say 10½ weeks for 5s. I got the second half ton, cost 4s. 2d., on January 17th, and am still using it, but have not kept up fire continuously. I do not know of any heater like the one I use, which, as previously stated, I made myself; but a near approach to it is one advertised in your journal, made by Franklin, Hocking, and Co., of Liverpool. These are made entirely of wrought iron welded, and are the best of small heaters I have seen or heard of; they are like the ironwork advertised by a Dublin firm some years ago—viz., "will last for ever and then sell for old iron." I do not know F. Hocking and Co. myself, but have seen their boilers in different stages of progress, and, looking at them as an engineer, must say that for small houses there is nothing to beat them—of course excepting my own!

Your correspondent, who uses a coil of 1-inch pipe, must get his fuel cheap or is indifferent as to its cost, for I think anyone conversant with the subject of getting all one can out of a pound of coal will tell him that the amount of heating surface in a coil exposed to the action of the fire is far too small for the fuel consumed to give a result equal to the cost. A further serious objection to coils is the tendency of the fuel to hang, thus allowing the fire to go out at the very time it is most wanted—viz., early morning. In my own heater I burn not only the large coke, but even that that will pass through a ¼-inch mesh riddle, and I have no doubt that Hocking's will do so as well. House cinders would be the best fuel where coke is not attainable, and are far better than small coal, which cakes and sticks, while the cinders fall as those below them are consumed. I am not a maker of heaters, only having made the one in use now after several trials and failures, nor do I know prices of Hocking's heaters; but, as their advertisements are in all your issues, your correspondent can get from them any further information he requires. Engineer.

—— In answer to inquiries in respect of my article of February 28th, I may say that the maker of the stove is Josephs, of Liverpool Road, Islington. I burn paraffin oil, and over the end of pipe I put a flower pot (a 54), which is about 4 inches across the top, and just fits the

e nicely; this prevents the heat rising and injuring the plants immediately above the outlet, and, as there are no fumes that will hurt the plants, there is no need to carry the pipe outside as you would thereby lose a lot of heat. With the aid of this little apparatus I was enabled to have some Scarlet Geraniums in bloom until February 25th. I have a blind on rollers (outside) to shade the house in summer, and in very severe weather I pull this over the house as an additional precaution; as in the case of February 27th—the glass outside recorded 14 degs. of frost, and my plants were untouched. I have two or three Maiden-hair Ferns that are now throwing up their fronds. I should think that, in a house of larger dimensions, pipes arranged in the same manner, with an elbow at the other end, and another stove placed under it, would answer very well, as, if the weather was not very severe, you need only have one stove alight. I always take every favourable opportunity to give air, and if the stove is kept clean there will be no smell whatever. If there are any other points on which I can assist any readers I shall be most happy to do so.—A. KING, *Islington.*

—— All through the winter I have seen in your paper questions on this subject, and lately by "J. P., Oxford." I have spent a good deal of thought, time, and money on the subject, and have tried many kinds of stoves, lamps, &c., without success until recently. Mine is a small house about 12 feet by 8 feet. I have a gas boiler outside, and hot-water pipes within; there is no stove pipe, and consequently no down draught, the fatal thing with gas boilers. I can regulate the heat almost to a degree by turning the tap down or up, and when I leave for office in the morning I do so with the pleasant feeling that all will be right in my absence. There is no dirty stoking, no dust, no over-heating, or going out of the fire, but that great desideratum a steady and uniform heat. I have compared my gas bill with the corresponding quarter last year and find the cost about 1s. or 1s. 6d. per week. For a small house the apparatus is perfect. I live in the same town as "J. P.," and if he would like to give me a call I shall be pleased to see him.—G. F., *Belvoir House*, 131, *Walton-street.*

—— In answer to "W. C. W.'s" query about heating greenhouses, I shall be happy to give my experiences of heating a small lean-to greenhouse 12 by 8 by 8. Last winter I tried one of the oil lamps recommended in your paper; it certainly kept the plants alive, but the oil turned the young shoots yellow. This winter I have tried, with great success, one of Swan and Nash's charcoal stoves, about 29 inches high, and, by keeping the pan of water on the top always, the air is kept moist. If the charcoal is crushed before being put into the stove it will burn 24 hours; if not crushed it will only burn two. For some little time we had very hard frost this winter, the thermometer nearly at zero, and yet I have lost nothing.—M. EDEN, *Inverness.*

—— One of Kinnell's Horseshoe Boilers, No. 1 size, would answer well. The best coke only should always be used, and that should be broken very small. Before filling up the stove a good draught should be put on till the fire is clear.—W. E. BOYCE, *Holloway.*

12873.—**Heating greenhouse by gas.**—Our greenhouse is heated by a gas stove which is in the cellar; it has a flow and return pipe which works well and gives every satisfaction.—OAKLEIGH.

BIRDS.

QUESTIONS.

13107.—**Breeding Budgerigars.**—Would anyone give me some information about breeding Budgerigars flying about in a room of north-west aspect? They are with canaries, which did very well last year.—MISS B., *Gloucester.*

13108.—**Outdoor aviary.**—I should be obliged to "W. S., Hampstead," if he would tell me whether I could keep insectivorous English birds, such as the warblers, through the winter? What food is best for insectivorous birds, and where to get it? Also, what is the average length of life of his foreign birds, and whether they would agree with English seed-eating birds, with which my aviary is solely stocked? The locality is the borders of Cheshire and Staffordshire.—B. I.

13109.—**Canary.**—I have a canary which has moulted since October, 1884, and has scarcely sung since, though very musical before. I feed it with ordinary canary seed. Will any of your correspondents tell me what to do? If the bird has insects, and I fancy it has, what would be the best cure?—E. B. P.

"Gardening" Index.—A complete index of GARDENING ILLUSTRATED, Vol. VI., is now ready.

BEES.

Feeding bees.—If a straw hive, with honey and bees, weighed 17 lbs. the middle of January, will it need feeding before the end of March? When commenced how much should be given each day? How are wooden supers for straw skeps fixed to keep the wind from blowing them off?—INQUIRER. [The bees should be fed at once, giving them each day as much as they will take for about a week afterwards, till stores come in abundantly. The feeder should be so regulated that only a small amount of food can be taken down at a time, this will stimulate brood rearing to the rapid increase of the colony. Wooden supers are usually provided with two small chains and skewers by which they are secured to the straw hive.—S. S. G., *Boxworth.*]

REPLIES.

12958.—**Swarming, &c.**—As "Young Apiarist" intends putting a crate of sections on his hive he had better not take an artificial swarm; on the contrary, he should use every precaution to prevent swarming, because the more bees there are in the hive the greater will be the likelihood of the sections being filled. As breeding and the strength of the colony increases, the spare frames should be introduced, one at a time, at intervals of a few days, the frames being furnished with comb foundation. Upon the hive becoming crowded with bees, and abundance of stores being brought in, the crate of sections may be put on. Swarming may be checked by removing frames of brood, extracting honey from full bars, and cutting out queen cells, but it frequently happens that in spite of all precautions swarms will leave the parent hive.—S. S. G., *Boxworth.*

—— 1. Make an artificial swarm so as to increase your stock. Confine your bees to about four frames, and give them syrup to stimulate them. As they increase in numbers add a frame of comb or foundation till you get about eight. About the end of May or the beginning of June remove the stock to a fresh stand, lift from it a frame of brood with queen and adherent bees, place this in a new hive on the old stand, with three or four sheets of foundation. Close the frames in the old stock, without adding any more frames. 2. You may add the frames as your stock gets stronger. You cannot put a super on, and make a swarm also, unless your stock is very strong.—FRED WILSHAW.

12959.—**Dysentery, chilled bees, &c.**—When the entrances of hives are not shaded from the direct rays of the sun in winter and early spring, it frequently happens that the bees are tempted out thereby for an airing, when a fall in the temperature chills them, and they are unable to reach the hive before becoming benumbed. The zigzag entrance provided to some bar-frame hives is most effective, as on account of its form no direct rays of the sun can enter the hive to tempt the bees out to their destruction. Bees will always leave the hive for a cleansing flight when the outside temperature admits, but are easily deceived by the false promise of warmth which gleams of winter sunshine often give. A clean dry hive with warmth and proper ventilation, and a cake of candy, or a frame of sealed comb, will usually cure an attack of dysentery.—S. S. G., *Boxworth.*

12961.—**Transferring stock.**—As the combs are built so irregularly there would be great difficulty in transferring them to a new hive. In these days of comb foundation, from which combs are so readily built out by the bees, transferring is not to be advised. Why not let the bees swarm naturally and put the swarm into one of the new hives, and then, twenty-one days afterwards, by which time all the brood will have hatched out, drive the bees from the parent hive, and put them into another bar-frame hive, provided with comb foundation? It is always advisable to feed newly-hived bees till combs are worked out.—S. S. G., *Boxworth.*

12962.—**Managing apiary.**—1. Puff a little smoke into the entrance and under the quilt, which remove; draw back the division-board, take the first frame by the projecting shoulders and carefully remove it from the hive. When one side has been examined, the right hand should be lowered and the left hand raised until the top bar is perpendicular, when, by giving the frame a half turn round towards the right and lowering the left hand, and raising the right so as to bring the top bar to a horizontal position, the comb will be reversed and allow of the other side being examined. It can now be returned to the back of the hive and the other frames examined. When all have been examined they must be carefully and gently replaced, each one in its original position, a little more smoke given, and the division-board and quilt replaced. This operation must be performed in mild weather only. 2. Cells containing brood have their capping slightly convex, those containing honey are closed flat. 3. The absence of brood at this time of year will indicate queenlessness. If the queen is present in the hive she may usually be discovered by examination of combs. She is generally to be found on the most central combs. A queenless colony must either be broken up and united to others, or have a young fertile queen introduced to it. 4. Gradually, as the strength of the colony increases.—S. S. G., *Boxworth.*

—— See answer to 12958. 1. At noon on a fine warm day when bees are working, I would recommend feeding with syrup or flour cake, or if they have stores unseal a few cells. 2. Honey cells are flat and white, brood cells rounded and darker; uncap one or two, and you will easily find out. 3. If they have brood the queen is all right. 4. When your stock gets stronger add one at a time in the centre filled with foundation.—FRED WILSHAW.

12960.—**Bee-keeping difficulties.**—See reply to Query 12958.—S. S. G.

12957.—**Sections.**—Any of the leading hive dealers—Neighbour, of Regent Street, or Abbott, of Southgate—will supply all-in-one-piece sections in quantity at greatly reduced prices.—S. S. G.

POULTRY, RABBITS, &c.

QUESTIONS.

13110.—**Corns on Brahma.**—I have a Brahma cock quite lame from corns on his feet. Can anyone give me a cure? He is a large, handsome bird, and I should be sorry to lose him.—E. S. R.

13111.—**Crooked breasted chicken.**—"W. H. A." wishes to know the reason that all her young chickens have crooked breasts, which cause a disfigurement when trussed?

13112.—**Fowls becoming blind.**—Can you tell me the reason why fowls (hens) that have an excellent run and are well fed, should become blind? A kind of film seems to obscure their eyes; both last year's pullets and older fowls being affected.—A. S.

13113.—**Poultry-keeping for profit.**—A wondering reader of "Cheshire's" experience in poultry keeping (see March 7th) would be very much obliged if he would kindly answer this question: Where is that delightful place where Indian Meal, Corn, and Bran can be bought for 15s., 14s., 12s. a load? A load, I believe, is 5 quarters; or is it some other measure? I foresee riches for my purse if I can buy food so cheaply. I make poultry pay, but not as largely as I could wish, and therefore shall be deeply indebted if "Cheshire" will favour me with a reply.—OPEN EYES.

REPLIES.

12624.—**Sneezing pullet.**—"Hamburgh."—This is common cold or catarrh, and is doubtless accompanied by slight discharge from the nostrils. It should be seen to at once, or will most likely end in roup, which is a far more dangerous disease. Confine the bird in a warm place, and give four drops of tincture of aconite in a pint of drinking water. Let the food be of a soft nature only, and give hot, taking away after each meal any that may be left after the bird has eaten its fill. Well season the food with cayenne pepper or powdered ginger. A little aniseed or liquorice is also a good thing to remove the cold. When the bird appears better add some iron tonic to the water. It is a very good plan to give a slight aperient to commence with—say, a grain or two of rhubarb or a teaspoonful of castor oil.—ANDALUSIAN.

12626.—**Ducks losing feathers.**—It is not usual for ducks to commence changing their feathers until about May or June, so that we cannot understand yours losing their feathers, except it be that they are kept under very unfavourable circumstances and are not in good health. You do not say whether they are old or young birds. Our supposition is that they are late last year's birds, and have commenced to change their feathers very early.—ANDALUSIAN.

12963.—**Thin shells for hatching eggs.**—There are no means, that we are aware of, to ascertain whether or not an egg possesses a shell sufficiently thick to allow of its going through the process of incubation without breaking. A person experienced in the appear-

ance of eggs can, however, generally tell whether the shell is a good firm one or not. There is a look of solidity and finish about a good shelled egg. If you provide plenty of shell-forming material, such as old mortar or lime of any sort in your run, and feed your birds properly, there is little fear of their laying any eggs with thin shells as nature is sure to prompt them to pick up the necessary material.—ANDALUSIAN.

12627.—**Fattening turkeys.**—Turkeys, if properly and liberally fed, should require no special fattening in order to bring them into condition for the table. A week or two's feeding on equal portions Indian and Barley meal mixed with milk will do wonders, and if to this be added a little Potato or steamed Mangel Wurzel nothing can be better. Be sure that everything is kept clean, and all food not consumed removed after each meal, so as to ensure an appetite for the next one. Water also requires attention. It must be kept clean and in abundance, as turkeys require a large quantity, especially when confined. Cramming is not necessary to bring turkeys into condition. When once these birds are really fat, it is advisable to kill them, as they quickly decline in weight if kept alive longer.—ANDALUSIAN.

12560.—**Rearing turkeys.**—Having for many years in the south seen young turkeys reared, I tried to do it here (in the north) in my own own way, and with fair success—sometimes very great—so I think I may venture to give your correspondent the plan. Firstly, young turkeys require to be kept dry and warm. To do this, give them rather a limited space for the first three weeks, as they are inclined to wander from the mother bird, even when in the hen-house; they are better kept under cover till their lovely little feathers grow, for even then a shower of rain will kill them off, if they once get thoroughly wet. I made a run, 12 feet long, of sod walls, with one end of the same 5 feet wide. With rough wood my husband made a couple of oblong frames, which I covered with common calico, brushing over it a coating of boiled oil to keep out rain, in this manner covering up 9 feet in the length. The three other feet we covered with an old glass frame from a ship's deck lights. I patched this up with glass, and fixed a large box as coop at the end, with a front of wire, leaving a strip open at bottom for the young birds to get in and out. This gave them a regular and sufficiently warm, genial temperature to let them grow, yet not too close, as our rough work also gave ventilation sufficient. I fed for the first few days on stiff porridge, made with milk, and hard-boiled eggs chopped. After, I took the entire crumbs of a 4lb. loaf, crumbled it fine, 12 hard-boiled eggs, chopped fine, a handful of Eschallot tops, green, or spring Onion tops, or Mustard and Cress going to seed—in fact, anything hot in its nature that I had in my kitchen garden—chopped that also fine, mixed all together well, peppered the whole with black pepper well, put it into a jar in a nice cool pantry, and gave therefrom about every hour a saucerful of the mixture. The intermediate feed would be either stiff porridge or chicken grits steeped in milk. For drink I gave fresh water continuously and sour milk curds; the mother bird having plenty of small and large corn always by her, soon taught the little ones to eat grain. Young turkeys need feeding often. My little creatures would come flying from all parts of the garden, ravenous for food, as soon as they heard me cry, and I in this way reared many beautiful broods; so that when the corn was cut they were able to enjoy themselves among the sheaves. I continued the same food, with the addition of a piece of liver boiled and chopped fine, till they were as large as a good-sized bantam; until, in fact, they told me they could forage for themselves. — ADELPHEE.

12625. — **Preserving eggs.** — Although there are so many receipts in existence for preserving eggs for kitchen use, we consider none so effectual as the old-fashioned plan of immersing them in a pan or cask filled with a mixture of lime and water of the consistency of thick cream. Another method much in vogue, especially in Ireland, consists in rubbing the shells entirely over with butter; but we are decidedly of the opinion that this does not prevent them going bad to a great extent, and moreover those that do keep good acquire a nasty taste from the butter becoming rancid. Another plan is to bury the eggs in dry salt. We have seen very good results obtained from this method. In any case the eggs so treated are no good for hatching purposes. We mention this because it seems odd you should require to preserve eggs at this time of year.—ANDALUSIAN.

12970.—**Fowls with healthy bodies and weak legs.**—The symptoms indicate over-feeding. I have had birds affected in the same way, and on killing them found excess of fat internally. Give to every bird affected a couple of pills, as follows:—½ oz. lard or butter, and ¼ oz. Rue chopped fine; this is sufficient for two birds. Give Potatoes and chicken Rice boiled with pollard or middlings warm for breakfast for a few days, and give Barley and Wheat only for evening meal. Laying fowls should not have more than 3 oz. of food each per diem exclusive of green food.—E. B.

DESTRUCTIVE BIRDS.

BIRDS have lately increased so fast that they now assume rather serious proportions, and yet we are appealed to from time to time to give them protection. Of this, both moral and legal, they have had so much that it is difficult to successfully guard against their depredations. Every gardener knows how destructive the blackbird, for instance, is; watch him amongst the Gooseberry bushes, in the Strawberry quarter, and in the Raspberry plantation, and he will be seen to devour or damage all the best fruit. Then we have that hard-beaked fellow, the chaffinch; he will walk along a row of Turnips just peeping through the soil, and only leave the white stalks of the newly germinated seed behind him, a circumstance which compels one to sow again, making, besides other drawbacks, the crop so many days later. I find black thread stretched over sowings of all the Brassica tribe the best preventive amongst the many I have tried. I run it from stick to stick, crossed and recrossed, about 2 inches from the ground. The birds, on alighting, come in contact with the thread, and are thus alarmed at what they did not see. I come now to the redbreast, the most pugnacious bird with which I am acquainted. In severe weather he represents himself to be in a forlorn condition—in fact, so dejected as to suggest imposture; while in summer he will repay the sympathy shown him in winter by consuming one-half of your Currants, and if a colony gets into the netted bushes it is difficult to dislodge them. The whitethroat and the lesser willow wren (both birds of passage) are often thought to be wholly insectivorous, but it is surprising how easily they can forsake their insect food and betake themselves to small fruit. The tomtit and the bluetit are also both very destructive birds, especially to fruit buds. Last spring the flower buds of well-trained Pears were completely destroyed by tomtits just before the buds burst their scaly covering. Plums on walls were treated in exactly the same manner. The tomtits and bluetits also attack and destroy the buds of Gooseberries and Currants wholesale, and soon ruin all prospects of a crop. Moreover, what is more annoying than to have one's best-keeping Pears pecked and rendered useless by these birds? Indeed, both Apples and Pears are treated alike by them, and they invariably choose the finest fruit. Amateurs know what mischief is done, and how it is done; but those who employ gardeners seldom inspect matters so closely; they see the fruit hanging on the trees, as they suppose, sound, and expect to have it for dessert when wanted, not knowing that the best has rotted through bird damage. Now, let us take the sparrow. Who can speak a good word for him? The way in which the sparrow has behaved of late years, particularly in the flower garden, is indeed annoying; as soon as the Primroses open their buds, he pounces on them and tears them to shreds to get at the young ovary. Gold-laced Polyanthuses are also treated in the same way. Here we grow several hundreds of the double sorts of Primroses for spring bedding, and last year it was found to be almost impossible at any time to pluck a small bunch of uninjured blooms. We all know how fond sparrows are of Green Peas, and how often they destroy the prospect of one's first dish. Nevertheless, we are told and are expected to believe that both sparrows and bluetits do us incalculable good, inasmuch as they destroy every day some thousands of caterpillars. We do not, however, find them clearing our Gooseberry bushes of caterpillars or ferreting out and destroying the Rose grub or those insects that eat our Cauliflowers and Cabbages. I can imagine suburban gardeners speaking in favour of protecting birds which are not nearly so plentiful as in the country. There matters are on a different footing, and I maintain that many kinds of birds are far too numerous. How is fruit growing to pay if birds get 50 per cent. of it? To lovers of nature, I admit, birds are a source of interest; but though no one can be fonder of them than myself, I think we should not allow mere sentiment to supplant our best interests.

Thickthorn, Norwich. HY. DOBBIE.

MAIDEN-HAIR FERNS.—Adiantum cuneatum, 3 for 2s.; Adiantum gracillimum, 3 for 2s. 6d; free. The above are the best varieties for button-holes or bouquet work. Strong plants, carefully packed in damp Moss.—CASBON & SON, Millfield Nursery, Peterboro'

PELARGONIUMS, Show and Decorative, in 25 best-named varieties, 3 for 1s. 6d, 6 for 2s. 6d., 12 for 4s. 9d., all free.—CASBON & SON. Millfield. Peterboro'.

CUCUMBER PLANTS, Rollisson's Telegraph (true), best variety for frames or greenhouse, 3 for 2s. 6d., 6 for 4s. 6d., free.—CASBON & SON, Millfield, Peterboro'.

CARNATIONS, mixed varieties, best sorts, transplanted layers, well rooted, from open ground, 6 for 2s. 6d.; 12 for 4s. 6d., free.—CASBON & SON, Peterboro'.

DOUBLE SWEET WILLIAMS.—Myriads of double sweetly-scented flowers, 12 for 1s. 6d.; 25 for 2s. 6d., free.—CASBON & SON, Millfield Nursery, Peterboro'.

NICOTIANA AFFINIS, sweet-scented, Bouvardia-like white flower, stroug plants for early bloom; 2 for 1s 6d.; 4 for 2s. 6d., free.—CASBON & SON, Peterboro.

LOBELIA CARDINALIS, Queen Victoria, dark leaves, scarlet, Gladioli-like flowers, 3, 1s. 6d.; 6, 2s. 6d, free.—CASBON & SON, Millfield, Peterboro'.

NOT GENERALLY KNOWN: That Auricula-eyed Sweet Williams make most briliant beds of bloom surpassing almost any flower, blooming for months continually. Strong plants for this season's blooming, 50 2s. 6d., 4s 6d. 100 free. Also intense crimson Sweet Williams, most brilliant colour, separate, 5s. 6d. 100. Very uncommou double Sweet William, grand rosettes of bloom, all colours, 50 3s., 100 6s. free. Wallflowers, double German, single Blood-red, Canterbury Bells, superb Mimulus, for immediate display, all 8d. dozen, 2s. worth free.—J. R. FLOWER, Floral Nursery, Ulley, near Rotherham.

STARTLING ANNOUNCEMENT.

THE BEST 1s. COLLECTION of FLOWER SEEDS in the world, post free 1s. 2d., 1 liberal packet each following (and packet single Dahlia, 20 colours, gratis):—T. Pæony Aster, German Stock, Carter's Gold-Striped French Marigold (splendid strains), New Tom Thumb Nasturtium, including Empress of India and Lady Bird, Mignonette, Crimson Giant, Antirrhinum (30 splendid colours), Sweet Pea (invincible scarlet and pure white, &c.), Canary Creeper (lovely climber), Godetia Dunnetti (rosy crimson, a fine flower), Linum Scarlet (very showy), Everlasting Flowers (including New Fireball, invaluable for decoratou), Candytuft, Dobbies' Spiral (pure white), indispensable for cutting, all guaranteed genuine, and will give a graud display of bloom until frost destroys them. Larger packets, every variety Flower Seeds, 2d., 4d., 6d. each.—JOHN R. FLOWER, The Floral Nursery, Ulley, near Rotherbam.

ROSE TREES, ABOUT 3 FEET HIGH. Gloire de Dijon, Cheshunt Hybrid, General Jacqueminot, La France, Celine Forestier, Crimson Bedder, 6 of the very best; any 3 for 3s. 6d., carriage free.
H. ENGLISH, Fairlie, Clevedon.

CATALOGUE OF CUTTINGS.

JOHN MORSE AND SON'S CATALOGUE of the above is now ready, and will be forwarded free by post to any address on receipt of a penny stamp. It contains all the most choice and new varieties of Dahlias, Chrysanthemums, Verbenas, Fuchsias, Pelargoniums, Phloxes, Geraniums, Petunias, Heliotropes, Calceolarias, Tropæolums, Coleus, Pansies, Pentstemons, Azaleas, Bouvardias, Lantauas, Pinks, Veronicas, Antirrhinums, Achimenes (bulbs), Gloxinia (leaves), and all kinds of Bedding, Greenhouse, and Stove Plants, cuttings of which can be sent free by post at one-third the price of plants. During the past 29 years, J. Morse and Son have received many hundreds of letters from distant customers, acknowledging safe arrival of cuttings in Ireland, Scotland, the Channel Islands, the Orkney and Shetland Islands; also in France, Belgium, Holland, Germany, Switzerland, &c.—THE NURSERIES DURSLEY, GLOUCESTERSHIRE.

NEW FUCHSIAS, 1884, 12 var. 4s. 6d., including Mrs. Gladstone, Mrs. Fawcett, Mrs. Langtry, S. Berlet, Flocon de Neige, Harmonie, and other grand sorts Zonal Geraniums, 1883, Lemoine's, Pearson's, &c, 3s. per doz.; ditto of 1884, prices on applicatation. 6 splendid Coleus, J. L. Toole (1884), a real gem; L. C. Beresford, E. Sentance, &c.; best sorts, named, distinct, 1s. 3d. The above good plants post free.—J. BLAKEMORE, St. Georges', Wellington, Salop. List on application.

NOTE THIS.—QUILLED ASTER SEED direct from the raiser. J. Betteridge has a limited quantity of his unrivalled Quilled Aster Seed to offer, 12 varieties, separate, 2s. 6d.; 12 varieties, 3s. 6d., mixed; per packet, 1s Also hardy plants of Anemone japonica, Honorine Joubert, white, rose, and pink, 4 each, 12 plants, 3s. Pyrethrum lacustre, single white, Monsieur Barrel, Double Red Carneum, single red, 4 each, 3s. Extra strong plants, fine for massing; all free by post for cash with order.—JAMES BETTERIDGE, The Aster Nursery, Chipping-norton, Oxon.

ROSES.—Good and cheap dwarfs. 12 strong plants of choice named varieties will be promptly dispatched on receipt of 6s by—J. GRANT, Linton, Kent.

"THE GARDENERS' FRIEND" PROPAGATOR, a new and simple appliance for striking cuttings and raising seed in heat; saves all the trouble and risk of a hotbed; price 7s. 6d. to 20s., delivered free. Send stamped envelope for drawings and particulars.—FLETCHER and PHILLIPSON, Baggot Street, Dublin.

GARDENING ILLUSTRATED.

VOL. VII. MARCH 28, 1885. No. 316.

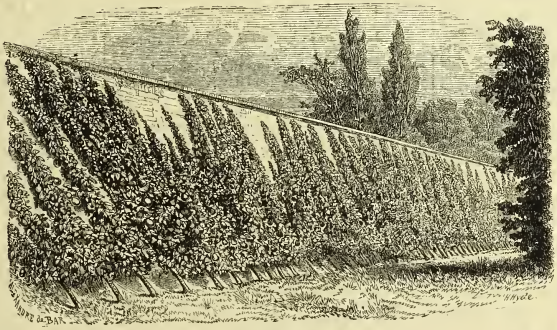
FRUIT.

CORDON APPLE TREES.

DURING the last few years a great improvement has taken place in fruit culture generally, and especially in that of Apples, which have of late come to the front in a remarkable manner, more especially as regards the finest of both culinary and desert kinds. These are grown as trained trees both on walls and trellises to a perfection that can hardly be realised by those who are accustomed to rely solely on the produce of uncared for trees, such as one finds in orchards in all parts of the kingdom. The autumn exhibitions of fruit held in the metropolis and other large towns have made it abundantly clear that Apples can be grown in this country equal to any grown in the world, as the exhibits from Barham Court, Maidstone, and several other noted fruit gardens conclusively prove, and in visiting these gardens at various times the finest examples that I have ever seen have been growing on what are termed cordon trained trees, of which there are several kinds.

Those employed for edgings to walks are mostly trained as simple single or double cordons, one of the simplest of all modes of training, and especially well suited to small gardens, when every inch of ground should be utilised to its utmost capacity. Stout wire is strained from short posts, a foot from the ground, and to this the Apples are firmly tied. They are planted as young maiden, or one-year-old trees, from the graft, with a single shoot from 3 feet to 5 feet long, and are planted from 10 feet to 12 feet apart for single cordons. The shoot may be left nearly its full length, only shortening sufficient to ensure every bud breaking to form a perfect wreath of spurs. To form double cordons the young trees are cut down close to the base and two shoots are left, one being taken to the right, and the other to the left, and allowed to grow partially erect the first year, and brought down to the horizontal line gradually. For walls, single cordons are most valuable for covering a large space in a very short period; the best form of training is that known as cordons oblique (see cut), or at an angle of about 45, and by having trees that have been specially prepared, and planted about 1½ feet apart, a wall may be covered at once, and a good crop gathered the first year, or young maiden trees may be planted and treated in the same way as those described for edgings. Many of the large fruit tree nurseries make a specialty of these trees, and supply them in bearing condition, full of fruit buds. Sometimes they are trained erect, but the objection to this is that the top of the tree monopolises too great a share of the sap, and a slanting position is found to yield more satisfactory results for a much longer period. For filling up the base of walls under other trees double cordons are frequently used with excellent effect, and at Barham Court they are largely used for filling up every foot of space between Peach and other fruit trees on south walls, and some of the finest fruits of the tender varieties, such as the White Calville, are grown in this way. When trained on wires, either as single or double cordons, about a foot from the wall, the produce is greatly benefited by the heat radiated from the wall. It is a fallacy to suppose that because Apples can be grown in some form or other, even in the coldest parts of the kingdom, they are not fit for, or do not require, the protection of a wall, for in this, the most southern part of the coast, I find Apples trained on walls are about the most profitable of all crops, as kinds that rarely come to perfection on open trees scarcely ever fail of a full crop of not only fine, but clear-skinned, high-coloured fruit. The system of pruning is of the easiest kind, namely, to pinch the shoots in July at about five or six leaves, and in winter shorten them in close, and thin out useless or weakly spurs. As regards varieties, I find that all kinds do well as cordons; but only the choice kinds that do not not come to full perfection on the open wires or edgings should be employed for wall culture. The late-keeping dessert kinds, however, any one that can afford wall space for a dozen kinds will find a capital addition to desert fruits in spring, when home-grown fruit is generally out of the question. Amateur gardeners will find the cordon system of Apple culture especially suited to their needs, as by it a good selection of kinds may be grown to the highest perfection in a very limited space.

Gosport. JAMES GROOM.



Cordons oblique.

Covering vine borders.—It is still supposed by some that, in order to keep Grapes in good condition on the vines as long as possible, it is necessary that the roots should be kept tolerably dry. All sorts of contrivances have, therefore, been resorted to in order to keep every drop of rain from falling on the border from the time when the Grapes are ripe till they are all cut. This has in some cases been carried out with so much persistency, that I do not doubt that injury has been done to the vines through depriving the roots of the needful supply of moisture at a time when it was wanted. Some have even gone to the expense of getting large sheets of corrugated iron to put on the border to keep off rain, while others have used wooden shutters, and when nothing better could be had the border has been thickly thatched with straw. In no instance, however, where coverings have been resorted to have I seen Grapes keep better than they do when the border is exposed to all the rain that may fall on it. In what way a dry border is supposed to assist in the preservation of Grapes I am at a lost to understand. It is, I imagine, expected to prevent too much water from being carried up by the roots and branches to the fruit. If that be really so, it is evident that the bottling system now so general for keeping late Grapes cannot be good, the branch to which the bunch is attached being in immediate contact with the water; yet in practice the amount of water which the branch absorbs does not, to any perceptible extent, interfere with the flavour or keeping properties of the Grapes. From this we may conclude that while the Grapes are hanging on the vines there is not sufficient water passing up to them, even if their roots are in a moist soil, to cause any deterioration in quality. Covering the borders with a view to keep them dry is, therefore, a useless waste of time and material. I dislike coddling vine borders when vines are at rest; indeed, as a matter of fact, I am convinced that all vine borders are the better for being fully exposed to winter rains and frost. Exposure sweetens the soil and renders it better for the roots, and where the drainage is right the winter's rainfall does good rather than harm.—J. C. C.

The Cherry Plum.—In Miller's Gardener's Dictionary (Ed. 1759), article "Prunus," I find among Plums "cultivated in the English gardens":—"Prunus fructu rotundo, nigro-purpureo, majori, dulci—Myrobalan Plum. This is a middle-sized fruit of a round shape; the outside is a dark purple, powdered over with a violet bloom; the juice is very sweet. It is ripe the end of August." But in Littré's Dictionary the Mirabella is described as yellow in colour, though round in shape. Some of the vendors of Prunus Myrobalana give Mirabel as an alternative title. Perhaps some of your readers may still grow this old-fashioned Plum here in England, and be able to tell us something about it.—SYLVANUS.

REPLIES.

13055. — **Black Alicante and Lady Downe's Grapes.** — If you plant Lady Downe's at the warmest end of the house it will do fairly well with Alicante, but it would be preferable only to have one sort in a house. Alicante requires less heat to ripen it than Lady Downe's, but it is not so good a keeper. If you want the most profitable sort for market during November and December, Alicante will suit you best. If you want a late keeper, then select Lady Downe's; but this variety requires a longer season of growth than the other, which means an addition to the coal bill. Unless you want early Grapes, I should not advise you to grow Black Hamburghs—the markets would be already overstocked with Grapes when they are ripe if not forced at all. —J. C. C.

12984 —**Border for vine.**—Thoroughly stir and well enrich the soil. Light, sandy soil will grow Grapes very well if the plants are well fed and get enough moisture when the fruit is swelling. Trench down to the gravel, and add a goodly portion of manure; and if you can supplement this with a few cwt. of crushed bones so much the better. As to width of border you cannot err in giving the vines as extended a root run as lies in your power; the greater the amount of soil at the disposal of the roots the more chance is there of the vines bearing well and retaining their vigour. Every spring the border, or that portion of it already occupied by the roots, should get a mulch of dung, and this retains moisture and facilitates watering.—J. C. B.

—— As turf is not to be had, it would be best to make the border to admit of 2 feet 6 inches depth of compost. Take of the best soil obtainable ten cartloads, add to it one cartload of decayed manure, one cartload of mortar rubbish, and a hundredweight of crushed bones. It is a good plan to place 9 inches of brickbats in the bottom, and, if necessary, see that it is sufficiently drained.—J. D. E.

12979 —**Peruvian guano for old vines.**—The best way to apply this stimulant is to scatter it evenly over the surface of the borders. For an outside border and old vines a peck would be sufficient for every 20 square yards. Thus, a border 8 yards long by 5 yards wide should have half-a-bushel applied to it. Apply it twice in the season—as soon as the Grapes are set and when the stoning period is completed.—J. D. E.

THE VILLA GARDEN.

(Continued from page 6.)

Brussels Sprouts.

This is one of the hardiest and best of the green winter vegetables. In the severe winter of 1861, the Brussels Sprout was among the few living things left in the garden when the winter passed away, and this reliableness in cold seasons is a very valuable quality. But it is important that the seeds should be obtained from a good source, and that the strain should be well selected. It was thought years ago that the imported seeds were the best, but where proper care is used, home-grown seeds are as good. Those who have been disappointed with their strains of Brussels Sprouts—and I imagine from the complaints which have reached me that they are rather numerous—should try the Aigburgh Sprouts. This strain was selected and grown near Liverpool, and was distributed by a Liverpool firm several years ago under the above name. Make two sowings—the first early in March, and the second about six weeks later. If an autumn supply of Sprouts is desired, sow a few seeds in a box under glass in the latter end of February, and as soon as they are large enough prick them out in a sheltered situation out-of-doors. Temporary protection with glass frames, if convenient, will be desirable. Plant out finally in the first week in June, the rows to be 3 feet, and the plants 2 feet apart in the rows. The land for all kitchen garden crops should be well done, and though I may not be constantly laying particular stress upon this matter it should be understood as being implied.

The successional plantings may take place as land becomes vacant, and if the plants are in danger of becoming too crowded in the seed bed, draw some out and plant 6 inches apart—to be transplanted afterwards when convenient. There is no danger of being overdone with Brussels Sprouts, especially during a cold winter, and therefore my advice is—Plant all you can find room for. I have had them do well between the rows of early Potatoes, and, in short, I plant anywhere with the certainty that something useful will come of it. As a catch-crop, even when put out late, they come in useful in spring, and the young shoots, which are thrown off by the stems, when the button-like Sprouts have all been gathered, are tender and succulent. The later plantings will not, of course, need so much room as the early lot, as they will not attain to such a development. There has been a tendency of late years to run after and lavishly praise the large-sprouted varieties, but I confess I like the medium-sized sprouts best. As a rule, in the case of vegetables of all kinds, the very large specimens are often coarse and strong in flavour. In late districts, and for an early autumn crop, a few seeds should be sown in September. I have, however, given up the autumn sowing, not finding it necessary for our wants to continue it. Still there are situations where it may be desirable to practice it, and plants raised in autumn are a long way in front of those raised in March.

Saving Seeds.—This is one of the few things I save seed of, and I recommend others to preserve a good strain when they get hold of it. There is no occasion to save seeds more than once in five or six years if they are kept dry. Save only from true, well-selected plants.

Varieties.—I have already referred to the Aigburgh, and every respectable seed house offers reliable strains, but still there is more deterioration visible in this plant, if great care is not used, than there is in most things. Sutton's Matchless is a good strain, and Covent Garden, when true, is also good.

Spinach and its substitutes.

The Round or Summer Spinach is usually sown in succession every fortnight or three weeks from the middle of March till the middle of July. In dry, hot situations, the summer sowings are not of much use, and are generally discontinued, and one or more substitutes introduced. The early sowings should be made in a warm situation. It is often sown as a catch crop between the rows of early Peas. Sow in drills 1 inch deep, and thin out the young plants to 4 inches apart. In May sow the seeds on the coolest spot in the garden, and thin early, keeping the soil freely and frequently stirred, this being better than watering. In many establishments Spinach is a necessity. Never a week, indeed, scarcely a day, passes without its being asked for by the cook. Hence, if from the nature of the soil and situation the round Spinach will not succeed, some substitute must be grown to take its place during the hot days of summer. The best substitute I know of is

The New Zealand Spinach.

When cooked it has just the deep green colour of the real Spinach, which other substitutes have not. The seeds should be soaked twenty-four hours before sowing in lukewarm water. Sow in March in small pots, three or four seeds in each pot; place the pots in a hot bed and grow them on steadily after they germinate. If all the seeds grow remove all plants but one. When the plants are getting strong (they do not, however, grow with very great luxurance in their youth) remove to a cool frame or pit to harden them off, and when all danger of frost is over plant them out 2 feet apart in the warmest and the richest corner in the garden. When the plants once get well established the growth will be rapid, and a bed five or six yards square will furnish a large supply, for the plant does not seem to suffer much from the loss of its leaves, but continues its rapid progress. Neither the weather nor the situation can be too hot or too dry for it. Another useful substitute I have had in the

Spinach Beet.

This also is a continuous bearer, one sowing yielding an immense number of leaves, and it shows no disposition to bolt till the proper season comes round the following year. The seeds should be sown thinly in April, in drills 15 inches apart and 1 inch deep. Thin out the young plants to 6 inches when large enough. Picking may begin as soon as the true Spinach fails. It is always best to keep this in reserve, and to use the real Spinach as long as it can be obtained, as, although the Spinach Beet is an excellent vegetable, good flavoured and succulent, it lacks the deep green colour and the peculiar flavour of the real Spinach. This Spinach Beet is much used in some districts, with Thyme and Parsley, for stuffing corned beef. Still another substitute for the summer Spinach is found in the Giant Oracle, or Mountain Spinach, which is sown in spring, and the young leaves and tops gathered as required.

The Winter Spinach

Should be sown in August, early or late in the month, according to locality and climate. I always sow twice, the first early in August and the last in September. The produce of the first crops is fit to gather in autumn and through the winter. The last sowing is exceedingly valuable in spring, continuing to make a new growth up till June. The prickly seeded variety is commonly used for winter, but a variety called the Flanders has been much recommended of late years. The winter Spinach with me at least succeeds best on land that has been well manured for a previous crop, such as Potatoes. The best plan is to dress the land with soot and lime, hoe it deeply, draw drills 15 inches apart, and sow the seeds thinly. On land so treated the crop does not fail from canker, as sometimes happens when the land has been freshly manured and worked. It is well known to cultivators that some retentive soils are dryer and warmer if not deeply worked in autumn, when it is intended to sow a crop immediately, especially if it be a crop liable to canker in a cold retentive soil. As soon as the plants are fairly up thin out to 6 inches apart (or more if very large leaves are desired), and keep the soil between and around the plants frequently stirred, as this not only keeps down weeds but helps forward growth.

Transplanting Spinach,

Though not commonly done, may, if desired, or if there be a necessity for it, be successfully done. The plants should be moved before they become too large. Lift them with a fork, so that the roots may come away intact. Plant with a dibble, and, if the soil be dry, water well to settle the soil around them. Only the winter Spinach will succeed transplanted. The Spinach is diœcious—*i.e.*, its male and female flowers are borne on separate plants. Saving seeds is easy enough, but it is hardly worth while, as enough for a large supply may be bought for a small sum. There are several varieties of the round or summer Spinach offered, some of which are improvements on the old form.

Mercury, or Good King Henry.

This is a hardy British plant, much grown in the gardens of Lincolnshire, the leaves being gathered and cooked like Spinach, and the young shoots in spring treated like Asparagus. It likes a deep, rich soil and top-dressings of manure, with occasional soakings of liquid manure. It may be raised either from seeds or root-sets, but the latter plan is the best, and both seeds and roots are cheap enough. The spring is the time to sow or plant, and the seeds should be sown in drills 15 inches apart, and the young plants be thinned when large enough to 1 foot apart in the rows. The roots (which may be obtained in Lincolnshire for about 6s. per 100) should be planted firmly about the same distances apart given above, and when the plants get strong enough gathering may commence, but not much should be taken from them the first year. The plant is a perennial, and will continue to produce for many years if well treated. The autumn is the best time to apply top-dressing. In spring the young shoots should be gathered like Asparagus just beneath the surface of the subsoil, and the leaves may be used as a substitute for Spinach any time when they can be obtained. E. Hobday.

ROSES.

Striking Rose cuttings in water.—About four years ago I read in Gardening an account of the successful propagation of Roses by cuttings rooted in water. As an experiment, about the end of July, I put half-a-dozen cuttings into an ordinary stoneware jam-pot more than half filled with water, and placed it on the inside sill of a window facing due south. The house was shut up during August, but on returning in the beginning of September every one of the cuttings was found to be rooted. They were planted in the garden, care being taken not to injure the tender roots, and the following summer all of them were nice little flowering plants. I cannot now remember how many, if any, had heels; but am quite sure that some were just taken in the ordinary way with a cut under a joint. At Kilcreggan, on the Firth of Clyde, where we were then living, Roses grow most luxuriantly. I do not know whether this would affect their rooting in water indoors or not.—Tam Glen, *Maryhill.*

REPLIES.

12985.—**Striking Rose-cuttings in bottles.**—Choose a colourless phial having a rather wide neck. Half-fill this with silver sand. Add water, the surface of which should be about a third of an inch above that of the sand. Firm cuttings should be selected of recent growth, severing the cutting from the plant about the eighth of an inch under the apex of a pair of leaves, which leaves must be carefully cut off, and the cutting now placed an inch deep in the sand. June and July are good months for the operation, at which time shade the bottle from the mid-day sun with a piece of paper. But in hot weather I have in this manner rooted Roses, Verbenas, Salvias, &c., in the shade, a long callus or thread of roots appearing in about nine days, until which time the whole should, if possible, remain undisturbed, excepting for the purpose of adding water if necessary.—A. E. A., *Stamford Hill.*

12976—**Lime and soot for Roses.**—Neither lime nor soot in small quantities will injure Roses, if strewed on the surface. Soot, being a fertiliser, is capable of doing much good when judiciously applied; but if used in excess it would certainly kill the plants. Lime is not likely to be of any benefit unless incorporated with the soil, as the chief merit of lime is to render more soluble all organic matter with which it comes in contact. Commencing from the present time, you may strew the soot on the surface once a fortnight until the end of the summer, at a rate of ½-pint to every square yard of ground, and then water the surface.—J. C. C.

—— Both lime and soot are good manure, especially the former, a good dressing of which forked in now will do much good. Lime is most serviceable on heavy land and in soils rich in humus; but almost any garden is benefited by an application of it.—J. C. R.

TREES AND SHRUBS.

TREE PÆONIES.

In many Continental gardens Tree Pæonies are to be found in as great variety and abundance as the herbaceous Pæonies are fast becoming with us; but the shrubby species are too rarely met with in English gardens. A few observations in reference to the management of Tree Pæonies may therefore prove of some use to those who, like myself, are desirous of possessing a collection of these plants, as well as to those who are on the outlook for good things for the outdoor garden. P. Moutan and its varieties are hardy enough to be treated as outdoor plants, and the gorgeous beauty and large size of their freely-borne flowers render them of quite extraordinary merit for garden purposes. The soil preferred by the Pæonies is a strong, deep loam, in which their thick fleshy roots seem to go down to a great depth. Moisture is also preferred, especially during the summer months, when the plants are making their growth. Tree Pæonies may be easily propagated by grafting shoots of them on to the stout, fleshy roots of the herbaceous kinds or on the roots of P. Moutan, and at the present time I find several English nurserymen are offering them in quantity for pot culture, so that there appears to be no difficulty in obtaining a good supply of plants. P. Moutan appears to vary very much both in the size, doubleness, and markings of its flowers. When first introduced the varieties were mostly light coloured—white, blush, or pink; the petals were somewhat ragged at the edges, and were rather too few in number to fill out the flowers well. Since that time, however, great improvements have been brought about by the few who have continued to cultivate these plants, and we have seen some that bore flowers both brilliant and varied in colour, and were possessed of much beauty. One of the first to appear of these fine varieties was Gloria Belgarum, which was raised in Belgium, and which was pronounced "a marvel among marvels," the flowers being of the deepest rose colour, nearly full double, and more than a foot in diameter, or about 4 feet round. Souvenir de Gand is another grand variety. It would be difficult to imagine a more gorgeous picture than would be presented by a specimen of either of these two varieties, with a diameter of 10 feet, and bearing 200 blooms each as large as a Victoria regia flower; and this is not an impossibility. In descriptive catalogues we find white, rose, pink, red, red-violet, lilac, and bicolored varieties offered, some single, others semi-double, and again others with flowers as compact and full as a double Dahlia. Here we have proof of the ornamental character possessed by P. Moutan and its numerous forms, ornamental enough and varied enough to be in themselves a flower garden of the most dazzling and beautiful

Single-flowered Tree Pæony.

description. In the large share of attention now being paid to outdoor gardening, and especially to ornamental trees and shrubs, it may be hoped that the Tree Pæonies will be allowed to take that prominent position which they are in every way qualified for. It has been well said that if cultivators had only spent a little of the time in producing good outdoor specimens of shrubs and trees that has in times past been spent in growing formal and distorted stove and greenhouse plants, &c., many of our gardens would have presented a different aspect from what they do at this time. Whether to such a cause may be attributed the neglect into which Tree Pæonies have been allowed to remain need not be discussed, but certainly it may be said that gardeners generally have hitherto been asleep to the first-rate qualities of P. Moutan and its varieties. B.

LONG FLOWERED BUCK-EYE.

We trust all our friends who like beautiful shrubs will not forget this—no doubt many of them have it already. It is always a pleasure to see it on the lawn, resembling when in flower, and indeed when in leaf, a little Horse Chestnut seated on the Grass, growing from 3 to 5 or 6 feet high, beautifully spreading and furnished in habit when not starved or crowded, and bearing profusely long and graceful spikes of flower very delicately scented. In autumn the leaves become of a fine golden colour. It is quite hardy in this country and throughout the greater part of Europe. It should not be put in the ordinary shrubbery to be crowded to death, but on the fringe, where it can spread out to a wide bush, or by itself on the lawn, springing direct from the Grass, and furnishing all round down to the Grass with its own fine foliage. It is not difficult to obtain it from any good tree and shrub nursery.

THE COMING WEEK'S WORK.

Glasshouses.

Heaths.—The different varieties of soft-wooded winter-flowering Heaths, such as hyemalis, that were cut back freely after blooming, will now have started into growth, and should be potted at once. Pots 2 inches larger than those they are already in will, in most cases, be sufficient; no disturbance of the roots should be attempted—merely remove the crocks from the bottom of the ball. Stock of this kind is often pot-bound, and therefore the new soil must be made more than ordinarily solid, otherwise the water used will be sure to pass through the new material, leaving the old ball dry. Early in the spring before the weather gets hot or in the early autumn after the dry, parching season is over, are the safest times for repotting Heaths, and where any portions of the younger description of stock are suffering from want of root room, they should be moved now, even though their blooming season is approaching, as if the potting is managed with care, so as not to injure or disturb the roots, the flowering will be little interfered with.

Greenhouse plants. — In potting hard-wooded greenhouse plants, commence with the freest growing sorts, such as Genistas, Acacias, Boronias, Eriostemons, Polygalas, Cianthus, and others of a like description, giving pot room proportionate to the habit of the respective kinds. Plants of this character will not bear partial removal of the old soil in the operation of potting, and unless they have sufficient pot-room they soon get naked and deficient of foliage at the bottom.

Vallotas. — These late summer flowering plants will now be making growth, and, where required, larger pots should be given them; discrimination however is required, for in common with most bulbous subjects of a similar character they do not succeed well if overpotted. Vallotas may be increased by the quantities of offsets which they produce, and which, if allowed to remain attached to the old bulbs, soon impoverish and overcrowd them. It is, therefore, well at this season to remove all the little bulbs, putting them in small pots about 1 inch apart, just within the rim, like cuttings, and using, as in the case of old bulbs, good holding loam with a little sand, making it firm, as they do not succeed with light potting. An ordinary greenhouse temperature is sufficient during the growing season; but, like a good many kindred species, these Vallotas enjoy a few degrees more warmth during this and the following month if placed in a light position.

Double Primulas.—The flowering will have somewhat weakened the plants, and it is better to now pinch out the bloom-stems as they appear; this is the more necessary where an increase of the stock is required. Where large plants exist these may be divided; separate the crowns and insert them singly in small pots, in an intermediate heat, and so far confined under propagating glasses as is requisite to prevent flagging.

Brugmansias.—Cuttings of these put in now in the ordinary way and placed in a little warmth will soon strike and make nice flowering plants in a year, forming beautiful objects when in flower in conservatories, halls, and similar

Long-flowered Buck-eye (Æsculus (Pavia) macrostachya.

places; they also come freely from seed, which, if sown at the present time and placed in a little warmth, will soon germinate, after which, when large enough, the seedlings must be put singly in 3-inch or 4-inch pots, giving them more space as the season advances. Old plants that require more room should now have a shift. Large plants that were cut back after blooming, and that have made some growth, should be repotted, giving them good turfy loam with some sand added, and as soon as they begin to make free growth, give manure water regularly.

Rhododendrons of the greenhouse section, will, if in good condition, by this time have made new shoots, which will root without much difficulty and form useful plants. As these shoots, which should be about half-ripened, consist of a cluster of leaves with a good length of bare stem below them, they form when taken off ready-made cuttings, but in removing them always leave two or three buds on the plant, in order to give it the means of furnishing itself with new growth. Sometimes the shoot removed is too long to be used in its entirety; in that case it may be cut to the required length, but the buds at the base hasten the rooting process, and should be left on if possible. The soil most suitable for such cuttings is fine sandy peat, with a liberal admixture of crocks broken very small, or pounded charcoal. Use small, clean, well-drained pots for the purpose, and insert the cuttings firmly; then give them a good watering, and place them in a close case in a temperature of from 65 degs. to 75 degs.; water and shade them as may be required; if too damp, give air for a little time. A sharp out-look must be kept for thrips. T. B.

Flower Garden.

General work.—In order to get all extraneous work out of hand, finish up Laurel and hedge cutting, apply mulchings to recently moved trees and shrubs, and edge and regravel roads and walks. Mowing must be attended to; Hyacinths must be tied, and the less hardy flowers protected from the sharp frosts that generally prevail at this time. Where any of the beds are vacant, summer bedding arrangements may be determined, and the edgings and groundworks of hardy plants got out. Herniarias, Cerastiums, Sedums, Saxifrages, Thymes, Violas, Pansies, and small shrubs are a few of the kinds the planting of which should soon be finished. Herniaria glabra, used in the formation of edgings, makes the most perfect green fretwork wall that can be conceived, and naturally grows so dwarf and

dense that no attention is required to keep it in form. As edgings of Echeverias and Sempervivums have become so common, and look so formal and artificial, and as for such purposes there are so many better plants, their use in this way should be discontinued; but as a groundwork for taller succulents they are in every way appropriate, and when so used and allowed to flower, which they do profusely, succulents may safely be classed among the most quaint, yet gay, of all summer bedders.

Bedding Plants.—Alternantheras are growing so freely that abundance of cuttings may now be had from them at any time. Coleuses and Iresines may still be struck, and those cramped in cutting pots may be potted off. These are both so long in starting when first planted out that, with a view to immediate effect, the aim should be to get the plants large before planting-out time. Increased space will daily now be needed for the tender kinds of seedlings, and all sorts that will stand a degree or two of frost should be put out into pits or sheltered spots. Lobelias, Verbenas, and Petunias may be put in turf pits and covered up with straw hurdles or felt frames. Calceolarias, Gnaphalium lanatum, and Abutilons are placed at the foot of the fruit walls, where they have the benefit of the wall covering. Most kinds of Pelargoniums are also quite safe under the same conditions. The tricolor must, however, yet have glass shelter, but be given abundance of air on all favourable occasions. Seedlings of Solanums, Wigandias, Daturas, single Dahlias, and others sown a few weeks ago will now be quite ready to pot off, and when done place them in a close, warm atmosphere, and shade them for a few days till the roots have started in the new soil. Castor-oils should always be sown singly in pots, as they are had subjects to handle in the seedling state. There is yet ample time if sown now to have good plants by the end of May; those sown earlier will be ready to remove to a cooler atmosphere to be grown in on plenty of light. In mild weather draw the lights entirely off frames in which seedling Stocks, Asters, Phlox Drummondi, Everlastings, and others of the annual and biennial sections are growing, and prick them off or thin them out as soon as they can be handled.

Phloxes and Pentstemons may be propagated in the same way as Chrysanthemums—viz., as the young shoots come up cut them off and make cuttings of them; they should, however, if possible, be put where there is a little heat, say on a gentle hot-bed. If the plants are in pots they should be kept close a few days before the cuttings are taken off. Cuttings struck in this way make good little flowering specimens the first season, but, of course, the above method will only need to be used for scarce kinds. Division is the best mode of propagation where large masses exist.

Fruit.

Vines in late houses now breaking under the influence of bright weather will require a good syringing two or three times a day, and the inside borders will be the better for a covering of some kind that will radiate atmospheric moisture as the temperature rises. Strong young rods may require bending down to a horizontal position to ensure an even break, and when all the buds are on the move they may be tied up to the wires. Let the night temperature range between 50 degs. and 55 degs. Give a little air at 65 degs., and encourage free growth by closing with plenty of moisture when the house stands at 75 degs. In succession and midseason houses the greatest activity will be necessary, as growth is very rapid. The most tedious work is thinning, and on this account it should be taken in hand as soon as the free setting kinds are out of flower. When properly thinned, ripe Grapes should not press each other out of form, neither should the bunches open when cut and laid on the dish. When the Grapes in the early house have finished stoning, the borders will require a liberal watering with warm liquid manure to help them through the last swelling. The paths and surfaces may also be damped with it after closing on fine afternoons up to the time the berries begin to show signs of colouring, when pure water only must be used. Wage incessant war with red spider, and destroy the small spinning spiders which endeavour to gain a lodgment in the bunches.

Vegetables.

If Snow's Broccoli is sown just now, or any time before this, it grows quite out of all character—becomes large, soft, and succulent, and the first sharp frost prostrates the foliage, leaving the heart unprotected. If sown the first week in May it will be fit for cutting the first week in November, and the plants will be close to the ground, and have much the same appearance as Walcheren Broccoli. Onions, Carrots, and a few Turnips may now be sown. We are engaged in planting our main crop of late Potatoes, consisting chiefly of Beauty of Hebron, Schoolmaster, and Paterson's Victoria. Early plants of Celery will now be ready to prick out. A slight hotbed is the best place for them, but they will do well in boxes under glass. Early Cauliflower will also require attention in the way of pricking out, in order to obtain good plants for the second batch of this indispensable vegetable. Sweet Basil, a really useful herb, should be potted and grown in Cucumber frames for use green. All kinds of herbs may now be sown under glass.

Cucumbers.—If old plants cannot be dispensed with, thoroughly renovate the beds by forking out as much of the sour soil as can be taken away without injuring the roots, and replacing with good rich turf and lime rubble. Apply lime-water for the destruction of worms, if any are present, as Cucumbers cannot succeed where the soil is exhausted by these pests. Woodlice, very often the cause of canker at the surface of the soil, may also be greatly reduced by the application of boiling water. Continue to cut the plants over until all the old foliage is renewed, then train thinly and keep the foliage clean by syringing with warm soft water, light cropping, and early closing with solar heat and moisture. If needed, spring-sown plants may now be allowed to carry a few fruit; but light cropping is imperative. Ventilate freely through the early part of the day to keep the foliage firm and healthy, and avoid shading as much as possible, or altogether where the fruit is not affected by the sun. In light houses the fruit of Telegraph is very liable to morning scalding; but a thin shade for a short time until the fruit is dry, and early ventilation will always correct this evil. Linings round frames will now require regular renovation to maintain a steady minimum of 70 degs., and good dry covering must not be neglected. Add a little fresh soil as the roots protrude, peg down the young shoots, train thinly, and rub off all male blossoms up to the time their services are needed. If the weather is bright and fine, and the heat is strong, overhead watering about 2 30 p.m. will do good, but the wetting of the foliage must be conducted with great caution for the present.

12994.—**Plague of sparrows.**—I think I can answer your correspondent's question, having had some twenty years' experience in managing an exposed garden near a public road. I have tried all manner of things, and found all useless—coloured rags, feathers on lines, and even a Turnip with feathers stuck all over it, and hanging by a thread and waving about, enough to frighten the owls, I should think. Even an artificial hawk suspended over their heads they wink at. I should advise "Hortus" to use black worsted stretched about in zig-zags among the plants; this disfigures the groups less, and frightens the impudent wretches more when they find their legs entangled in the threads. One was heard by my gardener to give a loud scream.—B. G.

—— If "Hortus" stretched a few threads of black cotton over the Crocus beds at a height of 6 inches I should think that would keep his adversaries—the sparrows—away. The gardeners in my neighbourhood regularly do this over beds containing seed of any kind to stop the ravages of these marauders. They argue that the birds are unable to see the black cotton, and on flying against it are startled, and, not being able to discern the cause of their fright, fly away with the idea that the particular piece of ground so treated is haunted. —G. T M.

—— Your correspondent, "Hortus," would find wire netting, made in the form of a cylinder, about the size of a gallon measure, a useful remedy both for sparrows and cats; or he may strain coloured worsted round some twigs.—Orion.

OUTDOOR PLANTS.

THE TALL MULLEIN.

Such of our readers as are fond of curious and fine hardy plants should not be without this beautiful Mullein, sometimes called Verbascum Chaixi. We first saw the plant in a Paris garden about fifteen years ago, and brought some of it home. Since then it has been gradually making its way through English gardens and nurseries. It differs from most of our own Mulleins in being generally a good perennial, and attaining a good height, the foliage being greener than our common large Mulleins, and very fine in form. It occasionally attains a great height. We have seen it 10 feet high, but at whatever height it flowers it is always handsome, the numerous yellow flowers having a red brown centre. It is a fine plant for a spot of good soil in the shrubbery, or for any other place where bold habit is appreciated. It would associate well with the very tallest herbaceous plants, but on the whole we think it is most effective as a single specimen or as a group of two or three.

The tall Mullein (Verbascum vernale).

Narcissus in the Scilly Isles.—I have sent you for your editorial table a few specimens of Narcissus, which are now being extensively grown in the open air for market in the Scilly Isles. The first cutting was made a week before Christmas, since that time the exports have been from 50 to 700 baskets weekly, each basket containing on an average about 65 bunches, of one dozen spikes in a bunch. Within the last ten years a great impetus has been given to that branch of industry; every garden has its bed of Narcissus, of which there are about 250 varieties grown. The old white variety, for which Scilly is so famous, is similar to the Belle de Normandy, and is supposed to have been introduced into the islands either by the Romans or the monks of Tavistock. Previous to their market value being ascertained they grew wild in the hedgerows.—J. C. Tonkin, *Scilly Isles*. [With this letter, for which we thank our correspondent, came (March 13) a charming series of Narcissus, mostly of the early Italian kind—N. Tazetta.]

SOME HARDY PLANTS OF FINE HABIT.

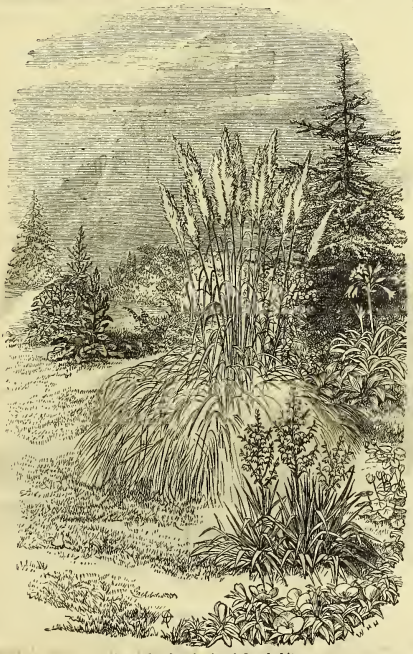
This illustration is suggestive of the great beauty of form as well as beauty of flower that occurs among what are called hardy plants. It comprises the thready Adam's Needle (Yucca filamentosa), the large Cape Lily (Crinum capense), the Pampas Grass, the Cow Parsnip, and Rhubarb, with some Evening Primroses in the foreground. In various parts of even small gardens a little colony of such plants might be made; or, indeed, of any plants of hardy character that have fine form and tend to relieve the eternal monotony of flat surfaces and straight lines, geometrical beds and bare borders!

Hesperis matronalis grandiflora.—I saw a description of a new large-flowered Sweet Rocket in a seedsman's catalogue two years since, saying it originated in the gardens of Mr. J. Wood, of Kirkstall, who describes it as a considerable improvement on the older varieties, both in size of flower and general habit. Having been so often disappointed with seeds purporting to be new and improved varieties, I would have paid no attention to it had it not originated in the gardens of one of our greatest authorities on hardy flowers. I purchased a packet of seeds, sowed it in the border in March, and transplanted the young plants where I intended them to flower, about the end of August. I consider it a great improvement on the older varieties, with large close compact spikes. When seen at a little distance it resembles a fine spike of the grand old double white Rocket. It is decidedly an "everybody's plant," as it will grow in almost any soil and situation. I have no doubt that it will become popular when better known.—J. S. [The above letter was forwarded to Mr. Wood, whose reply is as follows: — The Rocket referred to by your correspondent "J. S." is what I take to be a large pure white flowering form of Hesperis matronalis, single. The flowers are very large and well-spread; clusters are 5 inches to 9 inches in diameter. I cannot say how it came into my garden. In the summer of 1882, I think, I sent flowers to the *Garden*, and a favourable opinion was given of them. Mr. W. Thompson got my first crop of seed. I referred him to the *Garden*, and his description was based on that opinion, together with my own. Mr. Thompson called it Hesperis matronalis grandiflora. Until a week or two ago I could have given more precise references, but, clearing off the seeds, the notes placed in the seed-bag were destroyed. By no means, however, have we allowed the plant to be lost, for, as "J. S." says, it is likely to become more valuable as it gets better known. It is to be commended for its sturdy habit, big flowers in large clusters, the purity of colour, and most of all for its powerful but delicate perfume. The ladies rush at it for cutting purposes. It needs timely transplanting, and, if liberally treated, flowers appear on the side-stems several weeks in summer. Though evidently a perfect perennial, plants two years old from seed give the best results. Seedlings show the primary qualities to be fairly fixed, but I have noted slight variations in leaf and habit, and some of the plants have borne their flowers in cyme-like bunches in the manner of Sweet Williams.—J. Wood, *Woodville, Kirkstall.*]

Supplying references.—May I suggest that all correspondents when replying should quote page on which query appears, or to which remarks refer, as it saves a lot of time hunting over back numbers. A. Sweet, page 14, is a good model. I think it will still further improve your paper.—A First Subscriber.

GLADIOLI AND THEIR CULTURE.

Much has been said about Gladioli dying off from disease, which they do to a great extent in some places and soils; but that they do well in others is equally certain, or bulbs would not be so plentiful as they now are. Many fail with them because they plant them in over-manured land, which stimulates them and produces large corms, but it is done at the cost of soundness; the consequence is, they are neither firm nor ripe at the time of taking up, and, as a natural result, shrivel and die in the winter. Where I have always seen them do best is in fresh, sharp, gritty soil, from which they always come up clean and sound, and, if properly stored, remain so till the season arrives for planting again. The proper time to plant is in spring, for if they remain out of the ground longer, they lose weight and shrivel, and their vital strength is reduced very materially; so much so, that they start but feebly, and send forth the poorest of flowers. If the land is wet and unfavourable, it will be advisable not to wait, but to start the corms, by either potting them singly or placing them in boxes of sandy leaf-mould, from which they can be easily lifted and put in their places when we get more favourable weather. Meantime the ground can be prepared by digging, or, if the plants are to be grown in clumps on borders among herbaceous subjects, or in front of shrubs, holes should be dug out, and have some road scrapings worked in among the other soil when returning it again to its former position. All will then be in readiness for planting, which should be done by the aid of a trowel, as the plants can then be dropped into and covered carefully with the earth without breaking or injuring the roots or young shoots starting from the crown of the corms. If these latter are dry and dormant, they may be dibbled in, in which case it is always advisable to drop a little clean sand over them, which keeps the soil from coming in immediate contact with the bulbs, and thus secures free drainage around them, and by that means preserves them from rot. When once planted, Gladioli require little or no further attention till they begin to send up their bloom, and then, if the weather is dry, they are greatly benefited by an occasional watering; but before doing this it is as well to mulch round them, which not only prevents a washing away and cracking of the earth, but impedes evaporation, and thus keeps the plants in a more uniform state as to moisture. As the flower spikes are tall and heavy, they need support early, and in staking them care should be taken that the points of the stakes be not driven into the corms, as would most likely be the case if driven in near to the stems. Although the beauty of Gladioli is over rather early in the year, the plants should not be hurried out of the ground, but left there till late in the autumn to ripen, for so long as the leaves are green they are of use in assisting to swell up and mature the bulbs. Directly, however, the tops die away they may be lifted at once, and, after being laid on shelves in a shed to dry, stored for the winter. The way in which they keep best is in small bags containing a little silver sand, or in small pots covered with the same, as, being absorbent, it prevents damping, and keeps the air from acting on and shrivelling the roots. Not only are Gladioli effective in beds and borders, but they are also valuable in pots, especially the ramosus section, which are small and dwarf, and afford nice light spikes of varied and lovely coloured flowers, which when cut continue to open and last long in water. To have good masses of these kinds, several bulbs should be placed in a 7-inch pot, as they will have plenty of room, and if potted in good sandy loam they are sure to do well. The hybrids of gandavensis and brenchleyensis should be potted singly, as, being so much larger, they require more root space; but, otherwise, the whole may be treated alike. The best place in which to grow them is a cold frame, where they should be plunged in ashes, and not watered, unless the soil gets very dry, till they are in full leaf, after which weak liquid manure will be a great help. Later on, when the weather becomes warm, the lights may be withdrawn; and at all times the plants should have air to keep them strong and prevent them from drawing, which they soon do if grown in a close, confined space. S. D.



Some hardy plants of fine habit.

A curiosity for an out-of-the-way corner. — Bulrushes are common things, no doubt, but still there are numbers of persons who have never seen one growing. At any rate, it is a certain fact that they are not often seen growing in a suburban garden. I send a rough sketch of the way they may be grown. In an out-of-the-way corner I sunk a large flower-pot (one of the largest made, I should say), first stopping up the holes with cement. I three-parts filled it with mould, in which there was plenty of river sand. This I surrounded with rockwork (brick), and intend to place about it plenty of Ferns, &c. The water, I am told, must occasionally be nearly drawn off and fresh added. When watering the garden a little placed in the pot will keep it to its proper height.—Robert L. [The best name for this plant is Reed Mace. It is very graceful and bold, and may be grown anywhere where there is a bit of soil and water without a pot or anything of the kind.—Ed.]

Salvia patens.—I see a letter on herbaceous plants in your number for March 14th, and wish to bear my testimony that Salvia patens is often hardy enough to endure our Irish winters. I had a magnificent plant in my garden for six years, merely covered with peat-mould when winter approached; its size, height, and the profusion of its flowers, were remarked by everyone who entered the garden, and I frequently saved ripe seed from it. A very severe frost killed it at the end of that time as it did other Blue Salvia plants in a garden eight miles away, which grew quite freely for years in the open air, and were frequently divided. I found Scarlet Salvias less hardy than patens and have lost them from severe frost; but in Meath I remember two enormous plants of fulgens which were left in small beds close to dwelling house windows, and they grew and blossomed, to my own recollection, for ten or twelve years undisturbed. Peat-mould was also mounded over them in winter. —West Meath.

—— In December 20, No. 302, "Fides" speaks of Blue Salvia being hardy. May I state that S. pratensis is blue, and has very similar flowers. Is not "Fides" mistaken in the name, as S. patens will not bear the winter here (Rochester), while S. pratensis is in its glory?—Orion.

INDIAN KALE (CALADIUM ESCULENTUM).

This is a very fine drawing of a plant well-known in our gardens for its beauty and size of leaf. It grows quite freely in a warm house with simple culture, and in some of our southern gardens it is put out-of-doors in summer as a sub-tropical plant. In warm years with us it does very well in such sheltered places as Battersea Park. About Paris it does a little better still, and sometimes attains fine proportions. It is one of those plants that, while beautiful from our point of view, are extremely useful. In our country it is, perhaps, the last plant in the garden that anybody would suspect to be of the highest value as food, because the acrid leaves and shoots of the family are so intensely bitter that anyone who tries them would hardly make a second experiment. In hot countries, however, and in such climates as that of Madeira, which is temperate and beautiful, it is usually grown as a garden crop. The large starchy tubers are boiled and served in various ways, and are considered extremely good food. In Madeira one sees it everywhere in little gardens, as common as the Potato is with us. In some countries it is called Indian Kale, and it is the Tanga of South Carolina. The name Yam, sometimes given it, is, perhaps, more properly applied to some other plant, but the word is one that is used for different plants in various countries.

Indian Kale (Caladium esculentum).

Plumbago Larpentæ.—In a late number of Gardening Mr. Wood alludes to the difficulty experienced by him of inducing this hardy plant to flower. I remember that in a trade establishment, where a number of the best hardy perennials were grown in pots, this Plumbago used to bloom freely year after year. The plants stood on the east side of a hedge and partly under some tall Pear trees, and they certainly grew with great freedom. Whether it was the position or the being in pots that caused them to flourish I cannot say; perhaps it was the combination of circumstances that was unusually favourable. If I were to plant this Plumbago in the open ground I should select a place screened from the hot sun at midday, and from cold winds. I think it dreads fierce heat and parching winds. The late Donald Beaton predicted a future for Plumbago Larpentæ which was never realised. The rich blue of the flowers and the dwarf habits of the plant induced him to think it might be useful in those bedding displays which he was one of the first to utilise. But the extremely fugacious nature of the blooms, lovely though they are individually, rendered this Plumbago of no service where effect is desired, and so it soon fell into neglect, nor do I think it is ever likely to become very popular. It is only those who love flowers for their own sake, and not for the effect they create in a mass, who can appreciate this little hardy flower.—Byfleet.

Raising Annuals.—Few are the gardens in which some annuals are not grown, and many are the methods adopted for raising them; some growers, from want of accommodation, sow them in little patches where they are to flower. With this method I have been disappointed, as, where the ground is stiff and heavy, some of the small-seeded kinds refused to vegetate, and those that did were pounced upon by slugs. Another method is to sow the seed in store pots in the beginning of April, and place the pots in a cold pit or frame, keeping the lights close for a day or two, and, should the weather prove bright, shading, but taking care that each pot of seedlings is removed to a light position as soon as they appear above the soil. When large enough these may be placed, one or two or more, into small pots according to their respective kinds, and again placed in a cold frame until they have taken root, when the lights should be entirely removed. This latter may appear to involve a good deal of trouble, but I am convinced that in the end all will be repaid, as the young plants may be planted like ordinary bedding plants, and will not feel the shift in the least. In no case, however, should they be allowed to become pot-bound, or failure will result. Here, again, another obstacle may present itself to some, and that is want of pots. To those so placed I would recommend sowing in a frame in soil placed on a small bed of leaves. Sow in drills from 4 inches to 6 inches apart, setting the label at the end of each kind. As soon as the seedlings are up, ventilate by degrees until the lights can be drawn quite off. As soon as the seedlings are strong enough they should be planted out, choosing a showery day for the operation. We invariably choose the beginning of April for the sowing of such seeds. The following are among the kinds commonly met with, viz.: Asters, Stocks, Candytufts, Chrysanthemums, Convolvuluses, Centaureas, Eschscholtzias, Godetias, Helianthuses, Helichrysums, Lupines, Marigolds, Nasturtiums, and Prince's Feather, all of which, when mixed, make a pretty bed of themselves, and are also most useful for filling vacant spaces in herbaceous beds and borders.—C. W. C.

A new Violet.—The latest addition to garden Violets is called Viola Wellsiana—a decided gain, inasmuch as it is the largest single-flowered sort yet obtained. It is, moreover, very vigorous and floriferous. The flowers are twice the ordinary size, of a rich violet-purple, and are deliciously scented. A large number of plants shown by Mr. Turner at South Kensington recently, from his nursery at Slough, were the admiration of everyone.

REPLIES.

13054.—**Annuals for clayey soil.**—Few annuals do well in a clay soil if it is in a stiff state. The very first thing that should be done on taking possession of a garden on the clay is to get the soil out of a stiff state and into a light and easily workable condition. A clay soil forms a good site for a Rose garden. If the ground is well worked and well-mannred half-hardy annuals of most kinds will do well—Stocks, Asters, and Zinnias, for instance; Godetias and Clarkias suit, but most annuals run to leaf and grow straggling. Blue Cornflowers would suit and are useful for cutting. Hardy annuals as a class are not good cut flowers, as the blooms do not last well, and many which are showy on the plants close up when placed in the shade. Where cut flowers are required perennials should be planted, supplemented by half-hardy annuals. Pinks and Carnations are extremely unsuitable as they like to lie on a dry surface and are liable to rot in damp situations. Some other correspondent may be able to give further advice, as I have little experience of clay soil in the stiff state, having got my clay beds into workable condition after the first season.—J. D.

13063.—**Perennials for garden facing north.**—"Hibernia's" list of plants would do very well, I think, except possibly Geums and Pentstemons. The best Anemones would be A. japonica and its varieties. Other plants suitable are Tradescantia virginica, Iris Germanica, Solomon's Seal, Honeysuckles, and plenty of dwarf things like Primroses, London Pride, and Daisies. Some of the commoner Narcissi will do if planted early in autumn. At any rate, do as much digging with a steel fork as possible before beginning to plant, or hardly anything will flourish. A pretty blue plant of vigorous habit is Symphytum caucasicum, and it is desirable on account of its early blooming, and as it enjoys moisture and shade it would very likely flourish with "Hibernia."—T. J. W., *Crouch Hill.*

13001.—**Evergreens for banks.**—Tree Box, the common green Euonymus, and the variegated Euonymus radicans will do well; the latter is extremely hardy and thrives in any soil, covering the ground in time with a dense mass of foliage. It can be bought very cheap. There is a dwarf kind of Furze (Ulex nanus), a native of this country, which is very suitable for such purposes. Your best way is to plant in autumn so that the plants should get hold by the following spring. If planted at this time of year on a steep bank many will probably die of drought.—J. C. B.

13056.—**Carpet for dry position.**—Cannot the sloping border be levelled? No greater mistake can be made in laying out a garden than making raised or sloping beds unless the ground is a positive marsh. All the beds in a garden should be level, or nearly so; plants then have a moist root-run, and can be fed as required; whereas raised beds are too dry for most things, and artificial waterings run off without moistening the soil. If the position is sunny, try Portulacas. They require very little water, they are half-hardy annuals, and are easily raised from seed in a slight hot-bed, and have to be pricked out where they are to bloom when they have made a few leaves. Antirrhinums, Wallflowers, and Corydalis lutea answer in similar positions.—J. D.

12982.—**Sulphate of ammonia for Chrysanthemums.**—It is eight years since I grew Chrysanthemums in the open air, my last garden having been in too cold a climate for them. My plants had liquid manure twice a week, about a dessert spoonful of sulphate of ammonia to an ordinary housemaid's pail of water. The soil was shallow, but in good heart; it had been market garden ground.—J. D.

13009.—**Lily of the Nile.**—The best way to treat these plants is to plant them out in trenches exactly like Celery. They ought to have rich compost put into the trench to plant them in. Our own plan is to plant them with the Celery, and they get the same treatment as regards watering, &c. We lift and repot the plants early in October, or, perhaps, the last week in September.—J. D. E.

12972.—**Striking Honeysuckle.**—Honeysuckles may be increased by cuttings of present year's growth. Place in free sandy soil in June, and cover with a bell-glass.—A. E. A., *Stamford Hill.*

"**Gardening" Index.**—Our readers will be glad to know that a thorough index for the volume of Gardening ending in February is now ready, price One Penny.

ILLUSTRATION COMPETITION.

WE now propose what we hope will be an interesting and what will in any case be a harmless competition among our readers. The purpose is to get pretty or suggestive pictures of any gardening objects of interest, whether from the open garden, the hot-house, greenhouse, or room decoration. The best photographs or drawings in black and white of objects of gardening interest that are sent to us during each month will be engraved as soon as possible in the most fitting manner for publication in GARDENING. That is, perhaps, the best honorarium we can bestow upon the winners, but the senders of the chosen pictures will also be entitled to receive not less than one guinea's worth of books, useful for garden reference or practice.

Photographs of the outdoor garden should be taken with a lens adapted for the purpose—some photographers use lenses unfitted for landscape work. All photographs sent must be clear, the subject intended to be shown in good focus, and of a size to be distinctly seen; imperfect photographs will not be admitted to competition.

Figures of men or women, barrows, vases and all similar objects, should, as a rule, be omitted from all photographs.

Photographs or drawings should be addressed to the Editor of GARDENING, and marked "Illustration Competition." The name and description of each object sent should be distinctly written on the back of every photograph or drawing.

The photographs may be those of objects in one's own possession or cultivation, or of any others that may be obtained, but the source whence they are derived should be stated, and none sent the copyright of which may be questioned.

Unmounted photographs will do as well as mounted.

Drawings and photographs for the first competition must reach us by April 25th.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

QUESTIONS.

13114.—**Climbing Devoniensis Rose.**—Would this Rose do well in a house heated to 50 degs. and 60 degs. in winter? If so, how far from the glass should the branches be trained, and when is the best time to start it?—SHOWLER, *Stroud Green.*

13115.—**Ferns on Cork wall.**—Will any reader kindly tell me (1), the best method of fixing Virgin Cork to brick walls of a small fernery, heated; (2), names of a few Ferns likely to do well in the crevices; (3), the soil which they require, and time of year best planted?—P. W.

13116.—**Mulching orchard-house.**—I have large house of Peaches, Nectarines, Apricots, Plums, &c., planted out. The surface soil gets very dry after a hot day, which necessitates continual waterings. Would it better to mulch; if so what is the best thing for that purpose?—J. D., *Devon.*

13117.—**Plants for case.**—Will any of your readers give me the names of suitable plants, evergreen, to fill a plant case 3 feet high by 50 inches long and 18 inches wide, that is heated with a paraffin lamp in winter time to a temperature of 65 degs? I want plants that keep a good appearance all the year round, such as Ficus elastica. —ALPHA.

13118.—**Growing Violets from seed.**—Will any Violet grower kindly give me instructions for growing Violets from seed and having them in full flower at Christmas? I have cold frames and greenhouses.—SARNIA. [This is not the usual way of raising Violets; but perhaps "Sarnia" wishes to try it, and no doubt some of our readers can help her.—ED.]

13119.—**Propagating India-rubber plant.**—I have an India-rubber tree, stem without branches, but growing too high for the room. How can I propagate it—what soil should be used, and is artificial heat, even in summer, necessary? The plant is shooting freely at present.—R. P. [See reply to "Beta" in next column Probably some of our readers will also assist you.—ED.]

13120.—**Heating greenhouse from distant boiler.**—I have a greenhouse, and wish to know if it is possible to heat it from a coil boiler situated 6 yards away and 3 feet 6 inches above the level of the greenhouse pipes. The flow and return pipe will be almost level until they come under the boiler; they then rise perpendicularly. It is the only place available for a boiler or any other heating apparatus.—A NEW BEGINNER.

13121.—**Heating two greenhouses from one boiler.**—I have a greenhouse without heat, and propose erecting another 20 feet distant. Can I heat both from one boiler? The house farthest from the boiler is a lean-to, with 17 feet wall, and its floor 2 feet below the surface level. Should the connecting pipes be carried on underground or along a wall which is available? Of what diameter should they be, and how protected?—BACCHUS.

13122.—**Rough porous jars for Ferns.**—Can any one tell me where I can get the rough porous jars like the Egyptian "goolahs" used in Australia and the Mediterranean for growing Ferns, clay being plastered outside the jar, which is kept ever full of water and the Ferns then planted? I had one brought me from abroad and have seen the advertisement of others, but cannot now find it. —E. C.

13123.—**Scale destroying Peach trees.**—Will any reader tell me what to do with my Peach trees? Last year, while the fruit was setting, shell scale attacked the trees, and the leaves fell thickly. I syringed them then with the usual mixture of Fir-tree oil, which seemed to check their progress, and this last winter I had them washed with Gishurst's compound, and now the buds are beginning to swell and the trees are covered with the young of scale.—X. Y.

13124.—**Law as to removing shrubs and fruit trees.**—What is the law with regard to removing shrubs and small fruit trees? I moved into my house last August. The garden is well-stocked with fruit trees and shrubs, but I have planted about a dozen small fruit trees and Roses, &c, and as I intend moving next September into a house of my own, I wish to take with me the few trees, &c., I have recently purchased and planted. Can I legally do this, or must I remove them a certain time before I quit my present house?—R. W. GREEN.

13125.—**Apple trees and insects.**—What kind of gum or other sticky substance should I put round the stems of Apple trees to prevent the insects crawling up, of which the young afterwards destroy the buds? I have seen this recommended, but do not know what to use.—SURREY [Does "Surrey" mean the Codlin Moth? If not, what kind of insect does he refer to? We are not aware that any such substance is used by practical people in this country, but American growers have to resort to various contrivances of the kind against the curculio.—ED]

13126.—**Ferns for back wall of greenhouse.**—I have a cold lean-to greenhouse, facing east, that gets the sun all day. The plants are on a shelf in the front of the house, and I am covering the back wall (except a small portion at one end) with bog stuff, in which I intend trying to grow Ferns and Begonias. I will be much obliged if some of your readers will kindly give me the names of some Ferns likely to thrive in such a situation.—B. M. P. [We have simplified your question a little, and you will find the other portion dealt with elsewhere. Your idea as to the Creeper and shading is right enough.—ED.]

13127.—**Growing Cape Heaths from seed.**—Miss S. would be very glad of any practical information regarding the culture of Cape Heaths or Ericas. She has a frame and a cool greenhouse and would like to grow them from seed; would this be likely to succeed, and if so how soon would they flower? The culture of Heaths has been often mentioned in GARDENING, but nothing said about growing them from seed. "N. D." asks the same question. [We fear raising Heaths from seed is not work for an amateur. For general directions as to Heath cultivation we may refer our correspondent to Mr. Ravenscroft's article in the issue for February 28th.—ED]

13128.—**Local authorities and greenhouses.**—I have had, for fifteen months, a greenhouse erected against a brick wall (but not resting upon it), height about 11 feet at back, sloping to 7 feet at front, length about 15 feet by 8 feet, with a potting shed attached, the lower portion and back is of wood. This greenhouse is overshadowed by trees and is 90 feet from any dwelling, the only building near it is another greenhouse separated from it by a 12 feet brick wall. Before erection the builder advised that it was not a case for the local surveyor, but the latter now threatens penalties, &c., unless structural alterations are made. Will anyone kindly tell me how to proceed in the matter?—N. F. B.

13129.—**Getting rid of wire-worm.**—I should be grateful for advice as to how to get rid of wire-worm. We have tried to grow all sorts of flowers in a villa garden, and now find the borders contain a quantity of wire-worms, that eat the roots of Anemones, Silene, &c., so that everything looks sickly. The border is next to my neighbour's fence, so I am afraid if I destroy them by some dressing they will only come to me from my neighbour's garden. How can I keep them under, or what dressing can I put on? I have been recommended gas tar; but read in the GARDENING paper that it does not kill the wire-worms. The soil is a light sandy one, but stable manure has been added for many years, and some loam. I know, however, that one gardener put the manure on too new.—A DISAPPOINTED AMATEUR, *Bournemouth.* [The question has often been answered before; but perhaps some readers will kindly assist "Amateur," whom we may in addition refer to page 251, August 4th, 1883; page 271, August 18th, 1883; and page 436, November 8th, 1884.—ED.]

13130.—**Failure of spring blossoms.**—For several years I have been to a great extent unsuccessful with Hyacinths, Crocuses, Tulips, Narcissus, Spiræa, Dielytra, &c. I keep them in a cold frame till they start, and then bring them into greenhouse, and they grow well until the buds should begin to swell before opening, when they turn brown and come to naught. For two years have tried some pot Roses, but these have gone just the same. My greenhouse is a small span roof, and is heated by a gas boiler with a flue and hot-water pipes; the house is very sheltered, south aspect, and has during late sun shiny weather run up to 73 degs, with plenty of top ventilation, and 50 degs. at night, sometimes 45 degs. 1 sharp frost. I have other plants in the house looking healthy, especially Ferns and Lycopods. Will any reader of greater experience say what is likely to be wrong in my treatment?—CHISWICK.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13131.—**Flowering Lilium Thompsonianum.**—How can I make Lilium Thompsonianum, sometimes called Fritillaria Thompsoniana, flower? I have tried it in pots in the open border, in heat, &c. It makes foliage in abundance (of which I send specimen), and out of roots, of which I had six about five years ago, I have now more than one hundred. I kept it three years in an open border without taking up; it would not flower, but the number of bulbs it made was wonderful.—SOUTH DEVON. [*We flower this rare plant very well planted out in a cold frame and allowed to grow there for several years.*]

13132.—**Manure for Carnations and Pelargoniums.**—What kind of manure is best suited for Carnations and show Pelargoniums growing in pots?—AN AMATEUR.

[*We have always found that good, well-chosen soil, with plenty of water and a little weak liquid manure, made from sheep's droppings, was best, but, nowadays, artificial manures seem to be applied to all plants, and no doubt some of our readers will tell you the best, but we cannot recommend any particular "patent" manure; so the question must be confined to substances obtainable by all.*]

13133.—**Repotting Fuchsias** (*W. H. E.*).—Yes; pot at once, as you have not done so already.

13134.—**White Cyclamen** (*N. M.*).—White Cyclamens are not uncommon, we are glad to say, and sometimes they are very beautiful.

13135.—**Treatment of Solanum Capsicastrum** (*H. W.*).—Cut in, repot in rich sandy loam, and start in a good light and warm greenhouse.

13136.—**Roman Hyacinths after flowering** (*Mrs. N.*).—Plant them in a border, and they will flower next year. Forced bulbs seldom succeed the second year.

13137.—**Seeds for east and north-west aspects** (*L. C. W. T.*).—Any of the common, vigorous, hardy, and half-hardy annuals will do well in those positions.

13138.—**Propagating Lobelias** (*C. T.*).—You do not give the specific name of the flower, but we suppose you mean Lobelia ignea or Queen Victoria. All such Lobelias are propagated by division of the little suckers.

13139.—**Shrub for verandah** (*G. S. S.*).—There is a large choice. We doubt whether you can easily beat good plants of the common Adam's Needle or Yucca recurva; but, whatever you have, a bit of common English Ivy trailing from the tubs or large pots will add grace.

13140.—**The Wax Plant** (*T. M.*).—This plant (Hoya carnosa) is a very vigorous tropical climber, which grows quite freely in a stove, or even in a warm greenhouse against the back wall, or up a pillar, or on a trellis. It is one of the few climbers that will do well in a vinery.

13141.—**Planting Gloxinias** (*Showler*).—Plant so that the surface of the bulb shall be level with the soil. The covering of shaded glass that you suggest would be beneficial kept on until the shoots begin to grow. Keep near the glass, as light induces short, sturdy growth.

13142.—**Single Dahlias in Pots!** (*F. W. S.*)—We have never seen a Dahlia worth looking at in pots. Single Dahlias should be planted in the open air as soon as the weather permits—say, about the first or second week in May, according to locality—in good rich soil. If there is any danger of frost, invert a flower-pot over each young plant for a week or two.

13143.—**Water Melon growing in England** (*F. Meier*).—We have never seen Water Melons grown well in an English garden, and we do not expect that we ever shall. Are you quite sure you mean the Water Melon, and not the common Melon of the English gardens, which may be grown in our country? The true Water Melon, with the black seeds, is no good out of a hot country.

13144.—**Trumpet Lily and its growth** (*J. T.*).—We presume you mean the common Calla, sometimes called the Lily of the Nile. It is a plant that can be got in every nursery, and grown in every greenhouse; it lives out-of-doors in summer, and in the south of England and Ireland is quite hardy as a water plant, growing near the margin of lakes and ponds and in fountain basins.

13145.—**Liquid manure for vines** (*Harries*).—Properly-made vine borders should not require liquid manure; but it may be well applied where the soil is poor and worn out. Apply it in a very weak state. The manure you mention had better be used with other substances for putting in the ground direct. Sheep's is usually considered to make the best liquid manure for gardening purposes.

13146.—**Leafless India-rubber plant** (*Beta*).—Cut down, repot if necessary, and place in gentle heat of hot-bed or warm house until leaves have broken, and the plant is growing well. When the leaves are matured it may be gradually inured to greenhouse or room temperature. If you have no means of doing what we advise, hand it to some gardener or nurseryman to grow for you until it is quite green and firm.

13147.—**Hardy annuals in hotbed** (*West Meath*).—Certainly; give air with care and judgment during the sunny days. You can prop up the lights without throwing them open; but hardy annuals with the shelter of the frame would often best like them drawn off during the day. If you have allowed the plants to get drawn you will perhaps not do much good with them, and we should sow a lot of the same kind, now in the open air, in well-prepared soils; then you will have a double chance.

13148.—**Liquid manure for Roses** (*Rag*).—We should not give any at all if the soil is good and rich. If poor and in want, give it very weak at any time you like.

13149.—**Dividing Rhubarb** (*Amateur*).—It may be divided any time during the autumn, winter, or very early spring. Champagne Red is one of the best early sorts.

13150.—**Creeper for cold greenhouse** (*B. M. P.*).—We would take for choice the blue Plumbago capensis or the beautiful crimson Passion Flower (Tacsonia Van Volxemii).

13151.—**Ascertaining heat of Mushroom bed** (*Beginner*).—Growers can generally tell by their hand; but you can easily get a thermometer set in a stick for the purpose, or you can plunge a thermometer into the bed.

13152.—**Lilies of the Valley to bloom at Christmas** (*Denbigh*).—You must about September or October get large eyes, as they are called, of Lilies of the Valley, which are imported from abroad. Force in strong heat and good light, beginning gradually. All depends on your getting the best roots grown specially for the purpose.

13153.—**Liquid manure for plants** (*Rag*).—We know of nothing better than sheep's droppings for making liquid manure for plants, but almost any farmyard manure will do. Directions for making liquid manure will be found on page 8, in issue of March 7th.

13154.—**Treatment of Primulas after flowering** (*A. M. T.*).—We assume you refer to common single Chinese Primroses. If they are seedlings keep them on; if old plants you had better raise from seed. Do not keep them dry at any time of their life. Mr. Cannell, however, grows his old plants into very fine specimens.

13155.—**Hyacinths after flowering** (*H. E. W.*).—Hyacinths are rarely satisfactory the second year as forced plants. You had better plant them out in a warm border, all the better if at the foot of a south wall. We have seen planted out Hyacinths, deeply set in good ground, flower well for years in succession.

13156.—**Pig manure for vegetables** (*Rag*).—Pig manure is excellent for vegetables if given with ordinary care. [In any future queries you may send please observe the rules laid down for your guidance. Correspondents who send several questions on a single slip of paper will have themselves to thank if their communications are not noticed.]

13157.—**Abutilons in conservatory** (*Thos. Robinson*).—Abutilons will grow very well in a border in a conservatory against a wall; and also fairly well in the open air in summer. In the warmer parts of the country there is one beautiful and seldom-seen kind, A. vitifollum, which is a superb wall shrub, with pale sky-blue flowers, very large.

13158.—**Sickly Paris Daisy** (*E. S. O. R., Putney*).—It probably came from a warmer house than yours, the temperature of which you say varies from 45 degs. to nearly 60 degs. Cut it in and plant it out as soon as the weather is fine enough, and it will bloom prettily in your flower garden during the summer. Take cuttings as soon as you can get them from the young growth.

13159.—**Grubs on Maiden-hair Ferns** (*Miss C.*).—The grubs are those of the black vine weevil (Otiorhynchus sulcatus), or some nearly allied species; but they are so shrivelled that I cannot be certain which, as most are now in the pupa or chrysalis state. I do not think any insecticide would affect them. The plants should be repotted and carefully searched for the intruders. In about a fortnight search any plants whose foliage is being eaten after dark for the beetles. Place the plants previously on a white sheet, and enter the house quickly with a bright light, when they will feign death and fall; give the plants a good shake to be sure they are all down.—G. S. S.

TO CORRESPONDENTS.

Notice. — *Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—Ed.

Query (*H. Hamer*).—We know of no such plant as that which you name. Find out the proper name and write it distinctly, and we will try to help you.——Material for joining glass.—You must supply us with reference to the number in which the recommendation was made, or tell us clearly what it is you want.——Geraniums (*Miss S. and L. T., Wilts*).—We have no "exchange" column. Queries are inserted free of charge, but all announcements of the nature of advertisements must be paid for, and should be addressed to the Publisher.——Harbopitamus dropping flowers (*Skilo*).—You do not state how or where the plant is growing, and therefore it is impossible to advise you. Readers will understand that a person who has not seen a plant, and who is told nothing of the conditions of its growth, must be wise indeed if he can give any reliable advice about it.——Exchange (*Mamma*).—See reply to "L. T. and Miss S." above.——Best mowing machine (*W. M.*).—You should consult the advertisement columns of the paper.——Marechal Niel Rose leaves dying (*W. Medcalf*).—You do not tell us the conditions under which the plant is growing, and therefore it is impossible to advise you.——Pyrenean Anemones from seed (*Shamrock*).—You no doubt mean the scarlet Anemone (fulgens), or the scarlet form of the old garden Anemone (coronaria); you will have no difficulty in getting the seeds of such Anemones from or through any good seed house.——Destroying Daisies on lawns (*Daisy*).—Directions for destroying Daisies and weeds on lawn will be found in Gardening, p. 665 (Jan. 10th), and other notes on the matter have appeared in recent numbers.——Oriental Poppies (*T. T. Leeds*).—There is no catalogue on the page you refer to. We cannot forward addresses.——Procuring Book (*A. Maitland*).—A bookseller will be able to inform you where to procure the book you want.——London Gardening (*G. H. M.*)—We shall be happy to receive your article, but we cannot promise it insertion until we have had an opportunity of judging of its value.——Rabbits (*T. M.*).—We cannot afford much space to articles on Rabbits, but if you wish to send us any notes, and they are not long, we may insert them.——Begonias (*J. Blakemore*).—The Begonias you send are evidently very fine and valuable as winter flowers, but they arrived in a very damaged condition.——Illustration Competition (*J. P. Ross*).—Room decoration photographs are expressly included in the competition, and of course the use of vases in such cases is not vetoed. Competitors are not limited to one photograph.

Messrs. Pope and Sons, of Birmingham, who advertised Poet's Narcissus in Gardening, request us to state that, before the second of the two insertions of their advertisement could be withdrawn, many wrote for roots which they could not supply, as they had sold all. They returned over forty applications one morning, with P.O., &c., enclosed, regretting that they were compelled to disappoint so many, and they think some explanation is desirable.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Sprituing.—1, Cestrum aurantiacum; 2, Daphne Mezereum album.——*South Devon.*—Your Broccoli leaves show very unusual character.——*Rev. J. Byron.*—Violet Cress (Ionopsidium acaule).——*O. S. S.*—It is not unusual for Aspidistra to flower.——*Constant Reader.*—13, Begonia weltonensis; 3, Veronica decussata; 4, Euonymus japonicus; 11, Saxifraga sarmentosa. Please observe that our rule is to name but four plants at one time.——*W. H. Lewis.*—White flowered plant is Arabis albida; other is Cineraria maritima.——*Mrs. Cohusac.*—Libonia floribunda.——*F. Daher.*—Sparmannia africana.——*S. Sharp.*—1, Euphorbia splendens; 2, Deutzia gracilis; 3, Billbergia nutans; 4, Eupatorium ageratoides.——*Mrs. N.*—There was no plant enclosed in your letter.——*Pin Box.*—Aubrietia.

THE KITCHEN GARDEN.

RICHD. GILBERT'S PRACTICAL PAPERS ON FRUIT & VEGETABLE CULTURE.

The French Bean.—Indoor.

There is no inmate of our garden so justly popular as French Beans. They are alike a special favourite with the cottager and the amateur, and for my lord's table they are indispensable. French Beans in the winter and spring months are like Peas in summer—wanted daily. I know of nothing that gives a gardener more pleasure than forcing this truly delicious vegetable. We sow our first lot in pots on or about the 20th of August, stand them outside on coal ashes in a sunny situation, the pots we use being 16 size pots. These remain here until the end of September; they are then grown into sturdy plants. We rod them with small brushwood, and remove to a cool house, near the glass. They begin bearing immediately, and as the weather gets colder we keep the house warmer, say, from 55 to 60 degs. at night. This batch, in consequence of growing so strong, is the most fruitful of any during the forcing season. The soil we use is good, turfy loam; the variety used here for early forcing is Osborn's Prolific.

The next batch is sown on the 1st of October. These we sow in small 60 size pots, standing them at the top of the hot-water pipes until the third leaf is visible. We then pot them in 32 size pots, and stand the plants on the curb of the Pine stoves, or any other situation where plenty of heat and light can get at them. I may here remark that 32 size pots are superior to 16's. In the winter months we very much prefer a small pot full of healthy roots to a large one full of soil and meagre roots. Generally speaking, it takes about thirteen weeks from the sowing of the seed to the gathering of fruit.

We sow again on the 1st of November, which makes three batches at work at the same time, and this we consider sufficient for our purpose. Immediately the first lot is over, the second lot takes its place, and the third lot replaces the second, so that by sowing monthly we have always three stocks in hand. As we require a full supply until May or June we make up in February a common hotbed, putting from 8 feet to 10 feet of soil on the top of the manure. We plant Canadian Wonders at 1½ feet between the rows, and 3 inches apart between the Beans. These relieve our houses the latter part of April, and for size bear no comparison to the pot-grown plants, being so much larger. It is a well-known fact that red spider is the Bean's great enemy, and copious syringing in all stages of their growth is absolutely necessary. Among the new varieties of this esteemed vegetable, Mr. Bunyard sends us the Red Paris Bean, which is a giant in size, and the quality, when young and tender, is all that can be wished for.

French Beans.—Outdoor.

This vegetable is a true lover of a good larder, and I have been told, by no less an authority than my excellent friend the late Mr. Robert Thompson, of the Royal Horticultural Society's Gardens, that to plant French Beans on a Peach border is an excellent plan to keep the Peach trees clean of red spider, as they attack the Beans in preference to Peaches. The first week in May we plant our first lot on a warm sunny border that has previously been well manured in drills 3 feet apart. When well up we keep the ground well cultivated by a tool, which we call a cultivator. When about 9 inches high we earth them up slightly, to keep them safe from the wind. The variety we grow is Osborn's Prolific for first crop. Three sowings are sufficient. The second is made in the middle of June, and the variety grown is Canadian Wonder. The third and last sowing occupies a north border, and the variety last season was red Paris Bean, which answered well. I have grown French Beans in many different ways; perhaps the most successful for the early crop is to raise the plants in 60 size pots, and plant them out on a south border about the first of June. The cultivation is the same as above described.

Sweet Basil.

In all first-class establishments Sweet Basil is a necessity, and, unlike many other herbs, when dried it loses its virtue; therefore, it must be had green. There are two varieties of this herb—one, called Bush Basil, and the other Broad-leaved or common Basil, the latter being the favourite with the white cap and jacket. In February we sow our first lot in well-drained, clean pots, the soil being light and porous. When showing its third leaf we pot off into 60 size pots, and stand the plants in a Cucumber or Melon frame, and here they soon make sturdy little plants. We treat them to another shift, into 32 size pots, using the same kind of soil, replacing them in the frame. When well established we harden them off, and in May they stand in cold frames. It must be remembered that directly the plants get 4 inches high we begin to pick the leaders out, and supply the cook, so that they do good service when young. The outside growth should be sown the first week in June, and the beds shaded with mats; when well up, take the mats off in the evening before exposing them to the sun. Keep all clear from weeds, and Sweet Basil you will have in plenty. The best way to keep this herb is to dry it sufficiently, so that it will rub into powder, putting this into wide-mouthed bottles and corking well up, so that the air is fully excluded. Kept in this way it will fill up a gap if one exist.

Stamford. R. G.

REPLIES.

12983.—**Netting for supporting Peas.**—I have never seen cord netting used for supporting Peas, and to be of any service it must be specially made very strong, and with a mesh large enough to admit the hand to pick the Peas. It appears to me that "The Perfect Pea Trainer" is the sort of thing your correspondent requires. This is a patented article. The apparatus consists of upright metal tubes, and a series of specially-prepared waterproof cords running horizontally along the sides of the rows. The apparatus is not expensive, and it can be had 4 or 6 feet high. It is so constructed that it can be folded up and stowed away in a small space. I look upon this invention as a great boon to those who cannot conveniently get Pea sticks.—J. C. C.

12987.—**Keeping Potatoes in winter.**—When these are intended for plants, they should be spread out very thinly on the floor of a cellar, or any room from which frost can be excluded. If the place is warm the Potatoes will sprout, but if they do not grow very much, they can be planted carefully without injuring the growths. Where large quantities have to be planted for commercial purposes, the farmers do not take any heed of the sprouts, but break them off without taking any care of them.—J. D. E.

—— The best place to keep seed Potatoes is a cool airy room, in which the sets can be protected against frost. They should be spread out in layers, and these will, during the winter, from

short green spurs, with rudimentary roots at the base. Keep plenty of dry litter handy, and, should there be any danger of frost penetrating, cover them up. It must, however, be distinctly understood that abundance of air should be admitted as soon as the temperature rises above freezing. If such convenience does not exist the sets must be clamped in the ordinary way. If the winter is mild they will probably sprout a little, and must therefore be overhauled and the shoots rubbed. This is not good, but it cannot be avoided when they are covered up with earth.—J. C. B.

INDOOR PLANTS.

WINTER FLOWERING PLANTS.—IX.

Salvias

Are most useful for cut flowers in autumn and early spring. They do not seem to flourish really well in or near large towns, but in country air are as easily grown and as profitable as Chrysanthemums. Small plants do not produce very much bloom, but large bushes are exceedingly profuse, and if grown strong and placed in a warm temperature they produce quite a long succession of beautiful spikes. About the easiest method of obtaining a good stock of large plants is to strike cuttings in February or March, when they root readily in a gentle heat, pot them off into 60's, and plant out 3ft. apart towards the end of May in any open piece of ground, which should be preferably a good sound loam that has been well manured and trenched. If the plants are stopped several times up to the end of July, and watered and syringed in dry weather, they will form fine bushes from 2ft. to 3ft. through by October, when they should be carefully lifted, with large balls of earth, and placed in pots from 8in to 12in in diameter. These, if afforded a position in a light airy house, with a genial warmth of about 60 degs., will yield a large quantity of bloom during the autumn and early winter. The only objection to this plan is that if the roots are much injured in lifting, which the greatest care cannot always prevent, the plants suffer and drop their foliage more or less. This may to some extent be prevented by cutting round the plant with a spade three or four times during growth; this will prevent any long coarse roots being formed, and encourage the formation of a mass of fibrous roots close to the stem, which will produce a fine ball, easily lifted and potted. If the roots are cut on one side only at a time, the plants will not flag much. Give also a good watering a few hours before lifting, and another afterwards, and keep the plants close, shaded from hot sun, and moist for about a week after potting, and very little harm will ensue. But plants grown on altogether in pots will give the best results after all, only they are rather more troublesome. Pot them on as often as necessary, using sound turfy loam, with a little old manure and sand. They should be plunged in ashes or fibre in an open spot out-of-doors, and, when getting pot bound in the blooming pots, have frequent doses of weak liquid manure. Grown naturally, most Salvias flower during the autumn months, but, if pinched and potted, rather late, kept in a cool and airy house through the autumn, and placed in gentle heat about Christmas, with plenty of feeding at the same time, several varieties may be had in fine bloom in early spring. Salvia gesneræflora is one of the best of these late spring-blooming kinds. The only insect pest to which Salvias are much subject is the red spider, which is sometimes very troublesome, but may be kept down by frequent syringing with a solution of soft soap first, and clean water afterwards.

The best Salvias are:—S. albo-cærulea, blue and white, dwarf habit, very pretty; angustifolia, light blue, pretty; Bethelli, rose and white, extra fine; coccinea grandiflora, salmon or orange red; Heeri, orange scarlet, delicate grower, but fine in winter; Mons. Issanohon, white and cream, flaked scarlet, very beautiful; Pitcheri, lovely azure blue, compact and elegant growth and bloom, one of the very best; rutilans, with Apple-scented foliage, and beautiful clear magenta flowers, both the foliage and blooms most desirable for cutting; splendens, the old scarlet variety; and splendens Bruanti, an improvement on the last named, with brighter flowers, and a dwarfer and more bushy habit; foliage very elegant. B. C. R.

A FEW SWEET-SCENTED PLANTS.

Among plants that retain their popularity and are ever in demand, in spite of hosts of more showy rivals, may be mentioned some of the oldest inhabitants of our gardens. Although destitute of brilliant colours, they are prized for their grateful perfume of flower or leaf; they are also plants of easy culture, requiring but little artificial heat even in winter. Among those that have outlived all changes may be mentioned

Mignonette.—This has of late years been taken in hand by many growers and considerably improved, the large spikes of bloom produced by Miles's Spiral and some of the newer varieties being hardly recognisable as descendants of the Mignonette which we used to grow a few years back. Its culture as a pot plant is of the easiest kind, requiring no costly appliances, the main requisites being a firm soil and the keeping of the plants close to the glass in order to insure dwarf, sturdy growth for general purposes. Rather small pots are the most useful; 4-inch and 5-inch pots should be filled with good turfy loam pressed in firmly, and about a dozen seeds should be sown in each, to be thinned out to about half-a-dozen when fairly started in growth. A good situation is a shelf close to the glass, or, better still, low pits or frames, where the pots can be elevated within

The Sweet Luculia (L. gratissima).

a foot of the glass, and where air can circulate freely amongst the pots. The best time for sowing the main crop for winter and spring is August and September; and the greatest care as regards watering should be taken, so as to let the soil get neither dry, nor, what is equally fatal, saturated with moisture. If, however, the pots are well drained with clean potsherds, there is little fear of this happening. Mignonette does not bear transplanting well; it is, therefore, advisable to sow the seed in the pots in which it is to flower. For large specimens spring-sown plants are the best. All flower-heads must be kept pinched off before they expand, and the ball of earth must be carefully shifted to a larger pot without disturbing the roots. Weak liquid manure or soot water may be employed to promote healthy growth, and to keep down red spider syringing must be resorted to in summer under glass. Abundance of air at all times should be admitted.

Musk is a deservedly popular plant, and one that adapts itself to the varied uses for which plants are grown for room and conservatory decoration. It flourishes well in subdued light or in a sunny window, provided it is kept well supplied with moisture at the roots. It is readily propagated by means of seed or underground roots or stems. Any light rich soil will grow Musk, and for indoor decoration small pots, from 3 inches to 6 inches in diameter, are the most serviceable. The old small-flowered yellow Musk is the strongest scented, but Harrison's Giant Musk is the most showy.

The Lemon Plant (Aloysia citriodora), as it is called, is one of the best of deciduous scented-leaved plants in cultivation. Cuttings of the soft young shoots, taken off with a heel when about 3 inches long, strike freely in heat, and if grown on in 3-inch pots, make nice plants by the winter. They should be kept cool and rather dry at the root until they commence to grow in spring, when they may be cut down and repotted. They will then quickly form useful little bushes, and as room plants or for use in bouquets or any cut-flower decoration, there are few more delightful plants in cultivation. Red spider is this plant's worst enemy, and frequent syringing in hot weather must be resorted to. Frames set on coal-ash foundations make good summer quarters for the Lemon Plant. It requires neither staking nor tying, merely pinching over luxuriant shoots, and nice bushy plants will be the result.

Myrtles are highly prized as evergreen scented-leaved plants. Both in the shape of neat little bushes in pots and that of gigantic specimens in tubs they are most serviceable. They strike freely from cuttings taken off with a heel and inserted in sandy soil; when rooted, they should be potted off into 3-inch pots and grown on in frames, the points of the shoots being pinched in order to insure a busby, well-furnished base. Scale is the worst of insect pests that attack Myrtles, but it may be easily kept in check by syringing with Gishurst compound or soft soap dissolved in warm water. All the varieties are well worth culture, either as decorative plants or as large specimens for cutting, the shoots lasting a long time in a cut state.

Luculia gratissima, a spray of which we illustrate, is a shrub native of the mountainous regions of North India. It is, therefore, a tolerably hardy plant, and can be grown perfectly well in a cool greenhouse. It grows from three to eight feet high in this country, and during the latter part of autumn bears large clusters of rosy pink flowers, which possess a delightful fragrance. It is a most desirable shrub to grow, and in a house where it could be planted out in a border, and allowed sufficient space to grow, in a light position, it would be a permanent object of beauty. As a pot plant it flowers when only about a foot high, but it does not grow or flower so well as when planted out in a border. The latter should be well drained, and the treatment given to the plant should be such as is required by Camellias—in fact, these plants will thrive anywhere where Camellias will grow. It is a very difficult plant to propagate, and hence it is not common in gardens; but lately seeds have been imported, and it has been increased freely by that means. It may be procured at any of the large nurseries where greenhouse plants are grown, and it is not expensive.

Scented-leaved Geraniums of what are called the Oak-leaf kinds are great favourites; the perfume of many of the varieties is very pleasing, and the foliage elegantly divided. They strike as freely as any other kind of Geranium. Partly ripened shoots put singly into 2½-inch pots, and when rooted shifted on as required, soon make good decorative plants, and when too large for this purpose they become useful plants to cut from, the foliage being almost equal in value to that of Ferns for garnishing or in mixed cut-flower decorations, and single leaves make excellent backing for button-hole bouquets.

Heliotropes are great favourites at all seasons, either as pot plants or in cut-flower decorations, the perfume being most agreeable. As pot plants, nice little bushes in 5-inch or 6-inch pots are the most useful. Cuttings of the soft young shoots strike freely at any season in a brisk heat. It is a good plan to strike a quantity in the autumn, and keep them growing gently all the winter in an intermediate temperature, pinching the points occasionally to insure a dwarf, bushy habit of growth. Early in spring

another lot should be propagated for late summer use; President Garfield and White Lady are the best recent additions to this very useful class of plants. For supplying cut flowers I find that old plants, grown in large pots or boxes out-of-doors in summer and placed in a warm house in September, flower freely all winter, and if the convenience of planting out and training on a wall exists, there will be little difficulty in having a succession of bloom. The plants should be pruned in hard in summer, when plenty of bloom can be obtained from old stools planted in open beds.

Diosmas are finely scented greenhouse shrubs; they succeed well under the same conditions as answer for Azaleas—viz., potted in peat soil and kept cool in winter; but they like a little extra warmth in spring and summer when making their growth. Very firm potting is necessary, and great care in watering, so that they do not suffer from excess or lack of root moisture. Where cut-flower decorations are largely carried out, some large old specimens of Diosmas, in pots or tubs, will be found most acceptable for supplying scented green sprays, for, without plenty of foliage, cut flowers lose half their beauty and effect. J. G.

A scented Camellia (see Query 13060).—Are many varieties of the Camellia fragrant? I was under the impression that none was, until, some days ago, I noticed the sweet scent of an Albertus in the greenhouse. At first I thought that the odour was due to a Cyclamen just below; but now, after a week, during which fresh buds have opened remote from any scented flower, the Camellia is still sweet-scented. No other in the house—Monarch, Lady Hume, &c.—exhibits the same quality.—Sylvanus.

Scented-leaved Geraniums.—Various correspondents write asking where they can get scented-leaved Geraniums. We wish some nurseryman would take up the little family and develop it. That people cannot get plants they are interested in is much against progress in many directions. Scented Geraniums would form a most interesting and, we believe, a popular class, not only for the warm greenhouse, which they would make more aromatic and pleasant in winter and spring, but also for the open air, in which many of them grow well through the summer. Many of them afford beautiful leaves for use with cut flowers.

Malformed Arum Lily.—Mrs. Wyllie sends a curious specimen of a Lily, a part of which is coloured white like the flower, and yet in the shape of a leaf. It is considered a curious sport. [It is a malformation of the common Arum Lily (Calla), probably resulting from vigorous cultivation—in fact, it is the leaf developing the quality of the flower.]

REPLIES.

12925. — **Propagating Carnations.**—Winter-flowering Carnations, to which section those mentioned belong, are generally propagated from cuttings obtained from plants put in a temperature of 55 degs. in February. These growing along make the best flowering specimens the following winter. It is not the flowering stems that furnish the cuttings, but the side growths, which are taken off about 4 inches long. Where no warm house exists the cuttings may be taken off in August and kept under a handlight until rooted. But the easiest way is to put the plants in the open ground in May, and layer them in July, or as soon as the growths are long enough. Plants may be kept in the same pots two years, but they get rather lanky.—J. C. B.

13058. — **Raising Winter Carnations from seed.**—Winter Carnations are among the easiest plants possible to raise from seed. A light loam is the best soil in which to sow. Do not cover the seed with more than a quarter of an inch of soil. The middle of April is early enough to sow, and the best place for the seed pans is a cold frame. If placed in a greenhouse care must be taken that the soil does not become dry—at the same time the soil must not be made too wet. The first leaves are roundish, but the second pair are usually like the leaves of the mature plant, though small. As soon as the plants have made four pairs of leaves they should either be potted off or planted out where they are to bloom. They will bloom in mild winters on the south coast without heat, but only sparingly. They are, I think, quite as hardy as the border kinds, damp being their greatest enemy. A good border of good loam, leaf-mould, and rotted turf would grow them capitally. I would strongly advise "Marjory" to plant the seedlings out in a border, and allow them to bloom there. Pipings can be struck under bell glasses in spring with the greatest ease. These will make good pot plants for the following winter. It is a pity to lose the free growth and great quantity of bloom seedling plants produce by cramping them in pots. I have had 150 flowers open at one time on seedling plants grown throughout in the open air.—J. D.

12924.—**Cactus for suspension.**—There are not many kinds of Cactus suitable for hanging baskets, but Cereus flagelliformis—the Cat's-tail Cactus—is one of the best plants for that purpose in cultivation. I have a specimen that has been eight years in a 6-inch pot, which is placed in a basket, and which every spring bears nearly one hundred of its lovely rare-coloured flowers. It is as beautiful as many Orchids, and, unlike them, requires but little care—only demanding plenty of sun and air, and occasional doses of weak liquid manure when growing. In the case of specimens several years old the long slender shoots droop down a couple of feet. Both in winter and summer this Cactus is very ornamental.—J. Cornhill.

12675.—**Unhealthy-looking Latania borbonica.**—The plant is probably suffering from want of light, and, perhaps, too much moisture at the roots. Cannot you give it a lighter position? It cannot well remain healthy so far from the light; the less light plants get the more likely are they to suffer from over-watering. All that can be done is to be very careful in watering, allowing the soil to become dry, but not dust dry, between each watering, and if the soil looks discoloured clean it off, as this will better allow the soil to become sweet. Cleanliness is all important in the case of plants grown in rooms; the foliage should be washed with clear tepid water twice a week. Latania borbonica, being a cool-house Palm, should get plenty of air in fine weather.—J. C. B.

—— This plant is not so hardy as it is generally supposed to be. Yours has evidently suffered from want of warmth, or want of light, probably both. All you can do with it now is to place it in the window in the warmest room in the house, sponge and sprinkle the leaves, and water it twice a-week. The next Palm you try had better be a strong plant of one of the really robust kinds, either Chamærops Fortunei, Corypha australis, Chamærops humilis, or Phœnix dactylifera.—N.

12988.—**Fuchsias and Geraniums in window.**—Your Geraniums and Fuchsias are evidently sickly from some cause. Being in a south window, they should be allowed plenty of air by opening the window as widely as you can. A little airing, given by raising the window a few inches, is too often fatal. With plenty of drainage, air, and the use of water, not cold enough to chill the roots (leaving none in the saucers), your plants ought to thrive, if potted carefully in the right soil. Peruvian guano lightly sprinkled on the surface is a good stimulant.—A. E. A., *Stamford Hill.*

—— The reason that the flowers of the first drop off, and those of the latter shrivel up, is either that the plants do not get enough air, or that they are not carefully watered. Plants in a window exposed to the south suffer much in very hot weather if they are not shaded. In fine weather they should be placed on the window-sill outside, and in summer they may be out all night. If the plants are well managed in other respects, liquid manure is unnecessary.—J. D. E.

12974.—**Primulas after flowering.**—They should be kept in a light airy position, and not be shaded at all from sun; water only when dry, and never wet the foliage. If they are syringed overhead they will start into premature growth and begin to bloom again in early autumn, whereas by keeping them in a very dry place they will rest until that time. About the first week in August as much of the old soil as can be got away without injuring the roots should be removed, and the plants put into pots a size larger; give them just the treatment young plants require and they will make good specimens. Old plants flower rather earlier in a general way than young ones, and are, of course, larger, but the individual blooms do not come so fine.—J. C. B.

12978.—**Perpetual flowering Carnations** —Most of the perpetual flowering varieties are sufficiently hardy to stand out through the winter in the open borders, but they will not produce flowers. Indeed, they seldom flower well during winter, unless the plants have the advantage of a heated house, with a temperature of about 50 degs. to 55 degs. If these Carnations are to flower well next winter they ought to be propagated at once. Indeed, it is better to put in the cuttings in February; the plants must be grown on carefully and repotted as they require it. Each plant would flower in 7-inch or 8-inch pots. We use a little peat in the soil for perpetual flowering Carnations, but not for the flaked and bizarre summer flowering kinds.—J. D. E.

12977.—**Treatment of seedling Auriculas.**—It would be much easier to answer queries if those who wish information would be more explicit. For instance, I would like to know whether the Auriculas are growing out-of-doors, or are cultivated in pots. If they are show varieties growing in pots, most of the plants should flower the second year. Alpines planted out would also flower well the second year. The treatment of show varieties is this: Sow the seeds in February in a cool house or frame. The young plants will appear in three weeks, and as soon as they have formed the first leaf after the seed leaves a dozen of the tiny plants may be potted in a 3-inch pot. When the plants have grown so that the leaves are growing into each other, repot them again, three plants this time in the same sized pots. In due course the three plants may be parted out, and one plant only should be repotted in the same sized pots. Each plant will give a good truss of bloom in these small pots. Of course they require careful treatment, and the plants must not be seriously checked every time they are repotted. Alpines must also be sown in pots or pans; the plants to be pricked out in boxes, and there grown on until they are large enough to be planted out in the open ground. This will not be until July, but they ought to be strong plants by that time.—J. Douglas.

—— It will be better not to allow any of the plants to bloom this year, they will not yield strong trusses, and by picking them off a much better growth will be ensured. If the plants are in small pots and well rooted they may be shifted at once. Use good fibrous loam, with a little leaf-mould. If the loam is at all tenacious throw in a dash of coarse white sand. The great points to bear in mind are that Auriculas dislike hot sun, and soon suffer from overwatering. The north side of hedge or wall is the best place, the next best being an east aspect from the beginning of April till November. There they are screened from the strongest heat and heavy rains. Winter in a cold frame, giving plenty of air. If the plants belong to the alpine or hardy border sections they may, of course, be grown in the open air. Choose a position similar to those above-mentioned and plant at once.—J. C. B.

12998.—**Compost for Carnations.**—I am not prepared to say that peat is not good for the best show Carnations, but I would not care to use it. Some charcoal broken up and coarse sand would be better to lighten the heavy loam.—J. Douglas.

Azara.—Mr. Gumbleton informs us that this new hardy Evergreen shrub is now in flower with him, and perfumes the whole place.

12740.—**Getting rid of ants.**—To get rid of ants get some carbolic acid and mix about an ounce to a pint of water and sprinkle about their runs and nests. This is the only cure I have found efficient.—J. T. Scott.

12899.—**Hot-water pipes.**—These can be disconnected by making a good fire under joints to be loosed, when packing will rake out in a powder. If that cannot be done cut out with half-round file, or hammer and chisel, close up to a socket.—Wm. Bibby.

12734.—**Crickets in stove house.**—Four years ago we had thousands of crickets in the kitchen, which were a great nuisance. I procured two pennyworth of arsenic and mixed it with some soft cheese, made into a paste, and put it down near the kitchen range; the next morning the cheese was gone and also the crickets, for we have not seen nor heard one since. If your correspondent will try the experiment he will not be further troubled with crickets.—T. H., *Coalville.*

HOUSEHOLD.

A "HANDFUL OF SALT."

I am very glad to see so good a writer on Cookery as Miss A. M. Griggs, of the Edinburgh School of Cookery, writing in Gardening on the very important subject of the Cooking of Vegetables. To the readers of Gardening who have the pleasure of gathering their fresh vegetables there can scarcely be a more important and interesting question. I know it is a common idea of many rich people that the market is the best garden, but from very considerable experience of markets myself I know it is the worst. Vegetables are enhanced in value threefold by being gathered fresh. However, the main object of these few remarks of mine is simply to ask Miss Griggs to reconsider a little the question of the handful of salt which I see she, in common with most cooks, uses. I know that one of the great defects of our cooking is the great use of salt and spices. The worse the cook the more she resorts to those things. A first-rate French cook puts his salt in so delicately that you do not notice it; the common one uses it *ad libitum* in every dish, so that one cannot eat any food he prepares without having thirst excited or greater evils caused.

I have myself made many experiments in the boiling of vegetables with and without salt, and I have perfectly satisfied myself that salt is absolutely needless. We are all so thoroughly saturated with the idea and with the essence of salt that to many this will be rank heresy. I can only hope that my words will lead them to modify somewhat their use of salt, if they do not, as I do, prefer vegetables without salt or any addition whatever. If the vegetables are fresh and good of their kind, and boiled in soft or pure rain water, they, to a natural palate, have a much better, a much more delicate, flavour than when they are cooked with salt! Another odious habit is the use of soda. Between salt and soda the vegetables of most London restaurants and hotels are reduced to an unpleasant and most unwholesome mess.

Experience.

BEES.

SEASONABLE NOTES.

Those who contemplate going in for bee-keeping will find the present month (March) a good time to commence by purchasing stocks of bees that have safely passed through the trials of winter.

Selecting stocks.—A stock of bees may be judged to be in a healthy and prosperous condition if numbers of them are observed in fine weather carrying into the hive large quantities of pollen, in little coloured balls, on their hind legs. The internal state of affairs is easily ascertained in bar-frame hives by examination of each bar of comb, after having injected a little smoke to subdue the inmates. If the stock to be examined is in a straw skep the operation is a little more difficult. The combs in all cases should be built straight, and reach down to the bottom of the skep or the bottom bars of frames; they should be dry and free from mould, and of a light colour, dark or black combs being an indication of age. The hive should contain large numbers of bees, as well as a quantity of brood, in various stages of development. Strong colonies, with plenty of stores, usually begin breeding in January. The brood first occupies a small circle in the centre of the cluster, and the brood circle is gradually enlarged and small circles are begun on the adjoining combs, which increase as the season advances until all the cells not used for storing honey or pollen are occupied by brood; a prosperous colony will therefore now contain a large quantity of brood. If the stock selected be in a straw skep, it should travel in an inverted position with a piece of open sacking, or cheese-cloth tied over to allow of sufficient ventilation while confining the bees. If in a bar-frame hive the frames should be secured in the hive, and a sheet of perforated zinc be fixed on top, in place of the quilt, while another piece of perforated zinc should secure the entrance. When arrived at its destination the hive should at once be placed in the position it is permanently to occupy, and the entrance unstopped that the bees may be able to fly abroad.

Hives.—The bar-frame hive now used by all advanced bee-keepers is doubtless superior in many ways to the straw skep, although good results may be obtained from the latter under enlightened management—white comb section honey being obtainable equal to anything produced from the most elaborately constructed bar-frame hive. Combs built naturally are about an inch in thickness, and a space of about half an inch is left between each comb; the frames to contain the combs are therefore so made that the combs when built in them shall be in the same natural position with regard to one another as they are in the straw skep; they are also made so as to leave a quarter of an inch space round the ends and at the bottom as a passage-way for the bees. In a properly-constructed frame hive all the combs can be easily removed, and so complete control over the bees obtained by interchanging combs and bees from one hive to another; making artificial swarms; checking natural swarming by giving additional breeding space; strengthening weak stocks by exchanging empty combs for frames of brood from strong colonies, and removing bars of honeycomb from the hive, extracting the honey, and returning the empty combs to be refilled by the bees. In order to obtain full advantage from the moveable comb system, it is of course necessary that the outside measurement of all frames and the inside measurement of all hives should be uniform. The bar-frames are furnished with comb foundation, which, being quickly worked out into comb by the bees, is a saving to them of much time and labour. In the combination hive, now coming into general use, the frames run parallel to the hive front, instead of at right angles to it, which has hitherto been the usual position of the frames. The advantages of the combination or longitudinal hive are that any number of frames can be placed next the entrance, to be used as the breeding department, and closed up with a division board. When the brood nest is formed, a frame of queen excluder zinc can take the place of the division board, and sectional boxes, to receive surplus honey, placed next the excluder zinc. The worker bees pass through the excluder zinc and deposit their stores in the sectional boxes, while the queen is confined to the brood chamber. Bees store surplus honey as far as possible from the entrance of the hive, so that section honey can often be obtained in this way when it is found impossible to induce the bees to work in sections placed on the top of the hive. Another great advantage of the combination hive is its great length from front to rear, permitting of both brood nest and store department being made of any desirable capacity, and so suit the requirements of localities and seasons. Whatever kind of hive is adopted, it is good policy to obtain now as many as will be likely to be required during the coming season, as well as all other appliances necessary in advanced bee-keeping.

Boxworth. S. S. G.

REPLIES.

12958. — **Swarming.** — If a "Young Apiarist" desires a heavy yield of honey let him prevent swarming as much as possible; if increase of stock is desired induce breeding without supering; a full account of the various means of doing this would fill two or three pages of this journal. Buy a standard work on bees. It is quite possible by the addition of frames of foundation to fill up your hive; these are to be placed alternately with full combs when the hive is crowded with bees; these will be drawn out to combs in about two or three days, then place crate of sections on top of frames. When hive gets overcrowded take artificial swarm. —W. B. W., *Berks.*

12962.—**Managing apiary.**—Remove all pieces of comb from side and roof (?) of hive, fill empty frames with sheets of foundation, take out all unoccupied frames, and close up dummy board. When hive gets crowded insert removed frames alternately with full ones, not all at once. (1). Raise quilt gently, and notice whether combs have honey in them. If bees are clustered right up to top of frames they are short of stores, as bees will only cluster on empty cells. (2). Honey cells are capped with pure wax; brood cells with a mixture of pollen and wax consequently are much darker in colour. Honey cells, in the brood nest, are above and at the sides, brood cells in the middle and towards the bottom. (3). Bees with worker brood at this season are sure to have a queen. Yours carrying in pollen, with which they feed the brood, is a very good sign of having a queen. Drones being present after all other stocks have destroyed theirs is a sign of queenlessness. Examine all hives that you have any doubts about by taking out frames to find her majesty (4). When hive is crowded with bees, if hive is queenless unite with another having a queen, as it is too early for introducing—in fact, with present easterly winds all manipulating is out of the question.—W. B. W., *Wokingham, Berks.*

12961.—**Transferring stock to new hive.**—Transferring old and crooked combs is not worth the candle now foundation is so cheap. Allow bees to swarm and three weeks after drive them and put into frame-hive with foundation, or unite with swarm if you have only one frame-hive, first removing one of the queens.—W. B. W., *Wokingham, Berks.*

POULTRY, RABBITS, &c.

Simple way of preserving eggs — Lately I have seen in Gardening Illustrated a number of receipts for preserving eggs, most of which I have tried; but there is none better, or attended with less trouble, than the one I adopted last year, which was communicated to me by a farmer's wife, when visiting Buxton. It is simply to have a wooden shelf conveniently fixed, and made with a number of round holes, 1½ inch in circumference, and place the eggs in them, small end downwards, so that they do not touch. As it was a new thing to me, I, by way of experiment, placed two dozen eggs in that position on the 29th of June last year; at Christmas twelve of them were tried, breaking each one separately, and they were all perfectly good and sound. On the 2nd of February this year six more were tried with the same result, and on the 2nd of March the remaining six with the like result. The last were used for a custard, and they were pronounced to be a great success. To keep eggs good for eight months is a great boon, particularly where a number of fowls are kept, where a superabundance of eggs is obtained in the laying season, and where there is a large family. The result is that the above plan will be adopted in future by my household, as the contrivance is simple, clean, and effectual. I have had a cupboard or "egg-store" made, with ten sliding shelves, to contain together 600 eggs, which is compact, and occupies very little room, being fixed in a corner of the dairy.—J. T. P., *Bromley, Kent.*

QUESTIONS.

13160.—**Keeping eggs for sitting.**—Will any of your readers be kind enough to tell me how long it is safe to keep eggs for sitting?—G. W.

13161.—**Large egg.**—One of my geese laid an egg the other day which turns the scale at 12½ ounces. Is this weight uncommon?—R K.

AQUARIA.

I am glad to see correspondence on the above subject appear from time to time in your paper, and having kept a small fresh-water aquarium for many years may be able to offer a few hints to your young readers who wish to possess one of these interesting and instructive natural ornaments. The present is a nice time for making a start, and we will suppose the young aspirant to have provided himself with a tank that will hold about six to eight gallons. Let the bottom be covered with shingle to about 1½ inches in depth, and the shingle nicely covered with water. He must now put in a few fresh-water plants. Vallisneria spiralis is a useful plant and grows well. A few young roots should be carefully planted in the shingle, with a pebble laid on each root to keep it down to its place. Now let him fill up the tank to about 3 inches from the top, and it will be ready to be placed in its right position. A window with a north-easterly aspect, where the sun can just peep in as he commences his daily round, is the best. The next thing to be done is of vital importance. He must wait with patience for at least ten to fourteen days to see the result, and if about the end of that time (it may be sooner or later) bright bubbles of oxygen begin to appear on the surface of the plants, all is going on well, and no doubt by this time a green confervoid growth may be seen on the stems and on the glass, and when that is seen success is assured. This green vegetation, which seems

to trouble some young people so much, is the very life of the aquarium. Mine has a thick carpet of it on three sides, the front only being kept clear for the sake of appearance. This confervoid growth does more for the health of the aquarium than any plants that may be put in, and should the young student be in possession of a microscope will produce him endless pleasure. By this time the water will have become beautifully clear, and he may now drop in two or three small fishes, and more may be added as the vegetation gets established, but of all things let him mind not to overstock it with animate life.

Hyde, near Manchester. H. B.

Plants for an aquarium.—To those readers who entertain the idea of making an aquarium, I would suggest a few very useful plants for the same, all of which grow in ponds and ditches, and may be easily obtained. The Water Crowfoot with its two kinds of leaves is pretty and as useful as any, as it gives off oxygen freely. The Water Millfoil is also useful, and has the appearance of a Pine forest in miniature—in its growing state one of the best for a small aquarium. The Anacharis is a very free growing plant, and is one of the simplest to commence with, bearing rough treatment much better than others, and not unhandsome. The Frogbit, a floating plant, is curious on account of its falling to the bottom during the winter months in the form of small Olives, and rising again in May to flower on the surface. It does well in the aquarium. The Nitella is also a good plant, and will keep the water sweet a length of time without changing. The Water Soldier is another good, though less common, plant of the same habit as the Frogbit. Others such as Water Violet, Hornwort, Brooklime, the Pond weed (Potamogeton), Water Plantains, Water Starwort, are useful; but those described will give the best effect, and only require a st one tied to the roots, and some silver sand to keep them in position, and a few shells for ornament.—ORION.

BIRDS.

QUESTION.

13162.—**Breeding British birds.**—Can anyone tell me the name of a useful book on how to breed British birds?—BOOBL.

REPLY.

12621.—**Canary.**—I think your bird has got scurvy. Put a few drops of lime-juice in its water. Salt is good if the bird does not eat too much of it. I would not leave it on regularly, if at all. The less you pamper your bird the healthier it will be. Three parts Canary to one of German summer Rape is the best diet.—WM. ASPINALL.

60 NAMED GERANIUMS, autumn struck, 12 named Fuchsias, 12 Pelargoniums, 6 Carnations, 6 Picotees, 6 Pinks, 6 white and lilac herbaceous Phlox, 50 mixed Daisies, 12 splendid Violas, all well rooted, and sure to please; free for 12s. 6d.—THOMAS BETTERIDGE, The Gardens, Coalville, near Leicester.

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COLLECTION LILIES.—1 Lilium canadense, 2 auratum, 2 roseum, 2 rubrum, 2 double Tiger, 4s.; auratums, 4s. dozen. Splendid bulbs. Double Tigers, 4s. 6d. dozen. All free.—HENRY & CO., Amersham, Bucks.

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ACHIMENES.—Red, white, purple; a dozen of each kind to be exchanged for bedding Geraniums and Calceolarias.—L. T., The Chantry, Bradford, Wilts.

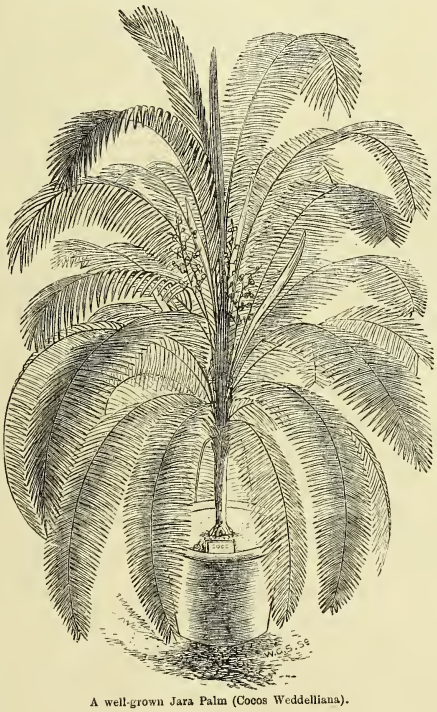
GARDENING ILLUSTRATED.

Vol. VII. APRIL 4, 1885. No. 317.

INDOOR PLANTS.

PALM CULTURE.

Palms have now become universal favourites, and their popularity is such that they are no longer confined to extensive collections in large horticultural and botanic establishments, but have been introduced, through nurserymen, to decorate and enliven apartments and assembly rooms of our cities. There is a strongly marked individuality about this order of plants that strikes even the ordinary observer, and the effect produced is all the more heightened when large and small specimens of various species are grouped together, and also when they are associated with tree Ferns, Cycads, Bananas, Marantas, Caladiums, and various forms of a more or less tropical character. Their culture is attended with little or no difficulty, and yet to produce and preserve healthy well-developed specimens much attention and labour are requisite. The soil should consist of a good free fibry loam, and, when intended for plants in a young root-forming condition, it should be thoroughly disintegrated with the fingers, and combined with a quantity of older mould of the same description, together with an admixture of sand. If good balls of roots are already formed, the potting material may be more roughly dealt with, and may contain less decomposed material. As these plants succeed admirably with small shifts at long intervals, it is the more necessary that a large proportion of fibre should be present in the soil, inasmuch as the mass will thereby take longer time to decompose and get exhausted. It will, moreover, form a better rooting medium, keep more porous, and so minister better to the sustenance and structure of the plant than it would otherwise do. In the process of shifting, the points to be observed are, limitation of root-space; the shift should in no case exceed 6 inches, and this only for such as have attained large dimensions in tubs or boxes; efficient drainage to prevent choking up, until the roots find their way among the crocks. To secure this, rough pieces of turf should be laid in the bottom of the pit or tub previous to filling up with soil. The whole should be made sufficiently firm by packing the soil carefully with a rammer. Thus a large amount of turfy material will be compressed within a small compass, thereby increasing its stamina. The best time for this operation is after the plants have made their season's growth, and before they go to rest; but it may also be performed during spring, care being taken that the roots are not mutilated so as to impair their action. A good margin or basin should be allowed for water, which should be freely administered; the indispensable condition of success in Palm growing is abundance of moisture at the roots, and more or less in the atmosphere. Another and most essential provision with reference to health and vigour is shade, and the accumulation of dust or other impurities on the leaves impairs healthy leaf action. War must constantly be waged against scale; or, rather, the policy that prevention is better than cure should be adopted. The appearance of this pest is frequently the result of starvation, or uncongenial treatment of some sort. Extreme fluctuations of temperature should be avoided, but I would not advocate high temperatures. Plants in which growth has been solidified by a due admission of light and air will winter in a minimum temperature of 45 degs.; but where they are intermixed with a miscellaneous assortment, it will be advisable, as a safeguard against cases of damping off, not to let it fall below 50 degs. The seeds of Palms require a high and steady bottom heat. The Date, however, may be raised in an ordinary greenhouse. Seaforthia elegans is often found springing up self-sown at the bottom of the parent stem—a fact which would indicate that Palm seeds should be covered lightly, and also that they should be sown as early as possible after they are ripe. In the arrangement of Palms, whether temporary or permanent, each should be allowed room sufficient to show off its outline to advantage. J. S.



A well-grown Jara Palm (Cocos Weddelliana).

Grevillea robusta.—In a young state this is an invaluable decorative plant for the summer flower garden. The foliage is a rich dark green, and beautifully cut and Fern-like; the habit of growth, too, is graceful in the extreme. It is really a greenhouse shrub, being a native of New Holland, but it stands 8 degs. or 10 degs. of frost without injury, a merit of no small moment to all who have to study how best to lengthen out the summer bedding season. The most effective way we ever used it was as what may be termed a miniature avenue plant. This Grevillea is telling when used with Pelargoniums, or indeed with any of the ordinary kinds of bedding plants, effectively destroying, or rather obviating, when planted at regular intervals over the bed, that undesirable flatness and formality so common in most gardens. It is best raised from seeds annually sown in January, the produce being planted out in May. The plants make a good show by midsummer, and if lifted in October, before the frost is too severe, they will do good duty in the conservatory in winter.

NOTES ON MY COOL GREENHOUSE.

I see the question "What is a cold greenhouse?" is asked in Gardening for February 28th, and should like to draw attention to the difference between a "cold" and a "cool" greenhouse. A cold house is an ordinary glass-house with no heat of any description. Only plants that are quite hardy will thrive in such a structure. A cool house is provided with just so much heat—usually of a very simple and temporary kind, such as a lamp stove or portable boiler—as will keep out frost. In such houses a vast number of half-hardy plants can be grown, and succeed well. The average temperature in my cool house during the first few weeks of the year has been 40 degs. at night and 45 degs. by day. There has been no great severity of weather, but during that time the thermometer outside kept tolerably steady within two or three degrees below or above freezing point, with much fog, and scarcely any sunshine, so that damp had to be guarded against as much as cold. For the last fortnight artificial heat has been required very occasionally, and only in anticipation of a sudden fall of temperature during the night, and will probably be dispensed with altogether from this time (the end of February) unless any unlooked for severity of weather should occur. The sun has already gained such power that the thermometer quickly runs up to 60 degs. on bright days, and as much air is given as possible in the middle of the day.

A pretty little Sorrel (Oxalis versicolor) has been full of its pink and white striped flowers for several weeks. It is one of those modest little plants which delight the true lover of flowers, and used to be abundant enough in greenhouses and as a window plant years ago. It is doubtful whether it is now to be found, except in the possession of a few amateurs. Most of the Sorrels require sunshine to induce them to open, and in sunless weather it is the custom here to bring the pots into the sitting-rooms for the sake of seeing this one unfurl the delicate spirals of its folded buds by lamplight. There is no group of plants which possesses more interest to the intelligent cultivator than the Oxalids, and it is a pity that they should have so much dropped out of mind. Cuttings taken last spring from old plants of the fine half-hardy shrub,

Sparmannia Africana (African Hemp) are just beginning to open their buds. This is an old and most useful tenant of the glasshouse, being so accommodating as to thrive equally well in the stove, the intermediate, or the cool greenhouse, the only difference being that under cool treatment it is later, and perhaps does not bloom so continuously as when grown in stronger heat. Of its healthiness when grown in a temperature kept above freezing point only, there is no question. The handsome bunch of stamens, yellow at the base and rich maroon above, with a sprinkling of pollen like gold dust from the perfected anthers in the centre of its white flowers immediately attract notice. It is suitable either for large or small houses, as cuttings make nice little straight plants the first season, giving four or five large heads of bloom. When the bloom is over, such young plants should be well headed back, so that they may break into as many branches as there are buds left on the stem. During the summer they should be placed out-of-doors and carefully watered, for upon the thorough ripening of the wood, especially when required to flower in a

low temperature, depends the earliness of the next year's bloom. The pale green foliage is very ornamental and the plant is very little troubled at any time with green fly, which do not seem to like the woolly texture of the large, soft, drooping leaves. No cold or cool greenhouse should be without a few pots of

Marie Louise Violets, which answer admirably well, provided they have been well grown during the summer, if potted up from the open ground in the autumn. They may be kept in a cold frame, if convenient, until forward enough to bring into the house. The early flowering

Forget-me-not (Myosotis dissitiflora) is invaluable at this season under glass, and is now opening its first flowers. It might be brought on even earlier, but that we prefer to leave the plants in the cold frames until they are wanted in order that the growth may be as vigorous as possible. Where Easter church decorations have to be provided for, nothing can be more effective than growing plants of this charming Forget-me-not. For this and other purposes it is grown here in troughs 3 inches wide by 3 inches in depth, made of galvanised zinc, which may be of any required shape, according to the position they are intended to occupy. Self-sown seedlings, taken up from the borders, are planted in these in the autumn, and are at once placed in the cold frames, but all the air possible is given during open weather, as they are apt to damp off if kept too close. Being perfectly hardy, this Forget-me-not resents heat, but enjoys the shelter of glass in severe weather, especially as the first flowers are often blackened by spring frosts when growing in the borders. It is essentially, therefore, a cold house plant. Another charming winter bloomer, which is often injured by stormy weather, is

The Rush Lily (Sisyrinchium grandiflorum).—Its purple bells open out-of-doors in the early sunny days of February, but are so fragile and easily torn as to deserve kinder treatment than wintry winds are likely to give them. Be it remembered, however, that a sojourn under glass is apt to weaken any hardy plant, and few recover sufficiently in one season to bloom thoroughly well the next. Duplicate clumps should be planted out in a reserve bed, and used each alternate year for indoor decoration. Many increase so rapidly that it is easy, by careful division and culture, to get a good stock of such as are desirable. The white variety of the Rush Lily is much less common than the type, and should be grown as a companion to it. One of the prettiest of early spring plants, both in foliage and flower, is the

Creeping Forget-me-not (Omphalodes verna), which is often mistaken for the true Forget-me-not. Though a common little every-day flower it puts on quite another aspect when grown under glass. Like the last, it should be potted up in autumn, and its trailing stems will soon run over the sides and clothe the pots with bright green, heart-shaped leaves and turquoise blue flowers.

Doronicum caucasicum (Leopard's-bane).—For brightness' sake, and because the sparrows will not leave its gay petals alone in the spring border, a plant or two of the dwarf Doronicum caucasicum should also be lifted. This, which is locally called hereabouts the French Sunflower, may be recommended to all who admire yellow Daisies; out-of-doors it is only about 4 inches high, but the stalks lengthen somewhat under glass. Add to these a few potsful of the brilliant scarlet Anemone fulgens, which is now opening close to the glass in the most airy part of the greenhouse, with the pale blue Apennine Windflower, or the still earlier A. blanda, with some early Narcissi and Van Thol Tulips, and you may have as gay and charming a house full of flowers, without any heat, as may be desired. One more useful plant is

Orobus vernus, which will remain in a pot in any out-of-the-way corner, provided it is not starved for want of water during the summer, and will begin to put forth its purple flowers soon after Christmas if only it is given a snug berth on a greenhouse shelf near the light. All these, with the exception of the first two on the list, are quite hardy, and will repay tenfold the small trouble of befriending them as thus recommended in wintry weather.

K. L. D.

ORCHIDS FOR EVERY GARDEN.

Amateurs who cannot afford to spend a small fortune in the erection of glasshouses of an expensive kind to grow Orchids in, are yet anxious to grow a few, even if they do not possess more than one small greenhouse. In that case the house must be treated as a cool Orchid house, and such greenhouse plants as will thrive with the Orchids may be grown. The cool Orchid house is about the best place imaginable for the numerous species and varieties of hardy Ferns. Spring flowers will succeed well there, such as Hyacinths, Tulips, and Polyanthus Narcissus; these and spring flowering shrubs, such as Deutzia gracilis, the Guelder Rose, Kalmias, Rhododendrons, &c., not to mention many of the hardy flowers grown in the borders, such as Lily of the Valley and Solomon's Seal, and the Christmas Roses. Later we have Ixias, Freesias, the Jacobæa Lily, &c. The Scarborough Lily does remarkably well with the very little heat required by the Orchids. No one who has not seen it can imagine the fine effect caused by some of the above plants when placed among hardy Ferns. Of course there are many other Ferns which are not hardy that succeed well there, and among them may be mentioned the common Maidenhair—the best of all Maiden-hair Ferns for this house, and the most useful, is the Adiantum cuneatum.

When the Orchids are making their growth it is better to place them together, in order that they may receive the treatment they require. As they arrive at the flowering stage, and the first flowers open, they may be removed and be placed among the Ferns with other flowering plants. The plants I have named are well adapted to grow among cool Orchids while the house is receiving the treatment cool Orchids like best. Those who have tried other greenhouse and cool stove plants in this temperature would do well to give the results of their experience. Referring again to the Orchids, I would allude to Odontoglossum nebulosum. This is a very handsome Mexican species, which I have cultivated for many years, and had to find out the right way to grow it after several failures. The plant does not require a high temperature—it succeeds in the coolest part of the house, and grows very freely on the stage with other plants; but in that position the young growths have a great tendency to damp off. They would start to grow again and again with this result. We ultimately hit upon the plan of growing them suspended near the glass; and in that position the young growths made very satisfactory progress. The flower spikes appear before the growth is completed, and the flowers develop with the growths. I like to see them hanging up, as the spike takes a pendulous form, quite different from the O. crispum type; the flowers are really handsome, large in size, crisped, whitish, and thickly spotted in the centre. Sometimes one will appear with white flowers. O. Rossii is another charming species introduced from Mexico. It succeeds well if placed near the glass, but if at a considerable distance from the glass the leaves have a tendency to die back from the points; and, as the flowers open at mid-winter, they are also liable to damp off; proximity to the glass prevents both these evils. The plants do well in pots, if these are filled half full of drainage. They succeed well in pans such as are usually sold for Orchids. Three holes are made in the rim, to which wires are attached. Being a small growing species it is well adapted for small houses. This species varies very much in the size and spotting of the flowers. There is a variety with a yellow ground which has been made a distinct species under the name of aspersum, while another has been termed rubescens, owing to its more intense spotting of brownish crimson. The ground colour of the ordinary forms is pinkish blush. Cultivators of Orchids for the first time are sure to be puzzled with the specific names. Almost every popular species that has been introduced in considerable quantities gives rise to numerous varieties; and if a right and well-understood system of nomenclature were adhered to of placing the specific name first and the varietal name after it, there would be no difficulty. Thus the varieties in question should be O. Rossii adspersum and O. Rossii rubescens. Another very distinct and beautiful species is O. membranaceum, grown also under the specific name of O. Cervantesii. It succeeds well with the same treatment as O. Rossii. The flowers are very pretty, pure white, with small brown bars in the centre. It is also very free in flowering. The spikes are of an upright habit of growth, and the flowers are very prettily arranged on them. There is a variety with rose-coloured flowers. Quite another type of Odontoglossum is O. triumphans, a splendid species, which forms a long spike of flowers sometimes branched. The flowers vary in form and colour, but not to a very great extent. They are rich yellow, spotted and blotched with maroon crimson. We have another handsome species in what is usually termed the O. luteo-purpureum section, to which O. Hallii and O. hystrix belong. O. Hallii has yellowish buff coloured sepals and petals, spotted and marked with reddish brown. Mr. Pollett, of Bickley, flowered a magnificent variety of this species, and exhibited it under the name of O. Hallii magnificum. I remark in passing that the names of some of these Orchids may seem rather formidable at first to those not accustomed to them, but the long names do not make them more difficult of cultivation; and after a little time the unfamiliar sounds soon become words of daily use. These yellow ground species require the same treatment as O. crispum.

Another species that should find a place in the smallest collection is O. Pescatorei; this is very beautiful indeed when well grown, and by many good judges of flowers is preferred to O. crispum. The commonest varieties of it are those with white or pinkish flowers, without spots. Some varieties have very beautiful spotted flowers, and when they are heavily spotted are of considerable value.

J. Douglas.

—— I have a hothouse which I keep about 60 degs. at night, and 65 degs. to 70 degs. by day; also a greenhouse, with hot-water pipes, which I keep the frost out of. In which would the Orchids mentioned do best? I have only had them a month, and have got them in the hothouse, in which they seem fairly healthy, and several are coming into bloom.—A New Subscriber. [The Odontoglossums will not succeed for long in a temperature of 60 degs. at night, although they will start well at first in such conditions. The Masdevallias require very similar treatment. Lælia majalis likes a cool temperature, and to be placed near the glass, where it will get plenty of sunlight, to be shaded only in very hot weather. Dendrobium nobile should be placed in the warm house to flower and make its growth. When growth is completed the plant should be placed in the greenhouse for two or three months rest; and during that time they do not require any water. The Cypripediums will succeed well in either house. Oncidium juncifolium and O. unicorne ought to be grown in the warm house. I would make a group of the Masdevallias and Odontoglossums in one corner of the greenhouse, and all newly-imported specimens ought to be planted in small pots, as small almost as the roots can be readily pressed into. The potting material ought to be fibrous peat, Sphagnum, clean potsherds, and some charcoal. The plants ought to be potted firmly. If they do not keep quite firm when the pots are moved they seldom do well. Live Sphagnum should be encouraged to grow on the surface. If the surrounding conditions are favourable the roots will push freely among the live Moss.—J. Douglas.]

Double spathed Callas.—Your journal—in many ways both interesting and instructive to lovers of flowers—is, I observe, very useful to those who desire to compare notes with others on their personal experience of certain plants. I venture, therefore, to ask your correspondents for information respecting the double-spathed Calla. The specimen with which I am acquainted, now in flower, is identical in character with that engraved in Gardening, Nov. 29th, 1884. It shows two perfect white spathes, the inner turned to the right, its apex lying lightly over the edge of the outer with much grace of fold, curve, and outline. This second spathe encloses a third, imperfect or rudimentary in structure, and hardly rising above the funnel-shaped throat of the two perfect spathes. Now can any of your

readers throw some light on the history of these double forms? Do they all follow the same type, and, if not, what variations do they present? Has any special treatment of plants tended to produce similar forms, and has any cultivator succeeded in perpetuating these remarkable departures from the ordinary form of the Lily of the Nile?—Subscriber.

WINTER FLOWERING PLANTS.—X.

Tree Carnations.

These are much valued for their rich and sweetly scented blossoms. They are propagated by means of cuttings or pipings, which must be inserted in fine sandy loam in a nice heat, and kept moist till rooted. As a rule they do better put in a bed of soil in a hotbed frame than in pots. When rooted, pot them off singly in good sandy loam, shift them on as necessary until pots 6in. or 8in. across are reached, in which they will bloom well the first winter. Of course during the summer they must be exposed to the open air, and the pots should be plunged in ashes or Cocoa-nut fibre to keep the delicate roots cool and moist. Pot firmly, and always in good sound loam, with a small admixture of some fertilising material. Wood ashes, animal charcoal, and crushed bones are all highly beneficial to these plants, used in moderate quantity. Remove all bloom buds as they show during the summer, and on the approach of winter place in a very light airy house, where a warmth of about 55 degs. can be maintained. A great point is to admit abundance of air, be the weather warm or anything short of a severe frost; a close atmosphere is most injurious. Tree Carnations are among the most manageable of plants as regards getting them into bloom at any particular time; if required to be retarded, all that is necessary is to keep them cool; if wanted in bloom quickly, assist with a gentle warmth of 55 or 60 degs., but always with free ventilation at the top of the house if not at the sides. With careful culture and training, and by frequent repottings as required, plants of a very large size may be obtained several feet in height, but as a rule vigorous young plants in 32's and 24's will prove the most profitable.

A few of the best for winter flowering are:—Alegatière, bright scarlet, extra fine; Mons. Baldwin, rich scarlet, grand; Vulcan, mottled reddish scarlet; Garibaldi, rosy scarlet, fine; La Belle, pure white, very dwarf and free; Miss Joliffe, rosy pink, a very fine flower; Lucifer, scarlet, free; and Mary Morris, soft, pink, very large and fine. These eight are all free flowering in the depth of winter, and can be thoroughly depended upon. A few other fine flowers, but not so free in bloom, are Souvenir de Malmaison, an immense blush white flower; White Queen, very fine, but late; The Bride, a beautiful fringed white, sweet scented; Andalusia, soft yellow, fringed; and Mdme. Alegatière, rosy carmine. L'Hermine (pure white), Irma (pink), and Le Favori, (bright rose), are three new French varieties very free in bloom, and promise to be great acquisitions.

Cytisus racemosus,

or Genista, is as pretty and sweetly-scented a plant as one can find in a greenhouse in March and April, and with a little care may be had in bloom much earlier; in fact they frequently bloom all the winter in pure air and under good treatment. Cuttings of this desirable plant should be put in early in autumn, inserted thickly in well-drained pots containing a mixture of sand, peat, and loam, with half an inch of pure white silver sand on the surface. After watering in they are kept close in a cold frame until rooted. In spring they are potted off singly into small 60's, grown on at first in pits or frames, and afterwards in the open air; placed in 48's, in good sound rich loam the following spring, again grown on, generally in the open air, through the next summer, and by the following winter or spring they are bushy, well-furnished plants, bearing numerous spikes of their fragrant yellow blooms. Market growers cut their plants back closely several times during growth, and thus obtain dwarf bushy plants, close down on and completely hiding the pots, a great contrast to the comparatively long and spindly plants generally met with. Nowhere else can be seen such beautifully grown and shaped plants—perfect miniature bushes, globular in outline, and furnished equally all round with strong bloom spikes—as in Covent Garden in the spring time. The time of blooming is to a great extent regulated by the time of the last heading back, but under cool treatment the plants will not, except perhaps in very favoured localities, bloom before the end of March or early in April; a gentle heat greatly hastens the blooming period, but this plant will not submit to rapid forcing, which speedily causes the buds to turn yellow and drop or shrivel. The Cytisus must be brought on gradually in a moist gentle warmth, with abundance of light, a fair amount of air, and a perfectly sweet and pure atmosphere. Syringing overhead is of great assistance, and a few applications of some liquid manure, not over strong, is also beneficial, particularly if the plants have been long potted. After flowering, the plants should be hardened off a little, then cut back, severely if the plants are not desired to increase in size, but only shortened back to sound plump wood if they are to be potted on to form large specimens; then kept rather close, with frequent syringing overhead, but the soil only just moist, to induce them to break again freely. When the young growths are an inch long, repot, and trim in the roots considerably if they are to go back into the same sized pots; use good sound loam, of a fibrous or open character, and pack this in round the roots as hard as you can by fair means. Again keep close in a moist atmosphere until both roots and heads are at work again; then harden off gradually, and finally stand on an ash-bed in an exposed situation out-of-doors. Shorten back any rampant growths until August, and water as required, never allowing the plants to flag, or giving more moisture than is really necessary, as every unnecessary watering only washes the goodness from the soil. Give a few doses of weak soot or guano water towards autumn, especially if the foliage begins to look the least yellow; a little soot-water will soon cure this. By careful shaking out and repotting, with severe pruning, the Cytisus may be kept for years at the same size, but it is not well to carry this on too far, or the plants lose vigour and become worn out. It is far better to keep striking a few cuttings, and have a healthy young stock always coming on. The Cytisus may be grown on to a very large size, and a well-shaped bush or pyramid, 6 feet or 8 feet in height, is a grand sight in a conservatory in March. When abroad I have seen hedges of it 6 feet or 8 feet high, which used to be a perfect sheet of golden bloom each spring.

Cytisus attleanus is a variety with bolder growth and foliage, which is of a darker shade of green. The bloom-spikes are somewhat similar, but rather larger, and not so tapering as in C. racemosus. The treatment needed is exactly the same.—B. C. R.

REPLIES.

13064.—**Filling small greenhouse.**—Plant Hyacinths, Tulips, and Crocuses in October for spring bloom; half-a-dozen 9-inch pots full of Lilies would do well for autumn display; Giant Musk and a few good Pelargoniums would make the shelves gay during summer, and some of the lovely summer Chrysanthemums for August and September would keep up a supply. I would recommend "Amateur" to put up a frame in which he could have a reserve, as his house is so small, and many plants could grow on successfully in that way and be lifted in in bloom. A turf wall with Ferns should do nicely in this small greenhouse, and hanging baskets of Campanula or Saxifrage would furnish it during a dull time.—Dublin Amateur.

12866.—**Greenhouse plants**—There are very few perennials that can be raised from seeds now to bloom next autumn. The double German Scabious grown on through the summer in the open air in pots and well managed will be useful, as will also the annual Chrysanthemum. Cuttings of the large flowered and other Chrysanthemums could also be taken now and grown in the open air through the summer, and will make the house very gay in autumn and winter, and they will be more satisfactory than wasting time over seeds. Some of the single Dahlias may be grown on in pots also. The Indian Pinks, of which there are many forms, will, perhaps, be useful; and Mignonette, Pentstemons, and Antirrhinums also.—E. Hobday.

13127.—**Growing Cape Heaths from seed.**—I fear "Miss S." will not succeed in growing Heaths from seed; the young half-ripened shoots strike so easily in silver sand that surely it would not be worth her while to attempt growing from seed, which must be a long and tedious process, and hardly likely to succeed. They would flourish well in a cold frame or greenhouse, never allowing them to get too dry, as that causes a rustiness which it takes a whole season to get rid of. Be sure to plant them in peat and silver sand, and do not let cold winds reach them; otherwise give all the air possible.—C. F. D.

13126.—**Ferns for back wall of greenhouse.**—I have the whole of the back wall of a greenhouse covered with Ferns, and if "B. M. P." follows the course I have adopted I think he will not find many failures. The whole of the wall is covered with peat, which is supported with wire-work, about 9 inches between each hole; into every other hole I planted a Fern; the wall is now one mass of green. I planted all the hardy British Ferns, including the Oak, Holly, and Beech Ferns. I have also some good Ferns sent me from Switzerland. The common Pteris Ferns (Ribbon Ferns) do remarkably well planted like this. These in summer are syringed twice a-day, and in winter twice a-week, and shaded in hot weather. This year there are hundreds of little seedling Ferns coming up. I do not think "B. M. P." will get on with Begonias or Adiantums planted like that, as neither like water on their foliage; but I have seen them growing like this in a hothouse. I grow the Begonias in pots in the hothouse, as I like them indoors.—C. F. D.

13066.—**Camellia flowers dropping.**—Very likely the soil in which it is growing has got into bad condition. This not infrequently happens with specimens planted out. It may either become exhausted, and require partial renewal, or it may be too wet or too dry. As there is no other apparent reason why the flowers should develop so unsatisfactorily, it would be best to examine the roots. Camellias flower better without artificial heat than they do with it. In March when the sun is powerful the petals soon get flabby and the flowers speedily drop to pieces.—J. D. E.

—— The cause of Camellias often casting their centre petals is that the plants have been allowed to get dry at the roots. I have proved this from experience. Particularly should this be guarded against when the buds are swelling, and strict attention should be paid to the thinning of buds before they get too large, never allowing them on after they get to the size of large Peas. Give the plants manure-water twice a-week when the buds are swelling, but never let them suffer for water.—W. C. Leach, *Stamford*.

—— Without seeing the plant in question it is difficult to determine what is the matter with it. It seems strange that the blooms which open in spring are not as good as those that come earlier; in a general way they should be the finest, being favoured with stronger light for developing. The most reasonable explanation is that the plant is overloaded with buds and in a measure exhausts itself before it can expand them all. The old white is very floriferous, and when there are more than two buds to a shoot the others should be thinned out in autumn. Are you sure that it is moist enough at the roots? An insufficiency of moisture would produce the effect complained of.—J. C. B.

12895.—**Hyacinths in glasses.**—"T. J. W." (p. 27) informs us that he tried for a whole fortnight to induce the bulbs to root at a distance of one-eighth of an inch off the water. His patience then being exhausted, he filled up the glasses, and to this latter proceeding he attributes his success, and I suppose believes the bulbs were still dormant when he did so. I will not doubt that his flowers are other than perfect, but I think the bulbs will not be such good ones for next year's borders as they might have been with the water kept from them. If "T. J. W." wishes to test this matter thoroughly, let him take two bulbs,

giving one the immersion and the other the non-immersion treatment. After flowering store the bulbs away, so that he may be able to distinguish one from the other; then, at the right time plant them in the borders, and if the flowers from them are equal in quality, I shall be most happy to acknowledge his system the better one. So far I have successfully grown Hyacinths in the way I described.—G. P. M.

13058.—**Raising winter Carnations from seed.**—It is getting too late now to sow seeds of Carnations to flower in the same year. They ought to be sown not later than the 1st of February, over a hotbed, and be pricked out as soon as they are large enough to be grown on in pots during the summer. In this case sow the seeds at once, and when the first leaf after the seed leaf is formed, prick them out in pots, say, a dozen plants in a 5-inch pot. In a month or more the small plants will have grown large enough to be potted off singly into small pots. By the end of the season each plant will be large enough to be grown in a 6-inch pot. If they were sown very early they would flower in September and October in a greenhouse; and if the greenhouse was kept rather warm they might flower during the winter, but the blooms do not open kindly in a cool greenhouse. The best potting soil is good turfy yellow loam, with some decayed stable manure and a fourth part of leaf-mould added to it. If this cannot be obtained, peat of a light fibry nature may be substituted.—J. D. E.

12934.—**Ferns.**—I have used Elliott's Summer Cloud for shading Ferns and foliage plants, and find it suitable, cheap, and easily applied. I applied it to the glass inside with a brush, the glass being quite dry at the time. The following Ferns will suit "J. D.":—Adiantum cuneatum, A. gracillimum, A. hispidulum, A. Williamsii, A. pedatum, A. Capillus-veneris, Asplenium bulbiferum, A. divaricatum, A. ebeneum, A. flabellifolium, A. palmatum, Cheilanthes elegans, Cyrtomium falcatum, Davallia canariensis, *D. Novæ Zealandiæ, Dicksonia antarctica, Didymochlæna truncatula, *Goniophlebium subauriculatum, Hypolepis repens, Lastræa Standishii, Lomaria gibba, Nephrodium molle corymbiferum, *Platycerium, alcicorne, Platyloma falcata, Pteris cretica, albo-lineata, *P. scaberula, P. serrulata cristata, P. tremula, *Woodwardia radicans. Many Ferns, in fact, will thrive in baskets, but those marked with an asterisk have creeping growth. I give also the names of a few hardy Ferns which are worth the shelter of glass:—Asplenium marinum, Athyrium filix-fœmina, Athyrium f. f. plumosum, &c.; Lastræa filix mas, cristata, L. f. f. grandiceps, Osmunda regalis cristata, Polypodium calcareum, Polystichum angulare proliferum, P. a. cristatum, Scolopendrium vulgare cristatum, Struthiopteris germanica.—E. Hobday.

12919.—**Tuberoses.**—The imported Tuberoses come from two sources. The South African bulbs arrive early in autumn, and are best for winter and spring flowering. The American bulbs are imported later, and are generally potted in January and onwards in monthly batches for flowering in summer. The bulbs from both sources are discarded after flowering, and new bulbs purchased simply because in the rush and hurry of our work the necessary attention could not be given them to induce them to flower well. All the imported bulbs do not contain a good grown spike of flowers even when grown by those who make a specialty of the culture.—E. Hobday.

13051.—**Epiphyllum leaves becoming crinkled.**—This is caused either by a too low temperature during the winter, or by defective root action. Epiphyllums like a constant warmth of about 50 degs. in winter, with just enough water to keep the soil moist. If the roots have suffered either from too much water or through the soil being unsuitable, the roots will have a discoloured appearance. This should be ascertained by turning the plant carefully out of the pot. If such be the case remove as much of the old soil as possible without injury to the roots, and replace in a clean pot only just about large enough to contain the roots, using, for compost, loam (one-half), the remainder to consist of peat and leaf, with one-fourth of the whole of silver sand. Give good drainage, water only when dry, and grow in a light airy place through the summer. Epiphyllums cannot get too much sun when growing. If they have to be wintered in an ordinary greenhouse, keep them at the warmest end, and give but little water. They will not need watering more than twice during the three dullest months.—J. C. B.

12931.—**Raising Lapageria from seed.**—Sow now in peat and sand. The pot should be well drained, and on the drainage place a layer of rough turfy peat, fill in with the finer soil to within an inch of the top of the pot, press down firmly, and give sufficient water to moisten all the soil. When the surplus water has drained away sow the seeds, and cover with sandy peat about one quarter of an inch deep. Press the soil down with the bottom of a small pot. Cover the pot with a square glass, and stand in a dark corner in the propagating pit till the seeds germinate, then remove to a light position; keep in an even state of moisture. Seedling plants are not so good as those raised from layers, as they are a long time before they flower.—E. Hobday.

12890.—**Fuchsia splendens.**—I should think the temperature named full high at this season. Try less heat and more air, and keep the plants near the glass. Do not overwater. If the plants are well rooted, try a little artificial manure. This may be given in the water, or a little sprinkled on the pots and watered in.—E. Hobday.

13057.—**White Pæonies as pot plants.**—If carefully lifted, with balls of earth and roots uninjured, and placed in pots large enough to receive them without crushing the roots, the Pæony will flower in a cool position under glass. When the flowering is over harden the growth a little and plunge the plants out in a reserve, and where water can be given if needed.—E. Hobday.

12947.—**Spiræa japonica.**—The plants seem to require more light. The temperature seems all right, but are the plants too much crowded? The damping off is certainly due to some local cause, which must be sought for on the spot.—E. Hobday.

13085.—**Aerides in low temperature.**—Those who have not the convenience of a warm house should grow A. japonicum, a Japanese species. It is very distinct, forming a dwarf compact plant, with short racemes of white flowers prettily spotted with rosy red. I have seen it well grown in a cool house in Messrs. Backhouse's nursery at York and other places. Nearly all the others are East Indian plants, and do not succeed well in a lower temperature than 55 degs. in winter.—J. D. E.

Scented-leaved Geraniums.—At page 48 in Gardening, you say that correspondents experience great difficulty in procuring these plants; allow me to say that Mr. B. W. Knight, florist, Battle, Sussex, whose advertisements frequently appear in Gardening, supplied me a year or two ago with a complete collection of these old favourites. He has frequently advertised them since, and I do not doubt that he is still able to supply them. From the number of varieties he sent me, I should say his collection is unique, for I had several from him which I had not seen before.—J. C. C.

Fertilising Moss.—I find this Moss, combined with common Moss, most useful. I grow all my spring bulbs in it, either in china pots, or bowls, or pottery. It is so clean and so light that it is especially suited for use by ladies. When put in china pots without holes for bulbs there is less trouble, as those do not need to be so often watered. I have not tried plants.—L. T. H.

OUTDOOR PLANTS.

THE NEW ZEALAND FLAX.

People about London have no idea of the great value of the New Zealand Flax as an outdoor ornament. In London we value it highly for the conservatory or winter garden, or for room decoration, and where it will not live out-of-doors it is one of the handsomest things one can grow in the cool greenhouse or orchard house; but, however well grown it may be in pots or tubs, we never get from these a good idea of the fine aspect of the plant when well-grown in the open air and in a favourable climate. In the south and west of England this Flax is frequently hardy out-of-doors, but the finest plants we have seen are in Ireland, where it thrives remarkably. In New Zealand this plant may be seen covering acres of ground throughout the three islands, over which it is, in places, plentifully distributed. It appears to grow most profusely in damp alluvial ground—often upon the banks of rivers and rivulets, and sometimes at very considerable altitudes. The Maoris were, and indeed still are, in the habit of obtaining from the leaves a most valuable fibre, which, when thoroughly freed by hand-scraping from the resinous gum which surrounds it, is of a soft silky appearance and texture, and of unusual strength. Numberless attempts have also been made by colonists to discover some method of cleaning this Flax, and a great many mills have been erected at various times, both in the north and middle islands, with this object. At one time it was considered that the secret had been discovered in the use of ammonia, but, either from the expensive nature of this chemical when used on a large scale, or from its practical failure to accomplish any valuable results, the process was never universally adopted. The natives, even now, produce the best Flax, which they scrape with sharp shells or knives, and, although only a comparatively small quantity can be thus rendered fit for the European market, it nevertheless invariably brings the highest prices. Many mills, however, are still worked, and no inconsiderable quantity of the Flax reaches England annually, in spite of the difficulty which has been alluded to, and the removal of which would render the Flax an article of export second only in value to the wool of the colony.

New Zealand Flax (Phormium tenax) out-of-doors.

Culture of Violets.—It may appear early to recommend the transplanting of some of one's stock of Violets in April; but it is not a day too soon if their flowers are in request for as long a season as possible. We invariably commence transplanting them in the beginning of April, and in doing so choose those that have been in flower during the greater part of the winter in pits and frames. It was the custom not many years ago to make Violet beds in shady situations, under trees, and in odd corners, and often in very poor soil, when they were expected to produce their coveted blossoms for years in succession. But experience has proved that they will repay a good situation and a moderately rich soil. The ground in which our Violets are grown has a dressing of either decomposed hot-bed manure or that from a spent Mushroom bed in quantity equal to that given to most vegetable quarters. The ground having been broken moderately fine in digging, we commence by lifting some of the plants and pulling them to pieces—that is, all straggling runners are drawn off with a heel and the old bunch is also divided. Two or three of the runners are then taken in the hand, their heads are placed all at one height, and one piece of the old crown is added; they are planted in rows a foot apart and 9 inches asunder in the row. They should be planted with the trowel, and care taken that the stalks and roots are put down full length, and not curled up within a few inches of the surface. Whether the weather be showery or not, these clumps of plants should have a good watering through the spout of a watering-can, and not

through the rose, the object being to wet the soil to the lowest part of their stems—not a mere surface dribble that dries up under the first hour's wind or sunshine. I have planted many hundreds during the driest and hottest of weather, and have not had a gap to make up. Should the weather prove dry after planting, they must be regularly watered, as they require moisture until they have taken root. We plant in different aspects and situations, and find that we get the best results from one place one year, and from another place another year, but, as a rule, an east or west aspect suits them best. I find that on the sunny side of a wall the plants are liable to suffer from red spider, and scarcely make any leaf, but flower well in the early spring. On the other hand, I find that on the north side of a wall the crowns do not get sufficiently ripened; the foliage is soft and liable to be carried off in the winter months by damp, especially when put under glass and kept close. Nevertheless, we shall never think of abandoning the cultivation of Violets in this situation, as it is from these that in hot summers we get our first blooms, usually early in August. The planting out may continue from the beginning of April till the beginning of June, but May would be quite soon enough for the main crop, as it would be a great sacrifice to divide the plants while in bloom.—C. W. C.

GARDENS OF LIGHT AND SHADE.

Introduction.

The writer of these papers seeks to show how insignificant plots of ground may be made to yield something in perennial beauty, and it is precisely because these papers will deal with gardens measured by feet rather than by acres, that they address themselves to a numerous class.

Many valuable books on gardening exist, but they usually suppose or would inculcate a botanical or any rate a technical knowledge which not one in a huudred householders possesses, or has the leisure and inclination to acquire. All the writer essays to exhibit is the advantage of an arrangement formed on nature's plan—similar, let us say, to such displays as may be seen in some of our parks and old-fashioned gardens of the least formal kind, and rendered in minature to suit the conditions of space.

With such information as is here given, supplemented perhaps in regard to details of planting and treatment by some good gardening guide book, he ventures to think that any suburban plot of reasonable dimensions may be made pleasing all the year round and at little cost.

To this unambitious programme the articles are limited; such short lists of trees and plants as will be given contain none but kinds inexpensive and easily obtained, yet ample in number and variety for the simple purpose in view.

Old-fashioned Gardens.

In books which treat of the gardens of a past generation we have evidences of the greater roominess and freedom of a period when the population of our island was yet sparse, and the disciples of Malthus, though they might find reason for dismal forebodings, were at least spared the sad satisfaction of seeing their apprehensions realised.

Of course even in those days, and long before them, there were pent-up streets in town and city, where the surroundings of a leafy porch and rose-clad walls were as unattainable as the garden of Eden itself, and where such knowledge and memory as the inhabitants had of tree and flower were either associated with gala days and holidays or belonged to the history of a youthful and long put off rusticity. But in the times we are thinking of, this much, at least, was certain, that what was called a garden deserved the name. The word had no such questionable and misleading application as too often obtains now. A garden was something more than an oblong court, blazing for three short months of summer with scarlet, and yellow, and blue, and for the remainder of the year a grim and leafless void. It was, above all things, a garden of greenery. It had its lawns, its Grass alleys, its Yews, its Ivies, and its Box edgings; and if the perennial border plants, which came forth each in its turn to help deck the seasons, were somewhat soberer in hue and habit than the gay sojourners of to-day, they possessed a quiet beauty of their own, which it is pleasing to know has recently received a measure of resuscitated recognition.

An old-fashioned garden has something more to recommend it than the promptings of a wistful sentiment. From its *pot-pourri* of romantic shrubs, its Rosemaries, its Lavenders, and Sweet Briers—from its Lilies, its Carnations, and its Jessamines, rises a fragrance not to be gainsaid, and which, though to some of us it be heavy with mystic memories, and on that account the sweeter, appeals scarcely less potently to the novice and the dunce. For in its shady walks and lambent lawns, its leafy arbours and over-archiug branches, its green alleys and dewy nooks, we all alike recognise a combination of charms like the gift of a bountiful nature. It is not our admiration which is kindled so much as our sense of enjoyment. We appreciate the gorgeous colouring of the modern parterre, but we reserve our heart's affection for the garden which endures.

When a child is shown a beautiful flower its not unfrequent inquiry is—"Has it a root?" and then—"Will it grow?" This preference for something not too evanescent and fragile, which may be looked for to stay with us, to withstand as long as may be the influences of the changeful seasons, and to reproduce again and again the beauties which now attract us, is the homage we consciously or unconsciously pay to the belief in our own immortality, and to the part we shall bear in a greater hereafter.

In an old-fashioned garden we perceive the conditions which appeal intuitively to our sympathies. The trees and plants are at home there. There is no suspicion of their having been provided for our coming; there is no presentiment of their disappearance when we have gone. We do not detect beneath the leaves the record of nine months' barrenness; these are perennial charms varying as befits the occasion, but never absent—an old-fashioned garden is a garden always.

If for no other reason than this, an old-fashioned garden is to be loved and imitated. It is a lasting instead of a transient delight. It appeals not to our fancy but to our heart; it is our companion and constant friend. What affectiou can we bestow upou plants which have been bought in full bloom at so much a dozen, are "bedded out" in June, and will be consigned—bloated and overblown—to the rubbish heap in September?

How differently do we regard the beauties whose homes have been made about us, whose first buds we have welcomed, and whose blossoms have seemed like a tribute to our solicitude and care, which, when their errand is over, sleep peacefully in the borders until returning spring summons them anew! And if this be the case with flowers, how much more is it true of the trees and shrubs, whose cultivation enters so largely into old-fashioned gardening? Their forms are visible to us all the year through; if deciduous, every phase of their annual life is interesting, and not least the period of their repose; if evergreen, they are most beautiful when all else is bare. Now it is they come forth in sheen of leaf and wealth of berry to redeem the landscape and to deck winter's brow with bays which proclaim that poetry yet lives.

Let us take a walk in a garden such as we have in mind. It is a forenoon late in July. The house about which our garden spreads is not an ambitious structure. It is but one story in height, and looks plain, middle-class, and unobtrusive. If it were not for the two urns upon the parapet of the porch, of some pretensions, we might say the building was without ornament. What splendour of red brick it may have boasted is now dulled by a century's weather. The chimneys which, doubtless, once smoked, we would fain believe have been cured of their disorder, for the curtains about the upper windows are white as snow. The windows themselves have been modernised; the thick woodwork and small panes have given place to more convenient if less picturesque sashes glazed with plate glass. A perpendicular trellis covers a portion of the walls, and a Magnolia grandiflora, after climbing to the highest bar, has now wound its arms about the chimney-stack and garnishes the scarred and crumbling brickwork with its chaste and splendid blossoms.

A notable feature of the house is that all the chief rooms look gardenwards. The bow window in shadow beside the screen of Portugal laurels marks the dining-room, and above it is the best bed-chamber. The drawing-room has been furnished with casements, and beyond the garden door a pair of narrow windows, heavily robed in white Jessamine now in full bloom, and miniature Ivies mark that sanctum sanctissimum—the study. Looking from any one of the windows we have a vista of delicious and various greenery, broken with far reaching recesses filled with golden sunshine, here and there snatches of yellow walks, mottled with shadow, and beyond all a glimpse of the dull red boundary wall, which we instinctively associate with the fragrance of Nectariue and Peach, though the time is not quite yet. In the foreground a Copper Beech spreads its branches protectively above a rustic bench where lie a lady's broad-brimmed hat with a bright ribbon about it, and an open book whose leaves scarcely move in the breath of noon—too drowsy even to turn the page. Beyond, we catch sight of the sturdy stem and compact branches of a Mulberry. For sounds, we have a hum of insects in the air, a twittering of birds under the gables, and occasionally the deep bay of the mastiff, sounding hollow from behind the Ilex which screens the stable yard.

Crossing the lawn, we startle a pair of thrushes and a blackbird seeking their vermiceous meal in the dew damp shadows of the Hollies, and above our heads a fly-catcher, which has built among the vine leaves on the housewall, swoops upon his tiny quarry. A straight gravelled walk leads forward. It is edged with Box full 6 inches in height, and beyond the Box, broad flower borders, rendered rich and solid by occasional density of Bay and Yew, Hemlock, Yellow Holly, and Juniper, with here and there the Syringa or Mock Orange, whose blossoms of surpassing fragrance have now fallen, Guelder Rose, its leaves bronzing in the sun, and Laburnum, decked with pendulous seed pods, turning yellow, as if true to the colour of the blossom. Conspicuous among flowers stand the sturdy Hollyhocks and massive Sunflowers, the scarlet Lychnis and Rockets; about their feet are huge bunches of red and white Valerian, Snapdragon, and Clove Carnations. The Solomon's Seal has dropped its blossoms long ago and droops in the shadows, the bead-like seeds of the Columbine rattle down upon the now decaying leaves of the Pæony; Nasturtiums trail at intervals, and, as though amorous of the sweet scent they lack, entwine their blossoms above the Lavenders and Sweet Briers. Southernwood, too, grown to the dimensions of shrub, is there; and Rue, and Thyme, and Rosemary, for our ancestors thought little of gardens which were not scentful, and packed their borders with aromatic plants, as their wives crammed their confections with spices.

In such a garden the hours, like the bees winging their way towards yonder hives, fly freighted with honey, and in the air we breathe we seem to taste both fruit and flowers. For beyond the archway, fragrant with the first bloom of the tiny White Clematis—sweetest of August blossoms—the great Plums, here of purple and there of gold, festoon the south wall, and, peeping from the curtaining leaves, the downy Peach and smooth-cheeked Nectarine grow mellow in the meridian heat. It is grateful to turn into the shady way where the Apple branches cluster overhead, and, threading the Filbert grove, to wander back homeward by devious paths. The deep musical voice of the great clock in the hall leisurely tells the hour of noon. Scarcely a leaf moves, the birds have ceased their twittering, the day seems fallen asleep, and there is silence everywhere, unbroken save by the hum of drones. Or, if instead of warm July it be chill October, when sound and fury are in the air, when the Birches bend low in the angry gale, and the yellow leaves dance upon the lawns—or mid-winter, when the rime is on the leafless trees, and the Pines and Firs show darkly against the red sky, is there nothing interesting and pleasant in the old-fashioned garden? If we inwardly shudder at the thought or give but a hesitating assent to the delights of a winter's walk among its plantations, and find no fragrance in the fallen leaves, then are we no native lovers of a garden, but aliens and pretenders. The garden which fails to inspire affection in every phase of its life is no true garden, or we to whom it appeals are no true lovers.

ROCK GROTTOS CLOTHED WITH IVY.

Here is a delightful group of rocks covered with Ivy, and fringed and crested with shrubs and trees. Anything more artistic it would be difficult to see in a garden. Pretty as it looks in the cut, it looks better in fact. It is a clever contrivance to hide a tool-house, the interior being a kind of cave approached by an Ivy-fringed entrance. It is one of the successful effects of rock gardens in garden landscape. Of the unsuccessful the country is too full already. We know nothing so hideous as the ordinary type of rock garden, and beg of all who think of making them to hold back, unless they have the right feeling and knowledge. It is quite possible to have beautiful gardens in a thousand different situations without a rock being seen. Anything ignoble or ugly should be turned out of the garden. Unless we have travelled among the rocks and noted their forms, their modes of emergence, and the pretty simple ways that flowers cluster around them as they crop out of the mountain turf, the chances are ten to one that we make a mistake with our rock garden.

REPLIES.

13059.—**Profitable market gardening.**—You do not say what locality you are situated; if in the neighbourhood of a populous town, your best way is to ascertain what kinds of vegetables and fruits are in request there. Unless you are in a very early locality it will not pay to grow vegetables on so small an extent of land for the London markets—the expense of transit and the uncertainty of the markets is so great. The prices reported to be obtained in Covent Garden are often very misleading, and we have known men to be quite ruined through basing their operations on such reports. In a populous neighbourhood fruits, such as Strawberries, Currants, and Gooseberries are always wanted. The latter are now much in request for jam-making, and of the three acres we should be inclined to plant one of them with Carter's Prolific, as this fruit can be easily disposed of to jam-makers, and once planted the great labour is over for some years. If there is a market within easy reach common hardy flowers of many kinds can generally be got rid of, also young plants of Pansies, Carnations, Daisies, Primroses; also Cabbage, Broccoli, Lettuce, &c., at the proper season. There is always a call for such things in a market town, and once you become known as growing them you will obtain a connection.—J. C. B.

Rock grottos in banks, clothed with Ivy.

12886.—**Profitable flower seeds.**—Unless "Ford" has some knowledge of the business he had better begin on a smaller scale first. For cut flowers decided colours are most in demand now: Asters (Victoria and Truffaut's), White Stocks (Midlothian), Branching Larkspur, double German Scabious, double Zinnia, single Dahlia, Godetia (the Bride and Lady Albemarle), Mignonette, Sweet Peas, Chrysanthemum (Dunnettii, double white, and double golden), Calliopsis Drummondii, Tom Thumb Nasturtiums, Cyanus minor (blue and white), Dianthus chinensis (Indian Pinks), Gypsophila elegans, &c. To save seed from Mignonette of a good strain, if a good crop, is valuable; some of the common hardy annuals, for which there is always a brisk demand, will probably answer best. The Candytufts, Clarkias, Eschscholtzias, Godetias, Indian Pinks, Linum grandiflorum rubrum, Lupines (in various colours), Nasturtiums (various), Nemophila (various), Sweet Peas, &c., will probably answer best.—E. Hobday.

12949.—**Climbers for house walls.**—For the house in Sussex I should like a mixture of Roses and Clematis on south front, but other things will do, such as Stauntonia latifolia, fast-growing; Escallonia macrantha, rather slow; Jasminum nudiflorum, fast; Ceanothus azureus, fast; Wistaria sinensis, fast, after the first year or two. For other aspects there are the Virginian Creepers, especially Veitchii, and the Honeysuckles, including the Dutch and the scarlet Trumpet. Passiflora cœrulea will do on the west side, with Smilax laurifolia. A collection of Ivies will do well on the north, if well looked after. Roses will also succeed well on the Gloucestershire house; as will also Clematis, Ivies, Honeysuckles, and Virginian Creepers. In addition, I would name Berberis Darwinii, Euonymus radicans variegatus (slow-growing, but pretty when grown), Garrya elliptica, Cotoneaster Simonsii, and C. microphylla, Jasminum officinale, Pyracantha, Laurestinus, and Pyrus japonica in variety. Some of those named are fast-growing, but summer creepers, such as Cobæa scandens, and Canary Creeper may be used to clothe the top of the wall till the others get up.—E. Hobday.

12935.—**Geraniums.**—For profusion of blossoms in perpetuity there is nothing better for exposed positions than the old Tom Thumb. Vesuvius has a larger truss, and also flowers freely and continuously. Henri Jacobi is also a grand variety for the purpose. For exhibition the following are good: Six double Zonals—F. V. Raspail, Mr. H. Cannell, Emile de Girardin, Madame Thibaut, Sir Garnet Wolseley, and Mrs. Orton. Six single Zonals—Ajax, Mr. Brunning, Edith Pearson, La France, Mrs. Deane, and Eurydice.—E. Hobday.

13063.—**Perennials for garden facing north.**—Carnations and Pentstemons require more sun than they would get in the position mentioned; but Pansies, Primroses, Polyanthuses, Daisies, Violas, and alpine Auriculas will thrive very well. Many kinds of bulbous flowers such as Tulips, Snowdrops, Crocuses, Triteleia uniflora, Hyacinths, and Narcissi, such as nanus, obvallaris, bicolor, Horsfieldi maximus; the common Lent Lily, and the large double Daffodils will be at home there; also Periwinkle (plain-leaved and variegated), London Pride, Cyclamen hederæfolium, Dog's-tooth Violets, Mimulus, and Myosotis dissitiflora. A good many other hardy perennials will do tolerably well in a garden where but little sun comes if it is fairly light; but in dense shade nothing much but Ferns can be relied on to give satisfaction, and some of the strong growing kinds look remarkably well if planted in groups. Lilies may be made a specialty of in a shady garden, and such handy free flowering kinds as the Tiger, the Orange, the Martagon, umbellatum, and davuricum may be freely used. The Japan Lilies, too, both red and white, should not be forgotten, as they prolong the blooming till late in autumn.—J. C. B.

13061.—**Plants for large beds.**—Try the large African Marigolds, both orange and lemon, with Ageratum, or the French striped, with Salvia patens. Again, capital beds may be made with single Dahlias, pegged down, such as Mrs. Reginald Upcher, with Gracilis elegans; or Walter Ware, with Mauve Queen; or Negress, with Rifleman; or White Queen, with Lutea grandiflora; or Lizzie M'Clive, with Albion; or Bronze, with Darkness; but with single Dahlias there is hardly any end to the combinations which may be made to produce the effect of shot silk, and their constant and lasting blooming is much in favour of their use. J. P., *Lancashire.*

12827.—**Plants for shady garden.**—There is no reason why spaces under trees should be barren in gardens, as they almost invariably are. They are not barren in the woods, except under Beech trees, or in very dense copse wood. Even our native plants would look better than bare earth, and, with a selection of these, and hardy exotics of similar habit, spaces under trees may be as well furnished as any other part of the garden. All that is required is to recognise the necessities of the situation, and act accordingly. Select plants which naturally grow under trees, and success will be the result. It must be kept in mind, however, that for these the soil matters little; they root into and live on the annual deposit of fallen leaves from the trees, or on the substance of these as it is being carried down into the soil. If a healthy carpet of vegetation is desired under trees, the first necessity is that the leaves be allowed to lie and rot where they fall. It is not sufficient to sweep the leaves up, and then return them after they are rotted. The woodland plants root freely in the autumn, when the newly-fallen leaves are all damp and rotting, and there is little doubt that they supply better plant food than when completely decayed. Of native plants, Lily of the Valley and Solomon's Seal do well, many Ferns, Wood Anemones, single and double, Scilla nutans, or Wood Hyacinths, of which there are rose-coloured and white varieties; Columbines, except in very deep shade; Honeysuckle; Primroses, single and double, of many shades; Iris fœtidissima, or Gladwin as it is called, a native Iris, which scarcely deserves its name, as its disagreeable odour is hardly perceptible, except when just picked; its bright scarlet seeds are ornamental in autumn—it will grow close to the trunks of trees. The hardy Vincas are useful evergreen trailers; Vinca major elegantissima, a variegated kind, is very showy. The white variety of Vinca minor flowers rather freely. After a good depth of decayed leaf-soil has accumulated hardy terrestrial Orchids will grow. Orchis mascula, O. maculata, the Butterfly Orchis, and the White Helleborine are pretty native kinds. Provided the trees are leafless in winter, a large number of early spring flowers may be grown successfully, as their growth is made for the season before the trees put on their leaves. Scillas, early Tulips, Anemones, Narcissi, Violets, Primula rosea, Primula Sieboldii, and several rarer Primulas will all do well. Clear of the drip of the trees, Pansies will do well; also German Iris, Mimulus, Day Lilies, Michaelmas Daisies, Foxgloves, and Spiræas.—J. D.

13056.—**Carpet for dry position.**—The Tom Thumb Nasturtium will do very well on your dry border. Dibble in the seeds singly 6 inches apart at the end of April, and if they get any moisture at all they will produce plenty of

flowers in due time. If the border is fully exposed to the sun it is just the position in which the lovely Portulacas delight, as they like the warmth of the sun and do not mind the drought. Being tender annuals the seed should be sown now in pans of fine sandy soil; place the pans in a warm greenhouse, where they must remain until the end of May; then put them in a cold frame for a few days, to harden off the plants Before planting place 2 inches of fine sandy soil on the surface of the border in which to put in the plants. Lift them carefully, three or four together, and put them in clumps 4 inches apart. A few gentle waterings on the evening of fine days may be necessary to get them established, but after that they will not want much attention unless the season should be very dry, and then a good watering once a week will suffice to keep them right. Portulacas are the most varied in colour and the most beautiful of all tender annuals, but they do not like shade or a damp position.—J. C. C.

—— The common white Arabis, sometimes called Snow-on-the-mountain, is an excellent plant for a hot dry position. It has really wonderful powers of endurance, for although in very parching weather it may shrivel up and look almost dead, the first refreshing shower restores it to its normal condition. Hypericum calycinum, the St. John's Wort, is also one of the best of plants for a dry bank; it forms a dwarf thicket of neat foliage, and remains constantly green, looking very cheerful when in bloom. We have seen these plants do well where most other things failed.—J. C. B.

—— I planted such a bank with Mesembryanthemum, a star-like flower, like M. tricolor, but a perennial. I raised a number in small pots, and when the roots reached the sides of the pot I turned them out into holes made the size of the pots, all over the bank, about 9 inches apart. The plants soon meet and become a mass of flower.—Norfolk.

—— If "Warwickshire" will try Mimulus in his border he will find that he will have something that will grow, more especially as he has a Hawthorn tree causing shade. This plant thrives in this district (Argyleshire) in any position, but seems to excel in the shade. It is also quite indifferent to "drip."—Rob Roy.

12991.—**Hardy annuals for bedding.**—Hardy annuals are not suitable for bedding in the ordinary sense of the term—that is, they do not work well into flat patterns, few of them being either sufficiently dwarf or lasting enough in bloom; but beds of annuals are quite as showy as beds of any other plants. Leptosiphons give very dwarf yellow (aureus), pink (roseus), and white (densiflorus albus). Saponaria calabrica, and its white variety, are very neat, continuous, and profuse in poor soils. Kaulfussia amelloides is a neat dwarf blue. Nemophila insignis is the best blue for spring. Silene pendula compacta is a good dwarf pink. About 9 inches to 1 foot high are: the Tom Thumb Tropæolums; Omphalodes linifolia, a pretty white annual; Bartonia aurea, a good yellow; and Viscarias, pink and white. Taller are Vilmorin's Rocket Candytuft, white; Convolvulus minor and Cornflowers, blue; Godetias, rose, crimson, and white; and Crimson Flax. Annual Chrysanthemums, single and double. All good: Clarkias, Lupines, Larkspurs, Coreopsis, Poppies, and Sunflowers. For a really good show of hardy annuals autumn sowing should be practised. The most brilliant and decided coloured annuals are Nemophila insignis, Kaulfussia amelloides, Convolvulus minor, and Cornflowers, blue; Tropæolum (King of Tom Thumbs) and Carnation Poppies, scarlet; Opium Poppies, scarlet and magenta; Crimson Flax, bright crimson; Godetia Lady Albemarle, and Tropæolums of several kinds, crimson; yellows, pinks, and whites as already named. The most brilliant colours among annuals, however, are to be found in the half-hardy and tender sections. Stocks, Asters, Zinnias, Portulacas, Phlox Drummondii, and Balsams give all the bright colour required in a garden.—J. D.

12880.—**Plants for open situation.**—Plant the flowers you love best. Almost everything will succeed in such a situation that does not grow too large. Herbaceous Phloxes, Pyrethrums, Pentstemons, Delphiniums, double Potentillas, Antirrhinums, Carnations, Picotees, and Pinks. Gladiolus may be planted now, and also Hollyhocks and Dahlias. If the large plot was well dressed with loam and manure, Roses, especially Teas, may be planted out of pots, and in such a climate the hardy Fuchsia, Riccartoni, will soon be a fine feature. The narrow border may be planted with Pansies and Violets, Anemone japonica, white and pink, will look well in the back, with dwarf things in front. Hardy annuals might be largely used.—E. Hobday.

13062.—**Camellias for high situation.**—Camellias are sufficiently hardy to be grown out-of-doors almost anywhere, but they only flower well in favourable situations. They are quite as hardy as the common Laurel. I have seen them grown well out-of-doors north of the Forth in Scotland, but they did not flower satisfactorily. They can be grown and flowered well in a sheltered place out-of-doors near London. One variety succeeds as well as another. They ought to be sheltered from east winds.—J. D. E.

12972.—**Striking Honeysuckle.**—In this district (Argyleshire), where the common Honeysuckle abounds, it propagates itself naturally at an astonishing rate. The point of any branch that may touch the earth makes root in a single season, and is by no means particular as to the nature of the soil. It seems to take root in hard gravel as readily as in good leaf-mould.—Rob Roy.

ILLUSTRATION COMPETITION.

All drawings and photographs for the first Illustration Competition must reach the office of Gardening not later than by the first postal delivery on Saturday, April 25th.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

QUESTIONS.

13163.—**Grub in Onions.**—Will anyone kindly tell me what will destroy grub in Onions?—Burnside.

13164.—**Wallflowers for market.**—Will any reader kindly inform where to send the above bunched for sale?—A Constant Reader.

13165.—**American glass cutter.**—Will "W. F. M., St. Andrew's," kindly tell me where the American glass cutter he speaks of (p. 26) can be obtained?—A. T. M. "M. Dayrell" asks the same question.

13166.—**Nitric acid and ammonia for garden.**—I have a quantity of nitric acid and ammonia to spare. Will any reader kindly tell me if I can utilise it in a garden?—Ammonia.

13167.—**Treatment of double Marguerite.**—Will any reader kindly tell me the time for sowing and the after treatment of the double Marguerite Aurora for winter flowering?—T. W. T.

13168.—**Roses under glass.**—Will some one experienced in the culture of Roses under glass give me the names of the best white and the best pink or scarlet (not crimson), for training up wall of greenhouse, giving large quantity of blooms for cut flowers?—Amateur.

13169.—**Treatment of Hydrangea.**—Will any experienced grower kindly give me simple directions as to the treatment of Hydrangea grown in pots in a comparatively cool greenhouse? I wish it to flower every year, but for the past seven years I have only been able to procure bloom every alternate year.—Rob Roy.

13170.—**Garden path.**—I shall be obliged if the correspondent who gave particulars of asphalt for above in Gardening, p. 29, will say if fresh lime will do as well as lime rubbish, and, if so, what quantity? Also, can he give an idea of how much per square yard of the mixture is required to make the path?—R. Blackmore.

13171.—**Substitute for turfy loam.**—Turfy loam has been recommended as a good staple soil for almost everything grown in a planthouse. What would he the next best soil where that cannot be obtained? Would soil that has accumulated in the garden corners—refuse from the garden—do, or would the addition of Cocoa-nut fibre improve it?—G. S. W.

13172.—**Constructing bottom of Fern case.**—Will some reader kindly tell me the best way to construct the bottom of a small Fern case, 24 inches by 12 inches by 18 inches high, as I am about to make one? A friend of mine suggests cementing the bottom. Would this be better than zinc?—A Lover of Ferns. [*Directions as to filling such a case have been given very recently.*—Ed.]

13173.—**Raising plants for bazaar.**—A bazaar will be held here during the first week in October, and a number of plants are wanted, some to form a screen to separate one part of the hall from another—I thought some sub-tropicals might answer. Others are wanted to be in flower for sale. Will some reader inform me what could be raised from seeds or cuttings, by means of greenhouse and frame, which would be effective at that time?—Excelsior.

13174.—**Growing Celery for exhibition.**—Would "North Briton," who wrote an interesting article on "Leek Growing for Exhibition" in Gardening (see page 603, January 24), or any of the Lancashire or other prize Celery growers, kindly say whether the plan recommended of putting a foot or so of fresh stable manure into the bottom of the trench for starting the newly planted Leeks into rapid growth has been adopted with the same success in the case of Celery?—Bengullion.

13175.—**Annuals for east aspect.**—What kind o annuals would be the most suitable for a small garden facing the east? The soil is damp and heavy, and only gets the sun for two or three hours in the morning; the locality is in the south of Scotland; those flowers having an effective show would answer best. When should I plant or sow?—Mechanic. [*We have noticed annuals doing better in the south of Scotland than anywhere else, flowering for a long time very beautifully. No doubt many of our readers in that country will help you.*—Ed.]

13176.—**Pruning Roses.**—Will any reader kindly tell me which of the following Rose trees ought not to be much cut back, and which will bear well pruning?—Prince Camille de Rohan, General Jacqueminot, Peach Blossom, Mrs. Rivers, Maurice Bernadin, Fisher Holmes, Empress of India, Louis Van Houtte, Magna Charta, Baroness Rothschild, Sultan of Zanzibar, Duchess of Vallombrosa, Maréchal Vaillant, Duc de Rohan, Gloire de Cheshunt, Marquise de Castellane, Edward Morren, Dupuy Jamain, General Von Moltke, Xavier Olibo, Bessie Johnson, and Gloire de Dijon.—Mrs. M.

13177.—**Treatment of Orchids out of flower.**—I am in a difficulty with some Orchids, and I should be exceedingly obliged if Mr. Douglas, or some of your readers, would kindly give me advice. I bought the following in flower a few weeks back: Cattleya Trianiæ, Odontoglossum Alexandra, O. cirrhosum, and Dendrobium nobile. These are now going out of flower, and I do not know what treatment to give them. The last named is throwing up a number of fresh shoots. I have also Lælia purpurata, Maxillaria hyacinthiflora, Anthurium Scherzerianum, and Epidendrum cochleatum, the first showing signs of moving. My house has a general collection of plants, and the minimum temperature at night is 50 degs. with a rise during the day.—E. H. G. T.

13178.—**Procuring Stramonium** (*The Beeches*).—Ask any large seedsman for Datura Stramonium.

13179.—**Cow manure for Pansies** (*Beta*).—A little well dug around the roots will do no harm if the soil is poor.

13180.—**Hyacinths in pots** (*F. D.*).—The best time to buy and plant bulbs is the end of October or beginning of November.

13181.—**Increasing single Dahlias** (*T. C. T.*).—Place in gentle heat, and carefully divide the crowns just as they bud.

13182.—**Cutting down St. John's Wort** (*Norfolk*).—Yes; old plants, as a rule, had best be cut down. The present or any time will do.

13183.—**Procuring Pompone Dahlias** (*T. Haigh*).—Apply to any good grower of bedding or soft wooded plants; consult our advertisement columns.

13184.—**Gathering freshly planted Rhubarb** (*St. Heliers.*).—As a rule freshly planted Rhubarb is not so good, and it had better be let alone for a year.

13185.—**Separating Vallota purpurea** (*J. B.*).—Pot and separate now, and grow on well during summer You may then expect good flowers about August.

13186.—**Blooming of perennial Poppies.**—(*Beta*).—Perennial Poppies, sown about August, will flower the following year if they receive the good treatment.

13187.—**Transplanting Hollies** (*R. T. R.*).—Move Hollies in April, in showery weather. All deciduous tree planting should have been finished before now.

13188.—**Scalded plants** (*Amateur, Derby*).—Your plants appear to have been scalded—that is, the house has been closed when the sun was shining brightly upon the plants.

13189.—**Cratægus Lelandi and C. Pyracantha** (Fire Thorns) (*Pyra.*).—There is very little difference between these. C. Lelandi is said to be dwarfer and more productive of berry.

13190.—**Dividing Christmas Roses** (*Hortulanus*).—Christmas Roses are divided in September; the soil should be light and rich. A good dressing of leaf-mould or decayed manure is beneficial.

13191.—**Narcissus not growing** (*E. C. G.*).—Narcissi and Daffodils are the same, the former being the botanical name. No doubt those that have shown leaf are early kinds, and the others will appear later.

13192.—**Transplanting Snowdrops** (*R. T. R.*).—The time mentioned in the answer to your question (13093) —June—is the best in the year for transplanting Snowdrops. In autumn the bulbs begin to form roots.

13193.—**Growing vegetables** (*T. Brown*).—You will find abundant information on this subject in every number of Gardening. Consult recent issues. Shaw's "Market Gardening" (Routledge) will help you very much.

13194.—**Soil for Cucumbers** (*G. S. W.*).—Cucumbers are not particular, and if they get plenty of manure and water they will be glad of any ordinary open soil in cases like yours where you cannot get "choice loam."

13195.—**Red Drop Fuchsia** (*Carrow*).—As you do not know the name we cannot advise you, but in certain coast districts and in the west of England every garden has old Red Fuchsias, and there can be no difficulty in getting plants.

13196.—**Sparmannia africana** (Gardening *Reader*).—This plant grows freely in a warm house with plenty of water and ordinary potting soil. It is one of the easiest plants we know to grow if it is given soil and moisture and light enough.

13197.—**Treatment of Asphodels** (*I. F. F.*).—We presume there is no doubt about the plant being the Asphodelus. That is quite a hardy border flower, and will grow in any good garden soil—the richer and deeper it is the bigger they grow.

13198.—**Raising seeds in window facing south** (*Anna*).—You can do it, but it will want great care. At this time of the year, and onwards, a great many seeds can be raised in the open air, and in frames and boxes very slightly protected.

13199.—**Nibbled Carnations** (*Glen Mona*).—If you are in a hare country, or if there are rabbits within a mile of you, the injury is probably due to them. Kill all the rabbits to begin with, and keep a sharp eye on big snails and similar things.

13200.—**Procuring Balearic Sandwort** (*Novice.*).—This plant (Arenaria balearica) should be obtained from any good nursery where alpine or herbaceous plants are grown. It creeps about and increases with such surprising rapidity that it would be easy to obtain millions of it.

13201.—**Hedge plants** (*Pyrus*).—The most beautiful hedge would be made by Pyrus japonica (Japanese Quince), unless you are bold enough to make an irregular and natural hedge of different plants, which might well be done. The others you mention are not quite suitable.

13202.—**Plants for shady water-tank** (*Mrs. E. Hopkins*).—The prettiest plant for such a tank as you describe is the beautiful fragrant Cape Pond Weed, Aponogeton distachyon. It covers the whole tank. It is worth dozens of the common weedy and slimy aquatics.

13203.—**Book on garden flowers** (*P. E. B. B.*).—The best book on garden flowers is the "English Flower Garden" (published by John Murray), in which 1,200 kinds are illustrated, and a sufficient account of, and directions how to manage, each are given.

13204.—**Sowing perennial seeds** (*New Subscriber*).—All the plants you mention are hardy perennials, and we think your best plan would be to sow at once in the open air in a border of fine soil. Sow in lines; take care that the soil is always moist, particularly when the seeds are sprouting.

13205.—**Poppy seeds sown in Grass** (*Ignoramus*).—No; as a rule it will be necessary to sow the Poppy, if you want a good result, on bare earth. It occasionally does sow itself among the Grass, but the best result in that case is when it does so in summer and the plant comes up in autumn.

13206.—**Obtaining Rollisson's unique Pelargonium and Tropæolum** (*Miss W., Rev. S. H. Booth, and M. W.*).—We have no doubt that any nursery where soft-wooded plants are grown will be able to supply this well-known Pelargonium. Tropæolums can be obtained from a seedsman.

13207.—**The growth of vines** (*W. Russell*).—There are innumerable articles in past volumes of GARDENING ILLUSTRATED on this subject. If you fail to find what you want in them and will state any points on which you are in doubt we shall be happy to assist you, but a general essay cannot be given in a reply to a question.

13208.—**Nasturtiums in greenhouse** (*T. M.*).—"Fireball" is one of the climbing Nasturtiums usually grown in a greenhouse. It flowers all the winter. It may also be grown successfully in the open air treated as an annual, sown now, and planted out in May. Crystal Palace is similar. All Nasturtiums are annuals.

13209.—**Procuring Yellow Fumitory** (*E. Allen*).—You may obtain it from any nursery where herbaceous plants are grown, and it is quite common in many villages and cottage gardens, in the south of England and home counties at least. It can be obtained also from seed, and it is naturalised here and there in stony places.

13210.—**Visiting nurseries in London** (*Amateur*).—Here are some: Orchids—Veitch's, Bull's, Williams—Lowe's; soft-wooded and greenhouse plants generally—Cannell's, Henderson's, Beckwith's; Roses—Pauls'; Chinese Primulas—Hayes'; hardy plants—Ware's. For addresses of horticultural tradesmen see "Garden Annual."

13211.—**India-rubber plant leaves decaying** (*Twelvemonths' Subscriber*).—This is not a climbing plant, and yours appears to have been subjected to too much cold, or the soil has become saturated. If the leaves are all decayed, as you say, cut the plants down within an inch or so of the bottom. It will then, probably, if there is life in it, make fresh shoots.

13212.—**Dividing double Primroses and Hepaticas** (*Tempe*).—A born gardener will divide a plant any time he comes near it, even in the heat of summer, having a bucket of water beside him in which to pop the roots at once. We should not be a bit afraid, with care, to transplant soon after flowering, but generally the safest time will be about the beginning of October.

13213.—**Hardiness of the Auricula** (*J. B.*).—The alpine Auricula is a perfectly hardy plant, quite as much so as the Carnation, and should require no protection in any part of Britain throughout the winter. Of course, we are assuming that the plants are in the open air and inured to it. Frame Auriculas may be made tender by coddling, so that they could not bear sudden exposure.

13214.—**Greenhouse and annual seeds coming up** (*Ignoramus*).—Most of the things you mention will appear in from one week to three, but very well ripened and old seeds come up very slowly and must be waited for with patience. A stock of patience and courage is essential to every gardener, but we should never be afraid of sowing because he does not know when a thing will come up.

13215.—**Growing Cucumbers** (*W. T., Barnes*).—If you could obtain two or three plants in May you would be saved the trouble and risk of raising. You require a little bottom-heat in your frame and should plant on a raised mound of loamy soil, mixed with manure, about 9 inches high. When the plants begin to appear on the surface later in the season, add more loam. If you wish to raise the plants from seed sow about the middle of April in heat.

13216.—**Plants for house decoration** (*G. H. Spring*).—Do not attempt to grow the Dahlia in a pot. It is much better planted out in a border. You may succeed with the others in pots, but they also thrive better in an open border. Pot the Gladiolus and the Tiger Lily bulbs now, using loamy soil with a little sand and manure. Put about half-a-dozen bulbs in a 10-inch pot, plant them about an inch below the surface, and do not keep the soil too moist before the leaves begin to sprout. When in vigorous growth you can water freely, provided the drainage is good

13217.—**Treatment of Triteleia** (*M. I. K. C.*).—This beautiful plant (Spring Star Flower) is perfectly hardy in all parts of our country. You have only to plant it in a sandy border or plot anywhere to find it doing well and flowering freely every spring. You may flower it in pots if you like, like any other plant. Separate the roots when the leaves begin to turn yellow, and plant out an inch or so apart.

13218.—**Obtaining Campanula persicifolia** (*Try Again*).—You must have tried in queer places; this plant is quite easily obtained in all nurseries where hardy plants are grown. It is also easily raised from seed, and will be found in the catalogues of all nurserymen who sell seeds of perennial flowers. It may be divided with the greatest ease, and raised from seed by the million, if you want it. You may sow seeds now if you like.

13219.—**How to dissolve bones** (*Try Again*).—The following simple plan is said to be effective: Take a quantity of raw bones, throw them up into a pointed heap on the ground you intend to manure. Give them a plentiful soaking with water, and then cover the heap up with 9 to 12 inches of fine earth as carefully as if you were pitting roots. In a few days after they have been covered in you will see steam rising through the mould that covers the heap. The bones have begun to heat, and when the heating comes to an end they will be so friable that they can be crumpled in the hand. Mix them with the mould which you have used to cover them as soon as you open the heap, and you will lose none of the fertilising ingredients. A little sulphuric acid in the water with which you soak them will hasten decomposition.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—ED.

Replies by post.—*It is not our practice to forward replies to queries by post, and correspondents are requested not to send us stamped envelopes or reply post cards.*

CRACKED BOILER (*Wm. Thorne*).—We fear there is no remedy for a cracked boiler.——FURNISHING ADDRESSES (*H. E. Carson*).—We cannot supply the addresses of correspondents to enquirers.——BOOK ON FRUIT AND VEGETABLE CULTURE IN FLORIDA (*H. Maude*).—We think the best thing you can do is to ask the same question in New York, at the office of the *American Agriculturist*. Of recent years American books have been well adapted to American wants, even for the southern states. Baltet's "Art of Grafting" might be useful to you.——HYDRANGEA LEAVES DYING (*Mrs. Christie*).—You do not mention where or how the plant is growing; but from what you say we fancy you have it in a room where there is gas.——A SUGGESTION (*Rob Roy*).—Thanks; but, as we have told other correspondents who made the same proposal, there are many objections to the opening of an exchange column in GARDENING. It soon degenerates into advertisements in disguise.——RIBBON FERN (*E. C. G.*).—We cannot possibly advise you unless you tell us something of the conditions under which your plant is growing, and what particular Fern you allude to.——CLIMBING ROSES ON SOUTH WALL (*Beginner*).—You do not say whether the border is inside the house or outside. In any case, the Roses have been planted such a short time that you may well hope for the buds some time.——PRESERVING EGGS (*Old Smith*).—Thanks for your note; you will see, however, that a precisely similar plan for preserving eggs is described in last week's GARDENING.——BOOK ON BOTANY FOR BEGINNER (*Tomkin*). "Science Primers—Botany," by Sir Joseph Hooker.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*T. Varty.*—Helleborus fœtidus. —*J. G.*—1, Garrya elliptica; 2, Pernettya mucronata; 3, Ligustrum chinense; 4, Aucuba japonica.——*C. A. E.*—Species of Equisetum (Horse-tail); Eupatorium ageratoides.——*H. B. P. B.*—1, Polypodium vulgare; 2, Pteris serrulata; 4, Daphne Mezereum; 5, Pulmonaria saccharata.——*T. M. Burke.*—Sisyrinchium grandiflorum.——*J. Clift.*—Garrya elliptica.——*E. H. Goddard.*—Next week.——*Mrs. King.*—The first flowers of Parrot Tulips do occasionally come green. 1, Omphalodes verna; 2, Acacia armata; 3, Erica codonodes.——*X. Y. Z.*—1, Pteris tremula; 2, P. cretica albo-lineata; 3, Next week.——*Elma.*—Not uncommon.——*A. P. H.*—Dogwood (Cornus Mas).——*Y. S.*—Next week.——*Miss White.*—Chrysanthemum frutescens (white Daisy flower); Eupatorium ageratoides; Helleborus viridis (green).——*E. L. Colman.*—Narcissus albicans; not uncommon.——*E. H. G.*—1, Asplenium Fernandezianum; 2, A. refractum; 3, A. Thwaitesi; 4, Adiantum Daphnitis.——*F. S.*—1, Asplenium laserpitiifolium; 2, Erychium japonicum; 3, Cyrtomium anomophyllum.——*X. Y. Z.*—3, Undoubtedly a Cystopteris, probably C. fragilis, but cannot say for certain, as it is much shrivelled up.——*Bluebell.*—Vallota purpurea; there was also a flower (Abutilon Due de Malakoff) in your letter.——*Mary E. T.*—Cupressus sempervirens.

Names of fruit.—*Taplow.*—2, Gooseberry; 1, Minchal Crab.——*W. B.*—Pear is Sussette de Bavay; Apples too much bruised to recognize, the skins being very tender at this season.——*J. Sterry.*—Winter Nonsuch.

Catalogues received.—*Spring Catalogue.* Collins Bros. and Gabriel, 39, Waterloo Road, London.——*Horticultural Sundries.* W. E. Ward and Co., Union Chambers, 7, Wormwood Street, London.——*Chrysanthemum List.* John Laing and Co., Forest Hill, London, S E.——*Farm Seed List.* Richard Smith and Co., Worcester.

THE KITCHEN GARDEN.

REPLIES.

13930.—Growing ridge Cucumbers.—Ridge Cucumbers can be grown in any favourable situation without the addition of any extra heat than that supplied by the sun, but starting early and getting the plants well forward bring about early production. The seed can be sown in March in single pots, and plunged in a gentle hotbed and placed close to the glass, and then there is no reason why you should not have success. When large enough they must be carefully hardened off and planted, but under handlights or given other protection; but when raised in a hotbed they are very often too much huddled up with other plants, and are ultimately turned out with a weakened constitution and often covered with insects. Consequently half the season is over before the plants are able to recover sufficient strength to bear fruit, and should the season be at all unfavourable, many may perish without bearing fruit at all.—G. H. MORTIMER, *Pimlico.*

12872.—Scabby Potatoes.—If "Young Beginner" will give his Potatoes some wood ashes or "denture" in the drills at planting time he will have fine clean grown tubers. Scabby Potatoes are generally caused by putting on fresh manure in the spring.—A. HATCHER, *Kent.*

12867.—Moss litter.—I can assure "E. B." as to the suitability of Moss litter for Cucumber growing, but he will get a sweeter and more lasting heat by mixing an equal bulk of leaves with it.—A HATCHER, *Kent.*

FRUIT.

REPLIES.

13055.—Black Alicante and Lady Downe's Grapes.—These two varieties succeed quite well together in the same house. They are also profitable Grapes to grow for market; but they ought to be grown so that they will keep in good condition until February. At that time, or even later, good Grapes are scarce. A more profitable Grape to grow than either of them is Gros Colmar. Well-grown samples of this variety always bring the highest price in the market about Christmas. They are worth one or two shillings more a pound; indeed, on one occasion a large market grower told me he was getting ten shillings per pound for Gros Colmar, while Alicante, from the same houses, were being sold for five shillings. Black Hamburgh is not a very profitable variety to grow as a late Grape, nor can it always be successfully grown as an early one.—J. D. E.

—— These two kinds may do fairly well together, but the first-named requires a rather longer season, and should have the warmest end of the house. Ordinary greenhouse temperature throughout the growing period is not enough to bring this Grape to perfection, and to do it well the vines should be started early in March with fire, so that they get a month or more longer than the Hamburgh to ripen in. A little fire-heat in dull cold weather in summer, and when the nights are chilly, is also necessary, as well as provision for giving abundance of air in hot weather, as this Grape is so liable to scald if the temperature rises above 80 degs. inside. In fact, Lady Downe's must get really good culture, or it is not a profitable Grape. Black Alicante is much easier to grow, it sets freely, and does not require such a long season to ripen its fruit. Both these Grapes are fine market kinds, Lady Downe's keeping up to April or later, and the Alicante up to Christmas. As to the Black Hamburgh, it is of no use now late; the finer-looking late kinds have supplemented it. Moreover, it cannot be depended on to keep after November, and the great importations of foreign Grapes in autumn bring the prices down so low as to render it scarcely worth growing. In a general way I should certainly recommend the Alicante for market culture.—J. C. B.

13116.—Mulching Orchard-house.—Place a thick layer of half-rotted manure over the roots of your trees; do this early in May, and the spaces between the trees may be covered with Cocoa-fibre, old tan, or sawdust, whichever is most convenient. Even short Grass from the lawn will be better than nothing; but if Grass is used it will want renewing, as the heat will soon dry it up.—J. C. C.

TREES AND SHRUBS.

A NEW EVERGREEN SHRUB.

This shrub (Azara microphylla) is the one to which Mr. Gumbleton alluded last week as flowering beautifully in his garden and scenting the whole place. It is very remarkable for its distinct and graceful habit. A good evergreen, it is different from anything else we have. It is pretty hardy, so far as we can judge from what we see in the home counties and the West of England. It has hitherto frequently been used as a wall plant, but we have seen good specimens standing free. The flowers are very small and yellowish, and, in respect of bloom, the plant can never compete with many of our showy shrubs; but, being of a deep orange yellow, they cast a curious tinge of colour about it when they come. We dare say our readers will not be able to find the Azara in every nursery, but it is so free in growth that good plants should be obtained in most nurseries where many evergreens are raised.

A new evergreen shrub (Azara microphylla).

Desfontainea spinosa.—I saw a letter in your paper about the best evergreen hedge. I find Desfontainea spinosa much the best; it is far more compact than Holly, a cat cannot go through, and it grows 6 feet high. It kept in flower with me this year till the end of January—of course I cannot answer for other parts of England, nor how much frost it will stand, but I have had it in my garden fifteen years without a check. Here the thermometer, although the weather has been cold, has not been below 34 degs. day or night all the season. I may add that I cannot understand the high prices that nurserymen ask for this shrub. I struck two hand glasses full two or three years ago with only about five missing!—South Devon.—* * A most interesting letter, for which we thank you.—Ed.

THE COMING WEEK'S WORK.

Glasshouses.

Heaths.—A thorough root examination of all specimen Heaths and other hard-wooded plants should be made early in this month; and if there is any doubt about their balls of earth being dry in the centre, they should be soaked in tubs of soft water till every part is moistened. The early-flowering Heaths, such as Erica Cavendishi and the different varieties of E. ventricosa, must not be allowed to suffer from the want of water now, when the flowers are formed, otherwise many of them will not come to perfection.

Chorozemas, Eriostemons, and other free-growing plants, should be slightly pruned when they have finished blooming, and should receive a liberal shift, when they will soon start into free growth again, and quickly make large specimens. Camellias making their growth must be liberally treated with water at the root, and the atmosphere around them should be kept moist; during bright weather, too, a shading of some kind must be placed over them. A good stock of the autumn-blooming Sedum purpureum should be potted and placed in cold frames. These will be found very useful for the conservatory during September. Lilies in pots will demand attention. It is a very common occurrence to let them remain too long in a heated greenhouse, so that the shoots get drawn; where this is permitted to occur, no treatment during the season will remedy the defect, which generally ends in the bottom leaves turning yellow and falling off before the flowers are open. To avoid this the plants should be moved to cold frames, if possible, as soon as they show above the soil; here they should be kept with their tops close up to the glass; the lights should be drawn completely off during the day—unless there is danger of the soil getting saturated by too great a downpour of rain—and put on again at night, but left tilted, so as to allow an abundance of air when there is no likelihood of frost. The frames should be placed where they will get all the sun and light possible. If frames be not available, instead of keeping the plants to get drawn in a house, put them under a south wall with a slight framework over to protect from frost, laying the pots down on their sides when the weather is very wet. Where a good selection of Lilies is made they are essentially amateurs' plants, as they afford a succession of bloom lasting a considerable time, and are easily grown, provided a few essentials are not lost sight of.

Flower Garden.

Sowing and pricking out annuals.—The common varieties of annuals may now be sown in the open borders. Sweet Peas, Mignonette, Virginian Stocks, Bartonia aurea, Candytufts, Clarkias, Larkspurs, Eschscholtzias, Lupines, Nemophilas, Scabious, Silenes, and Sweet Sultans, are among those that we usually sow in small patches amongst Roses or on vacant spots in mixed borders, where most of the varieties not only do good service in filling up blanks, but are also invaluable for cuttings. Though we sow annuals amongst Roses, it is only because, from want of space, we have no choice in the matter, as we would much prefer the ground being kept for the Roses alone, and any who are compelled to follow our practice in this respect would do well to sow the annuals at long distances apart, and as far removed from the Roses as under the circumstances is possible. It is also now time that ornamental Grasses were sown. These we find quite indispensable for winter decoration, and hitherto have had the best success with them when sown where they are to grow much in the same way as the flowers just named. A still better plan, however, is to sow them altogether in some sheltered border, arranged, as to distance of drills, according to the height to which each variety attains. The drills being drawn, as here indicated, fine soil should be sprinkled in them, and the seeds should be covered with the same material; if dry, they should be well watered. The soil drawn out of the drills should be left to serve as protection to the young seedlings, and by-and-by, as soon as they have been thinned out, it should be levelled down with the hand, to serve as a mulching to the roots. Asters, Stocks, Zinnias, and Phlox Drummondi, should be pricked off as soon as they can be handled, as, except for the germination of the seeds, glass cannot be spared here for these classes of plants. We have recourse to turf pits and coverings of hurdles or mats, and under such conditions they invariably do well. They are pricked out in light vegetable soil, half light loam and half leaf-soil. About 4 inches in thickness we find ample, and as this rests on a hard bottom, the plants lift with such an abundance of earth that they scarcely feel the check occasioned by removal.

Fruit.

Vines.—Assuming that former directions have been followed, the vines in the latest houses will now be ready for disbudding. If they have been suspended in a horizontal position get them tied up to the wires before the young growths are too far advanced, syringe regularly until the bunches become prominent, and close with sun-heat at 75 degs. Attend to disbudding and tying down in succession houses, and remove all superfluous bunches from free setting kinds as soon as the most compact and best placed can be selected for the crop; fertilise when ready with pollen from the Black Hamburgh, and thin out the berries when the size of Peppercorns. When all the bunches have been thinned allow the laterals to extend over vacant parts of the trellis before they are again pinched, give the inside borders a good supply of warm diluted liquid, and add more fresh, but well-worked, manure where the surface is not well covered. Keep up a circulation of warm air in houses where Grapes are in flower, and fertilise when the heat has reached the maximum on fine days. Maintain a minimum of 65 degs. for Hamburghs, and allow 5 degs. more for Muscats when the weather is mild and air can be admitted, with the aid of moderate firing; but on no account abide by these figures when external conditions are unfavourable. Although I do not approve of syringing vines

when in flower, some Grape growers do, and attribute their success to the application of water, which is doubtful, as Grapes that would set with the syringe would, in all probability, set just as well, if not better, without it, provided the roots are in a warm, well-drained border, and sufficient atmospheric moisture to support the delicate organs is produced by damping the stems and floors on bright days. When the fermenting material has been removed from the inside of the early house, and the berries begin to show signs of colouring, remove any stoneless berries where they can be spared, as their presence always detracts from the appearance of an otherwise perfect bunch. Give the borders the final watering with water at a temperature of 80 degs., and if necessary add a little more short stable manure to keep in moisture and throw off ammonia when the house is closed for a short time every afternoon. When spring planting is contemplated, April is the best month in which to turn out growing vines. These should always be planted in internal borders, and the compost should be made warm by the sun before it is placed about the tender roots. Settle the soil as soon as they are planted by giving a little water at a temperature of 80 degs.; shade slightly for two or three days, and then give plenty of air and keep the house moist.—W. C.

Vegetables.

Outside Mushroom beds should now be bearing good crops. Winds soon dry their surface, in which case they should be watered with luke warm water through a fine rose. It is important to allow 1 inch or 2 inches in depth of straw to be on the bed while it is being watered, as in that case the water soaks into the bed instead of running away. Late Celery may now be sown outside, also Brussels Sprouts, Savoys, and curled greens, and, above all, do not forget plenty of Parsley. All kinds of Broccoli, except Veitch's Autumn, should be sown later on. My first early Potatoes are planted close under south walls. The soil is slightly broken, the Potatoes planted shallow, and a covering, consisting of burnt refuse and sand 3 inches in thickness, is placed upon each set. The variety planted is the true Myatt's.

Asparagus may be planted directly it begins to shoot. I have a large breadth to plant this season. I shall draw wide drills 3 feet apart, lay the plants in flat at the bottom, and cover them 2 inches deep with sand and burnt refuse. As regards Seakale, we are now cutting excellent heads from young plants planted last season, over the crowns of which we put a couple of forkfuls of half-rotted leaves. Just now is a capital time to form new beds. I think seedling plants are better than cuttings. Vegetable Marrows and Gherkin Cucumber beds may now be formed by taking out a trench 3 feet wide and 1 foot deep. Any old material from Seakale or Rhubarb beds now done with may be advantageously used with a little fresh material from the stables. Mix up altogether, and earth up from the sides; place handlights on the top, and sow the seeds at once.—R. G.

Work in town garden.

Outdoor Garden.—Matters in the outdoor department ought now to be in fairly good order. The present is a very good time for laying down gravel, which is usually about the last thing to be done in laying out or renovating a garden, for obvious reasons. The last week in March or the first week of April is also the most suitable time for sowing lawn Grass seed on ground previously prepared; indeed, there are very few lawns that will not be greatly benefited by having the surface loosened by means of a sharp-toothed rake, being freely sprinkled with the finest Grass seed, and then a sifting of fine light soil added at about the present time. Be careful to give in dry weather a good supply of water to newly-planted trees and shrubs.

Greenhouses. — Keep Stocks, Petunias, Lobelias, Pyrethrums, and other seedlings pricked off constantly into other pots or boxes as they become crowded in the seed pans, or they soon become very weak, and damping off is also liable to occur if allowed to get too thick. All these should be kept near the glass; a shelf is the best place, so as to keep them sturdy and strong. Maintain also a moist genial atmosphere to induce them to grow freely.

Cannas are fine stately subjects, and grow well in town air. Seeds of these should be sown at once, but they require a strong heat of 75 degs. or 80 degs. to germinate freely; the seeds must also be soaked for some hours in water at 120 degs. before sowing. The Caster-oil plant (Ricinus) is also desirable; seeds of this germinate freely in a warm greenhouse, and if potted and grown on quickly they make very handsome plants by the summer. The Ricinus is useful, as well as ornamental, for a single plant in a room or shop will usually banish all flies from the apartment—a great boon to many. R. Gibsoni, with dark bronzy foliage, is much superior in appearance, though not so rank in growth, as the green-leaved sorts.

Sow now Asters and Phlox Drummondi in any quantity. Both these are splendid town plants, and with rich soil will make a grand display anywhere. The dwarf Chrysanthemum Aster is much the best for bedding, but the Victoria is preferable where large and finely-formed blooms are desired. Sow these in well-drained boxes of light, rich soil. Leaf-mould and sand is best. The Phlox seems to germinate better in a more loamy compost.

Cytisus racemosus and Deutzia gracilis are two very pretty and desirable greenhouse shrubs, now just coming into flower. At this stage they delight in a genial temperature of 60 degs. or so, and a frequent shower from the syringe greatly assists them. These do not succeed well in a very smoky locality, but in outer suburbs may be done very well with a little care. The grand point with both is to induce a free and healthy growth in spring and early summer, and to get this well ripened by exposure to sun and air in autumn.

Repot Camellias, if necessary, as soon as the bloom is over; good fibrous peat, with a little loam if the plants are large, is the best stuff for them. Myrtles may also now be shifted, they must now be grown freely and strongly to produce any bloom. Keep the pips of Auriculas clear of green fly, and give a good supply of water.

Hyacinths that have done blooming in rooms, &c., should be planted about 6 inches deep on a warm south border, where they will produce pretty little spikes every spring for years. This is a much better plan than keeping them in pots after the first season. B. C. R.

HOUSEHOLD.

VEGETABLE COOKERY.—II.

(By Miss Annie M. Griggs, Edinburgh School of Cookery.)

The Parsnip closely resembles the Carrot, but is not so extensively used, nor is it so generally liked. It is a vegetable much in demand during the winter and early spring, and, unlike other vegetable roots, is considerably improved by frost after it has been taken from the earth. A pleasantly-flavoured wine is sometimes made from the Parsnip, and a spirit is also distilled from it. In the north of Ireland it is frequently used with Hops in brewing beer. When young the Parsnip only requires to be well washed and brushed before boiling; but when matured after washing it must be briskly scraped or thinly peeled, and all hard and discoloured spots removed; it should be cut into quarters lengthways and thrown into boiling salt and water, and cooked gently until quite tender, which will be in about half an hour or three-quarters of an hour. Cooked thus plainly the Parsnip is usually served with boiled pork or salt fish.

Boiled Parsnips with white sauce.—Take six good-sized Parsnips, half-a-pint of milk, one small lump of sugar, a dessertspoonful of flour, a piece of butter about the size of an egg, pepper and salt. Wash the Parsnips until they are quite free from all earth. Plunge them when thus prepared into boiling salt and water, and cook them until quite tender. Drain away all the water, and lightly scrape the Parsnips Cut them in slices about 1 inch thick, toss them in the sauce described below, pile in the centre of a hot dish, and serve hot. Sauce: Melt the butter in a saucepan over the fire, add the flour, and stir briskly with a wooden spoon until there are no lumps, pour the milk gradually on to this mixture, stirring all the time, and continue to do so until the sauce thickens and boils, then add the sugar, pepper, and salt, and when thoroughly mixed it is ready for the Parsnips.

Parsnip fritters.—These may be made from cold Parsnips. Mash some cooked Parsnips, and take away any fibrous pieces. To 1 lb. of Parsnips thus prepared allow one egg, one tablespoonful of moist sugar, a small pinch of salt, and one teaspoonful of lemon juice. Beat the egg to a froth with the sugar, add lightly to the Parsnip with the salt and lemon juice. Then with two dessert spoons form the mixture into pieces the shape of an egg, slightly flour each one and fry to a golden brown colour in clarified fat, drain on porous paper, sprinkle some sifted sugar over, and serve as quickly as possible on a hot dish, previously spread with a folded napkin or paper; or, after the mixture is formed into egg shapes, they may be dipped into a batter made as below. This will considerably increase the bulk of the fritters, and tend to diminish the predominance of the Parsnip flavour. For the batter, take four ounces of flour, one table spoonful of salad oil, melted butter, or dripping, one gill of warm water, the whites of two eggs, whipped to a stiff froth, and a pinch of salt. Put the flour into a basin, make a well in the centre, and into it pour the oil and water; gradually mix in the flour, and then beat it vigorously until air bubbles rise. Place the white of eggs upon a scrupulously clean plate, to it add a small pinch of salt, then with a clean broad-bladed knife beat the egg quickly and lightly, until the coagulation of the albumen is sufficiently stiff to be turned down without losing any of the egg; then mix it lightly with the flour, &c., drop in your Parsnip mixture, and when each piece is well covered with batter fry for about three or four minutes in hot fat, drain upon porous paper, sprinkle with sifted sugar, and serve hot.

Parsnip cutlets.—Take 1 lb. of cooked and mashed Parsnips, 4 oz. of bread crumbs, 1 oz. of butter, 1 gill of hot milk, one Shalot, pepper, salt, and the yolk of an egg. Boil the Shalot for ten minutes; skin and chop it finely; break the butter into small pieces, and put the bread crumbs, Shalot, and butter into a basin; pour over them the hot milk, and beat with a fork until well mixed; next add the mashed Parsnips, pepper, salt, and egg. When all are mixed, form into cutlet shapes; slightly flour each one, and fry to a pale golden colour in some hot dripping or fat. As each cutlet is browned, dry it on porous paper in the oven or before the fire, and served either hot or cold. A dish of these cutlets may be varied according to the sauce sent to table with them—*e.g.*, white sauce, Tomato sauce, or brown sauce, and they may even be served without any sauce.

Parsnip soup.—Take six large Parsnips, half a small Carrot, a very small piece of Turnip, two medium-sized Onions, one head of Celery (or a teaspoonful of Celery seed tied in a piece of muslin), a sprig of Parsley, Thyme, and a Bay leaf, a piece of dripping the size of a large egg, 3 pints of water, 1 pint of milk, pepper, and salt. Cleanse and prepare all the vegetables, wash them thoroughly, dry them with a cloth, and cut them all into very thin slices. Melt the dripping in an iron saucepan, throw in the vegetables, put the lid on the pan, and toss the contents over the fire for about ten minutes, until they are hot, but not discoloured. Pour on the water, add pepper and salt, stir until boiling, skim thoroughly, put the lid on the pan and let all simmer until the vegetables are sufficiently soft to be pressed through a sieve or colander. Then return the pulp with the soup to the saucepan, add the milk and continue to stir over the fire until the soup boils. Serve very hot with dry toast, cut into small dice If the sweet flavour of the Parsnip be objected to, it may be lessened by the addition of lemon juice, spiced vinegar, or one tin of Tomatoes added to the vegetables when commencing to make the soup.

Parsnip wine.—Select some good and sound Parsnips, wash them thoroughly, scrape away all the outer skin, and remove all blemishes, cut each one into slices, and while doing so be careful to take away any fibrous or decayed parts. After they are thus prepared weigh them, and allow four pounds of Parsnips to every gallon of fresh spring water. Put the

water and Parsnips into a very clean copper, and boil them very gently until the Parsnips are soft but not broken, then remove the cover from the copper and allow the water to cool before straining away the Parsnips. Then add three pounds of broken lump sugar to every gallon of liquid, and boil again for ten minutes; pour the syrup thus produced into a tub, and when it has cooled to a lukewarm temperature, place a large slice of toast on the top spread with some thick brewer's yeast, cover with a thick warm cloth or piece of flannel, and let fermentation take place; lift the cloth daily, and stir the wine for about ten days or a fortnight until fermentation ceases. It is then ready to be put into a cask, the bunghole of which must be left uncovered, and if the wine still continues to work, fill up the cask with some wine reserved for the purpose. When quite still fix the bung tightly in, and let it stand for six or eight months. The wine may then be bottled, but is not fit for use until twelve months after it has been made.

ROSES.

LATE PRUNING OF ROSES.

Time was when Roses were pruned any time after the fall of the leaf. They were mostly summer kinds, and flowered but once. After flowering the wood and leaves ripened, and as soon as ripening was completed, Roses were either pruned at once or at any season when convenient up to the middle of February. The exact time was held to be of little moment so long as the Roses were pruned and the wounds healed before the rise of the sap. But all these stereotyped times of pruning are now set aside. The introduction of perpetual Roses, and the virtual monopoly that this race has established in our Rose gardens, has revolutionised our times as well as methods of pruning. Instead of pruning before the rise of the sap, the very copiousness of its flow is accepted as a sort of index that the time to prune has come. What a waste of force! many exclaim. True; but what a saving of buds and of Roses. The fact is, in this manner of pruning Roses more than in most others we lose to gain. The upper buds are left as decoys for the excitable sap. As they break into leaflets the pressure is removed from the lower buds, and the latter virtually rest or stand still. While they do they are safe from the vicissitudes of the weather, and it is chiefly to keep these lower buds in a semi-dormant condition that the time of pruning Roses has been pushed further and further forward into the spring. With the higher beauty and increased floriferousness of perpetual Roses we have to accept their greater sensitiveness to injury from cold, and their higher excitability. So excitable are many of our modern Roses that they can hardly be said to be ever at rest. This wakeful growing condition makes the time to prune a matter of difficulty—it is altogether so different from the long rest of Cabbage, Moss, Scotch, and climbing Roses. The highest art in pruning Roses may be said to be reached when we cut them at the best time to ensure the development of the best flowering and best placed shoots. But, alas! these are by no means always, nor often, found together. The best flowers might often be produced from the buds on the extremities of the shoots; but were these chosen the symmetry of the tree and succession of good flowers within reasonable space might both be rendered impossible. Thus we must prune, not only for the immediate future, but for succeeding years as well. By pruning early our Roses might bloom in May, provided no spring frosts cut them off. As a rule, however, Roses are wanted for showing and other purposes chiefly in June and July; therefore, the time to prune must be determined to a considerable extent by the time of flowering.

When to prune.—Pruning Hybrid Perpetuals should for the most part be done in March. Prune the hardier and commoner ones in the first week and go on pruning all through the month, leaving a few till the first week in April; that will give five or six weeks to complete the pruning of this class of Roses, and the extension of the time of pruning will tell with good effect on the prolongation of the season of blooming. Tea Roses may be pruned in April and up to the middle of May. Of course these remarks apply merely to what may be called the spring pruning of Roses. Where any considerable collection is grown, more or less pruning will be practised almost every month of the year.

Modes of pruning.—This will turn very much upon how much or far the shoots should be cut back. Possibly did we know our Roses more thoroughly, everyone would have its own special cut that would suit it best in regard to length as well as time. In the absence of such special knowledge the pruner may safely generalise in practice thus; the weaker the Rose the harder it should be cut back; the stronger, the less. The latter axiom may be said to run to extremes in Maréchal Niel, for this magnificent Rose thrives best probably unpruned, at least as far as the practice of stopping its shoots is concerned. Its pruning and that of a few others should consist of a thinning out of any excess of shoots and of weakly ones. But these Roses are exceptional, and though there is an infinite variety of strength and length of growth among Hybrid Perpetual Roses, the whole difference in length may almost be included within the two extremes of an inch and a foot. To cut back to within an inch of the old wood would be called very short pruning; to leave a foot of last year's wood is more than most cultivators would allow. In practice, from 4 inches to 8 inches is a common length to leave the stronger growers. Some, however, might be left 18 inches with advantage. A good deal may depend on the number and strength of individual shoots as well as the character of varieties. At times the wood of Roses is very imperfectly ripened. There is nothing gained, but, on the contrary, very much, perhaps all, lost, by leaving long shoots of unripened wood. It is needful to prune back as hard as possible in all such cases. Better bloom and healthier wood will be produced from one ripe bud at the base of a shoot than from half-a-dozen spongy, watery, albeit probably better-looking ones at a higher elevation; therefore, whatever point we prune to, it is of vital importance that it should be close to a thoroughly-ripened, well-posted bud.

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GARDENING ILLUSTRATED.

Vol. VII. APRIL 11, 1885. No. 318.

INDOOR PLANTS.

NOTES ON MY COOL GREENHOUSE.—II.

In my small conservatory, which opens upon two sitting-rooms, there is a breadth of about 3 feet of blank wall between the glass doors, which at present is covered with Tropæolum tricolor coming into full beauty, and already hanging its scarlet and black bells in brilliant festoons along the wires round the windows. We made the mistake this year of allowing the slender stems to rush up at once to the top of the trellis, and of not turning them back again to run down the wires as soon as they had reached the highest point as heretofore. In consequence, the lower part of the trellis is not so well clothed as it might be. Oversight and neglect of this kind, however, teach practical lessons. The small tubers were planted several together in hanging pans, and answer extremely well, though we do not expect so much bloom from them as from the more matured tubers. We top dress all the Tropæolums occasionally with rich soil, and water them frequently with soot water, as most of them are growing in small-sized pots; this helps to keep them healthy and strong enough to support the mass of bloom.

Clematis cirrhosa (Evergreen Clematis), an Algerian and South European species, which is hardy in some of the southern counties, blooming out-of-doors in winter and very early spring, seems likely to adapt itself to the cold greenhouse. This winter we have only used it for the sake of its remarkably graceful foliage, which has draped its pot in charming fashion. As yet it is but a two-year-old seedling, but next year we hope it may bloom. The flowers are not showy, being soft creamy white, with brown specks, of a somewhat bell shape; nor are they large, but grow in small bunches. The most easy mode of propagation is by seeds, which must be procured from some foreign source, as I have never seen it named in an English catalogue, and I do not think it ripens good seed in English gardens, where, indeed, it is not commonly to be met with, though I have known it thriving both in leaf and flower out-of-doors in Devonshire for a number of years.

Primulas of various kinds are coming well into bloom. It is not sufficiently known that, besides the familiar Chinese Primula, which is tender, and needs more warmth than the cool greenhouse affords, there are numbers of hardy Primroses which can be made available for early spring decoration. The Himalayan species (P. denticulata) and its varieties, such as P. purpurea and P. pulcherrima, are most useful when well grown in the greenhouse in March and even earlier. They all bear small flowers, of a pale lilac colour, crowded into a large head, which is sometimes almost globular. The foliage of some of the varieties is thickly powdered with a yellow or white farina. A packet or two of seeds of the different kinds, sown several years ago, have given a number of varieties, which succeed admirably in the borders and yield plenty of spikes for cutting. Some of these are potted up in the autumn, just when the leaves are dying away, and are wintered in a cold frame, until the flower buds begin to show that it is time to bring them into the greenhouse. The lovely pink P. rosea, may be treated in the same way, but its colour is brighter out-of-doors than under shelter, and it does not seem to take quite so kindly to pot-culture as some others. One of the most showy of the groups for the early spring is probably P. Sieboldi, now beginning to show its buds, and it is decidedly better for pot-culture than for the open ground, because, from its habit of disappearing entirely for several months of the year, its fate is generally to be hooked out and thrown away as rubbish when the inevitable "tidying up" of the borders takes place; happily it lives very contentedly in a pot without deteriorating. There are several varieties of this handsome Primrose ranging from rosy purple to pure white. Re-potting need only be done every two years. A top-dressing of good rich soil when the leaves begin to show is all that is necessary the second year until the flowering is over, when the roots may be divided and repotted. The pots may then stand in a cold shady frame, or even with their pots sunk up to their rims in a border, throughout the rest of the year, with an occasional watering, to prevent them from becoming too dry, which must on no account be neglected. It must be remembered that even the hardiest plants are made delicate by a sojourn under glass, and care must be taken after their blooming is over to harden them off gradually before they are fully exposed again. I have seen the leaves of P. Sieboldi completely destroyed by a few hours of exposure to sun and cold wind, after being turned out of a greenhouse—a disaster which must necessarily affect the blooming of the following year. A good hardy Primula, of the Auricula class, is P. marginata, now in bloom. Its grey-green indented leaves have an edge of yellowish farina, which makes it a pretty plant, even when out of flower, and

Double variety of Opium Poppy (see page 68).

its soft, dark-lilac flowers are delicate and pretty. It is easily propagated by suckers in the spring, which send out plenty of rootlets. It should be grown in a good sized pan, as it is not a deep rooter, and in a considerable mass to be effective. It may be a disappointment, possibly, to some to be told that Chinese Primulas do not succeed well in the cool greenhouse. A mean temperature of 45 degs. at night and at least 10 degs. higher by day is, probably, as low as they will thrive in during the dark days of winter. They have been tried here over and over again, but each time have been found to damp off just above the collar or that part which joins the stem to the root. But good specimen plants may be grown in a warm sitting-room window.

Bell glasses.—The practical cool-house gardener will find nothing more useful than a few bell glasses, both for the striking of cuttings and raising of seedlings. Here two or three large pans, filled with sandy soil and fitted with a glass shade, are kept in readiness for any cuttings that may come to hand, and they scarcely ever fail to strike. Last autumn, for instance, a friend asked for a plant of the spreading St. John's Wort (Hypericum patulum), which I had not to spare at the time, but cuttings were at once put into one of the propagating pans, and lately I had the satisfaction of potting off about a dozen well-rooted little plants, which are now hardening off in a cold frame. Some crimson Roses put into the same pan a little later than the St. John's Worts, were equally well-rooted, and gave no trouble from first to last. Each pan contains a miscellaneous assortment, but they are so managed that there is no difficulty in raising any particular cutting to examine its state. There is never a time during the whole year when the bell glass is out of use, and there can be no better gardening investment than a few shillings spent on some of these of different sizes for the raising both of cuttings and seedlings. For the cool greenhouse they will be found much better (except in such cases as the starting of Gloxinias or any specially tender seedlings) than any heated case or hotbed, as cuttings and seeds raised under them do not receive so great a check on removal.

Let me impress upon all cool-house gardeners that their success in the winter depends entirely on their diligence and forethought from now and onwards throughout the summer. Also that it is next to useless to buy plants in flower, as we are all tempted to do, and to expect to grow them on, under totally different treatment, with the same success as the nurseryman. Therefore, I have learnt by experience to strike my own cuttings and raise my own seedlings, and, with a little patience, such labour brings its own reward. A paper shade should always be used for the seed-pans covered with glass, as tender seedlings are very apt to be scorched in bright sunshine. Like the Chinese Primula, the

Persian Cyclamen is not to be bloomed early in a cool greenhouse, and in an unheated one is a failure altogether, as the crowns damp off. There is one fine plant here, which bears from 150 to 200 blooms every year, but it seldom opens its first crimson flowers before March, when it is scarcely wanted, on account of its colour matching badly with most others. The longevity of this Cyclamen is somewhat remarkable, since this particular plant has bloomed here for at least ten years in succession, and, had it been white, would have been of great value. Persian Cyclamens make the best of winter plants, however, for a warm sitting-room, especially when their leaves are frequently sponged to remove dust. The white and pink autumn-blooming varieties of the European Cyclamen answer well for pot culture; but as the flowers appear before the leaves, it is better to surround them with a little living Moss. Their marbled leaves make charming winter foliage, and a few bulbs of Snowdrop or Scilla sibirica dropped into the pots, which should be kept in a cold frame until the buds of these appear, make a pretty addition to the winter greenhouse for those who like mixtures of the kind.

The double blue Periwinkle, mentioned in Gardening (March 21), proves to be one of the hardy flowers which are truly charming under glass. The soft lavender flowers, which are larger than a florin, being only semi-double, lose none of their elegance by the doubling process, which gives them a somewhat frilled edge. To have good plants of this or any other kind of Periwinkle, cuttings must be put in at once, to have strong early flowering plants next year, and can be grown in pots, pans, baskets, or troughs, as may be most convenient. I feel sure that a trial of these, if rightly managed, will not bring disappointment either for the cool or the unheated greenhouse.

The Spring Star Flower (Milla—Triteleia—uniflora) is a very useful hardy spring bulb, now in bloom, and tolerably well-known, yet deserving of a passing notice. There are two varieties—one white, with a pale blue stripe down the centre of each petal, the other pale blue altogether. The bulbs increase with great rapidity, so that it is easy to get up a good stock, and as the flowers are invaluable for

cutting, and the roots grow strong in the open border, no garden should be without them. The stems when cut or bruised have a strong smell of Garlic, and for this reason the water in which they stand should be changed daily, when it is not perceptible. The flowers themselves are honey-scented. When grown in pots the bulbs should be divided every year, and they are most accommodating as to the time of blooming, which can be regulated according to the mode of treatment. But the most useful time is to have them in early spring, to associate with Tulips, Hyacinths, and Narcissi; and being quite hardy the plant is equally suitable for the cool or unheated greenhouse. For either purpose also

Tiarella cordifolia, a North American evergreen plant, is very suitable, and seldom seen. Potted up in the autumn it is now opening, under glass, its numerous spikes of creamy-white flowers with orange stamens. It can be described best, perhaps, as bearing a sort of resemblance to white Mignonette, a name given to it sometimes by children in its native habitats. It is little known as yet, but as North American plants become more familiar it will surely become a favourite with us. A shady position in the greenhouse suits it best.

The Sweet-scented Laburnum (Cytisus fragrans) is too well known to need description, but must be mentioned as throughly suited to cool house culture. It fills a small conservatory with sweetness, and carries so much blossom that it is best to stand it in a saucer, which should be allowed to empty itself of water before being refilled. No plant at present in the greenhouse so soon shows distress for want of water as this Cytisus.

Salvia rutilans, the Pineapple-scented Salvia, takes the place at present of other scarlet species, which are flowering in warmer houses. Though not so showy as S. gesneræflora, it is very acceptable at this season, when the spring tints are, as a rule, tender and pale. It may not be generally known that plants of the handsome scarlet-bracted S. splendens, raised early in heat, and grown on quickly through the summer, will make handsome little flowering plants for late autumn, coming in very usefully at that time, when flowers are beginning to be scanty; but they do not last after Christmas at the latest, and it is useless, without heat, to try to save the plants through the winter. Treated in this way, as annuals, they are often very effective. K. L. D.

WINTER FLOWERING PLANTS.—XI.

Roses,

Though somewhat late on the list, are by no means last or least in value. Nothing is more beautiful or acceptable at Christmas than a bunch of nice Roses, if only buds; and a very moderate amount of care and foresight will suffice to produce a few nice flowers at midwinter, with a little warmth at command. It must, however, be borne in mind that it is of little use attempting to grow, and much less to force, Roses in a smoky town atmosphere; Roses need pure air, and plenty of light; but, these being granted, the rest is comparatively easy. Pot Roses are perhaps more useful and manageable, for amateurs in particular, than those planted out. For flowering in winter and early spring potting should be performed after the blooming is over the spring previous. Six-inch or 7-inch pots are large enough for plants for small greenhouses; though larger specimens are perhaps more profitable where there is room for them. Good sound holding loam should be used, with a small admixture of old decayed manure. Make the soil quite firm in the pots—indeed many growers ram it as hard as possible, but this may be carried to an excess. After potting, water carefully for a time, and keep close and slightly shaded in a frame or pit with rather moist atmosphere, until the roots are working in the fresh soil, and the plants beginning to grow again. Then expose to the open air, plunging the plants in ashes or spent Hops, and keeping rather, but not too, dry, so as to induce a state of rest. Pick off any buds that show until a few weeks before flowers are wanted. When housed in autumn keep the plants as cool as possible until shortly before flowers are required, then introduce into a gentle heat, syringing frequently overhead; give a frequent dose of some liquid manure, not over strong, and admit only a little air by means of the top ventilators on fine days. Some give no ventilation whatever after forcing has begun, and this is certainly better than too much, but in very tightly constructed houses it is well to change the air occasionally. The house should be very light, and in an open situation, so that the plants may receive the benefit of every ray of light and sunshine that can be obtained, to give the best results. After flowering turn the plants out-of-doors, or, if the weather is very cold, place them in a pit where they can have plenty of air, for two or three weeks, to harden them a little. Then repot. A temperature of about 60 degs. or 65 degs. will generally be found sufficient to expand the blooms nicely.

Of varieties for pot culture, the fine old favourite, Gloire de Dijon, will stand more rough and ready treatment than any other, and is very easily managed and got into bloom in midwinter. It should be kept slightly cramped at the root—not over-potted, or it may run to growth too much—though, as a rule, Roses need enough pot room; and if well fed and syringed occasionally, it will generally produce abundance of flowers in a very moderate temperature. Niphetos is the best white Rose for pots, though there is now a white form of the "Gloire" which promises well. Isabella Sprunt, Rêve d'Or, Honière, and Celine Forestier, are fine yellow flowering varieties for pot culture, particularly the first-named; and Maréchal Niel is, as everyone knows, an exquisite flower; but this is seldom seen in really good condition in pots, and always proves far more profitable when planted out in a well prepared border. Of Hybrid Perpetual Roses, such kinds as General Jacquemiuot, Alfred Colomb, Victor Verdier, Mdme. Victor Verdier, Senateur Vaisse, are more useful than others possessing more delicate constitutions; the "General" especially, when well grown into a fair-sized specimen, produces an enormous quantity of beautifully-formed buds and blossoms, and is in practice about the best of all the hybrid perpetuals for pot culture. Maréchal Niel and Gloire de Dijon, being both very free growers, are better planted out permanently in well-drained borders of rich loamy soil, and trained on wires or trellises a short distance from the glass. Under this treatment, and with proper attention as regards pruning and watering, hundreds, and in some cases thousands, of blooms may be gathered from a single plant in a season. The main thing with Roses thus prematurely planted, or indeed in any case where the plants are not removed into the open air after flowering, is to have the houses so constructed—either with abundance of large ventilators at both top and sides, or with removable sashes to form the roof and sides—as to allow of their being thrown completely open during the summer and autumn months, for without the thorough ripening of the wood induced by such a process good results can never be obtained. Some growers have low-span houses, in some cases with nothing but wooden sides and framing, with the roof formed entirely of removable lights or sashes. A door is provided at either end, and a pathway runs up the centre. On either side of this is a simple bed of good soil in which are planted permanently strong dwarf bushes of General Jacqueminot, Aimée Vibert, or other useful kinds, the shoots of which are pegged down (at the ends only) to the soil, and cross and re-cross each other in all directions. A 2-inch or 3-inch hot-water pipe runs round the house, and all that is necessary to produce flowers is to close the house, turn on the heat, and water and syringe as required, when a good crop of bloom can be easily obtained one or two months earlier, or sometimes more, than from plants outside. When flowering is over the heat is turned off, and the lights forming the roof entirely removed, when the plants are, to all intents and purposes, planted out-of-doors. A good dressing of short manure in autumn completes the treatment required. The pegging-down of the shoots causes them to break and to produce a flowering shoot at nearly every joint; and thus a very large number of nice medium-sized blooms is afforded.

A very simple way of obtaining a few Roses early, where a stock of pot plants is not kept, is to take up in autumn a few nice healthy young dwarfs, either worked on the Brier or on their own roots, and carefully and firmly pot them in sizes sufficiently large to hold the roots comfortably, using good loamy soil. They should be placed in a cold pit after potting, if there is one available, or plunged over the rims in Cocoa-nut fibre or spent Hops in the open air. Early in spring bring them into the house, and gradually apply a gentle heat, which, with plenty of light and occasional syringing, will soon start them into growth, and they will shortly come into a fine bloom. Even standards or half-standards may be treated in the same way with perfect success, if vigorous plants are chosen, and these, potted in 7 or 8-inch pots, make very pretty objects for the conservatory in March or April, when there is no difficulty in getting them in full bloom. B. C. R.

12895.—**Hyacinths in glasses.**—Flowering Hyacinths in water is so widely practised now, and interests so many people, that I venture to ask room to reply to "G. P. M," page 53. It ought not to be impossible to discuss differing modes of cultivating plants without losing one's temper. "G. P. M." by implication discredits my statement that the bulbs were still dormant after being a fortnight in the glasses; but surely, on a simple matter of fact like that, I must be the best to judge of what occurred, and I repeat that neither root nor leaf growth had commenced at all. He then invites me to test two bulbs on what he calls the immersion and non-immersion treatment respectively. But I stated expressly on page 27 that if the bulbs were immersed, doubtless they would rot. What I advised was to let the water just, and only just, touch; a very different thing. And, curiously enough, on page 16 (facing "G. P. M.'s" note) appeared an article on the subject by "C. F. D.," in which this same treatment of "just touching" is recommended. I have also looked up the cultural notes in several of the trade catalogues, and find that the four well-known firms unite in recommending the same treatment, only one out of the number I have expressing the opinion that the bulbs should not touch. The balance of opinion would, therefore, seem to be against "G. P. M.'s" dogmatic assertion that they "should on no account be allowed to touch the water before they have rooted, or it will cause decay." I do not deny for one moment that "G. P. M." can grow them successfully in his way. I simply prefer mine as being calculated to hasten the formation of roots, and consequently starting the growth in a natural way.—T. J. W., *Crouch Hill.*

13171.—**Substitute for turfy loam.**—There is no proper substitute for turfy loam in the sense that gardeners mean when they recommend it for pot plants. The chief value of turfy loam consists in the fact that it contains a large quantity of fibrous matter which does not quickly decompose; the soil, therefore, remains longer in a suitable condition for the roots of plants than any other mixture that could be provided. Nearly all other ingredients that could be added to make up for it would either render the soil too porous, or it would quickly decompose, and in that state it would retain more moisture than would be good for the plants. The fibrous matter which turfy loam contains also furnishes a steady and certain stimulus for the roots; for this reason it is always recommended by gardeners. But amateurs and others should not be discouraged if they cannot get turfy loam for their use. It is not an absolute necessity for those who grow flowers for their own pleasure only; but those who expect to grow exhibition specimens must certainly provide it for all those subjects for which it is recommended. Such plants as Camellias, Ericas, Epacris, and Azaleas, must have peat and sand as a compost; but such things as show Pelargoniums, Fuchsias, Balsams, Cyclamens, Marguerites, Chrysanthemums, Primulas, Cinerarias, Roses, Clematis, Coleus, Spiræas, Abutilons, Bouvardias, and many similar plants will invariably do well in any ordinary garden soil that is rich enough to grow good vegetables, providing it does not at all incline to clay. With such a compost, coarse sand and broken charcoal should be used at the rate of about one-sixth part. The surface soil of most kitchen gardens is good enough for many plants, provided it is taken under cover, so as to get it moderately dry before it is used.—J. C. C.

Propagating tuberous Begonias.—Where there is but little or no glass these Begonias are more accommodating than ordinary bedding Pelargoniums, for when lifted in autumn they may be stored in any shed or outhouse in which Potatoes are safe. Those who have strong roots of them should now encourage them to grow, when some of the shoots may be taken off with a heel and inserted in sandy soil, where they will make excellent plants for planting out this summer. To ensure success they should be placed on a slight hotbed, such as that in a Cucumber or Melon frame. If taken in time this will be found to improve rather than otherwise the old roots, as they often break away too thickly, and the shoots left will have a better opportunity of developing themselves. Those who have not the means of raising these Begonias from seed will find propagating them in this way a convenient method of increasing their stock.—C. W. C.

THE COMING WEEK'S WORK.

Glasshouses.

Pelargoniums.—For ordinary decorative purposes it is not necessary nor desirable to grow Pelargoniums to the size of exhibition plants or to attempt the same form of training; but in other matters the general cultivator will do well to adopt the treatment that the exhibitors follow, which is first to induce the greatest amount of root formation of which the plants are capable, and afterwards to sustain them by liberal stimulants in the shape of manure water applied at the right time, which is when the flower trusses are formed in quantity. Without this the bloom will be deficient in size and the foliage will be wanting in the rich green colour that adds so much to the general appearance. If the plants have all along been kept through the winter close up to the glass, the shoots will be so stout and short-jointed as to require not more than half a dozen small sticks to each to give the requisite support. In the case of young stock propagated last autumn, it will be advisable to stop the shoots sufficiently often to lay the foundation for bushy examples with a view to having them at their best towards the latter part of summer, when the ordinary spring-flowering plants are over.

Daphne indica.—Young or medium-sized plants that have done flowering should at once be placed in an intermediate temperature, for if only treated as ordinary greenhouse stock, the progress they make is slow, and the flowers they produce small and wanting in quantity. This Daphne cannot bear overpotting, but if the opposite extreme is followed it gets into a stunted condition, out of which it is difficult to move it. Old examples are much benefited by the use of weak manure water at the time when they are making growth.

Primulas.—Some seed of these, if not already sown, should at once be put in, so as to give time for the plants to get large enough to bloom strongly in the last months of the year, for if the stock is late and weak their flowering will be proportionately meagre. Hardy Primroses, such as the different coloured varieties of P. cortusoides with P. japonica, are deserving of pot culture wherever there is a greenhouse, for when well managed they are beautiful objects, in no way inferior to the more generally grown Chinese varieties. This is a good time to get up a stock. Small plants procured at the present season will, if well cared for, make strong examples before the end of summer that will bloom freely next spring. Double Primulas intended for division in about a fortnight will be the better for being thoroughly cleaned and kept rather close till that time, as the formation of roots will be thereby hastened. T. B.

Flowers and plants in rooms.—Among the species and varieties that will bear the atmosphere of living rooms where gas or oil is burnt are some of the hardier kinds of Palms, the green and variegated forms of Aspidistra, the India-rubber plant, and small growing green kinds of Dracæna that will thrive in a greenhouse, such as D congesta, D. lineata, and D. rubra. The Aspidistra may be increased by division of its creeping underground stems now when commencing growth The Palms are raised from seed, but their propagation is better left to those who raise them in large numbers. Small plants beginning to show their natural habit can be kept in a healthy state in very little pots by the use of manure water through the summer season while the most active growth is going on. Palms will grow in almost any description of soil, but where they are to be subjected to the rough usage indispensable from being located in rooms loam is best, as it imparts more substance to the foliage. The India-rubber plant is easily increased from cuttings made of the young shoots with some two or three leaves each; they will root if kept confined under a propagating glass either with or without heat, but where they can have warmth the rooting process will be sooner effected. Among Ferns that will bear full exposure to the atmosphere of a room may be mentioned Davallia canariensis, Adiantum cuneatum, A. pubescens, Pteris serrulata, and some of the crested forms of this Fern which attain a much larger size than the type, and P. cretica and its variegated variety. These, if regularly supplied with water and allowed to make their growth in the rooms in which they are to be kept, will produce fronds of a hard, enduring character that will last much better than those that are grown in plant houses and afterwards moved to the rooms. B.

Flower Garden.

General Work.—Cuttings of tender kinds of bedding plants may still be put in, others may be potted off, and so should seedling subtropical plants. The earliest sown Castor-oils and Solanums will now require a shift into 5-inch pots; old roots of Cannas must be divided, potted, and placed in warmth, and in order to make room for these gradually remove from the pits all the kinds that will stand a

Oriental Poppy (Papaver bracteatum). See page 68.

degree or two of frost. Tuberous Begonias should be started into growth. Plant them in boxes, placing the tubers about 3 inches apart. The soil should be at least half leaf-mould; they will then transplant with abundance of fibres. Tubers or roots of every other kind should also now be taken out of their winter quarters, and be placed in pits to start them steadily into growth. In the open air the most pressing duties are the completion of pruning shrubs and hedges, and the placing of supports to and mulching the roots of recently moved trees, an operation which the long continued dry weather renders necessary. Newly sown lawns should be frequently rolled, and any portions of the turf that have a sickly hue should be dressed with soot and wood ashes.

Herbaceous borders.—All plants in the herbaceous borders will now be above ground, and as soon as the necessary digging and manuring has been done all vacant plots should be filled up with Gladioli, Hollyhocks, Campanulas, Antirrhinums, Pentstemons, Foxgloves, Violas, Pinks, Sunflowers, Sweet Peas, and suitable annuals. The whole of the border should be lightly forked over, and stakes should be placed to kinds liable to be injured by winds or heavy rains. Delphiniums, Dielytras, and the flower-stems of Geums are among those that at the present time need supports. Any bare spots near the margins of borders should be sown with Mignonette, Virginian Stocks, and dwarf Silenes, or, as soon as weather permits, be planted with Lobelias, variegated Mesembryanthemums, Heliotropes, and Verbenas.

Planting hardy beddders.—Edgings and groundworks consisting of hardy Sedums, Saxifrages, and Cerastiums are what we are now planting; next will come Violas, Verbenas, Calceolarias, the hardier succulents, and Golden Feather Pyrethrum, and when these have all been planted the remaining vacant plots will be labelled and the plants put out as soon as they can be safely exposed. W. W. H.

Fruit.

Melons.—Keep the atmosphere of the house in which early Melons are setting their fruit moderately dry with a circulation of air. Fertilise all blossoms on fine days, and give very little water to the roots until a good set has been secured. The most troublesome setters can be brought into subjection by the application of bottom-heat, and by withholding water from the roots. As soon as the fruits begin to swell syringing may be resumed to keep them free from spider; but water must be sparingly given at first, as a flush before the fruit attains the size of Walnuts would most likely cause it to turn yellow and go off. If the compost—stiff calcareous loam and bone dust—is dry and in a fit state for use as a top-dressing see that it is made as warm as the soil in which the plants are growing before it touches the stems, and guard against injuring them in its application, as canker is often brought on by undue pressure, or the use of cold materials. As soon as the roots have taken to the top-dressing apply warm stimulating liquid as often as the plants can take it. Keep the bottom-heat at 85 degs., syringe at 80 degs. on fine afternoons, and run up 5 degs. to 10 degs. after closing. Give a little front air at the close of the day, and let the night heat range about 70 degs.

Figs and Apricots.—Figs may now be pruned and nailed or tied to the walls, care being observed that a space is not left to admit of a current of air behind the shoots. Pruning should simply consist of thinning out the shoots and arranging the past year's growths, so as to have an even spread of well-ripened shoots studded with embryo fruit, all over the space allotted to the tree, and as all the fruit of any value will be found near the points or the shoots, the latter should never be shortened at the spring pruning unless young branches are wanted to fill up vacancies. Where broad coping boards and heavy coverings have been used for Apricots a little judicious management in their removal will be necessary. The boards will, of course, remain for some time longer, but the canvas must be taken off every day and put back at night on the approach of danger. Disbud gross shoots and keep a sharp look-out for the active little grubs whose whereabouts is easily detected by the rolled-up appearance of the points of the young shoots.

Peaches and Nectarines will require constant attention to keep them from aphis until it is safe to apply the usual dressing. Avoid the use of dangerous dressings until their strength has been properly tested. W. C.

Market fruit gardens.—Grafting is now an important operation. By means of crown or rind grafting, Apples, Pears, and Plums are converted from unsatisfactory trees into fruitful and profitable ones. Top-dressing trees recently planted must no longer be delayed; it is the drought in spring before the roots get established that is so much to be dreaded. Orchards on Grass, to which farmyard manure was applied during the winter, will now need bush harrowing and rolling, at the same time picking off stones and forking up Docks, Thistles, or Nettles. Orchard Grass should never be made into hay, but fed off closely, as is just now being done by ewes and lambs. Orchards or fruit gardens dug up roughly in winter should now have the soil made fine by means of prong hoes. Strawberry beds must be divested of weeds and heavily mulched with fresh stable manure.

Birds must be kept off fruit buds either by powder and shot or by means of some other remedy, for if allowed undisturbed access to trees and bushes but little fruit will come to maturity. Sparrows are especially troublesome to Gooseberries, and bullfinches to Plums, Cherries, and Apples, and the next month will be their period of greatest activity.—J. G. M.

Vegetables.

The present is a capital time for sowing a good quantity of Peas. I generally form miniature Celery trenches for their reception, and earth up by cutting down the sides of the trench. When earthed they become level with the rest of the ground. My special variety is Laxton's Standard,

a really good bearer and otherwise excellent Pea; but we have many more that are perhaps equal to it. Pride of the Market and Stratagem are both good where 6 feet stakes and plenty of room is no object; Telephone and Telegraph are likewise two grand varieties. Broad Beans have now become an indispensable vegetable; eaten when about the size of large Peas, they are both delicate and delicious. Green Windsor and Mazagan are as yet the best; they are so easily satisfied, that they will succeed almost anywhere provided the soil is rich. Keep the hoe well at work amongst Lettuces and Cabbages, and, in fact, among all growing crops. R. G.

OUTDOOR PLANTS.

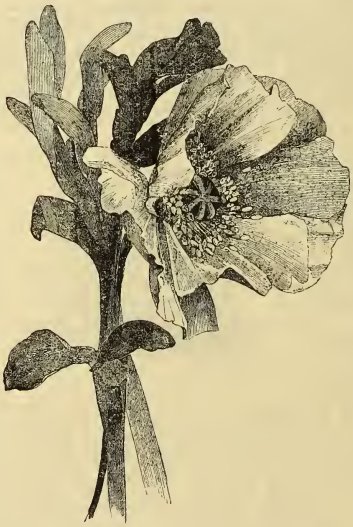
GARDENS OF LIGHT AND SHADE.—II.

Spare the trees.

It is only here and there, where an owner or occupier carries out or actually superintends the disposition of his garden, that we witness an escape from the thraldom of the professional tyrant. What the average gardener's notion is of the purpose comprehended in a garden may be at best conjectured. We know that he is of opinion a tree is a thing to be hacked, mutilated; not seldom to be got rid of. A tree is always in his way, or he supposes it in the way of something else. Either something won't grow under it, or something is "drawn up" too quickly, or its "drip" kills something. It never seems to occur to the gardening mind that it would be well to adapt the minor conditions to the major. If it be desirable that the ground round about a tree should be planted, the gardener should be at the pains to discover what will best thrive there. Happily, Nature's gifts are various, and there are plenty of shade-loving plants with which to garnish even the darkest places, while so long as Ivies are attainable there can be no sort of excuse for barrenness. To uproot a graceful tree because a few square yards of Grass are injured by it appears a monstrous illustration of a faculty for reasoning backwards; yet how often has a gardener gained his point upon no better plea! It once cost the writer a considerable expenditure of time and patience to save a Hawthorn from the ruthless hatchets of the men employed. Their contempt for a Hawthorn, apparently only because it was a Hawthorn, was immeasurable. Yet, besides being a particularly well-grown bush of its kind, it answered a definite and obvious purpose by supplying screen and shelter just where they were wanted, and in a degree a newly-planted shrub of any kind could not have attained to except after years of favourable growth. A glorious sweet Almond tree, well known through the county in which it stood, was removed for no more cogent reason than that "it harboured the birds!"

It is surpassing strange that men who live among trees and plants should be so unsympathetic in regard to them. It is taught, in the experience of most people, that the gardener is the very last person to whom to entrust the safety of the trees, and there are few lovers of leafage who, however blind their faith in his ability, would concede over much to his taste. With a view to demonstrate this curious perversity, a well-known and undeniably clever arboriculturist was invited to advise concerning a small but singularly attractive garden in his neighbourhood. This garden had been planned with consummate taste and judgment, and was now arriving at maturity. It seemed to supply an apt illustration of the most naturally artistic way of dealing with a small plot of ground. Its meagre proportions were hidden in the elegance of its outlines, and not one in a hundred who looked from the windows upon it would have guessed its real dimensions. The gracefully winding path was flanked by miniature lawns, in their turn hedged about by luxuriant shrubberies, in which Box and Holly, Bay, Hemlock, and Rhododendron, Guelder Rose, and Red Dogwood, with many others, all found a place, while here and there Pines and Spruce Firs, with an occasional Cedrus, rose from the undergrowth, and mingled their branches with the soft leafage of White Poplar and Silver Birches. The result was exactly as anticipated. The great man stood for a moment in the porch, looked contemptuously at the intricacies of Rose and Jessamine about it, shook his head, and slowly muttered, "Oh! there's a deal of *grubbing up* wanted here!"

If we have the courage to take such giants of knowledge to task, we are told that what they object to is "overcrowding." A tangle of rich and varied foliage, which appears to less orthodox minds a beautiful and desirable result of planting, is to them an abomination. They want so many feet of space left between the trees and shrubs when they are put in, and directly the plants begin to grow a considerable number of them must be grubbed up or mutilated. It appears a not very wise contention that, because a quarter of a century hence the branches of a tree we are planting may reach 20 feet from its trunk every way, we are, therefore, to leave all that area unoccupied meanwhile. Not all of us can afford to defer our enjoyment for twenty years. Moreover, it is this "crowding up" in Nature, this mingling of tree with tree, this piling up of hill upon hill, rock upon rock, that gives her pictures their greatest charm. A mountain divested of its "shoulders" and buttresses of hills, rising sheer from the plain like a sugarloaf from a table, might be remarkable, but could scarcely appear beautiful. Or let us suppose a forest in which all the trees were equidistant—where no one branch overlapped another—where there was no undergrowth. We do not underrate the grandeur of a specimen tree standing alone in a plenitude of space, but in dealing with gardens of such dimensions as we now treat of, a far more pleasing result is obtained by the interlacing of various growths than in the possession of a solitary tree, even though it could be put there ready grown. The knowledge that is wanted is of judicious mingling. We want early effect, too, and this can often be obtained by tasteful grouping, where a single tree or shrub would be insufficient for a decade to come.



The Iceland Poppy (Papaver nudicaule). See page 68.

Three young blue Gum trees (Eucalyptus globulus) some 10 feet in height, planted as at the extremities of an equilateral triangle, and about which wound a Clematis Jackmanii, whose rich purple blossoms contrasted grandly with their powdery foliage, were greatly admired by ordinary observers, but they did not please Mr. Critic at all. He could not deny there was some novelty in the arrangement, nor that the colours showed to great advantage; but, said he, "These trees are only 8 feet apart—if they live, think what they will be half-a-dozen years hence." If they live! Well, we all know that in its own home the Eucalyptus is a giant among trees, and that a single full-grown specimen would overshadow half-a-dozen suburban gardens; but, admitting this, we should say that even if its living with us were far more certain than it is, it would be better and more reasonable to exclude it altogether from the garden than to leave about it the space it will occupy in a remote future.

When a tree, large or small, is standing upon a plot of garden ground, the first consideration should be how to spare it and enjoy it. If the house is not yet built, let the tree be remembered in the design. Architects would object to this upon principle. Nobody likes to labour under restrictions, and architects usually refuse to look an inch beyond their plans, which they persist in drawing as if the margin of their paper represented space infinite and unoccupied. Yet if we remember how much more easy it is to produce a house than a fine tree, how impossible indeed it is to reinstate a tree once destroyed, and how greatly the surroundings of a house affect its beauty and the comfort of its inhabitants, we shall no longer deem attention to such matters unnecessary.

How many dwellers in suburban villas might well pine for the beautiful trees which would have afforded them grateful shelter, and would have supplied an element of loveliness to surroundings now irretrievably mean and ugly, yet were sacrificed in sheer wantonness, or, at best, for the value of their timber! The destruction cannot even be explained by greed, for so great and widespread is the love for trees that a house with a garden gifted in greenery will always command a higher rent than a similar house whose plot is treeless. Speculative builders might find it advantageous to regard a living tree as possessing a higher marketable value than its dead trunk, and the same observation would apply in still greater degree to shrubs and bushes—often the denizens of a partitioned, old-fashioned garden, and capable of doing great things towards relieving the desolation of a "new neighbourhood."

In the suburbs of London there is a continuous destruction of beautiful trees which is truly deplorable, and ought to be made legally, as it is already morally, criminal. Possibly, in generations to come, the conservatism, whose first principle is now embodied in a defence of the rights of individual property, will recognise in its greater enlightenment the property all mankind may claim in a scene of natural beauty, and will be as eager to safeguard a lovely landscape, an interesting panorama, or even a notable tree, as it is now anxious to enforce the abstract doctrine that a man may do what he will with his own.

The Natural in Gardening.

In designing and stocking a garden, extremes of prejudice and fashion, as well as hard and fast rules of all kinds, may be avoided with advantage. We want the graceful negligence and wealth of nature, restrained, it is true, but also assisted by such art as we can command. The restraint and assistance must not be manifest, for what is unnatural can have but little real beauty. If we had not to reckon with considerations of space, we should be disposed to say—Free nature of all restraint, let her do as she listeth.

The highest skill of the landscape gardener is shown in a faithful representation—we may almost say reproduction—of natural beauty. In a moment of vanity he may assume his best effects to be ideal, but reflection will teach him that where his art excels most his handiwork more nearly approaches Nature's. At his best he imitates most closely, and he is never really successful but when he presents to us a prospect in which no canon of natural law is obviously violated or overlooked. When our host opens a casement and, stepping upon the terrace beyond, invites us to look upon a miniature panorama of hill and dale, waving wood and glimmering water, we admire it in exact ratio to our appreciation of its veracity. The skill is limited to producing or enforcing familiar efforts. The pool below is beautiful chiefly because it satisfies the requirements that we involuntarily insist upon, and which owe their origin to our acquaintance with natural scenery. The process of widening the rill, the digging out of

the clay, the planting of the banks, the formation of the island, were works necessary to the production of the beauty aspired to; but when that beauty is attained they are lost sight of and hidden as though they never had been; they have gone their way, and are no more presently accessory to the scene than the navvies and trollies which made havoc with the turf of the water-meadow.

Let us be sure—and although the reflection partakes of the character of a truism it is one we are not inapt at forgetting—that there is no dreamed-of diversity of landscape, no artful grouping of trees and plants, no clever combination of light and shadow, but it is excelled and brought to nothingness beside the great achievements of unaided nature; that at most we are but her humble followers, and that our labours in park and garden are only acceptable in so far as they exhibit our subordination to her teaching and example.

When insisting upon a preference for naturalness over mere artificiality in the treatment of our gardens we are conscious of the many who are insensible to its charms. To them the formal is alone the beautiful. Freedom is licence, and the standard of excellence they covet for their plants—though happily never quite reached—is that exhibited in the flora of the ecclesiastical metal-worker, or transferred to the wall-papers of æsthetic decorators. Unfortunately it is all too easy to do our gardening in this fashion. A small rectangular piece of ground, such as most of our suburban houses possess, lends itself readily to straight lines, while no effort of taste or workmanship is necessary to the putting in of a row of white or yellow border plants, and behind them the inevitable scarlet Geranium planted by the score at equal distances with a precision attained by actual measurement, and worthy the best examples of Colewort and Cabbage. Recently, as might have been expected, something of a reaction has set in against the ribbon gardening, and the carpet gardening, which had been fashionable for so long a time. Many people who half-a-dozen years ago limited their list of plants to Geraniums, Calceolarias, and Lobelias are now among the admirers of herbaceous borders, and, travelling from one extreme to the other, not a few have issued edicts of banishment against the more gorgeous interlopers.

Here they appear to be wrong. Just as it would be but foolish pedantry to exclude from our shrubberies and thickets all but native trees and shrubs, so it is undesirable to rob our borders of the charming effects attainable by a judicious use of fragile and semi-hardy plants, whose bloom or foliage contrasts pleasingly with the more substantial but less brilliant perennials, of which the large majority are no more indigenous to our soil than are the bright visitors a too severe code would condemn. What we contend for is that the garden should exist independently of all that is migratory and ephemeral. By all means let us welcome those beautiful strangers just as we welcome the swallows or the butterflies. Let them have place and honour, but let not our gardens await their coming nor vanish with their departure. Let them be like ornaments to a comely woman, garnishing and emphasizing the beauty which would still remain though all adventitious aid were wanting.

A garden arranged after Nature has many recommendations. It is an economical garden. When once it is planted it calls for no more annual outlay upon it than the means of its possessor allow or his taste decrees. Year by year, though it be almost untended, it will grow in beauty as the trees and shrubs mature. In it, as in a mirror, the seasons will be reflected—the tender spring, the leafy summer, the rich autumn, and grim winter, each in its turn, and every phase will be interesting. Again, such a garden will supply of its own naturalness the conditions favourable to the growth and perfection of many charming plants. Upon the shady borders where the leaves fall thickly and the ground Ivies spread a variegated carpet during winter, spring will marshal her earliest blossoms. There will flourish the Ranunculus and the Primrose, the beautiful little Scilla siberica, and, succeeding them, the Bluebell and the Anemone, the Arum and the Periwinkle, with other shade-loving flowers, the most beautiful and interesting of all kinds.

"Oh," once exclaimed a lady, "how large and bright your Primroses are, and yet they are growing all among the brambles, right under the bushes, too, where they get no sunshine!" Her own Primroses were planted upon a border sloping south, dry, and exposed to the glare of the sun all through the day, and she wondered why they did not flourish. Nor is the value of shady borders limited to the flowers which show to greater advantage there. The shadows of a garden are among its most bewitching resources, for they help to fashion its smiles. A garden without leafy ways and shady intricacies of bough and blossom, and upon whose trim lawns the shadows of trees never fall in sunlight or moonlight, can make no pretence to beauty. All the pleasing accessories of a garden will be absent. Not thence will swell the tuneful insect chorus, the buzz of bees, or the trill of birds. It would almost appear as if birds were quick to appreciate the natural in gardens, and to detect blunders and solecisms. If we would have the thrush and the blackbird, the finches and the linnet to make their homes about us, to charm us with their melodies, and to cheer us with their life and motion, we must not fright them by startling improprieties of taste and method. Our art must not be so self-assertive as to demonstrate that our garden is unreal. Rather let us be solicitous, like many of our best workers in all crafts, to labour hard, but to labour unobserved. In this matter we cannot afford to be severely logical. A garden planted with trees, and shrubs, and flowers, then left to itself, would run riot apace, and become a jungle or a wilderness. But if we are no more illogical and inconsistent than Nature herself no one has a right to complain. In truth, Nature is the most real of artists, because with her art is inborn. In her wildest retreats we come across such pictures as never mind of man conceived, and, strange to say, such effects and such methods of exhibiting them, as never mind of man contrived.

The Indian Daphne out-of-doors.—I have grown Daphne indica variegata from a cutting given to me in 1863 by a gentleman living in Devonshire, where he did not venture to put it out-of-doors. One of the cuttings, when rooted, I gave to a friend in Wales, where it did well out-of-doors, I believe. My own I kept in a greenhouse, where it flourished, but did not grow in a picturesque form, and where it flowered every other year only. I had to change my home nine years ago, and as I very much valued the plant I brought it with me, though I knew I should have to hazard it out-of-doors. Here I planted it in a sheltered nook and south aspect, and I have had the satisfaction of seeing it thriving most luxuriantly, covered with its sweet blooms every year, and, being near the garden door, they send their fragrance through the house. I bent its straggling boughs, so that it now forms a large bush.—M. L., *Blackheath.*

Camellias out-of-doors.—You receive enquiries from correspondents almost every week as to the hardiness of Camellias. I send you herewith some flowers cut to-day (March 30th) from a tree in my open garden here, which is covered with blooms, and which gave us its first this year on March 6th. I am well aware that the Camellia flowers freely in the open air in many parts of England, but I think it is unusually early to cut fifty blooms from one tree in the month of March.—J. R. Parfitt, *Plymouth.* *** The flowers sent were very fair, and the foliage was beautiful.—Ed.

The Burning Bush.—I daresay that of the Dictamnus Fraxinella, or so-called "Burning Bush," your readers will begin to feel that they have heard enough. A word or two more may, perhaps, be allowed from which the fact of the plant being capable of giving off a flash when a light is applied may not seem so very wonderful after all. According to my experience, it may only be seen "on fire" when the plant is at full maturity—*i.e.*, when in flower. Then the flower-stems bristle with dusky hairs, having glands charged with resinuous and volatile fluid. The fine and powerful smell coming from this plant is not really from the flowers, but from the glands; though, what I will call, the perfume is only present in full growth when the plant is in flower. One correspondent said that the flash could be better caused after the hand had been drawn over the stems, and it is so; nor is it difficult to understand why, for the glands more or less are broken down, and the inflammable principle escapes in increased quantity, when if a light is at once applied a flash may be seen. A dry and still night should be chosen for the experiment. A trial or two may not cause any perceptible injury to the plant, but I am sure it can be scorched like any other green herb; for since my little boy saw the dodge he has frequently wended his way, armed with lucifers, to the plant that "flames up," so that by the end of the season he has pretty nearly made the leaves straw colour.—J. Wood, *Woodville, Kirkstall.*

Clipping box edgings.—Now is the time to dress these, and to have them in proper order they must be dressed annually. From 3 inches to 4 inches high and the same in width at the base are the right dimensions for them. When very tall and wide they take up too much space and afford ready shelter for all kinds of small vermin. In cutting them, the sides may be run quickly over with an old scythe blade, and the top should be clipped neat and level with the shears. When the clippings fall on the soil they require a considerable amount of labour to get them cleared up, but if a long, thin, wide board is laid on the soil close to the Box the clippings will fall on this, are turned on to the walk, and are easily swept up. The board should be shifted onwards as the cutting proceeds.—J. M.

13056.—**Carpet for dry position.**—Pyrethrum Tchihatchewi (sometimes called the Russian Daisy) is just the thing for "Warwickshire." It is in the Botanic Gardens at Kew. I enclose a piece of it which is now growing in my garden in the dry sand under a large Cypress, a place where nothing else would grow.—Mrs. K. *** We are doubtful whether the plant sent by our correspondent is the Pyrethrum in question. It does not look like a Pyrethrum at all. If she sends us a better specimen we may be able to decide.—Ed.

13199.—**Nibbled Carnation.**—It is very probable that the Carnations were nibbled by the large brown field mice. Our Carnations and Pinks are very often terribly injured by them. Sometimes they may be enticed to eat a little phosphorus paste which will destroy them; but they do not take kindly to it, and they are not easily caught in traps as their depredations are done during the night. They are not so easily dealt with unless you can keep a cat constantly near the plants.—J. C. C.

13057. — **Best manures for flower garden.**—The only really good manure for gardens, especially small suburban gardens or speculative builders' estates, is good fat manure from a stable or cow-shed. This may be utilised while rotting as a hot-bed for raising half hardy and tender annuals. Where a garden has been well cultivated for years artificial manures may do as a makeshift; but where the soil is exhausted, or in the raw, upturned subsoil, of which the gardens of most suburban villas consist, a plentiful dressing of rotted dung is essential. Blood manures are good for things like Roses, which require strong feeding. The others are useful for Grass, or poor soils, and in the kitchen garden, but there is not the slightest necessity for using any of them near towns where stable manure can always be had. No artificial manure improves the texture of the soil as stable dung does, or can be substituted.—J. D.

12836.—**Destroying sparrows.**—I cannot agree with "T. A. T.'s." (page 29) solution for solving the Crocus destroying nuisance. I have a front garden with all kinds of Crocus, but can scarcely keep a bloom owing to my next-door neighbours throwing crumbs out three or four times a day, causing crowds of birds to accumulate; these eat the food and pick off my Crocus blooms at the same time. My neighbours further down the road do not suffer in the least from this nuisance, showing that food, as a bait, does not always protect the blossom.—J. W., *Brockley, S.E.*

Cooking Seakale Beet.—Will someone kindly tell me the best way of cooking and serving up the Silver or Seakale Beet? Some was tried by boiling, and was not liked.—J. C. L.

GARDEN POPPIES.

Among the many plants to which an altered taste has given a new life in our gardens, there are none more worthy of mention than the Poppies. Common old-fashioned annuals as these used to be a generation or two ago, they were swept away by the bedding mania, and it is only of late that one has again had the pleasure of seeing their fine qualities in the garden landscape. The colour and form are excellent when properly used in nice bold groups in the shrubbery or in certain borders. We have seen them in various gardens used with extremely good effect—in the rectory garden at Bingham, Notts, and in Sir George Macleay's at Pendell Court. We are now speaking mainly of the common garden and French Poppies, which have such fine variety of colour; but there are various perennial Poppies that have also great claims upon our attention, particularly the great Oriental Poppy and its close ally Papaver bracteatum. Perhaps, however, of all the Poppies in the garden there is nothing so delightful as the Iceland Poppy (P. nudicaule), which is quite a graceful hardy plant, with beautiful clear rich yellow, sometimes orange, flowers; and there is a white-flowered variety too. The flowers are scented, instead of being unpleasant in smell as some Poppies are. The best known of the Poppies are the annual kinds, very showy as they are, and easily grown in beds or flower borders or bare places in the shrubbery.

P. Rhœas is the French Poppy. The varieties possess almost every shade of colour except blue and yellow; some are self-coloured, while others are beautifully variegated. Some are dwarfer than others, but all range between 2 feet and 3 feet in height. These Poppies, being hardy annuals, can be sown where they are to bloom, but should be grown in good soil in order to bring out in the fullest perfection their size and colour. The seed, being very small, should be sown thinly, and the plants eventually thinned out to 6 inches or 8 inches apart. In semi-wild places and by the sides of drives they can be made conspicuous features, and their culture is recommended to lovers of hardy border flowers. Mr. Frank Miles states that he never sows them with any more care than to sprinkle the seed in the border in any place where the colour of red is wanted, or where there is a collection of early spring bulbs. Here the Poppies are in their right pace, growing into good plants, while the Tulips, or Snowdrops, or Daffodils, or whatever it may be, are blooming and making their leaf growth. After that the Poppies keep up a succession of bloom for several months, particularly if the plants have grown to a good size before flowering. The individual blooms are very short-lived, but there are always multitudes to follow, so that these Poppies are one of the glories of the garden.

The Opium Poppy is P. somniferum, grown so much for opium in Eastern countries, and often for the beauty of its double and single forms in our gardens. The single white is often a fine flower. The plant is quite easily grown, and often sows itself, living through the winter in warm soils, and answering well as a hardy annual sown in spring. There are a great many handsome varieties, and it may be treated like the French Poppy, but it grows high, and is bolder in its leaf.

The Spotted Poppy.—Mr. Wolley Dod, who grows P. umbrosum well, speaks as follows of it: It is a plant to which justice can hardly be done by growing it as an annual, though its natural duration of life is less than a year. It is a native of the Caucasus, and was introduced by Mr. W. Thompson, of Ipswich, about four years ago. The seed of the year should be sown early in August, and care should be taken to prick out the plants in moist soil, and to keep them growing, and to give them plenty of room, for if they attempt to throw up a flower-stalk before winter they may as well be pulled up and thrown away. They should be planted in their flowering places early in November, and will grow all the winter except during hard frost. Every plant should have a clear space to itself, measured by a radius of 18 inches from its centre. By the beginning of May, if well treated, the tuft of root leaves will be 2 feet across, and the flowering stems showing, and they will be full of flower from the middle of May to the end of June. In my soil plenty of self-sown seedlings come up where the plants have been, and these make the best specimens, whether transplanted or left. They appear in August. Sowings, especially in spring, are apt to miss. In the first place, Poppy seed keeps badly. In the second place, slugs and other garden vermin seem to have a vicious taste for opium, and clear off the minute seedlings before they have been seen. How certain individual plants escape in the open border where slugs abound is a problem which often puzzles me. If gardeners who have tried P. umbrosum only as an annual will grow it as I have described, I think they will never regret their change of method.

The Opium Poppy (single form).

The typical *Iceland Poppy* is considered to be of a clear yellow, the plants vary from 6 inches to 15 inches in height, and the flowers are often of the width of an ordinary sized tea-cup. P. nudicaule is a capital plant for growing in borders, and there are few prettier sights than a large and well grown mass of seedlings representing all the varied colours of this Poppy. The best soil is a moderately rich and light loam, and it should have a fully-exposed position. It is a strictly hardy perennial, but like many other alpine perennials is liable to perish, and it is, therefore, best to raise seedlings annually in order to keep up a good stock of plants.

The *Oriental Poppy* is very handsome, and among the noblest of hardy plants. The type is a fine plant, but the variety bracteatum is much superior in size and attractiveness. This variety forms rich masses of handsome foliage; the flowers are 6 inches to 9 inches across, and of a brilliant scarlet. There are several varieties of orientalc besides the distinct bracteatum, and all are ornamental plants, valuable for borders or for isolated masses on lawns, and also for the open parts of pleasure grounds, as they flourish in almost any kind of well-drained soil. The Oriental Poppy is quite a hardy perennial, that never refuses to grow in any good soil. It will live for many years if left alone.

13070.—**The virtues of herbs.**—In answer to "Anvil's" enquiry about the virtues of herbs, there are many good and valuable herbals to be had, the best, of course, being Gerarde, an Elizabethan writer, but he is dear, and not always to be met with. The most useful book on this subject is "Culpepper's Herbal," which gives all information as to the virtues of plants, and "Lindley's Medical Botany." It is indisputable that much less harm would be done if the old-fashioned herb medicines were more resorted to, and that herbs have marvellous powers and virtues is sufficiently accredited. For instance, Comfrey Root for cuts, &c.; Agrimony, Wood Betony, the little meadow Centaurea — all tonic and regulators of the system. However, the plant medicines are much in disrepute now, although in Spain still every old village woman knows how to doctor a wound and cure a cold and sore eyes as well, or better, than the most experienced doctor, and the herb shops in all Spanish towns are frequent. The "culling of the simples" is delightful, and will lead to a wider knowledge of, and love for, plant life, which cannot fail to be of interest to you.—Nono. ***We have to thank correspondents for other replies to this question, but we repeat what we said—that we have the opinion of the most scientific men to the effect that all herbs and other remedies out of bottles and saucepans are hurtful rubbish. Thousands are killed yearly by pills and drugs, and we believe that some day their consumption will be put a stop to by Act of Parliament. All curable diseases are really influenced by a true, simple dietary, by fresh air, exercise, and the complete avoidance of stimulants in every form. The doctor himself must go unless he becomes a teacher of hygiene—his true function. This is not the place to discuss the subject, however, and this is the last word we shall say on it in these columns.—Ed.

Salvia patens.—Salvia patens lives here all the winter covered with ashes, and has done so for the last four years. I lost it in 1879-80.—West Norfolk.

ILLUSTRATION COMPETITION.

We now propose what we hope will be an interesting and what will in any case be a harmless competition among our readers. The purpose is to get pretty or suggestive pictures of any gardening objects of interest, whether from the open garden, the hot-house, greenhouse, or room decoration. The best photographs or drawings in black and white of objects of gardening interest that are sent to us during each month will be engraved as soon as possible in the most fitting manner for publication in Gardening. That is, perhaps, the best honorarium we can bestow upon the winners, but the senders of the chosen pictures will also be entitled to receive not less than one guinea's worth of books, useful for garden reference or practice.

Photographs of the outdoor garden should be taken with a lens adapted for the purpose—some photographers use lenses unfitted for landscape work. All photographs sent must be clear, the subject intended to be shown in good focus, and of a size to be distinctly seen; imperfect photographs will not be admitted to competition.

Figures of men or women, barrows, vases and all similar objects, should, as a rule, be omitted from all photographs.

Photographs or drawings should be addressed to the Editor of Gardening, and marked "Illustration Competition." The name and description of each object sent should be distinctly written on the back of every photograph or drawing.

The photographs may be those of objects in one's own possession or cultivation, or of any others that may be obtained, but the source whence they are derived should be stated, and none sent the copyright of which may be questioned.

Unmounted photographs will do as well as mounted.

Drawings and photographs for the first competition must reach us by April 25th.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

QUESTIONS.

13220.—**Soot for Strawberries.**—Will any Strawberry grower tell me whether soot is a good thing for Strawberries, and when it should be applied? Stiff soil.—J. J.

13221.—**Stopping Pelargoniums.**—Up to what time previous to an exhibition can I venture to stop Pelargoniums?—G. B.

13222.—**Forming village flower shows.**—I should be glad of any suggestions for forming a village flower show.—A. Turner.

13223.—**Garden donkey plough.**—May I ask if any of your readers can say whether the garden donkey ploughs are serviceable in a moderate sized garden, and whether their use is cheaper than spade labour?—A. Turner.

13224.—**Strawberries for market.**—Will any of your readers give me advice as to what Strawberries are best for market purposes on stiff soil, and whether President and Stirling Castle are suitable?—J. James.

13225.—**Pitting Quick Thorn berries.**—Will some reader kindly let me know if Quick Thorn berries pitted on the 24th of March will do as well as those pitted in February?—An Amateur.

13226.—**Heating pit from conservatory border.**—I have a conservatory facing the south, heated by hot-water. I wish to erect a brick pit, 13 feet by 6 feet, with three lights, and to heat it from the same boiler. I should be pleased to know how I can best do this to be of most use for growing Cucumbers and the like and for raising seed. How many rows of pipes should I put in, and what should be the position?—Geo. Roberts.

13227.—**Culture of China Asters.**—I shall be glad if some of your correspondents acquainted with the culture of Astere for exhibition purposes would kindly give an article treating fully on the subject.—Manchester.

13228.—**Tabernæmontana dropping flowers.**—Will any reader kindly tell me why my Tabernæmontana fl.-pl. drops its flowers? The plant is remarkably healthy, and it is kept in a temperature of 70 degs., but as the flowers begin to colour they drop off.—G. B.

13229.—**Propagating evergreens.**—I am desirous of propagating for my own use a few evergreen shrubs, such as Aucubas, Euonymus, &c., and shall be glad if anyone experienced in increasing evergreens would tell me the simplest way to do so.—H. G., *Finsbury Park.*

13230.—**Raising Fuchsias from seed.**—Will any readers who have raised Fuchsias from seed kindly tell me how to do so? Is any special treatment of seed previous to sowing necessary, and, if so, what?—George Edwards.

13231.—**Lily of the Valley for forcing.**—Will Lily of the Valley do for forcing again next year? I purchased a quantity of home-grown crowns, they came up very weak—in short, good for nothing. Will they be stronger another year? If they will shall I keep them in the pots or put them in the ground?—Amateur, *Cambridgeshire.*

13232.—**Grafting Tree Pæony.**—Will any of your correspondents kindly state at what season the Tree Pæony should be grafted on the herbaceous kind—also what wood (green or older) of the Tree Pæony should be used, and any other directions they can give? I should like to try the experiment.—West Norfolk.

13233.—**Maiden-hair Ferns not growing.**—Last spring I repotted my Maiden-hair Ferns, which were then good sized plants. From that time to the present they have neither made wood nor grown in any way. Can anyone tell me what to do to them? They are in a moderately heated greenhouse and kept well watered.—Miss G. M. S.

13234.—**Nitrate of soda for lawn.**—I made a lawn-tennis ground last October; the sods were 14 inches by 6 feet, but rather mossy. The Grass now is not growing well with Moss and Daisy roots. Would any reader recommend an application of nitrate of soda; if so, how is it applied; or is there any other application that would be more suitable?—Juvernis.

13235.—**Roses for pit.**—Will any Rose grower kindly tell me what are the nine best Roses for a lean-to pit, to grow as bushes in pots, and to be divided as follows: Six Teas, two Hybrid Perpetuals, and one Moss? What month should I get them from the nursery, and would a bed of decayed Strawberry leaves do to plunge the pots in?—G. E., *Rothesay.*

13236.—**Early flowers in the London markets.**—Would any readers give me a little useful information about the sale of early flowers in the London markets? Primroses are now in bloom about here, and I could grow them by thousands upon thousands, but I am in the dark about the markets for them; Violets, too, I can grow in any quantity, also Narcissus.—M. A., *Cornwall.*

13237.—**Geranium leaves turning scarlet.**—Will any reader kindly inform me what is the cause of my Geranium leaves and some of the young shoots turning scarlet, and then decaying. The house is exposed to the south sun, and there has been no artificial heat. They have been syringed twice, is that the reason? Many of them are old plants and were cut down about three weeks since and most of them were repotted about that time in rather heavy soil.—Scarlet Geranium.

13238.—**Culture of Microlepia hirta.**—Can you kindly give me advice as to the cultivation of the Fern, Microlepia hirta cristata? I had a plant which grew well last summer, but in the autumn, though carefully attended to, and kept in a rather cool greenhouse, the fronds one after another got small rotten, or soft, places in the stalk, and drooped off; it is now growing a little, but only weakly.—Borderer.

13239.—**Stunted Rose trees.**—I have several Rose trees in a large span-roof greenhouse, some more than twelve years old, and some only planted in November, 1883. They all show quantities of Roses, but nearly all the early ones are short, stunted, and ugly. What can be the reason? The soil is light and sandy. I manure them well, and syringe nearly every day, and give plenty of top air.—A. J. R.

13240.—**Building and heating greenhouse.**—I intend building a span-roofed greenhouse, 30 feet long, 14 feet broad, 10 feet high, running north and south in the north of Yorkshire, and should be obliged if any reader would tell me what quantity of 4-inch piping would be required to heat it to 45 degs. in severe frost? I wish to make a partition in the middle, and to have one-half 10 degs. warmer than the other. Could I manage it by extra flow and return in the first half?—A Thorntonite.

13241.—**Greenhouse ventilation.**—I am disappointed at not seeing any reference to the remarkable paper by "L. C." of Boston on greenhouse ventilation, which appeared in your paper of February 28th last, page 655. I am about to put up a vinery this year and would be glad to know whether Grape growers approve of his principle. To secure ventilation without draught, and consequently mildew, is the object of every Grape grower, and certainly, to a non-practical man, "L.C.'s" plan seems to overcome the difficulty, but I should like to have the opinion of other men of experience.—J. J. Hooper.

13242.—**Weak Niphetos Rose.**—Will anyone kindly suggest a reason for a Niphetos Rose not succeeding under the following treatment?—It is grown in a 10-inch pot in good loam, with some leaf-mould and crushed bones, in a small greenhouse with an average heat of 55 degs. It is trained on wire against the glass. I got it over a year ago, and very soon after it bore very fine blooms, though the petals were rather flaccid. Since then it has steadily grown weaker, constantly sending out shoots and numbers of buds, but the latter do not seem to have strength to flourish, many falling off when quite small, others not reaching the opening stage, and going bad and black at the base of the petals. The whole plant seems in an exhausted state (though it has been well fed), the frequent young shoots being too weak to ripen.—Niphetos. *** *Perhaps you have neglected to prune or pot it.*—Ed.

13243.—**Bleaching Pampas Grass.**—Will some reader kindly tell me how to bleach the flower of the Pampas Grass?—Amateur. *** *We think the colour so beautiful in itself that it is a pity to either bleach or dye it; but, perhaps some of our readers may help you.*—Ed.

13244.—**Stopping bleeding of Birch tree.**—Will any reader please tell me how to stop the bleeding of a tree? A Birch tree has had several branches broken by the snow, and it is still bleeding from several parts. Tar has been applied, and fully, also clay, all ineffectually. I shall be much obliged for any information on the subject, and should like to know whether the bleeding would damage the tree if not stopped?—A Lover of Flowers.

13245.—**Coal ashes in the garden.**—Are coal ashes of any use as fertilisers and could they prove injurious to any plants or flowers if mixed with the soil? The soil in my garden is poor and difficult to get fine, and it has occurred to me that ashes, sifted fine, strewn over it and dug in, would prevent its getting into hard lumps and make raking more effectual.—E. J. D. *** *It would be better if you had stated more clearly what kind of soil yours is. Good gardeners never rake, but we feel sure some of them will give you their experience as to coal ashes.*—Ed.

13246.—**Rose leaves dying.**—I should be glad if "J. D. E.," or some other correspondent, would tell me what is the matter with my Roses. The young leaves come out and then die away again, the outside leaves begin to hang and lose all life, and then the very young or inside leaves follow suit—they go a dull dark green. They are in a small house facing north, with heat about 50 degs. to 55 degs. in daytime. I give air and follow advice given in books, but all to no use. I give little water, just keeping plants from flagging. They are alike both in pots and in bed. They are mostly the Gloire de Dijon, Baroness Rothschild, and Charles Lefebvre.—Amateur.

13247.—**Cheap Dahlia stakes.**—Mrs. Morton will be much obliged if any reader would inform her where Dahlia stakes or sticks can be bought cheaply, and carriage paid to the suburbs of London. None can he got in her neighbourhood under 1d. each, which is ruinous when many are wanted. So many gardeners and others advertise gardening requisites cheap, but they do not seem to mention flower-sticks, labels, stakes, and so on—at any rate stating price, which is what one wants to know, and what "Mrs. M." has been looking out for in her paper in vain for a long time. Correspondents should, in answering, state the length of flower-sticks and labels as well as the Dahlia stakes.

13248.—**Peaches not ripening.**—I have bought some Alexandra Noblesse Peach trees, and am now told they are subject to stone-splitting. Would some experienced Peach-grower kindly inform me if this is usually the case (they are out-of-doors), and, if it is, does it prevent them from ripening and eating well? Do you consider it one of the best of Peaches? It is so provoking to grow Peaches for four or five years, and then find you have a bad sort. Nurserymen are not to be depended upon. I have a Violet Native under a glass coping loaded with fruit every year. The fruits look dead ripe, but are so hard that we have to stew them before they are put into a tart. They are worse than Turnips. Could anyone kindly suggest a remedy?—C. W. W.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13249.—**Fertilising Filberts** (*H. W. Fishguard*).—Get some catkins of the Hazel if you cannot get any from Filbert trees. You should loose no time in doing it.

13250.—**Book on treatment of Ferns** (*Penge*).—Moore's handbook of British Ferns, published by Routledge.

13251.—**Procuring double white Bramble** (*S. Robson*).—You must enquire of nurserymen who grow shrubs.

13252.—**Violet Wellsiana** (*J. F.*).—This is a new sort recently brought out, and probably not yet offered in the trade generally. No doubt it will soon be advertised.

13253.—**Marechal Niel Rose leaves dying** (*W. M.*).—So far as we can gather from your letter there is nothing wrong in the treatment. Your best plan is to show it to some intelligent grower in your neighbourhood.

13254.—**Soil for Crotons** (*G. B.*).—It should be composed of a mixture of fibry loam, peat, and decayed leaf-mould, and enough sharp silver sand to make the whole friable.

13255.—**Unhealthy Celsias** (*C. E. T.*).—The plant you enclosed is not a Celsia but Alonsoa incisa. Send us one of the deceased plants; the specimen sent is, as you say, so "frizzled" that it does not enable us to help you.

13256.—**Culture of Sunflower** (*Westmoreland*).—You may sow in the open ground or in pots. By sowing in a hotbed you will get stronger and larger plants, and they will flower earlier. Sow any time during April.

13257.—**Obtaining Rhodotypus kerrioides** (*Harry Spencer*).—Apply to any nurseryman who grows shrubs extensively. We have no doubt there is a stock in some of your large Lancashire nurseries, but we cannot recommend any particular house.

13258.—**Sparmannia africana not flowering** (Gardening *Reader*).—We think it is only a question of time with your plants. If you wish them to flower in a small state do not repot them; keeping them pot bound in small pots will induce them to bloom.

13259.—**Treatment of Orange trees.**—(*C. M. F.*).—Growth, if not active at this season, will soon be so. The soil for Orange trees should be kept moist throughout, and if it is exhausted a little mild liquid manure would do good. Keep the plants perfectly clean.

13260.—**Preserving Cinerarias** (*W. Pennefather*).—You may preserve by cutting them down, but they will not be so good. Cinerarias are raised from suckers only when the sort is especially good, and it is desired to perpetuate it. The usual and best way is to raise from seed yearly.

13261.—Propagating Dahlias (*C.*).—Wait until the shoots get two or three inches in length, then cut off close to the tubers and insert in a small pot with sand at the base of the cutting; put the pot in a hotbed.

13262.—Unhealthy Scarborough Lily (*Bluebell*).—The bulb has apparently become diseased, probably infested with a maggot that often destroys bulbs. If the old bulb shows no sign of recovering turn your attention to the offsets and grow them well on; in about two or three years they will be large enough to flower.

13263.—Weak plants in cool house (*S. Fairbrass*).—We think both defective ventilation and injudicious watering are the causes of your Roses and Hoya carnosa being in such a state. Give ventilation and keep the plants dryer. Probably now that the brighter weather is come you will see a change.

13264.—Growing Oxalis hirta (*Miss Lee*).—We cannot give you any instructions how to flower your Oxalis as you do not tell us the conditions under which you have it. It requires a cool greenhouse and the pots should not be too large. When the tubers get strong enough they will doubtless flower well.

13265.—Blooming seedling Chrysanthemums (*Thos. Edwards*).—Seedling Chrysanthemums raised last year will no doubt bloom this year with ordinary treatment—such treatment as Chrysanthemums generally get. We should say your plants are certain to flower if you treat them fairly.

13266.—Cultivation of the Pansy (*Gruffydd*).—References to the Pansy and its cultivation are scattered broadcast through the past volumes of Gardening. If you get the lately-published index (price 1s.) to the last volume you will, we have no doubt, be able to find all the information you have need of. If not, write to us again.

13267.—Maiden-hair Fern turning brown (*Clinton*).—From your description of the conditions under which you are growing this Fern we cannot account for your ill success. Try a dry er treatment; probably you give too much air, and, the fronds being at certain stages of such a delicate nature, too much air, especially a cold draught, is apt to be injurious.

13268.—Chemical solution for destroying weeds (*A Constant Subscriber*).—The best solution we know of is the wit or common-sense to perceive that weeds cannot grow if a hoe be run over the ground once a fortnight, say every second Monday morning. It is a much less laborious process than any other kind of cleaning, and the result is that one never has any weeds at all.

13269.—Plants for gas-lighted room (*Leicester Curate*).—We should say that an American Aloe, made of cast iron, would be the only plant that would do well in a room where gas is used; the most long-suffering plant, however, among those not made of metal is the common green Aspidistra, which will grow in any place that a plant can live in a house.

13270.—Calycanthus and Chimonanthus (*Rosemary*).—Calycanthus is the Carolina Allspice, a hardy shrub that flowers in summer, with a chocolate-coloured bloom. You probably mean the Japan Allspice (Chimonanthus fragrans), a beautiful hardy shrub, flowering very early, with a delicious scent. You can get plants without difficulty from any nurseryman who grows shrubs.

13271.—Tacsonia not flowering (*Primrose*).—There are various Tacsonias; you do not mention the kind. If the room is sufficient most of them flower in due time, but they are so rampant in their growth that they are generally best planted out in a border. A young plant wants very little or no cutting back. Keep it clean, and feed it well, and it will probably both flower profusely and grow even too vigorously.

13272.—Lilium longiflorum not blooming (*Penge*).—You say nothing about the condition in which the plant is growing. Our experience is that it grows much better in the open air than in any pot. It should be planted in a free, light, vegetable soil, leaf-mould, Cocoa fibre, and peat. We have noticed it doing very well indeed on some fine sandy soils—but best of all in those above mentioned—almost in the heart of London.

13273.—Primroses in greenhouse (*Amateur*).—You have been misled by taking our common English Primrose for the Chinese Primrose, P. sinensis, which is a tender plant. The varieties of our common Primrose are much better out-of-doors in their native air. Occasionally, however, in late districts, a few well-grown roots may be brought into flower earlier. Gradually inure your plants to the open air, and put them in nice shady borders.

13274.—Arum Lily not unfolding (*Penge*).—At this time of the year the Arum Lily is best in a greenhouse. It enjoys plenty of water and occasional applications of liquid manure. There have been many notes as to the proper treatment in Gardening. You do not say a word as to the place in which your plant is growing; but there can be little doubt that it has been ill-treated in some way, or it would readily open its flowers.

13275.—Melon Culture (*Cantab*).—You have read our statement that under no circumstances whatever have we ever seen the Water Melon grow well in England. It would only be done with an amount of trouble and expense that would be too great. The other Melons, descriptions of which you quote from American source, are forms of the Melon grown in England and France; the Canteloupe is one most frequently grown about Paris, but both are quite distinct in nature from the Water Melon. The Melons usually grown in England and Western Europe may be grown in your well-heated greenhouse, if specially and wholly adapted to their culture, and if the plants are started early and are in all ways well-heated. The culture of Melons, which has often been described in Gardening, is exactly applicable in their case. The directions you send us from California—a country we have visited, and where, as also in Eastern America, we have seen Water Melons and our own white seeded Melons frequently grown in the open air—are entirely inapplicable to English cultivation. Over an enormous area in America the Melon is as easily grown in the field as the Turnip is here.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents," All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—Ed.

Fleshy Pod Pea (*E. F. Shaw*).—You probably mean the Sugar Pea, and if you will, at any time, send us a specimen we will tell you what the right name is. If you describe what you know of the plant to any large seedhouse we have no doubt you will get what you want.——Flora Conda (*A. L. Crawford*).—We cannot form any idea as to the plant you mean. If you will send us a portion of it, or, as you have only one, a leaf, we may be able to help you. ——List of flower shows (*P. Scott*).—Not of sufficient general interest.——Spider Plant "Invisible" (*Inquirer*)—We know of no plant of this name, and, unless you show us a bit of the leaf when it becomes visible, we cannot tell you what it is.——Name of Daffodil (*M. A. Cornwall*).—There are many scores of Daffodils, and it is quite impossible to say which you mean unless you send a specimen of the plant.——Lapageria alba not growing (*Xenia*).—You leave us quite in the dark as to the treatment you give the plant; how, then, can we tell you why it does not grow?——Procuring wire trellis (*M. B.*).—Apply to any wire worker, and see our advertisement pages.——Illustration competition (*Miss E. Gregory*).—Photographs are best, but any drawings in black and white will do.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*Xenia*—Forsythia suspensa. It is perfectly hardy in a shrubbery or against a wall.——*H. E. H.*—Iris tuberosa; commonly called Snake's Head Iris.——*I. Darvell.*—Kennedya Marryattæ.——*C. J. Perry.*—Alonsoa incisa.——*M. Williams.*—One of the New Zealand Shrubby Veronicas.——*A. M. O. T.*—Sparmannia africana (African Hemp).

Books received.—*Weather of* 1884 *in the neighbourhood of London.* By Edward Mawley, F.R. Met. Soc. Stanford, Charing Cross.——"*Homer down to date.*" Pall Mall Electric Association, Limited, 21, Holborn Viaduct, E.C. ——*Usury of English Bishops.* A. Southey, 146, Fenchurch Street.

DESTRUCTIVE BIRDS AND INSECTS.

No doubt many readers of Gardening were interested by the remarks of "Hy. Dobbie" (p. 38), under the above heading. In our neighbourhood the birds are becoming a greater pest each year. Your correspondent very justly says, "We should not allow mere sentiment to supplant our best interests." I think he could have gone a little farther, and said that sentiment in this case is apt to defeat its own ends, for to allow these creatures to multiply to such an extent that they are driven by semi-starvation to have recourse to unnatural food is a greater cruelty than it would be to destroy enough to keep the number within due limits. It should also be borne in mind that if birds were allowed to multiply without any check, natural or artificial, they would in a few years overrun the world; so, however repugnant it might be to the feelings of the humane mind to see the poor birds robbed of their nests, or the poor innocent helpless young torn from their homes, and destroyed, a killing day must come sooner or later, and the longer it is postponed after their numbers have increased beyond certain limits the greater will be the misery in times of scarcity of food, and the greater will be the number to be destroyed.

With respect to the good the birds do us, I think the experience of most practical men will bear out your correspondent in the remarks he has made in reference to the subject. What gardener of any experience, whether professional or amateur, when his crops are infested with vermin, ever gets, or seriously expects to get, assistance from the feathered tribe? That these creatures ever materially affect the balance of the insect class is more than doubtful, as they prey on the carnivorous as well as on the vegetable-eating species.

I have often heard it said that on the Continent once the numbers of birds were so reduced by wholesale destruction that, in consequence, the crops were seriously injured by insect pests, and that, to prevent the further total destruction of the crops, the birds had to be allowed to multiply again. Now as the powers of multiplication of insects to that of birds are as ten thousand to one, how could the birds reduce the numbers of insects after the latter had once got ahead? It is obvious that if there were no other means of destruction their increase must go on till checked by starvation, which means total destruction of the crops. That such was not the case we all know. It appears not unreasonable to assume that the insect would be self-adjusting, and that if the whole feathered tribe ceased to exist the former would preserve due proportions in its numbers by the agency of its own carni vora.

It is a fact well known to cultivators that these insect plagues come and go in a very mysterious manner. We often have a visitation of one of these plagues after our severest winters. Might not the conjecture be hazarded that these important results are brought to pass by microscopic disease organisms? Science has proved that many of the diseases to which the higher animals are subject are the effects of the action of these infinitesimal agents, there being thirty different species that prey on man.

Doubtless the progress of research will make it manifest that many of the ills to which the gardener or the agriculturist is subject are due to the action of microscopic parasites of the Bacterian or fungoid type. For some time it has been established that the Potato and Hollyhock diseases are the effects of a fungoid growth; the fatal disease to which silkworms are liable is also due to the presence of a parasitical fungus. By the hypothesis above advanced I think many of the diseases to which plants are subject, and which are at present a puzzle to practical men, can at least be plausibly accounted for. Take, for instance, the shanking of Grapes. Might not this be the result of the agency of a living organism, the conditions of the existence and the growth of which being a certain constitutional state of the vine, caused either by the roots getting into uncongenial soil, or by too great a difference between the temperature into which they are growing and that in which the leaves are situated, together with certain atmospheric conditions resulting from the action and shelter of the glass? L. C. K.

13050.—Hawking garden produce.—"A Cottage Gardener," or, indeed, any other person, can hawk his own garden produce either outside or inside a municipal borough, nor need the fruit or vegetables he vends be the produce of his own garden; in short, he may sell any garden produce anywhere. Commercial travellers, book agents, sellers of vegetables, fruit, flowers, fish, or food, or persons attending and selling in fairs or markets legally established, do not require either hawkers' licenses or police certificates. Of course, in the case of fairs and markets, dealers would be liable to pay the lawful toll, and in some boroughs the whole town or city is, on market or fair days, deemed the "market."—J. P., *Lancashire.*

13065.—Gillingham's heat radiator.—I can quite sympathise with "Roger" about his Gillingham's heat radiator, as I had a greenhouse full of white Chrysanthemums well-nigh spoiled by a deposit of soot from mine. My house is 16 feet by 10 feet, and I find that the radiator works very well now, the cause of the catastrophe being a minute air hole between the mica "window" and the copper of the chimney; the heat escaped and also the soot from the flame. By substituting a plain glass chimney of an ordinary Duplex lamp everything went well, and I think it probable that the same thing is the matter with the one complained of by "Roger." I find that the brass ends of mine are burnt through, which I think is a defect. I may mention that the whole apparatus requires a thorough sweeping out two or three times a year, and the water-troughs require fresh water once a week. With these precautions I am quite sure "Roger" will find his stove behave in a most exemplary manner.—Dublin Amateur.

12779.—"Fairy Rings."—We should like to say a little more on this subject. The ring we are acquainted with is 24 feet in diameter and 18 inches wide, and no cock of hay would be that size. It has been there for several years. The field is first mown for hay, then pastured with sheep and cattle each summer. Can it be caused by the rays of the sun?—Enquirer.

ROSES.

REPLIES.

12975.—**Dwarf-bedded Roses.**—All dwarf Roses if budded or grafted should have the union of stock and scion below the surface of the soil. All stocks are more tender than most of the Roses budded on them, even our native Dog Rose. This may be seen when standards are killed by a severe winter. The fatal injury will be found to have occurred in the lowest 6 inches of the stem, not in the tops, which start into growth, but die of starvation. —J. D.

13114.—**Climbing Devoniensis Rose.**—This Rose would do very well during the winter in a temperature of 50 degs. to 60 degs., if during the autumn the house in which it is growing had plenty of air to ripen up the summer growth; but if the house is always kept close and the internal air moist it would keep growing all the winter and produce but few flowers. I have grown this Rose under glass, but had to discard it on account of its rampant growth; altogether I consider it the least satisfactory of any Rose for growing in a house. If you wish to try it put in a plant at once, and train the growth 18 inches away from the glass, and allow it plenty of room, for in a good soil it will make shoots larger than a man's thumb, and 16 feet to 20 feet long in one year.—J. C. C.

12985.—**Striking cuttings of Roses in bottles.**—Rose cuttings will emit roots freely in bottles of water. About the beginning of July, when the wood is getting firm, choose a few hard-looking stubby portions, cut them out close to the stem from which they issue, and secure a heel to each. Let the cuttings be about 6 inches long, and cut off all the leaves from 4 inches for insertion in the water, only leaving about one pair of leaves out, and none inside the bottle. The neck of the bottle must then be stopped up with a little cotton wool, and hung up in a shady position. The leaves must be sprinkled frequently, in order to keep in a green condition, and the roots will be formed in a very few weeks, when the young plants must be placed in soil. A few pieces of charcoal must be kept in the bottle, to keep the water pure. I have also succeeded in striking Roses by placing the cuttings in bottles as early as the middle of March, and placing them in a greenhouse.—G. H. M., *Pimlico.*

13129.—**Getting rid of wireworm.**—If "Disappointed Amateur" will put in the soil with his seeds or plants a little rape cake, ground small, he will soon also have a disappointed wireworm.—Rook.

FRUIT.

Canker in Apple trees.—This is a disease which has given rise to almost as many different theories as the dreaded Potato blight; but after several years careful observation I have come to the conclusion that it is due to insect life. It is very prevalent in this district, viz., Weald of Kent. The soil is a stiff clayey loam. Now if it is due to cold and exposure, badly-drained land, &c., how is it that it is so often seen on Pyramid trees in well-manured, cultivated, and sheltered gardens? And if it proceeds from the roots how is it that the branches are not wholly affected, but just a patch here and there? The Hawthornden is especially subject to it in this part, owing, I believe, to the softer nature of its wood, thus being more easily penetrated by the insects. After several "remedies," which were of little or no avail, I have practised one, for the last three years, which has answered well with me—that is, in the winter to brush over all the largest branches with coal tar. I have done old and very much diseased trees with it, and have had the satisfaction of seeing the wounds heal, the bark regain its ground, and have effectually stopped the canker. It is not too late now, provided care is taken of the buds which are at this time swelling rapidly. A good many gardeners are afraid to try it, fearful of killing the trees; but, after having once practised on some poor old specimen, are only too ready to repeat it on all others affected.—A. Hatcher, *Kent.*

Dark Spotted Poppy (Papaver umbrosum). See page 68.

REPLIES.

13116.—**Mulching orchard house.**—If appearance is no object with you, mulch with 3 inches of well decomposed stable manure, which is by far the best for the purpose, for it keeps the border nice and moist, and helps to keep the roots near the surface. Or you may use—what would look better—a like dressing of Cocoanut fibre refuse. Either of them applied now would save a deal of labour in watering, besides being better for the plants.—W. G. T.

12995.—**The Cherry Plum.**—There is a Plum exactly answering "Mrs. M.'s" description called Skipton or Cherry Plum. It fruits well in Lancashire. The name might lead us to infer that at one time or another it had had some distinct connection with Yorkshire. There are too many richer and larger Plums for it to be much cultivated now. The trees I have seen were aged.—Aleph, *Southport.*

12950.—**Peach budded on Nectarine.**—A Peach will do budded on a Nectarine that has been previously worked upon a Plum, but no one in this country uses either the Nectarine or Peach as stock. From seeds, Peaches and Nectarines are interchangeable—*i.e.*, the seeds of one may produce the other. The Nectarine is only a variety of the Peach. The blossoms fell very likely from immature wood and imperfect buds.—E. Hobday.

THE KITCHEN GARDEN.

RICHD. GILBERT'S PRACTICAL PAPERS ON FRUIT & VEGETABLE CULTURE.

Rhubarb.

Allow me this week to give your readers a few words on one of my favourite vegetables—Rhubarb. This is simply a delicious treat, which the poor may enjoy to the full. The ways in which it may be cooked and served to table are almost endless. In the latter part of the year it is also good as a preserve, and it makes a most palatable and healthy wine.

Varieties of Rhubarb.—We grow here St. Martin's, Leicester Early Red, Paragon, and Hawkes' Champagne (true). These four varieties belong to the early section, and for late work we grow Scott's Crimson and Myatt's Victoria. Scott's Crimson Rhubarb is the only one, of my knowledge, which cuts red through the stalk. We have these six varieties growing in one large break, and I have this day (March 18) made a careful inspection of the whole break. I find Hawkes' Champagne from 8 inches to 10 inches long in the stalk, and the colour all to be desired. The next in point of earliness is the Leicester Red, but the colour is not perfect. Then comes St. Martin's, Paragon, Scott's Crimson, and, lastly, Victoria. I therefore, after twenty years' experience, look upon Hawkes' Champagne as the finest of all Rhubarbs of my knowledge.

Cultivation.—The present time is the best for making new beds, and we plant Rhubarb in a very simple manner. The quarter we purpose to plant this season has been employed with Coleworts, and, without any trenching or digging, we simply take out holes 8 inches square, and about the same depth. These holes are 3 feet apart in the row, and 4 feet apart row from row. We put into each hole a spadeful of good manure, mixing it well with the soil both below and above, and here we plant the roots, preferring two eyes to one. After the quarter is all planted we give it a rough level over. Should the summer prove very dry, we give it one thorough good soaking, and a mulch. Rhubarb planted in this way makes good stools during the season, and may be lightly pulled the first year.

Forcing.—To lift large stools, and place them in the Mushroom-house, is of all systems the very worst. The produce to me is almost uneatable, being tough, stringy, and having a very strong taste. Our Rhubarb, which is always ready at Christmas, is forced with leaves entirely, and is of fairly good flavour; but to have Rhubarb in perfection, place on each stool a small fork full of dry litter at Christmas. In March you will have Rhubarb in plenty, which is, as I have just said, the perfection of this great and glorious inmate of our garden.

Stamford. R. G.

Judging Peas.—(*To the Editor.*)—Please give me your opinion. How many points should a judge give in judging Peas? My opinion is that two only would be the right thing—colour and flavour. I think large giants in Peas, without flavour, is all nonsense.—R. G. *** We quite agree that flavour is everything; size is secondary. The big Peas of the London market are seldom worthy of the name of Peas.—Ed.

TURNIP-ROOTED CELERY (CELERIAC).

I certainly did not give as much manure as is given to Celery, (see page 35), but it was planted in well-manured ground (the plants having been first raised in the greenhouse); half the row was well watered with liquid manure, which did not seem to make any difference. One of your correspondents suggested that we might not get the best seed in England, so I wrote to a German friend in London requesting him to make inquiry in his country for seed. He was referred to Heinemann, of Erfurt, who informed him that he had an agent in Glasgow, Schmelzer and Co. I have written to the firm for seed, and also for Heinemann's "Cultural Guide." This gives special instructions for growing Celeriac—copy of which I enclose. My

German friends have told me that they use it chiefly as a salad, but I have tried these imported roots cooked various ways, and my guests have pronounced them delicious. — Ellcee. *Extract.*—"Sown in hotbed in March, and grown on vigorously, they are planted out in May in beds 4 feet broad in three rows, each plant at a distance of 18 inches, cutting off before planting the points of the leaves and the roots. It is necessary to water them and hoe them frequently during the summer. When the roots have reached the size of an Apple, the soil around them is removed, and all the side roots cut off. Only those growing towards the bottom are left. After this the soil is replaced around them. In the beginning of October they are taken up, the side roots cut off, as well as the leaves, leaving of the other, however, the heart; then they are put by in the cellar in sand."

*** One thing our readers may be assured of, the Turnip-rooted Celery won't grow as Mint and Thyme do—in a way we have too often seen it treated in England. It is really a valuable winter plant — the nicest of all, we think. It is worth while growing well. It should be treated pretty much like common Celery, but not earthed up, and, as "Ellcee" says, the little suckers must be removed. We remember seeing it much and well grown in the neighbourhood of Vienna, and no doubt it is common around many German cities.—Ed.

—— Four years ago a few plants came up in my Onion bed, and were allowed to grow. In the autumn they produced fine clear roots. The last three years I have sown some seed with the Onions in March, and thinned them out about 2 feet each way apart. They grow slowly until the Onions are ripe, and then with one good hoeing they soon cover the ground and produce fine clear roots all through the winter, not like the things that have been transplanted. They should always be sown where they are to grow and in good ground.—W. B., *Oxon.*

—— If "Ellcee" will select a plot of open ground, composed of rich light loam, manured about 3 inches thick with some well-rotted stable manure, and dug in and allowed to rest till the Celeriac plants are ready for pricking out, he may be sure of getting as fine roots as the one that is sent you to-day by parcels post, and which weighed, before it was trimmed, just over 1 lb. I regularly grow them as fine as this sent, and store before the hard weather sets in, as you would store a Parsnip. The seed should be sown now in heat, and the seedlings hardened off. When a fair size to prick out, and the weather permits, they should be planted in the prepared ground about 9 inches apart, carefully watered till they take root. They will require no more attention than not being allowed to flag for want of water in very dry weather. My seeds are up and showing rough leaf. You can't be too early in reason. —H. P. Webb, *Trowbridge.*

*** The root sent was a very fair specimen, not of the first size but quite large enough for every purpose of the cook. This vegetable is at its best in late autumn and winter, but when cooked this was excellent in flavour. The addition of this, well grown, to our kitchen garden crops, would be a valuable one. People are every year raising all sorts of new Cabbages and other vegetables, of which we already have excellent types, whereas to make this a common vegetable in English gardens would be to add to the resources of every householder in winter. We, of course, mean those who can grow and appreciate a first-rate vegetable.—Ed.

—— I shall be pleased if any information I can give respecting Celeriac, or Céleri-rave, as it is called in France, should be useful to readers of Gardening. I have eaten it in many towns on the Continent, and can confidently endorse the words of a correspondent who says that those who have not tasted it have a treat in store. It certainly is well worthy a place in every kitchen garden, and, I think, meets with general approbation when brought to table. First, then, let me advise those amateurs who have hitherto failed in their attempts at its cultivation to try again, and procure their seed from a reliable source. I would recommend either of three varieties sent out by a well-known foreign firm:—First, Gros lisse de Paris, a very large and clean root; second, Céleri-rave d'Erfurt, clean root, early variety; third, Pomine à petite feuille, a smaller kind, but very clean and good. Any of these may be had in small packets. As to cultivation, little need be said. Prepare your ground as for Celery, with the exception of the trench. Feed liberally, for the root, like ordinary Celery, is a gross feeder—in fact, the same treatment that will produce a fine stick of Celery will produce a fine root of Céleri-rave. No earthing-up is needed, as the Rave, as its name implies, belongs to what we should call root crops. When wanted for table, scrape and clean well, cut in pieces as you would cut a Turnip, stew gently till tender, and serve with white sauce or gravy according to taste. I hope we shall soon hear of fine specimens being sent you for inspection.—G. L., *Jersey.*

POULTRY.

MEAT AND EGGS *VERSUS* FEATHERS.

(By Sir Henry Thompson.)

I have been frequently asked why, having very carefully and successfully bred "high-class" poultry on a somewhat large scale for four or five years, I have lately relinquished the pursuit. As it is difficult to answer the question in a very few words, and as I think the answer I am compelled to give is one that concerns other people—many others—far more than it does myself, I venture to ask a little space to make that answer.

No one will pretend to say that I desisted from any failure to breed a strain of birds which might be successful at the first-class shows. The highest prizes at the Crystal Palace, the Dairy, Birmingham, and many other shows, were taken by birds hatched in my own yard, and from parents bred there. At all events it was not disappointment with the prize achievments of the breeding pens of dark and light Brahmas at Hurst Side which occasioned my secession from the fancy. When I began to keep poultry and constructed a new yard on the most approved principles for the purpose, my primary object was to rear the best poultry which could be produced. At the outset, having no previous experience or even knowledge of the poultry world, I naturally concluded that the most perfect birds were either those best adapted for the table and the most welcome when served there, or those which produced the largest number of the finest and richest eggs for the same purpose. These two separate results seemed to me to sum up the reasons for the existence of poultry. For what other purpose were poultry wanted if not for these?

Certainly in France, the poultry of which I well knew, at least on the table, their *raison d'être*, as Frenchman would say, could be only so explained. But I very soon learned that in England, practical England, such were by no means the chief objects of poultry culture. And I further discovered that, spending infinitely more money on the rearing of poultry, and giving in prize money for the "best" (?) varieties fifty times more than in France is so expended, we produce races inferior to those of France, cannot supply the moderate wants of our population, and pay enormous sums every year for the poultry and eggs of that country.

When I entered on the breeding and culture of the finest strains of Brahmas, I did so in the firm belief that I was really occupied in developing the growth and production of valuable food, and at least aiding in some humble degree to promote the progress of a great national industry. This admission will probably create among the initiated a laugh at my extreme simplicity. Be it so, that laugh strengthens my position here. I soon learned, to my surprise, that the poultry fancy of the day, with very little exception, is an unreasoning competition in a keenly-contested race for the production, not of meat or of eggs, but of feathers! And thus I found it at length an uninteresting and profitless task to attempt compliance with artificial standards, liable, like the fashions of dress, to arbitrary changes—standards which stipulate that the birds shall manifest certain characters which are as unnatural, irrational, and absurd as the manufacture of the little foot for the Chinese woman, or the flat head by the Choctaw Indians. Judged by any canon of taste they are not more artistic, while they are far more detrimental, than is the tatooing of a South Sea savage.

Could the production of the required marks in the feathers, such as a demand that the plumage should pervade the entire leg and foot, and even extend to the tip of the second toe (!), as in a Brahma (which may be taken as the type of "standard" stipulations in other varieties), he accomplished without prejudice to the primary and sterling qualities of the fowl, I should have less reason to object to the system. But all these high qualities are sacrificed, and necessarily so, by competing to produce the plumage. The simultaneous association in one bird of certain marks and shades of feathering, and certain arbitrary distributions of the same, together with a peculiar type of comb, to say nothing of minor characters, can only be attained by carefully selecting for breeding purposes, the strain or the individuals which notably manifest these external signs, and by sacrificing all other considerations. Are the chosen sires and mothers good layers? Are they prolific? Are they small in bone and big with meat? Such important qualities have no place in the choice of the birds from which the prize animal must be bred. And thus it happens, as I have too often had occasion to remark, when I have produced, with endless care and some good fortune, a splendid cock with abounding leg and foot feather in the highest perfection, that the animal is therefore so unwieldly that his daily exercise, such as it is, is taken with painful difficulty; and in the performance of that special function for which his sex designs him it is only by the rarest luck that he can succeed in one among many attempts.

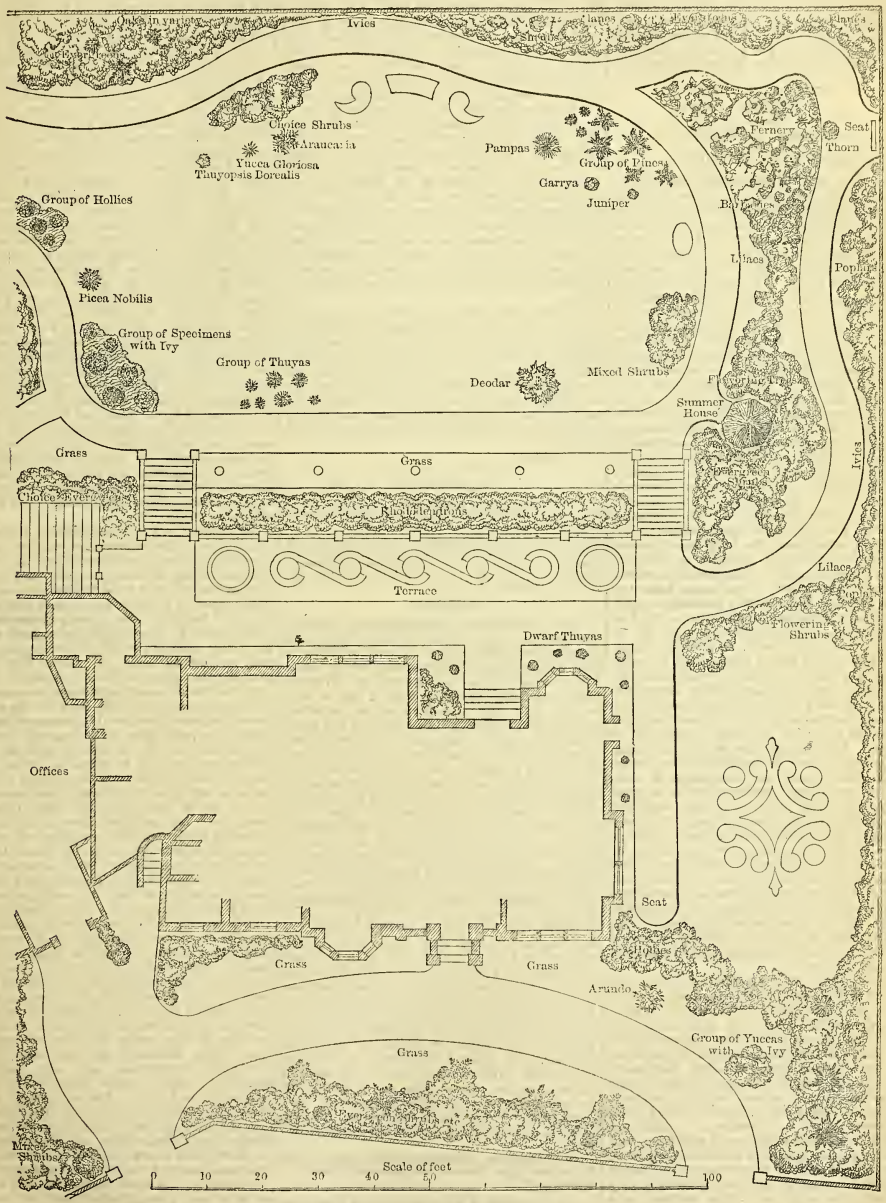
Illustrations innumerable of the mischievous tendency of the prize-feather system might be furnished, as every fancier knows. I do not deny that weight and reasonable form of bodily development are demanded in connection with the plumage, but I contend that the conditions respecting the latter are so imperious that the best qualities of poultry, for all practical purposes of the table, are sacrificed to the form, colour, and situation of the feathers; to the form and colour of combs, and to other slight external signs of no practical value whatever. Such is the result of our folly and short-sightedness in permitting the feather standards to dominate our poultry breeding, and hence our inferiority to France in the quality and abundance of poultry products.

Thus the meritorious fame of the prize strain or the prize bird spreads from the local centre when the winner returns from the popular show, and, unthinkingly, dazzled by its prestige, the neighbouring farmer, or even the well-to-do cottager, will give a few extra shillings for a cockerel next year from the celebrated source. It does not occur to either to reflect that the bird, whose feathers obtained him that honourable position, may probably deteriorate even his flock of farmyard mongrels by introducing blood which is non-prolific, infertile, may be, associated with defective liver, not infrequently produced by the habits of birds bred for the prize show, and sometimes transmitted to their offspring. . . . I believe, until the whole system of breeding for prize birds from the present artificial standards is swept away, and all the energy of poultry breeders is directed towards the production of poultry good for meat and eggs, we shall be dependent on foreign growers for the supply of our tables. And I will not hesitate to affirm that these might be far more than amply furnished by ourselves, were it not for the grave faults in our mode of breeding which I have thus briefly endeavoured to indicate.

12818.—Artificial Asphalte.—"W. J." will find the following a good receipt for paths, &c.: To one bushel of coal ashes, sifted through an ordinary cinder sieve, add two gallons of coal tar; thoroughly mix; a day or two before it is used is best, and avoid the too common error of laying it too thickly, two inches will be quite sufficient. Sprinkle road grit, sand, or fine beach, and then run the roller over it every other day for a fortnight, by which time it will be quite firm.—A. Hatcher, *Kent.*

PLAN OF LONDON SUBURBAN GARDEN.

The garden of which we publish a plan is one of a very numerous class, of which good models are very desirable. It is, as will be seen, limited in size—all the greater reason why no pains should be spared in its design. If, in casting an eye over the plan, we begin with the strip of planting which screens the house from the road, we see a free and well-broken margin, the very reverse of the common stiff, straight, or curved one. On such irregular margins it is a good plan to further vary the edge by planting dwarf shrubs or herbaceous plants on the grass, beyond the earth line of the plantation. On the other side of the entrance-drive also the group of Yuccas on a low mound, with a carpet of Ivies beneath them, is worthy of a word of praise. The Ivies do away with the necessity of mowing or otherwise interfering with the surface of the ground beneath the Yuccas, and both subjects are green and effective throughout the year. On the lawn is a group of specimen shrubs with a carpet of Irish Ivy beneath them. This, or indeed any other, ornamental carpet is much better than the ordinary bare surface usual beneath shrubs. The lawn, for its size, is open, and embellished with choice groups of Pines, and the lines of sight through it are so disposed that the best obtainable views are secured. As the names of the plants are given in the plan, further allusion to the planting is un-



PLAN OF A LONDON SUBURBAN GARDEN.

necessary. As to any improvements that we might suggest we should like to simplify the scroll flower-garden, as we feel assured that all beds of complex pattern, sharp corners, &c., are mistakes—troublesome, ugly, ineffective. We feel assured that, taking equal surface, a much better result would be got generally by adopting an absolutely simple form of bed, say oval, or a group of ovals, or a round bed where a round bed was most fitting. The garden was designed by Mr. E. T. Chamberlain, of Haverstock Hill.

BIRDS.

OUTDOOR AVIARY.

(Reply to Query 13108.)

It is a curious fact in connection with birds, more especially such species as derive their main or sole support from insect food, that our own hardy songsters are often more difficult to keep alive than birds imported from foreign and more southern countries. A remark, be it understood, applicable at all seasons, and not especially so at winter. Experience has taught me that the majority of bird-kind are wonderfully capable of adapting themselves to circumstances, provided there be consistency in the treatment which they receive. A sudden change in the weather, unforeseen possibly, and, at any rate, unprovided for, more especially when that change is from intense cold to a rapid thaw, has a most baleful effect on them. Over and over again I have, in the second or third day of such a variation in the weather, picked up birds apparently perfect in plumage and condition. Then again, all that have shown signs of asthma, though enduring the extremest cold, die instantly on the arrival of a warmer wind, and it is to this particular period, which marks the breaking up of the dark season, that I would call the attention of "B. I." and others attempting to keep insectivorous birds. If the aviary is properly constructed and free from draughts, which it must be, never hang up a shred for a less cause than ten degrees of frost. When severe weather compels you to wrap up, continue to do so for a night or two beyond the moment when it ceases to be essential on account of cold. On the other hand, if you can by any means increase the quantity of air by day in the sleeping compartment, do so, to drive out the damp which invariably follows on a hard frost. Prevent moping by scattering the food or giving it in small supplies at intervals; do not, however, decrease it in quantity. All through the winter the birds must be kept *alive*. A perfectly clean house, plenty of sharp sand, and abundance of clear water to encourage bathing, fresh and good food at all times, and the winter will kill nothing which is not already dying. Pay very great attention to cleanliness in the food dishes. I have found nothing superior to glazed plant-pot saucers for this purpose, and when a bird remains impervious to the glitter of tin or glass, he often finds it impossible to resist a bath in glazed earthenware. Bathing in midwinter occupies the birds and keeps them lively; but it should only be encouraged as a continuation of a summer practice, and not started suddenly in the cold season.

And now as to the question of food. The body of the food should be German paste, which may be purchased of all bird dealers. It must not be allowed to become dry, and should have a sweet, wholesome smell. To one part of the paste add the following, in equal proportions, to make a second part: Crushed Hempseed, bread crumbs, and yolk of egg. The main thing is to avoid, on the one hand, a sloppy mixture, resulting in loose stools, and on the other a gluey consistency, causing costiveness. A little experience, combined with careful watching, will teach the precise condition of suitable soft food better than it can be proportioned on paper. About the beginning of March get in a supply of dried ants' eggs, and after soaking for a quarter of an hour in boiling water, mix with the other ingredients daily, or, what is probably quite as efficient, sheep's liver, boiled and grated, and this may be given in the place of egg all the year round, if preferred. As the birds advance into full song, and take to transporting twigs from one side of the aviary to the other, put in some big Fir boughs, as, although they may not sit, many will amuse themselves by building. Give a few meal worms once or twice a-week, and teach the birds to come and beg for them, which the most intelligent will learn to do very readily.

English birds, as a rule, are inclined to be rather aggressive, especially when they are the first occupants of an aviary; but "B. I." might try an introduction or so, in the shape of the scarlet tanagar, various small weavers, and the paradise and pintailed Whydah birds, all of which, except the first, which is at times expensive, are now in their winter plumage, and may be purchased for a few shillings a pair. They are seed-eaters. I have already given a list of sorts easy to manage, both insectivorous and others, and need not repeat it here, beyond saying that Pekin nightingales and blue robins are the two exclusively insectivorous birds which should come first in all selections, and exquisite creatures they are. If "B. I." does not know the former of these, let him obtain a pair, and I promise him he will be delighted not only with the breasts like a sunset, and the great fearless eyes, but also the marvellous powers of song, which for strength, variety, and melody of phrase, is equalled by the Surrey nightingale alone.

The duration of life in captivity ranges from four to eight years, rarely longer. Saving by reason of degrees of delicacy, I have found no distinct variation of age in species. A bird will often live longer in a cage, possibly from the special attention it receives. Neither captivity nor climate will shorten the life of a bird properly treated. German paste and every other requisite may be obtained of most large bird dealers.

Hampstead. W. S.

QUESTIONS.

13276.—Food for greenfinches.—Will any reader tell me what is the correct food for greenfinches, also what green food is most suitable for them?—E. R.

13277.—Food for thrushes.—Could any of your readers tell me what is the best general food for song thrushes? I have two cock birds in splendid plumage, but they do not sing. One was hatched in April, the other in June last.—G. Wilson.

REPLIES.

13107.—Breeding Budgerigars.—Seeing the question about breeding budgerigars in a room of north-west aspect, I shall be happy to give my experience in breeding these birds, which I have done for some years. When I first commenced breeding them I had a wire aviary, with only a wooden house, in which they roosted at night; but for the last two years I have had my birds in a stone-built out-house, about eight feet square, with a sloping slate roof, and a window, which I have wired over; and besides the usual door I have put in one of fine wire netting, so that whenever the weather is fine, even in winter, the outer door is left open, and the birds get all the air and sunshine possible. This house faces south-east, and the birds breed freely in it and are in perfect health. I have cockatiels and red rumps, which have also bred in the same place, and goldfinches and bullfinches, which I hope may breed this summer. When the weather is very cold I light a small oil-stove, which sometimes is required both day and night, but not often, and even in the coldest day I open the door and let in the fresh air for a while. I did not find my budgerigars take to the Cocoa-nut shell to build in, but preferred the box-nest made by Groom, who works for the Zoological Gardens, and the young birds are no trouble, requiring no looking after or extra food. The pair I now have here began to breed last summer, and when I left home in January there were three young ones in the nest in different stages of maturity, and I had in all ten young ones. This was in Scotland, so I should think "Miss B." can have no difficulty in breeding in the room she describes.—*Berwickshire.*

13162.—Book on breeding British birds.—"Our Native Song Birds, Warblers, and Canaries," by George I. Barnesby.—B. I.

13121.—Heating two greenhouses from one boiler.—You can heat both houses from one boiler; but you should go to the one 2 feet below the other with your water pipes first, and return to the higher house last. Fix your boiler low enough for the lower house. 1 inch or 1¼-inch pipes will do from boiler to house, and put in a dry trench.—An Old Hand at Boilers.

13165.—American glass cutter.—I know nothing of the merits of the American glass cutter, but I have tried several different makes, other than the proper glaziers' diamond, and have never found them worth the money I invested upon them.—J. C. C.

BEES.

SEASONABLE NOTES.

Colonies of bees will now, in many cases, be found to be growing light in stores rapidly. The cold winds experienced during the greater part of March, kept the bees within their hives and prevented them availing themselves of what supply of food the Crocus, Arabis, and other early spring flowers would have afforded them.

Examination of hives.—Hives should, in mild weather, be examined to ascertain their condition as to stores, brood, queen, &c. In order to do so thoroughly, the hive should be removed from the stand and the bars of comb and bees transferred to a fresh hive, placed upon the old stand, each comb being examined as removed. If neither queen nor brood is to be found, the colony must be united to others, otherwise, being queenless, it will soon die out. To hives, where stores are running short, a few pounds of syrup should be given, rapidly at first, and afterwards gently to encourage brood raising. Stocks should be equalised as breeding increases by giving weak colonies frames of brood from stronger ones, and putting frames of comb foundation in the place of combs removed. In this way weak colonies can be quickly made strong, and put in a condition to take full advantage of the first honey flow. Again, a comb containing a small quantity of brood can be put in the place of a comb containing much, or a frame of empty comb can be placed in the centre of the brood nest, and contracted by division boards, so as to crowd the bees into small space. This should be accompanied by gentle feeding and the gradual enlargement of the breeding department. By these means the colony is stimulated to raise at this season much more brood than it otherwise would.

Appliances.—A great acquisition in modern bee keeping is the honey extractor, by the use of which honey is extracted from the combs without injury to them, so that they can be returned to the hive to be refilled by the bees, which causes a great saving of time and labour in comb building, and greatly increases the honey harvest. Then again, in a good season the combs often get so full of honey that there are no empty cells in which the queen can lay her eggs, and the population of the hive decreases consequent upon the cessation of the production of brood. Now, by the extraction of the honey the queen is given more breeding space, the population increases, and the bees are stimulated to increased activity upon finding empty cells to store in. Also, when the bees cannot be induced to work in sectional boxes a large quantity of honey may be secured by the use of the extractor. Full frames of honeycomb are removed from the hive, the covers of the honey cells are sliced off with an uncapping knife, and the combs placed in pairs in the revolving cages of the extractor; this being set in motion by a handle at the top, the honey is rapidly thrown out, and is afterwards drawn off by means of a tap. Another valuable invention in connection with modern bee keeping is comb foundation, which consists of thin sheets of wax stamped to the shape of the base of the cells; a sheet of foundation fixed in a frame supplies all the material necessary for the building of the whole sheet of comb, which the bees will work out in a very short space of time, and also saves much time in that it does away with the necessity of wax being secreted by the bees. Strips of comb foundation are also used as guides, to insure combs being built in the centre of the frames. The advantages of the movable comb-hive are, in a great measure, lost if combs are built in an irregular manner; strips of comb foundation are, therefore, fixed to the top bar where whole sheets are not used. Sectional boxes, in which to obtain pure white comb honey, are small frames made of a white wood of a very tough nature, and are made to hold, when filled, one pound and two pounds of honey; they are placed in racks upon frame and straw hives; they are furnished with comb-foundation of a thinner quality than that provided to the bar frames, and, to prevent the comb of one section intruding upon the next, separators of wood or zinc are placed between each section, which keep the combs of regular thicknesses. As the boxes are filled they are

removed, and others provided with foundation take their place. In a crowded hive with stores coming in abundantly, the bees work very readily in these sections. Honey taken in this form is more saleable, and obtains a better price than run or extracted honey, sections well filled with pure white comb honey, and glazed on either side, presenting a very inviting appearance.

Boxworth. S. S. G.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING.

No branch of gardening embraces such a wide range as that relating to the culture and preservation in a healthy state of plants in dwelling-houses. There are and always will be so many who have no frame or greenhouse, that the question of how to grow plants successfully in windows is necessarily of the greatest interest to them. Those who have even the convenience of a cold frame will, of course, find the task of decorating the dwelling much facilitated; but, as I have said, there is a great portion of our population who not only are not provided with this simple accommodation, but whose garden is of the most fragmentary character. This is more especially the case in large towns where windows in many parts form almost the whole available space in which garden operations are conducted. There is, however, no reason for anyone to despair of attaining success, for I have noticed that it is more from a want of knowledge than from adverse circumstances that failures occur.

Choice of Subjects for Cultivation.

Formerly the choice of plants suitable for culture in rooms was somewhat restricted, but now, thanks to the exertions of plant collectors and to the improvements that have been effected in many of our florists' flowers, we have an abundance of subjects from which to choose. It is almost impossible to give a list of plants suitable for everyone, as the conditions of air, light, warmth, and atmospheric humidity vary according to the situation and uses to which the rooms are put. For instance, a plant that would do perfectly well in an apartment that is not constantly occupied, where ventilation is somewhat freely given, and where artificial heat is but seldom applied, will linger and die where a fire is constantly kept and oil or gas is freely burnt. On the other hand, we shall find certain plants that can only be kept in health by being placed where they are screened from draught, and where the air is maintained at a certain temperature. The care which these two classes of plants will require will necessarily be of an entirely different description, and it is just in this respect that the plant grower in windows will have to exercise judgment. As an illustration let us take the Cyclamen, which is a beautiful window plant, but one that will succeed only in a cool room; confinement is certain death to it. An India-rubber plant, on the contrary, will thrive best if kept tolerably close, but it must receive certain attentions which the Cyclamen will not need. Then, again, we must take the aspect of each window into consideration. A Moss or a Fern will thrive admirably where a Fuchsia or a Pelargonium will give but little satisfaction. In most dwellings there are windows having different aspects; all that is necessary, therefore, is to ascertain in which of them the desired plant will best thrive. The various types of vegetation, flowering and fine foliaged plants, &c., may be all represented, and the grower will thus be enabled to secure a series of plants, pictures, as it were, each one presenting distinct characteristics of its own. While indicating a few of the plants best adapted for window gardening, I would advise that growers should allow some scope to their individual likings, and make trial of those plants which they may have a fancy for. There is much yet to be accomplished in this branch of gardening, and the pleasure and honour derived will be in proportion to the difficulties surmounted. There are many plants now considered difficult of culture which probably only require to be better understood to be rendered amenable to room culture. For a confined atmosphere, such as an ordinary sitting-room, we must rely chiefly upon fine foliaged plants, those possessing leaves of a somewhat hard, leathery nature being the easiest to preserve in health. Ficus elastica and Chauvieri, Aspidistra lurida and its variegated form, Dracæna terminalis, congesta, and indivisa, Cordyline rubra, Chamærops excelsa, Livistona borhonica, Corypha australis, Maiden-hair, and other Ferns are amongst the best for such situations. For apartments that are but occasionally heated, Grevillea robusta, Acacia lophantha, Aspidistras, Chamærops excelsa, Aralia trifoliata and reticulata, Cyclamens, Solanums, Primula sinensis and denticulata, Violets, Mignonette, Tropæolum tricolorum, and bulbs of all kinds may be grown. The plants enumerated are all suitable for winter and early spring. In summer we get a much greater variety. Pelargoniums, Fuchsias, Lobelias, Petunias, and all the various kinds of bedding plants will grow and bloom admirably in windows during the summer season. A very effective and gratifying display can be made by sowing different kinds of annuals in boxes made to fit, and affixed to, the outside of the window. Nasturtiums, Sweet Peas, Eschscholtzias, Mignonette, Phlox Drummondi, and such free-growing, persistent blooming plants when thus grown make a dwelling very pleasant to the eye. This method of floral decoration is not nearly so much adopted as it should be; the cost of a box or two and the necessary fittings, as well as the small amount of seed required to sow them, is very trifling, the cultural care, too, being of the simplest. Windows facing the north and east are most suitable for boxes, inasmuch as they there get only the morning and afternoon sun, and, being shielded from the fierce noonday heat, the flowers last longer in perfection. For a northern aspect there is no more beautiful plant than the common Moneywort; when well grown it forms a drapery of lustrous green and bright yellow, such as is scarcely equalled by any other plant. In windows facing the north nothing will give more satisfaction than Ferns and Mosses, which, at all times lovely, acquire additional luxuriance and beauty in just those very places where most other plants refuse to flourish. Any of the following may be selected, they being all of fairly easy culture:—Asplenium bulbiferum, Adiantum Capillus Veneris and cuneatum, Pteris cretica and scaberula, Onychium japonicum, Davallia Novæ Zealandiæ, Niphobolus Lingua, and Selaginella denticulata. Succulent plants should not be omitted, as they afford variety, give but little trouble, and are really interesting; they must, however, be grown where they get the full heat of the sun. Many of the old-fashioned plants, such as the Candle plant and the partridge-breasted Aloe are now but seldom seen. They are, however, very distinct in manner of growth, and deserve a little more attention than they get. Vallota purpurea is a handsome, evergreen, bulbous-flowering plant which anyone may grow. Campanula Barrelieri is a pretty little trailing plant suitable for a small basket. I once saw a beautifully flowered specimen of it hanging on the outside of a window in a crowded part of London. Saxifraga sarmentosa and Cereus flagelliformis may be both employed in the same way; the one in a shady situation, the other in the full sun. The plants above enumerated may all be cultivated and kept in health in the dwelling-house. There are, of course, a great number that may be introduced for a time into apartments, but which cannot be retained therein without injury, but of these it is not my intention to treat. The owner of a glasshouse will, of course, not need to grow these plants in the windows of his residence.

General Treatment.

It will naturally be understood that cleanliness is of the first importance to plant life. Leaves breathe, as it were, through their pores, and if these be choked by impurities of any kind, the functions of the plant are in a manner paralysed. The more confined the atmosphere the greater need is there for frequently washing and syringing. All plain, hard-foliaged kinds should be well sponged, using plenty of clean tepid water. Ferns, Mosses, &c., may be gently but thoroughly syringed, taking care that the under surface of the foliage is well cleaned. Insects often make their appearance, and must be brushed off with a soft brush or be kept under by means of fumigation. The latter is the most effective method, although if the stitch-in-time principle be acted upon and the first insects destroyed, there will seldom be any need for it; should a plant, however, become badly infested, place it under a tub and fill the same with Tobacco smoke. Two applications at the interval of a few days will generally suffice to clear them all off. When we come to watering we touch the most difficult part of our subject. It is utterly impossible to lay down hard and fast rules; the attempt to do so would merely result in disastrous failure; nothing but practice can give proficiency in this branch of plant culture. The great point to be kept in view is, that in winter water is merely required to maintain life, whereas in summer, when the functions are active and growth progressing, enough must be given not only to supply waste, but to allow of the extension and formation of new tissues. Were these facts kept constantly in mind, there would not be many disasters from over-watering. In dull, sunless weather let each plant dry out thoroughly, and then give just enough to well moisten the ball of earth. In a hot parching time this care is not so needful; if the roots are healthy, and the plant growing freely, copious and frequent waterings must be the rule. These general rules will form a basis upon which the grower may safely work. They will, however, have to be varied and modified according to circumstances and the plants cultivated, but for the acquirement of this knowledge he must rely upon constant practice and unremitting attention. In the matter of ventilation be careful to avoid cutting draughts; much harm is often done by injudicious air giving. Do not either run into the common error of turning your plants out upon the doorsteps or balconies in weather which, although sunny, may yet be of a chilling nature. Harden gradually on the approach of spring by increasing the amount of air, and only turn them out-of-doors on mild, moist days. A safe rule is to be guided by one's own feelings; if the atmosphere be congenial to the human frame it will be beneficial to plant life, and *vice versâ*. That, at least, is the conclusion at which I have arrived.

Potting and Propagating.

Many who grow window plants make a point of getting them shifted by a professional cultivator. This is, however, by no means necessary, and is wrong in principle, as the nature of a plant is but imperfectly understood if its root action cannot be observed. I would advise that the soil be bought at a nurseryman's; the purchaser should state for what kind of plant it is required. Be careful never to give large shifts, and see that your soil is well sanded and not too rich; any little deficiency in nutriment can easily be supplied by a top-dressing of any of the concentrated manures. For Ferns and delicate-rooted subjects allow plenty of drainage; in fact, all kinds of plants grown in rooms should be amply provided for in this respect. Nothing can be more injurious than a stoppage of the drainage, and, to secure immunity from injury in this respect, each plant should be examined at the commencement of the winter and fresh drainage given if found necessary, some good clean potsherds or broken charcoal being used for that purpose. There is no reason why window gardeners should not try their hands at propagating; it is amusing, and greater pleasure is derived from the culture of home-struck plants than from that of those which have to be bought. Most of the so-called soft-wooded plants may be increased with ease, and if a few cuttings be put in every year they will supply the place of plants which get too large. The appliances necessary will consist merely of a few bell glasses, some soil of a light description, and some silver sand. Fill the pots to within 2 inches of the rim with soil, and finish off with sand, making the pot quite full. The pot should be filled about one-third of its depth with drainage. The cuttings are inserted in the sand and kept covered with the bell glass until rooted. Fuchsias, Heliotropes, Verbenas, Lobelias, &c., may all be struck in this manner in an ordinary living-room. Pelargoniums only will need no covering. Put each cutting in a small pot; it will root freely enough. Seeds of annuals may also be raised by sowing in a pot filled to within 1 inch of the rim, and covered with a piece of glass until fairly up. I have

here indicated comparatively little of what may be done in the way of window gardening, but enough, I think, to enable even beginners to try the undertaking with a fair prospect of success. I trust that they may not be daunted by a few failures, for, permit me to add, in this, as in every other branch of gardening, there is no royal road to success. J. C.

THE VILLA GARDEN.

(*Continued from page 40.*)

Borecole or Kale.

These are less grown than they used to be, but they are mild in flavour and tender in composition, the young shoots in spring being delicious. The seeds should be sown in April, and the young plants be set out as opportunity offers between the middle of June and the middle of August. They are not particular as to soil or situation, although, of course, like all other things, they pay best for good treatment. Plant in rows 2½ feet apart, and 18 inches apart in the rows. When land is scarce, set them out between the rows of Potatoes, or any other crop which can shortly be cleared off. The New Hearting or Heading, and the Asparagus, or Bude, are excellent varieties, and the variegated will be useful in winter for garnishing.

The Tomato in the open air.

Sow the seeds in February or early in March in pots or pans; cover lightly with sand or sandy soil, and place in a hotbed near the glass. When the young plants appear move them to a warm house, where they will be near the glass, to get hardened by light and exposure. Pot off either singly or two in a pot, standing at opposite sides of the pot, so that when the time comes to plant out the ball may be divided through the middle, each plant taking its share; and but little check need be given. After the plants are potted off they may either be taken back to the hotbed for a few days, or be kept in a warm, close house till the roots begin work again, when they should be moved to a light place, in order to give strength. Plants that are well cared for in their youth begin to blossom and bear fruit weeks before those which are dragged up in vineries or in situations away from the full light, and in our short, often sunless summers, this is a very important matter. If necessary the plants should be shifted on into larger pots, though a very little check when they have made some progress will do them no harm. It will simply have a hardening effect upon them. As soon as the weather is settled in May, or, say about the third week, plant out. In the South of England Tomatoes will succeed in any warm position, but they cannot have too much heat in our climate, and though we may plant in any warm situation, even away from a wall, it must not be forgotten that the warmest positions at the foot of a south wall are the best.

That mode of training is the best which insures early ripening rather than heavy crops that will not ripen, and this early ripening can be best attained by confining the growth to one or two main stems, and these main stems should have been started when the plants were young, by pinching out the leader. A two-stemmed plant will require 2 feet of space or a little more. A plant having only one stem will not require more than 15 inches. As soon as planted, and the soil settled round them by watering, a tie should be placed to each stem. If against a wall a nail and shred may be used, but the latter should be placed loosely round the stem to allow space for swelling, which it will do considerably. If planted on the open border, a strong stake 4 feet long should be placed near each stem, and a piece of matting placed round the stake and fastened to it first, and then the stem of the plant should be loosely fastened also. In the after training all side shoots should be rubbed off as they appear (this will involve weekly attention), and all the strength of the plant directed upwards into the main stem. Sometimes the leaders are pinched when the first cluster of flowers appears. This throws strength into the blossoms and the next shoot, which breaks away from the leader and grows on till another cluster of blossoms is put forth, when another pinching of the leader takes place, and so on, a check to growth being given as each cluster of fruit is formed. I do not think it really matters much whether these pinchings or checks are given or not, for I have proved that a plant which is allowed to grow straight onwards, unstopped, will bear as much fruit as the one that is pinched. All that is gained by the pinching is the confining of the growth to a smaller space, and if the wall or the fence on which the plants are to be trained is a very low one, then pinching may be useful, but otherwise it is not of much value. Beyond the pinching and training the summer culture is almost nothing. Weeds, of course, must be kept down, and if the summer should be hot and dry mulching and watering may be beneficial. In cold, wet districts the plants must occupy a south wall, and, if possible, lay a mound of soil (the sweepings of the potting shed, or the old soil saved from the renovation or renewal of Vine or Peach borders will do) against the foot of the wall, and plant in the mound. When the fruits are swelling rapidly, and approaching the ripening stage, gradually remove a few of the leaves to let in the sunshine, and in autumn when frost is expected the late fruits will ripen off if gathered and placed in a warm kitchen, or in a warm position anywhere.

The Tomato under Glass.

Given a light house, and a night temperature of 60 degs., and the Tomato may be had all the year round. Within the memory of middle-aged people the Tomato was only regarded as a useful sauce producer. Now it is used in many and various ways; and in the future it is not impossible that varieties may be raised suitable for dessert. Much of this has been brought about by its culture under glass. In the open air, in many places, it is a precarious crop. Very frequently the fruits refuse to ripen, and when they get the colour they lack the flavour of the fruits grown and ripened under glass; and very often, too, the fruits fall a prey to a disease not unlike in character and appearance to the disease which causes such destruction to its relative, the Potato.

Raising the Plants.

Under glass I have had one set of plants go through the year without renewal; but young plants should be raised at least every year, as young plants produce the finest fruit, and they are so easily raised that there is nothing gained by a prolongation beyond a year. The plants may be raised from seeds, but I like cuttings best, as I think they come into bearing earlier, and the plants are so healthy and strong in both cases that one need not consider the question as to whether we lose or gain in vigour. As a matter of fact, I think the seedlings are sometimes over vigorous, and require curtailment at the roots in order to moderate the exuberance. The best time to take cuttings is in summer, say in August, and they will strike anywhere—in a shady place, in a frame, or under a hand-light best, or on the shelf in the greenhouse—in fact, anywhere. They are best put into single pots of small size, and shifted into larger pots as required, until the time comes to plant them out. If struck early in August and grown on steadily they may be taken to a fruiting condition in pots, and be transferred to the Tomato house in time to begin bearing early in spring, when fruits are most valuable, so that really there need not be any break in the crop, as the crop in possession of the house will go on bearing till the time of its removal if carefully managed. I have said "if carefully managed," but really very little care is required. To do them justice, they must have

A Light House.

It may either be span-roofed or a lean-to, but it cannot be too light. In either case it should be wired, the wires being about as close to each other as would be necessary for vines, and about 9 inches from the glass. The provision for the roots may consist of narrow brick pits, or boxes, or large pots. Where convenient, I think the narrow pits are best, but they need not be more than 18 inches wide, and 2 feet in depth. Place 6 inches of drainage in bottom, fill it with turfy loam, inclined to be rather sandy than heavy, and top-dress when necessary, giving manure-water if it should be needful, to swell off a crop readily.

The Best Way to Train

Is to pinch out the leader when the stems are 6 inches high, and from the shoots which break away train up two. These will form the main fruiting stems, and should be trained up the roof, 15 inches apart. All side shoots should be rubbed off, and when the first cluster of flowers show pinch out the leader. Select the next leader which breaks away, and nip out the point of that also when a truss of blossoms has been evolved, and so on till the shoot reaches the top of the house. The close pinching must be persisted in to throw the strength into the plant; and a few of the main leaves may be removed when the fruit begins to ripen, to let in the sun to colour them, As the bottom fruit begin to ripen and are taken off for use, a shoot here and there may be permitted to grow, and these in turn will develop blossoms, when, if the same pinching process be adopted, a successional crop will be started which will prolong the season.

Varieties.

For open air culture:—Keye's Early Prolific, Orangefield Prolific, Criterion, Greengage. For culture under glass:—Dedham Favourite, Stamfordian, Carters' Perfection, Hathway's Excelsior, Criterion, Large Yellow.

Saving Seeds.

This is a very easy matter. Select the handsomest fruit of its kind, and when perfectly ripe break up, and separate the seeds from it by washing. Dry them, and place them in packets for use. E. Hobday.

13120.—Heating greenhouse from distant boiler.—If, as you say, the boiler is 3 feet 6 inches above the level of the greenhouse pipes, you will find it impossible to heat your greenhouse from it, as it is against the law of circulation to expect hot water to travel downwards. If you could manage to sink your boiler to a foot or more below the level of your greenhouse pipes, you could then expect to have satisfaction with it. The distance from the boiler to the house is not against it, provided the pipes between the boiler and the house are covered.—W. G. T.

B. C. RAVENSCROFT'S CHOICE PLANTS

ARE SUPERIOR TO ALL OTHERS.—Extract from a letter received recently:—"Your plants always give the greatest satisfaction; they do not die off like those sent by other advertisers" All are grown cool and sturdy, and sure to do well. Carefully packed in strong boxes, and sent free by parcels post for cash with order. My new

ILLUSTRATED CATALOGUE

Is now ready, price 3d., post free, which will be allowed off first order; gratis to customers. Lists of seedling plants and rooted cuttings gratis and free. Catalogue contains *valuable instructions* for the treatment of plants received by post, ensuring success.

SPECIAL OFFER.

The finest winter-flowering GERANIUM, F. V. Raspail. This grand variety surpasses all others for winter flower. In my 100-feet house of Geraniums this variety bloomed continuously from November till February—long after Vesuvius, West Brighton Gem, &c., were worn out and over. Colour, rich crimson scarlet; flowers, being double never drop; pips as large as crown piece; grand for cutting. Good rooted plants, 3s. 6d. per doz.; 6 for 2s., free; 100 for 25s.

FUCHSIAS.—12, in 6 fine vars., 2s.; 12 in 12 splendid exhibition kinds, 3s.; newer sorts, 3s. 6d. and 5s. per doz All very strong and correctly named.

COLEUS.—12 good named sorts, 2s 6d.; 6 for 1s 6d.; 12 good mixed, 1s. 9d. New and choice vars., 3s. 6d. per doz.; and 6 splendid novelties—Hy. Irving, J L Toole, Comtesse de Kerchove, Mdme. V. Grandel, Mdme. Brabant, and Souvenir d'Arnheim, 9d. each. The colours of these are most brilliant.

WHITE MARGUERITES, very strong, fit for 48's, 3s. 6d. doz.; 6 for 2s.

MYRTLES, good plants, year old, 6d. each; 3 for 1s. 3d.

ZONAL GERANIUMS, single and double, 12 choice named, 2s. 6d.; 12 new and superior varieties (Lemoine's and Pearson's), 3s. 6d. and 5s.; the pick of all recent introductions.

BEGONIAS.

For conservatory, window culture, or bedding. Choice mixed tubers, sound and good, 3s. 6d. and 5s. per doz., according to size Choice varieties, selected to colour, 6s., 9s., and 12s. per doz. Doubles, 12s. to 60s. per doz; all free. Equal to named kinds, and give universal satisfaction.

GLOXINIAS.

A splendid strain, mostly erect, flowers very large. Mixed colours, good bulbs, 3s. 6d. per doz.; larger, 5s. Pot now, as they are starting into growth.

CHRYSANTHEMUMS.

300 best varieties. Six pairs, 2s.; 12 distinct, 2s 6d.; 12 pairs, 3s. 6d.; 100 for 12s. 6d. All strong plants from cold frames.

SPECIAL NOTICE.—Owners of town gardens are advised to procure their plants from my *Lewisham* Nursery, which, being situated in a thickly-populated district, plants are inured to unfavourable surroundings, and will not "go off," as those from open country places so often do. Selections of plants, suitable for town culture, at 5s. to 20s.

B. C. RAVENSCROFT,
GRANVILLE NURSERY, LEWISHAM,
AND
NEW ELTHAM NURSERY, KENT.

GARDENING ILLUSTRATED.

VOL. VII. APRIL 18, 1885. No. 319.

FRUIT.

GRAPE VINE LATERALS.

IN GARDENING ILLUSTRATED of the 3rd April, 1880, there is an article in which the writer, "J. G. K.," describes his practice in Grape growing on the long-rod system, and in which he never stops the laterals on the young rods grown for succession fruit bearers. To carry this out "J. G. K." gives plenty of room to his vines, having in one of his vineries, 30 feet long, with 16 feet rafters, only two vines—a black Hamburgh and a Frankenthal. These have, every season, six fruiting shoots each, at a distance of 2½ feet apart, and between these the six successive shoots—on which the laterals are not to be touched—are trained. His vines, "J. G. K." says, have stood this simple treatment for twelve years without root-pruning or other assistance. His wires run horizontally, and this system, he says, is the one adopted in most of the German vineyards.

I have given it a trial, and think I have every reason to report favourably of it. The year before last I carefully conserved one lateral on a vigorous young shoot of Esperione, growing, however, on a wall in a very unfavourable situation, being very much shaded by adjacent trees and buildings. I labelled the lateral with a view to noting results, and these were that last year the bud at the base of that lateral was the only fruitful one on the vine. I have another Esperione in a cool greenhouse, now unfolding its fruit-buds. One of these is much in advance of the others, and displays four bunches of such good and equal size that I shall have some difficulty in determining which shall be retained and which taken off. On examining the shoot at the place from which this bud springs, I find the stump of a strong lateral which had been cut off at the last autumnal pruning. Now, these two instances go far, I think, to support "J. G. K." in his mode of treatment, which, indeed, is no other than an application to the Grape vine of the extension system of training so ably advocated by Mr. John Simpson in his "Improved Pruning and Training of Fruit Trees." J. M.

REPLIES.

13248.—**Peaches not ripening.** — The Alexandra Noblesse Peach is a valuable variety if you reside in a district favourable for outdoor Peach culture; but if Violette Hative does not ripen with you, there is not much hopes of the midseason sorts doing so. As to the Noblesse being a stone splitter, that would not prevent the fruit from ripening, or in any way interfere with the flavour of the fruit. Are you sure you do not overcrop your trees? I feel pretty sure you do, or you would not have to complain of the fruit being so hard. If you plant any more, try Hall's Early and Early Beatrice; these should be ripe in August on open walls.—J. C. C.

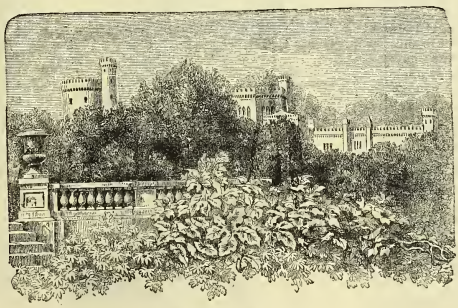
13220.—**Soot for Strawberries.**—If soot is judiciously applied to the soil it is a capital fertiliser for Strawberries. Sprinkle it on the surface at the rate of one pint to a square yard of ground, and then Dutch hoe over the surface, so as to mix the soot with the soil. Repeat the application once a fortnight until the Strawberries begin to ripen their fruit.—J. C. C.

13164.—**Wallflowers for market.**—If you want to send them to Covent Garden we can recommend Messrs. Hooper and Co., and Mr. W. Denman, of that place.—J. C. B.

13247.—**Cheap Dahlia stakes.**—I find the best flower-sticks are those of Bamboo, 4 feet long, sold in bundles at 3s. 6d. per 100 at the Army and Navy Stores (Auxiliary), as they last for years. Other lengths I could not get there, but procured them at Green's, Bedford Nurseries, Covent Garden.—COBHAM.

ROSES.

A remarkable Rose tree.—At the New Gardens, Whitby, there is growing a remarkable Rose tree of the Maréchal Niel variety. It was budded on Victoria stock in the year 1865, so that it is nearly, if not quite, 20 years old. For many years it produced regularly large quantities of Roses of perfect beauty and rare perfume, but it was not till the year 1882 that the full number of blooms, were accurately counted, when no less than 2,500 single Roses were recorded. This is believed to be the largest number ever grown on the tree during one season. In 1883 there was a falling off in the number of Roses grown of about 1,000, the actual number plucked being a few less than 1,500. Last year (1884), there was a further diminution in the number, as only 850 blooms were grown. It was then thought that the tree had seen its best days, and that, considering its age, its vitality was on the wane, and that its powers of production would lessen every year. There is, however, more than sufficient reason to believe that there is abundant life in the old tree yet. Since last season considerable care and attention have been devoted to the tree, and there is now the best evidence of the probability of these being amply rewarded, for at the present time there are many hundreds of buds in various stages of forwardness, some on the point of opening, and others just visible at the ends of its long and vigorous lateral growths. There is every reason to believe that the tree this year will be more prolific than ever, and the number of probable blooms is estimated at not less than 3,000.—J. J. J., *Whitby.*



Climbers on Terrace Wall.
(See "Hardy Climbers and Wall Plants," p. 82.)

REPLIES.

13242.—**Weak Niphetos Rose.**—Your plant is evidently wrong at the roots. Either the soil has become impoverished by there being a large number of roots, or the drainage is insufficient. You must not expect a plant in a 10-inch pot to produce as many good flowers as one with its roots planted in a bed of soil. Pick off all the flower buds and examine the roots; if they are healthy give it a 16-inch pot, but if you find but few roots, and they are inactive, shake off a portion of the soil and repot in the same pot again. After potting keep the plant well shaded for a month, and only give just enough water to keep the soil moist.—J. C. C.

13168.—**Roses under glass.**—The best white Rose is Niphetos, and the best pink, Reine Marie Henriette (pink Gloire de Dijon). Roses grown on a back wall of a greenhouse must have plenty of light and air, or they will not produce many flowers.—J. C. C.

— Niphetos is the most useful white kind, being largely grown for Covent Garden; and Duchess of Edinburgh is an excellent coloured variety.—J. C. B.

Grubs of the daddy-longlegs on lawns.—The grubs of the daddy-longlegs are by no means easily got rid of when they attack lawns or cricket grounds, for the grubs during the day generally remain about an inch below the surface, where they cannot be effectually reached by any insecticide, for whatever fluid may be used it will not reach them in sufficient quantity to injure them. They, however, often come to the surface during the night, and may then or very early in the morning be killed by rolling with a heavy roller. Cutting trenches 6 inches wide and of the same depth with upright sides has been found very useful; the grubs, when roaming about at night, fall in and cannot get out again. They should be collected every morning. This plan has been tried with great success. Laying slates, turves, boards, &c., about for the grubs to creep under has been recommended. Rooks and starlings destroy quantities of these grubs. Late in the summer and in the autumn, when many of the flies are about, the Grass should be rolled with a heavy roller or mowing machine in the evening. These insects are generally most abundant on damp ground. Any damp weedy corners or other places should therefore be cleared out.—G. S. S.

13166.—**Nitric acid and ammonia for garden.**—"Ammonia" does not state for what purposes the nitric acid and ammonia he has to spare may have been used; but, provided they contain no deleterious matters, I should advise him to mix them together in small quantities at a time, endeavouring to make the mixture as nearly neutral as possible, and then, if he dilutes it sufficiently with water, it will, no doubt, be a good stimulating liquid manure.—CHEMIST.

—— Dilute the nitric acid with water, if strong, and add the ammonia by degrees, stirring until the liquid is alkaline (when it smells slightly of ammonia, and turns red litmus paper blue). You have now a solution of nitrate of ammonia, and may use it, diluted well, to water plants or garden, the free ammonia acting as an immediate stimulant, while the nitrate is slower in its action. It is useful for flowers coming into bloom. Be careful to have excess of ammonia rather than nitric acid. The former will do no harm, the latter will. If the ammonia is the solid kind (carbonate of ammonia) the final result is the same, but carbonic acid gas is given off when it combines with the nitric acid. Nitrate of ammonia has been found in traces in fresh-fallen rain-water, and it has undoubted fertilising properties, and contains 35 per cent. of nitrogen.—CHEMICUS.

13065.—**Gillingham's Heat-Radiator.**—In answer to "Roger," I have had a 4 feet 6 inch iron radiator in use in my little scrap of a greenhouse—10 feet by 5 feet—since last November, and it has answered remarkably well. In fact, with the lamp turned down low, it made the house too warm, and I think would keep the frost out of one double the size. The wick requires careful trimming. There is a little smell when the lamp is first lighted, but it soon goes off, and would not arise if it were not put in the house for a few minutes. The apparatus is very simple and very dear—I mean in proportion to what its first cost must be; but, it being a patent, there is no help for that.—SETTON.

13171.—**Substitute for turfy loam.**—Well decayed turf, the edgings off lawns and verges, thoroughly rotten leaves, and some good stable manure, well mixed with fair garden soil, will make an excellent substitute. Keep the soil well open and rich, and it will grow almost anything in a plant-house. Indeed nothing is better for most pot work than decayed turf and leaves. The latter are greatly used by nurserymen and florists, and "G. S. W." will not go far wrong in using the mixture named above.—J. P., *Lancashire.*

THE COMING WEEK'S WORK.

Glasshouses.

Perpetual flowering Carnations.—Where there is a well-managed stock of these, the principal lot should now be fast pushing up their flower-stems. The plants will be much benefited by the application of manure water once a week. A little soot added to the manure water will be found an advantage, as, besides its manurial properties, it tends to banish worms, and is distasteful to various insects.

Stephanotis and Gardenias.—Plants of these two fragrant white flowers started in a brisk heat some time back will now come rapidly forward. The Gardenia requires plenty of sun, as, however much heat it receives, the flowers do not make much progress until the sun gets some power. Use every means to keep down scale and mealy bug. If the growth of the Stephanotis was well ripened last autumn, the plants will generally show flower freely on the young shoots as soon as formed. Do not use too much atmospheric moisture.

Tuberous Begonias.—If not already started, the old bulbs of these should at once be set to work; repot them in good, fresh soil, and give root-room proportionate to the size of the bulbs, for, though they may be considerably assisted by liquid stimulants, free-growing subjects like these Begonias, which form large heads in little time, require a good amount of space for the roots.

Tender annuals.—Even in gardens where plants of a permanent character are made the principal feature some of the handsomest annuals suitable for pot culture may be grown with advantage. Such things as Balsams, Globe Amarantus, Rhodanthe Manglesi, Celosia pyramidalis, and the old-fashioned Cockscomb, when well managed, are amongst the most effective plants that can be grown for summer decoration, and when in flower they can be placed about in conservatories and similar structures where it would not be expedient to set plants of more value. The feathery plumes of the Celosia are unequalled as regards effect when grouped with plants of more bushy habit. The principal matter to be kept in view in the cultivation of these things is to give them sufficient room and to keep them close to the glass from the time the seed germinates until they are in bloom. It is not advisable to place the seeds in too much heat; an intermediate temperature, such as that obtainable from a moderate hotbed composed of leaves and manure in about equal quantities, answers best.

Filmy Ferns.—Many who have attempted the cultivation of these elegant Ferns have failed through keeping them too warm. No more heat is required than is sufficient to keep out frost. They should be confined within a glazed case, for though they will live exposed to the atmosphere of an ordinary cool fernery, they do not get on so well as if less air be given them. Any that need more root-room should be repotted, without disturbing the roots more than is unavoidable, as now when growth is commencing any mutilation of them will interfere with the development of the young fronds. Keep the soil well supplied with water, as the least approach to dryness is most injurious at all times, but much more so during the early stages of growth than at any other time. In giving water be careful not to wet the plants overhead, as if this is not avoided they always have a brown, shabby appearance.

Flower Garden.

General work, to a large extent, still consists in the preparation of plants for summer arrangements. We are at present busy making hotbeds, consisting of stable litter and lawn mowings, for Alternantheras; putting in cuttings of Mesembryanthemum cordifolium variegatum in boxes, which are placed over the pipes in vineries to strike; pricking off seedling Tagetes, Pyrethrums, Zinnias, Asters, and Stocks, also potting off Coleuses, Iresines, Heliotropes, and Petunias, and planting out Lobelias and Verbenas in turf pits, and Calceolarias and Violas in the open air. Dahlias and sub-tropical plants require the extra space thus gained, and some of these need larger pots, our rule being never to let them get root-bound, as that cripples the growth of the plants for the whole season. The outside operations are now principally mowing and sweeping; preparing beds and borders for planting; pruning and tying up, or nailing in climbers; sowing hardy annuals, and making successional sowings of Sweet Peas, Mignonette, and Virginian Stocks.

Spring flowers.—Wallflowers, Primroses, and Polyanthuses may be sown now, and good varieties of the two last should be increased by division as soon as they have done flowering. New plots of Violets should be made as soon as runners can be had; from these early plantings good flowers are frequently produced in quantity throughout the autumn and winter. The Czar and Victoria Regina are the best winter bloomers, simply because they are the hardiest. In order the better to insure a long succession of flowers in spring different aspects should be chosen. We plant a few at the foot of the fruit tree walls in every aspect. Lily of the Valley is amenable to the same mode of culture, and the season of flowering is also proportionately extended. Beds of this Lily should now be top-dressed, and new beds made by dividing the roots that have been forced. Plant single crowns in lines 9 inches apart and 3 inches asunder in the line; press them firmly into the soil, and then mulch with cow manure, which should remain on the whole of the summer; next season some good flowers may be expected, and the following one they will be as fine as those from imported crowns. W. W.

The Great Bind Weed (Calystegia sylvatica).
(See "Hardy Climbers and Wall Plants," p. 82.)

Fruit.

Vines.—Vines in the latest houses will now be fit for stopping if the operation has not already been performed. Syringe well twice a day until the bunches become prominent, encourage a short-jointed, sturdy growth by ventilating freely through the early part of the day, close with brisk sun heat to save firing, and allow the temperature to range about 60 degs. at night. If the inside borders have not been watered since the vines broke, now will be a good time to give them a thorough watering—if gross, with pure water; if weak, with liquid manure or guano water—which will carry them on until after the fruit is set, when they may be again watered and mulched with short manure. On no account let the thinning of the berries get behind, otherwise a tedious operation of this kind, which requires great patience, is sure to be hurried over and imperfectly performed. Fertilise Muscats now in flower, also Black Morocco and other shy-setting kinds, using Hamburgh pollen if it can be obtained or has been preserved in a dry, warm place. A camel-hair brush should be used in preference to drawing the hand down the bunches, and the atmosphere of the house should be dry and warm when the operation is performed. Keep a sharp look out for spider. W. C.

Vegetables.

Of Celery, which is always useful and enjoyable when well blanched and well grown, our early sowing now pricked out in boxes for second or for main crop is well above the ground; for the last crop of all we sow in the middle of April. This proves most useful in early spring. Early Broccoli, such as Veitch's Autumn Giant, good old Walcheren, and White Cape should, if not already done, be sown at once—under glass, if possible. To sow seeds outside is not a good system; the young seedlings do not grow and flourish in the same manner as if raised under glass, and weakly, crippled plants are not the thing if success is a consideration. Defer sowing the later kinds until the 1st of May. Scarlet Runners I grow in miniature trenches, the same as Peas; the trenches should be taken out at once, well manured, and dug deeply, breaking the soil well as the work proceeds. We then put burnt refuse an inch deep on the top of the broken soil, and wait until the second week in May; then with a cultivator we mix the ashes and the soil in the trenches, draw a shallow drill down the middle, and in this plant the Beans in single rows, earthing them up when large enough, until the ground is level before staking. This method of planting Scarlet Runners makes them to a great extent independent of dry, hot weather. Peas that are sufficiently grown should be staked after slightly earthing them up; and here I must remark that Peas are very much benefited by staking: it keeps that worst of all enemies—the surface wind—at bay. I consider wind far more dangerous than frost for all outside Peas. We are just finishing planting Potatoes. French Beans should now be sown in small pots, and planted out under south walls or in warm corners for an early supply. R. G.

Work in the Town Garden.

April should be a busy month, both in the garden and in the greenhouse. A great part of the summer display depends almost entirely upon what is done at the present time.

Annuals and perennials.—Plant at once, in properly prepared beds or borders, nearly all kinds of hardy herbaceous and perennial plants. Among the best of these, for culture in towns, may be reckoned Larkspurs, Lupines, Sweet Williams, Carnations, Pæonies, Anemones (A. japonica is a good town plant), Campanulas, and Hollyhocks. The many beautiful varieties of Iris succeed splendidly in smoky air, if afforded a somewhat damp and shady, yet well-drained, position. The ordinary Iris Germanica will grow anywhere, and with a very little care most of the others may be made to grow and flower well. Few have any idea of the loveliness of many of these. Plant also Gladioli, in many varieties, at once for flowering in good time this summer. A little dry silver sand should always be placed round the bulbs, particularly if the soil is of a damp nature. Saxifragas, especially such varieties as crassifolia, pellata, and ligulata, are fine for shady and damp situations; when well established, several of these produce fine spikes of flowers in the most persistent manner. One other, the gorgeous Tigridia, should be mentioned; plant in the same manner as a Tulip, and on a warm, dry border they are sure to do well.

Sowings of many annuals, such as Mignonette, Cyanus, Linums, and many others, should still be made, particularly where a succession of bloom is desired throughout the summer.

Climbers.—Of climbing annuals, Sweet Peas, though so generally admired, do not do much good in town gardens; in the outer suburbs they may be tried, but are very different from those in a cottager's garden in the country. One great point in succeeding with these is to give them fresh soil each year, they are always poor

in exhausted or old soil. The best of this class is the beautiful Convolvulus major, or Morning Glory. In rich soil and a sunny aspect these do well anywhere, and the finest we ever saw were growing very nearly in the heart of London. Sow these any time this month, where they are to flower; they are far better thus than sown in heat and transplanted. The elegant Canary Creeper (Tropæolum canariense) may be taken next. Treat this exactly the same as the last, and their long wreaths of golden blossoms will delight you until the autumn frosts destroy them. The Everlasting Pea does well in town gardens, growing with great vigour when once it becomes established, though this often takes time. One of the most showy climbers for suburban gardens is the large wild white Convolvulus, or Bindweed. Any rooted pieces planted in good soil are almost sure to grow, and in size and purity it surpasses any of this family, not excepting the many beautiful exotic species. We have frequently seen flowers of this plant measuring over 5 inches in diameter when under cultivation. Most of the other useful climbing plants need to be sown under glass, and planted out early in June.

Passiflora cærulea, the blue Passion flower, is a fine town plant, though in very smoky places it does better under glass. The present is the best time to plant this curious and beautiful climber, as, becoming well-established before winter, the plant has a much better chance of withstanding frost.

The greenhouse.—Every inch of space in the greenhouse should now be occupied, and the frames also be crowded with healthy young scions, which will need all the labour and care that can be bestowed upon them. Keep all seedlings pricked off as soon as ready. Shade from hot sun, particularly those that have been recently transplanted; plenty of moisture should also be supplied whenever the temperature rises to 70 degs. or 80 degs. Petunias for early flowering in pots should now be potted singly in small 3-inch pots, and shifted presently into 5-inch or 6-inch pots; pot up also a good supply of Fuchsias, and any spring-struck Geraniums that are well-rooted, particularly of choice named sorts. Encourage the growth of these young plants, Fuchsias more particularly, by a genial temperature and frequent use of the syringe overhead. The present is a good time to fill hanging baskets in conservatories with flowering plants, Ferns, and drooping subjects. The basket should be well lined with Moss, then filled with light rich soil pressed in rather firmly, and when the plants are all put in, water well, and keep in a warm, close, and shaded house till all are established.

Pelargoniums in pots (show and fancy) are now advancing rapidly. Keep them near the glass, tie out the shoots and thin where necessary, and give plenty of water on a sunny day. A dose of soot water and guano water alternately will greatly help them. Sow also now Asters, Balsams, and tender climbing plants, such as Thunbergias, Ipomæas, Maurandias, and others. Where space is limited and appliances not very perfect, it is, however, perhaps better to purchase young plants of many of these when they are wanted. B. R.

13120.—**Heating greenhouse from distant boiler.**—The distance from boiler to greenhouse does not matter, but water will not circulate 3½ feet below the boiler. Your trouble and expense will be lost if you try it.—An Old Hand at Boilers.

13121. — **Heating two greenhouses from one boiler.**—The two houses may certainly be very well heated by means of one boiler. It is simply a question of employing one large enough, and a sufficient amount of piping. The connecting pipe should, if practicable, be carried underground, as it is there better protected; but all depends upon the depth at which the boiler can be set. Properly the stokehole should be so deep that the flow-pipe from the boiler can be carried underground without dipping. You do not give the dimensions of both houses, and therefore we cannot approximately tell you how much would be required; but in any case use 4-inch piping, and the connecting pipe should be of the same size. If you say how high and wide the houses are we can tell you how much piping you will require, and the size of boiler.—J. C. B.

OUTDOOR PLANTS.

HALF-HARDY ANNUALS.

There are a great many beautiful garden plants classed as half-hardy annuals, which would be much more extensively cultivated if their merits were more generally known. They are all more interesting, and many are far more beautiful than the usual run of bedding plants. Those who have not the convenience of a heated greenhouse would do well to turn their attention to the best species and varieties of half-hardy annuals, as they can be well cultivated in pots, while an assortment may be planted in the open borders. By far the best way to manage the whole of them is to make up a hot-bed early in April, and over this place a glass frame. It does not answer to have such a violent heat as is sometimes produced by an ordinary hotbed; 85 degs. to 90 degs. is a good heat, and if there is more than this the seeds may be injured or may vegetate weakly. The best material for a hotbed is an equal portion of leaves and stable manure. Some Cocoa-nut fibre refuse should be spread over the surface of the manure in which to plunge the seed pots, pans, or boxes. Use good loam, mixed with a third part of leaf-mould, and a little sharp sand, in which to sow the seeds. Those that are small should be slightly covered with finely sifted soil, and the arger seeds put a little

Mountain Clematis (C. montana).
(See "Hardy Climbers and Wall Plants," p. 82.)

deeper. Successful cultivators of these and kindred species of plants say, "Cover the seeds with a layer of soil as thick as the diameter of the seeds." Thus the small seeds would be but slightly covered, and the larger ones more deeply. Some seeds vegetate more quickly and better than others; and as soon as the plants are large enough let them be pricked out. Delay in doing so causes considerable injury to the plants. Many of them will damp off before being pricked out, but they will not do so afterwards. Some of them may be pricked out to flower in pots; others that are to be planted out may be planted thinly in boxes, to be gradually inured to the open air. There is no better place for them than cold frames, so that the lights may be removed from them in fine weather.

The best time to plant them out is the end of May, or say the first week in June. It would depend much upon the state of the weather; a careful gardener would not plant out tender things like these in the teeth of an east wind. They may either be planted out in beds or in clumps in the borders. All half-hardy annuals may be grown and flowered out-of-doors. Some of them are much better adapted for pot-culture than others. There are few more beautiful or elegant plants than the Rhodanthes. We prick out eight or ten plants in a 6-inch pot; and with ordinary frame culture they soon make a mass of bloom. R. maculata is the best to grow, but R. Manglesii, and R. atro-sanguinea are very pretty. They make the best of plants for the window boxes. Nearly allied to them are the Acrocliniums. We are growing a new double form this year, it is a variety of A. roseum. Another variety, album, is pretty. The different species of Alonsoa are of a graceful dwarf habit, and make a brave show.

Another half-hardy annual that will almost make a garden by itself is the Schizanthus. The flowers are of a singular formation, and comprise an endless variety of colour. Asters and Stocks are all best treated as half-hardy annuals. Phlox Drummondi is a charming open air plant, and few make a more effective bed or border; the colours, too, are rich and varied. The Petunia may be said to be a perennial, but this class of plant succeeds best if grown as a half-hardy annual. Petunias are better adapted for planting out-of-doors than for flowering under glass. The main thing to attend to in all these classes of plants is to see that they do not receive any check to their growth during the process of pricking out into pots or boxes, and of planting out in the border. J. Douglas.

CLOVE AND BORDER CARNATIONS.

Much newly-awakened interest, I observe, is taken in these sweet and beautiful flowers, and their value as border plants is fast becoming known. Old florists well understood the value of planting the Carnation in masses, which is certainly the best way to make them effective, and for this purpose self-coloured ones are the best. A selection of Cloves consisting of different colours should include the following, viz.:—Crimson, and shades thereof: The true old Crimson, Crimson Pet, Géant des Batailles, Hindoo, and Sparkler. Purple: Albert, Cremorne, Imperial Purple, Lord Rosebery, and Daniel Delworth. Scarlet: Coroner, Jupiter, Lucifer, Vivid, and Fire-eater. Pink: Annie Williams, Cynthia, Mary Morris, Mrs. Whitmore, and Rosa Bonheur. White: Bride (Hodge's), Bridesmaid, Duchess of Connaught, The Governor (blush), Mrs. Matthews, and W. P. Milner. Yellow: Chromatella, King of Yellows, Lady Cathcart, and Lady Rosebery.

Nearly all these self-coloured Carnations thrive out-of-doors, planted in groups and arranged in colours. They even succeed within reach of the smoke of London. A certain way of making this good old English flower more popular would be to plant large groups of it in the London parks. What a grand effect masses of the various colours would have backed up with evergreen shrubs and in front a broad margin of well-kept lawn! Their perfume, too, so grateful and so distinct from that of any other flower, would add to their value. In order to get the best results from a bed of Carnations, they should be planted in deep, well-manured soil, and the plants should be left two years in the same place.

The Grass, as it is called, should be layered in August. This is done by scraping away some of the surface soil from around the plants and replacing it with fine sandy material, and the work ought to be done in such a way that when the layering is finished the whole surface of the bed should be level. If the layers form roots freely, there will be far too many of them. It may, therefore, be well to thin them out, when enough might possibly be obtained to plant two more beds the same size as the original one, still leaving enough to form a mass of blooms the following season. A. J. D.

The use of Cloches or large bell-glasses.—The author of "Parks and Gardens of Paris," mentions the free use of the Cloches by the French gardeners, and recommends them highly. I always understood that there was a danger of their flying if kept on the ground in frosty weather; but at page 490 of the book it is stated that "when once winter comes in earnest down they (the Cloches) go, and are all through the winter in the same condition as what we call Wardian cases." Is any and what means taken to prevent the cracking of the glass? Can you inform me also whether they may now be had at the price of 10d. or 1s. a-piece as mentioned at page 599 of the same book, and whether from Messrs. Breffit and Co., of 83, Upper Thames-street? The price given in a list (of another firm) I have by me is about 3s. 6d. each, or 40s. a

dozen. These are, it is true, with knobs; but I should wish to get some, as the author recommends, without knobs. — Borderer.

*** In severe weather in winter the Paris gardeners have a little light litter placed among the Cloches and, over all, mats. They do not suffer much from breakage, but then they are thoroughly accustomed to them, and grow almost all their winter things under them. It is most desirable that these excellent Cloches, which are so much better than the old awkward and costly handlights, should be sold at a reasonable price in England. Some of our readers will no doubt be able to say if they are so sold. The price of 3s. 6d. each is preposterous.—Ed.

GARDENS OF LIGHT AND SHADE.—III.

Garden Ground and How to Treat it.

Nowadays, when the creation of ground rents is the first motive of the suburban proprietor, large numbers of tenements are erected with a notable disregard of their surroundings; such trees, shrubs, or bushes as are upon the ground are ruthlessly uprooted, and in mercy to the weeds, which might otherwise essay a blighted existence, it were well if the miserable yard in rear of these "attractive" residences were asphalted and made over to barrenness for ever.

But while it would be hopeless to attempt to render picturesque spaces scarcely the size of an ordinary room and encumbered with a scullery door, a knife-cleaning shed and a water-butt, it is surprising to those who have never made the trial, how pleasing an effect may be produced by the judicious arrangement and planting of very limited areas. Much, of course, depends upon what is beyond the boundary. If the surroundings be open and the air sweet, there is no reason why a healthy little shrubbery should not be maintained about the most modest establishment, securing a measure of privacy and providing something green and pleasant for the eye to rest upon all the year round. But if scullery open on scullery, chimney gaze on chimney, and the ground be ever in shadow, the case is different. It is useless to waste time in attempts to coax plants to live out a blighted existence. Human life, blighted or otherwise, according to our code of ethics is sacred, and we must be at every effort to preserve it—no matter at what cost to the sufferer; but a broken and leafless plant pining for sunshine and fresh air is as melancholy a spectacle as a caged bird, and it is best to have done with it at once. Transplant it if you can to liberty and real life; but if it be too old of limb and tenacious of fibre, hew it down and put a paving-stone over its root, lest it send forth ghostly shoots and make you timorous by night as you look across the shadows of the chimney pots.

In suburban districts it is common now to find terraces of houses built back to back upon parallel roads. The width of garden ground allotted to each is, perhaps, no more than 20 feet, corresponding, of course, with the frontage of the house. The depth may be 50 feet or even 100 feet. Let us suppose it to be 75 feet. The space intervening between the two rows of houses is then 150 feet, and if there be twenty houses in each row we have an open space of 400 feet by 150 feet. This extent of ground is capable of being turned to very good account, but just as our streets, for want of a general design, are disfigured by incongruities of architecture and the interposition of mean or ruined buildings, so in a series of "gardens" the most conspicuous effect produced is that of a patchy ugliness.

Looking from an upper window, we perceive a double row of plots divided by dwarf walls or wooden fences. Here and there it is possible that an individual garden has been designed with taste, but what beauty it boasts is marred for want of a suitable setting. The environments given over to brickbats, swings, clothes-props, or, perhaps, to be the habitation of that terrible *bête noire*, a black Poplar, loom through the foliage, too thin to hide so great barrenness, and it is easy to understand that no sort of treatment will render one of these small plots wholly independent of the contiguous premises. Now, something in the nature of a general design for planting, carried out when the houses are built, would remedy all this ugliness, and might be made to increase the privacy that is so dear to our insular notions, but which is very poorly attained under existing conditions. The possession of only a moderate amount of skill and but a trifling expenditure of money would be necessary to provide a pleasing *coup d'œil* from every point of view, and to hide under a graceful garb of leafage the unavoidable boundary fences. Looked at as a whole, the space between the houses would appear as a miniature park, and this result might be achieved without laying down any too arbitary rule of uniformity in regard to the disposition of the several plots—indeed, absolute uniformity would only prove a disadvantage. No doubt such a method of treatment would be adverse to the petty utilitarianism which exacts tribute of Potato and Cabbage from the tiniest area, and draws across the face of the vignette which every such garden should present to the windows a curtain of Runners and Peas. But it cannot be necessary to argue seriously the propriety of growing vegetables in plots such as we now contemplate. A kitchen garden in its proper place is a thing of interest, and is by no means devoid of grace and poetry. Fruit, if you will, of certain kinds, may peep in at the windows; Marrow bine or a Rhubarb plant may fill a corner; a Tomato may cover a trellis; even Carrots and Parsnips, Beet and Chicory, may be disposed

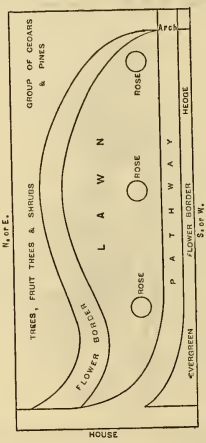


Diagram 1.

about a flower border; but Onions and Beans, with all things grown in drills and rows, are nothing but abominations when obtruded upon the eye, which craves, or ought to crave, a soft picture of shadow and sunshine, curving lines, and ever changing effects. Of course, the ground attached to terrace houses offers the least opportunity for tasteful arrangement. The long, unbroken lines of houses are in themselves fatal to absolute beauty. But there are thousands of gardens, large and small, round about detached and semi-detached houses, where the rules for the natural in gardening might be applied with satisfaction. Whether the ground measure a rod or an acre, it is equally necessary that the selection of trees and plants should be governed by considerations of its form and area. Space which is ample for plantations of some kind would be altogether unequal to the demands of widespreading forest trees, and in planting narrow, oblong pieces of ground, care should be taken to choose plants of a compact and miniature habit of growth. Happily there is so great variety that choice may be readily adapted to circumstances. It is nothing less than surprising to those who have never made the trial to find how pleasing an effect may be produced by judicious planting even in such a piece of ground as would be contemptuously dismissed as "a yard" by those who are fortunate enough to command more spacious premises, or whose opinions are founded upon ambitious reasoning. A garden measuring 75 feet in length, and of no greater width than 30 feet, may be made to contain a dense shrubbery on the north or east side, edged by a flower border, a miniature lawn, a winding pathway, and another border bounded by an Ivy clad wall or trellis. The measurements would be these:—

Shrubbery,	greatest depth,	12 ft., diminishing to	6 ft.
Flower border		4 ft.,	4 ft.
Lawn	smallest width,	8 ft., increasing to	14 ft.
Pathway		4 ft.,	4 ft.
Border		2 ft.,	2 ft.
		30 ft.	30 ft.

The accompanying diagram (No. 1) represents the ground plan of such garden.

A garden of 35 feet in width might have a shady walk winding through the shrubbery, or a greater width might be given to the lawn, or the south or west wall might be fronted by a second shrubbery composed of plants of less lofty growth than those on the north or east.

Medley Gardens.

A very pleasing effect is produced by an intermingling of fruit and flowers. When there is ample room at disposal it is perhaps best to keep the shrubberies clear of fruit trees, and the border of Currant and Gooseberry bushes; but when the garden is too small to divide without disadvantage, we may venture upon a medley, and not only gain something in beauty, but lose little in regard to the quality or quantity of the fruit. A medley garden is in an especial degree a natural garden; the wild Crab in the hedge-row claims many a strange companion, and the Bullace yields best when its branches are intermingled with those of the Hawthorn and Hazel.

The eye is not indisposed to dwell with satisfaction upon a neat garden, where everything is in order, where the borders are well kept, and accuracy of habit and growth appears to have been instilled into the very plants. But in striving after mere neatness much real beauty may be missed. The Box bordering, if there be one, may be trimmed to a nicety without offence; the lawn may be spic and span, and its edges sharply defined and regular; the gravel paths may be rolled until they have gained the surface of a billard table, but hereabouts mere tidiness should end. The tree-hacking and ribbon-planting, which reduce the life of a garden to a dull uniformity and parallelism, appear to be at best but the rudiments of real gardening. They remind us of the straight lines required of us when we essayed our earliest efforts in drawing; in themselves they possess no beauty whatever, in the completed picture they are absorbed and hidden. Rather would we take as the highest perfection of beauty such mingling of tree and climber, of fruit and flower, and gorgeous contrast of foliage as are depicted of the South American forests in the glowing pages of Kingsley and others. We cannot hope to approach the splendid prodigality of those tropical scenes any more than that our trees can be made to compare with the mammoth trunks of Mariposa, or our shubberies with an Indian jungle. But while size will always enhance our sense of the grandeur of a scene, it ought not to be deemed capable of adding anything to its beauty; and as size is relative and not positive, what is most important is to obtain proportion and harmony.

In designing a medley garden we must not forget the maxim already laid down—that the art we employ must not be too conspicuous. Yet anything approaching to confusion must be avoided. Nature does not always present us with mere quantity and entanglement. She is fully capable of light and delicate touches. The obvious requirements of individual growths must not be overlooked, and, although nothing should seem to be constrained, everything should occupy the position best qualified to aid in its development. Thus, it would only be bungling to put an Apple tree, or Pear, or Plum, where, of necessity, it would become outgrown and dominated. But if a Pear tree rise from a cluster of slow-growing shrubs, and spread its branches above and beyond them, the effect is good, and the tree itself is none the worse for its company. Even when branches are interlaced a little, it does not follow that the crop of fruit is rendered inferior. There are fruits and fruits, and different varieties of the same fruit will attain perfection under totally different conditions. So it is with flowers and shrubs. The knowledge that is required is of their habits and wants, so that we may dispose them in

suitable positions. Then, as to climbers about living trees. Great prejudice exists against them, but unreasonably. Ivy may not be desirable, it grips too closely; but there are many other climbing plants whose embraces are by no means so tenacious. Further, it may be asked, and the question is strictly consistent with the tone of this little treatise throughout, whether, in dealing with limited areas, we may not elect to gather a little less fruit, so we are gainers all the year through in beauty? By all means let us concede the palm for bushels to the market garden and the orchard, but there is an item contributing to our sum total which is absent from theirs, and which carries our yield —rod for rod—well beyond all they can offer.

No more beautiful effect is produced than by a judicious and tasteful arrangement of climbing plants—Wild Vines, Clematis of all kinds, Roses, Honeysuckles, the Virginia Creepers, Japanese Honeysuckle, Cobæa scandens, Passion-flower; and for annuals, the Convolvulus, Canary Creeper, and Nasturtiums, with many others, may all be very easily cultivated, and their introduction to a garden will add charms that are unattainable in any other way.

Where there is a Grass alley—unhappily few modern gardens possess one—we have an exceptional opportunity for seeing climbing plants at their best. Here is one where the over-arching branches are draped with the Clematis Jackmanii. There is no grander plant for the purpose. The rich blossoms lie in dense folds about the boughs, and hang festooned from tree to tree. Here the Canary Creeper decks their purple like delicate embroidery of gold; there they entwine in strange harmony of colouring about the creamy leaves of the Acer Negundo. Apples, Pears, Plums on bushes and pyramids are ripening above and beside us, and beneath there is the grassy way, flecked with tremulous shadows and bordered with plants of varied foliage, evergreen shrubs, and blooming flowers. The Castor Oil plant, the Chilian Beet, with its massive bronze leaves and ribs of crimson and orange, groups of Gladiolus brenchleyensis, not yet come into bloom, plants of Dracæna indivisa, Cannas, Begonias, and Coleus, lent from the greenhouse for the summer, are conspicuous here, and in among them the stately Hollyhocks rising from a tangle of Ferns, and the great Golden Lilies of Japan. Truly a medley, but what a medley! That it offends the gardener may be taken for granted. What matter if it brings delight to less conventional minds?

In laying out a garden of this sort, it is all-important to the cost whether the surface of the ground is turfed or not. If lawns have to be laid down the expense is greatly increased. In the garden represented here the ground had been originally a portion of a meadow, so that it was only necessary to cut the paths and borders to leave the lawns as shown. Under similar conditions the total expense of laying out such a garden, and of a size of, say, a quarter of an acre, need not be more than £50, of which a considerable portion would be wanted for the paths, tiling, &c.

It may be interesting to housewives to know that such a garden—a veritable medley—produced, in the fourth year of its existence, Red and Black Currants and Raspberries sufficient for innumerable pies and puddings, and for the manufacture of 90 lb. weight of *real* jam, besides a goodly show of Apples, some of them of prodigious size, Plums and Medlars, a few Pears, plenty of Gooseberries and Strawberries, and a sprinkling of Nuts. Further, it will be pleasant to all of gardening bent to be told that from the first year the garden has been both fragrant and gay for nearly eight months of the twelve, and has supplied annually many scores of nosegays as gifts for friends, a daily garniture of the table, and several large consignments of blossoms for charitable institutions.

Bulrushes.—At page 43 you very properly correct a popular error respecting the plant known under this name. Although the Reed Mace and the Bulrush are both aquatic plants they are very different in appearance. The Reed Mace has flag-like leaves; the Bulrush is a true Rush having round leaves while the other is wide and flat.—J. C. C.

PLANTS FOR HEAVY CLAYEY SOIL.

It is to be regretted that the extra amount of labour entailed upon amateurs in arranging newly-made gardens should be, as it often is, considerably augmented by many builders of the present day who are too wont to leave only the top spit of the soil presentable, which, on being removed, will often reveal the presence of a large quantity of brick rubbish, stumps of trees, wood-cuttings, and not omitting in the case under notice, old boots, enough to mar the delights of the most persistent hobby-monger in matters horticultural. My purpose now is to say what flowers and vegetables have grown well in a newly-formed garden of clay. In the stiffest parts I have found standard and dwarf Roses to bloom well the first year, these flowers, as most amateurs are already aware, finding a suitable soil therein. Dahlias also succeeded well, as did the herbaceous Phlox and P. Drummondi, scarlet Linum, Sweet Peas, Ten-week and Brompton Stocks, French and African Marigolds, Wallflowers, scarlet Lychnis, Verbenas, Salvias, Pansies, and the foliage bedders Cineraria maritima and Centaurea candidissima.

Grass alley in medley garden. (From a photograph taken in the fourth year after planting.)

The annuals, Phlox Drummondi, Ten-week Stock, Marigolds, and Pansies, I raised in slight heat, using the top spit of an adjacent field. But even in this, being of the same clayey nature, the very small seedlings remained stationary. Renting an old garden, I removed a few sacks of well-decayed soil from a Vegetable Marrow bed, which proved of great service, and into which I pricked out the seedlings, keeping them close to the lights in a cold frame, giving sufficient air. Under this treatment they made rapid growth, and in a fortnight were planted in the open ground. Having been grown on as described, they soon made vigorous plants, and all flowered most profusely, the Pansies making a fair show the first season. The Brompton Stocks, sown in the best parts of the open ground, showed the finest mass of bloom I have ever seen, even in nurseries. But alas! they met the gaze of the nocturnal garden-loiterer, who took good care to "thin out" the plants. Of vegetables, I found Spinach, Celery, Peas, Broad and Runner Beans, winter Greens, and Cabbage Lettuce all thrive well. I reserved the old hotbed soil for the bottom of the Celery trenches, using the red description, earthing it up with fine cinder ashes mixed with the finest of the soil, and giving manure waterings during the growing season. I sowed Dell's Crimson Beet as an experiment, but the best measured only 2 inches across the top; being a tap-rooted vegetable, I did not expect it to succeed. I also made a trial with Ashleaf Kidney Potatoes and Paterson's Victoria, but both failed. In most clay soils I have generally found, as in this case, that some parts are much better than others, and that the worst may, on an emergency, be much improved by well forking it over while in a semi-dry condition, and never working it when at all moist. The following year were added, in the month of January, cinder ashes and fowl and stable manure, which rendered the ground in every way suitable for most plants, and removed all appearance of the same soil having been only the previous season one of heavy clay. The above information may be of some service to a few of the readers of Gardening at the present time.

Stamford Hill. A. E. A.

Violas.—Amateurs who require a gay garden for six months in the year should grow this plant extensively. It is of very simple culture, and a wonderfully free bloomer. A bed of three or four varieties forms a conspicuous object, especially if in a grass plot, as there the colours are shown off to advantage. A great point in favour of Viola culture is that no matter how dull or wet the weather is, from the time they get well into bloom until late in the autumn the flowers are there in quantity. Try them, and you will not be disappointed; but, remember, Violas are fond of rich soil.—V. V. V.

Matricaria inodora fl.-plena.—Among the hardiest white flowers for cutting this beautiful flower (May-weed) ought to hold a high place. With practical florists it is a great favourite, whether in the herbaceous border or as a pot plant in cold greenhouse or frame. Snow-white rosette-like blooms are produced in profusion from May until late in autumn, garnished with rich green foliage. Strange to say it is but little seen with amateurs, but they need only a glimpse at a bed when in bloom to be induced ever afterwards to grow it. This plant survives the hardest winters. Propagate by cuttings taken in autumn.—V. V. V.

REPLIES.

13213.—**Hardiness of the Auricula.**—It is stated in answer to this question that "frame Auriculas may be made tender by coddling." They may be made so certainly; but not necessarily so. The object of growing the plants in frames is to protect them from wet or cutting frost winds. In all favourable states of the weather the lights ought to be removed, and the plants are in that case almost as hardy as those planted out-of-doors. All varieties of Auriculas are sadly injured by much rain and wind; and those who wish perfectly developed flowers must provide some shelter for their plants.—J. D. E.

13231.—**Lily of the Valley for forcing.**—As "Amateur's" Lily of the Valley crowns were so weak this year, they will be no good for forcing next year, but, if planted out during the summer, they may be good the year after. The best plan is to have alternate clumps of Lilies for forcing, taking care not to force the same lot two years running; and always plant them out in the open ground when they are flowered.—C. F. Davis.

13199.—**Nibbled Carnations.**—Hares, rabbits, slugs, snails, the leather-coated grub, and various other pests nibble Carnations, but it is not unlikely that sparrows are the culprits. They nibble our beds annually, and as soon as the plants in pots are placed out-of-doors they start to nibble them also. They are effectually stopped by running some cotton thread in lines just above the plants. Old sparrows seem to fancy that every arrangement of thread is a trap, and do not care to go near it.—J. D. E.

—— "Warwickshire" is much interested in this discussion as she has a number of Carnations, and about half of them have this nibbled appearance. It cannot be field mice with "Warwickshire?" can it be sparrows? There are so many about. It does not appear to be slugs—no traces of them can be seen.

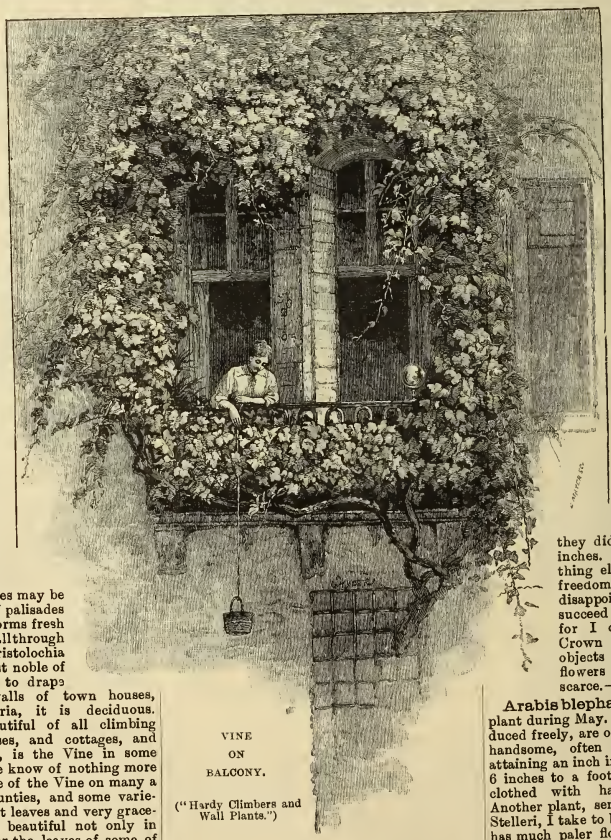
—— I see hares and rabbits are made responsible for the nibbled Carnations; also snails. Mine are nibbled, but birds are the culprits.—A. C.

13209.—**Procuring Yellow Fumitory.**—If E. Allen will send me his address and pay postage I shall be happy to give him a plant of the above. It flourishes wonderfully with me.—Mrs. Stuart Forbes, *Witherley Lodge, Atherstone, Warwickshire.*

HARDY CLIMBERS AND WALL PLANTS.

We have many plants suitable for covering balconies and pillars that add very materially to the charms of a garden. In our town gardens more especially these graceful plants should find a place, as they require but little attention after being planted, and do much towards softening the rugged angularities of brick-and-mortar structures, the barrenness of which is but too obvious in our streets and squares. We have a great wealth of material at hand for such purposes. In planting climbers for covering buildings, protect them from drip from the eaves, as this is fatal to their well-doing.

Among the forms of vegetation best suited for pillars, balconies, arbours, or porticoes, are Roses, especially the climbing varieties, all of which are very beautiful. Dangerous for the garden, but too beautiful to be thrust out of it, are the two varieties of the Great Bind Weed (Calystegia sylvatica). No plants form more beautiful and delicate curtains of foliage and flowers, and none grow more vigorously in any soil. The common white Jasmine is a great favourite with us, and the golden-coloured Jasminum nudiflorum is very pretty in winter, when trained loosely up a trellis on a fresh green background of the common Ivy. One of the best of all trailing plants is the fragrant Lilac-flowered Wistaria sinensis, which, as most of us know, blooms very freely on a sunny wall, while its foliage keeps fresh and green until very late in the autumn. We generally see this plant trained horizontally along a wall, but it is much more beautiful when trained up the trunks of Larch, Scotch Firs, or other trees, and allowed to droop down from among their branches in elegant festoons, or its long branches may be trained along the tops of palisades and railings, where it forms fresh green wreaths of foliage all through the summer months. Aristolochia Sipho is one of the most noble of all climbers with which to drape balconies or outer walls of town houses, but, like the Wistaria, it is deciduous. One of the most beautiful of all climbing plants for walls, houses, and cottages, and even trees and bowers, is the Vine in some of its many forms. We know of nothing more graceful than the foliage of the Vine on many a cottage in the home counties, and some varieties have beautifully-cut leaves and very graceful shoots. They are beautiful not only in their pleasant green, for the leaves of some of them, such as the claret-coloured vine, the Barbarossa, and the wild vine known as Humboldtii, change in the autumn to the brightest tints of crimson and gold. We have also seen some of the larger American vines running over Pines and other trees with a most graceful effect. A magnificent vine is the Humboldtii, which has leaves over a foot across, but we know no vine that is not good, and some kinds are very easily obtained. The illustration shows what beautiful effects may be obtained by training vines over houses. It represents a scene in Spain, where light goods appear to be introduced into a house by means of a basket and cord. At Chiswick one of the prettiest autumnal features of the place was formerly produced by different kinds of hardy Grape Vines. There were Vitis vulpina, V. labrusca, and some others, which gracefully draped and festooned some ornamental chains and ironwork near the Council-room, and when their leaves became crimson-stained and yellow-hued in autumn the sight was more suggestive of sunny Italy than of cloudy England. In warm and sheltered positions, especially on limestone soils, some very pretty effects might be made by wreathing old tree trunks and terrace walls with some of the finest of the ornamental vines. Vitis amurensis, V. purpurea, V. riparia, and V. vulpina might be planted for their leaves, and in the south especially they would flourish to perfection. The turquoise-berried vine (Vitis humilifolia) is very handsome in favoured positions near the sea when covered with its pretty clusters of blue berries late in autumn. The American Fox Grapes grow luxuriantly on trellises, and are useful for covering walls or low out-houses along with the green and variegated forms of the common Ivy. Cotoneaster microphylla is another excellent evergreen wall-plant, which is always fresh and cheerful, either in spring when covered with snow-white flowers, or in winter when thickly studded with crimson berries. A very pretty effect may be produced by planting it with the golden-flowered Jasmine nudiflorum, as the two contrast most effectually when seen together. For town gardens few deciduous trailers surpass the Virginian Creeper which succeeds so well in the neighbourhood of London. It grows quickly, and is invaluable for covering blank walls and trellises in the shortest possible time. Its foliage is fresh and green throughout the summer, and in autumn it dies off, tinted gloriously with glowing crimson, rich brown, and purple. The Japan Creeper is another fine wall plant, which clings firmly to masonry or brickwork.



VINE ON BALCONY.

("Hardy Climbers and Wall Plants.")

For walls, porticoes, arches, and corridors few plants are equal to Clematis, C. montana, C. Jackmanii, C. lanuginosa, and many other varieties of that useful genus are well known on account of their profuse flowering qualities, and we have seen them grow well and flower freely in exposed positions, even as far north as Leeds. The common Hop plant is also one of our best coverers, and of Honeysuckles there are several species that flower freely. Solanum jasminoides, Bignonia capreolata, and B. grandiflora are likewise all suitable plants for sunny walls on warm soils, where they grow and flower freely; nor must we forget the different kinds of Magnolia—M. grandiflora, M. purpurea, M. Soulangeana, and M. glauca being the best. M. grandiflora and its variety, exoniensis, are very useful in warm situations, having glossy evergreen foliage and large fragrant white flowers.

Yellow Crown Imperial.—This plant will not grow with me. I plant large bulbs of it in good soil in the same border in which the brown-coloured variety succeeds admirably; but the yellow one never grows strongly enough to flower. Yet every spring as I go through our village I can see it flowering as well as anyone could wish in a cottage garden, where it has evidently stood for many years undisturbed. It is seven years since I planted two dozen strong bulbs of it in four separate clumps, and only one of these sets has given me any flowers, and these were poor and weak. One set furnished a capital example of suspended animation, for not one of the six bulbs made any growth the first year, yet they remained sound. Next year some growths appeared above ground at the same time as the others, but so weak that they did not reach a height of 12 inches. I may mention that everything else grows with the greatest freedom in the same border. I am disappointed in not being able to succeed with this yellow variety, for I consider all the different Crown Imperials to be striking objects at a time when outdoor flowers of the same character are scarce.—J. C.

Arabis blepharophylla.—This is a pretty plant during May. Its flowers, which are produced freely, are of a deep rose colour and very handsome, often on well-grown specimens attaining an inch in diameter. It grows from 6 inches to a foot in height, and is densely clothed with hairy, spoon-shaped leaves. Another plant, sent out under the name of A. Stelleri, I take to be a variety of the above; it has much paler flowers, and is not nearly so handsome. A. blepharophylla is the only rose-coloured Arabis in cultivation, white being the prevailing colour; it requires a sunny spot on the rockery and light, rich soil. The very best place for it is an old wall, or wedged in between stones, as it is very susceptible of damp. It strikes freely from cuttings, which are produced in early autumn.—D. K.

Double white Rocket.—Now that old-fashioned plants are being grown as of yore this grand flower is once more holding up its noble head. In the north of England and Scotland it is extensively cultivated, as its long spikes of white, sweet-scented bloom find a ready sale in the market. If planted in rich soil the flower spikes average from 12 to 18 inches. There used to be a dwarf variety, but, unfortunately, that is now lost to cultivation. The double purple is a nice companion to the above, and well worthy of a place in every garden.—V. V. V.

ILLUSTRATION COMPETITION.

All drawings and photographs for the first Illustration Competition (full particulars respecting which will be found in last week's issue) must reach the office of Gardening not later than by the first postal delivery on Saturday, April 25th. We would advise competitors to send photographs *flat* and not *rolled*.

We have to acknowledge the receipt of several packets for our competition, and are glad to say that they include some beautiful things well worthy of being engraved. Senders of the successful photographs will hear from us at the end of the month. Meantime, we may state that we are so far satisfied with the result that we propose to continue the competitions monthly throughout the season. Any object in black and white will be welcome; but we shall probably have competitions for special subjects—such, for instance, as illustrations of the prettiest and most artistically or naturally-disposed lawn. This competition may interest many readers who are happy enough to have lawns not yet "improved" off the face of the earth, as, we are sorry to say, a great many beautiful lawns have been by terrace gardens and other doubtful ornaments.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

QUESTIONS.

13278.—**Fixing wires for creepers.**—Will anyone tell me the best way of fixing up wires for creepers on a cemented house?—M. A.

13279.—**Culture of Acacias.**—How should I treat Acacias after flowering? A few hints on growing them from seed will greatly oblige.—J. D., *Carlow.*

13280.—**Culture of Horse Radish.**—Will someone kindly give me a few hints on the culture of Horse Radish?—W. B., *Essex.*

13281.—**Culture of Cucumbers.**—Would any reader give me information on the culture of Cucumbers outdoors without a frame.—W. B., *Essex.*

13282.—**Propagating Camellias.**—Will any of the experienced readers of Gardening tell me how and when to strike and propagate Camellias?—E. A. G.

13283.—**Destroying slugs.**—Will anyone kindly tell me what will destroy slugs that eat away my Cabbages?—A. P. *** *On p. 220, July 19th, 1884, you will find information that may assist you.*—Ed.

13284.—**Pansies and Violas.**—I shall be obliged by anyone telling me if I can have Pansies or Violas in bloom at the same time as Wallflowers, Daisies, Myosotis, and Arabis? If so, how ought I to begin?—Ignorant Amateur.

13285.—**Annuals for garden facing east.**—What would be the best annuals for a small garden facing east, having the sun only three or four hours a day, situated on the outskirts of Manchester; soil light?—J. H.

13286.—**Destroying green fly.**—Will any reader inform me if the following is a good receipt for destroying green fly? Half-pound of bitter aloes in five or six gallons of water, applied with a syringe.—An Old Subscriber.

13287.—**Artificial manure for Roses.**—Will anyone tell me what manure I must apply to my Roses and other plants, as I am unable to buy any old rotten manure? Would guano suffice, and how should it be applied?—Kent.

13288.—**Sowing Tropæolum Lobbianum.**—Will any reader tell me when Tropæolum Lobbianum ought to be sown for winter flower? Should it be out-of-doors or in a frame? Do all kinds answer equally, or which do best?—Sootia.

13289.—**Summering Arum Lily.**—I have an idea that if Calla æthiopica were repotted in rich mould, and plunged in the open ground during summer, it would bloom earlier on account of receiving no check from lifting in autumn. I have usually turned them right out for the summer rest, but they flag so on being lifted. Will some practical correspondent kindly give an opinion on this point?—Westbury.

13290.—**Destroying worms on bowling green.**—Will anyone kindly let me know the best remedy for destroying worms (without injury to Grass) on a bowling green?—O. K. W. *** *You may refer to p. 382 (Oct. 11, 1884) for information. Doubtless some correspondents will assist you.*—Ed.

13291.—**Ivy on new walls.**—Ivy will not grow or cling to a new wall. Will any reader tell me whether there is any wash or composition that I could put on the freshly-cut stones to which the Ivy would cling—anything that would act like the thin coating of Lichen and mould found on old walls?—J. D. B., *Elgin.*

13292.—**Hardy Climbers for east wall.**—Can anyone suggest a few hardy climbers for a brick wall in front of a kitchen window? The aspect is east, and it only gets a little sunshine in the early mornings. Evergreen would be preferable, but I should be glad to know what would grow quickest, and do on poor soil in a bleak situation?—Friold, *Monmouthshire.*

13293.—**Lawn mower.**—Will your readers kindly tell me the names and addresses of firms who make lawn mowers, the knives of which do not throw the Grass forward, but back? I find it suits me best on my narrow borders, as I can cut the Grass close up to the plants without damaging them with the box, as I do with the others.—Laws Mower.

13294.—**Celery piping.**—Will any reader kindly tell me what is the reason of Celery getting pipey, and how to prevent it doing so? I have tried sowing it upon hotbeds and in the open border, and have had it transplanted and carefully earthed up during the summer. I have also tried it in sandy soil and stiff clay, but the last four years or so it nearly all got pipey.—Manning.

13295.—**Marechal Niel Rose-buds decaying.**—Can anyone tell me the reason of the buds on a Marechal Niel Rose tree looking healthy for a time and then becoming decayed? It is a young healthy-looking Rose tree, grown in a cool greenhouse, with the roots outside in a vine border; the branches are trained under the glass.—A. D.

13296.—**White substance on Plumbago.**—I have a blue Plumbago plant in my greenhouse, the leaves and stems of which are covered with a white substance resembling silver sand. Will someone kindly tell me what disease it is, and how to get rid of it?—Mary Howe. *** *A small portion of the plant sent might have enabled us to see whether what you refer to is some small kind of scale, or really a disease.*—Ed.

13297.—**Camellias out of health.**—I have two plants in cold greenhouse in Lancashire. One of them did not make any growth last year, and all the leaves hang down as if there were no life in them, but they still keep their colour. The other plant made splendid growth, and had fine buds; but all the leaves of last year's growth and all the buds, except one, dropped off; that one opened full, and was of a red colour. Can any reader tell me the cause of both failing? They were potted two years since, and have never been allowed to get dry.—T. W.

13298.—**A lost Wallflower.**—About thirty or forty years ago there was a variety of double Wallflower, which bore no seed, and was propagated only by cuttings; it required the protection of a mat during the winter, and lasted an indefinite number of years. There were four or five different shades of colour in the flowers, viz., yellow, orange, red, and brown. Will any reader tell me whether this variety is gone out of cultivation altogether; and, if not, where it can be procured?—W. B H. *** *We think that all the good old Wallflowers have been recovered, so to speak, and are now to be had here and there. "W. B. H." does not give us any clue to the variety he means.*—Ed.

13299.—**Powdered Oyster shells for Wallflowers.**—Will anyone kindly inform me whether an application of Oyster shells (twelve months in the powdered state) would be of good service to a bed of Wallflowers? *** *We never knew the Wallflower to refuse to grow in any soil or on any wall. In certain soils, no doubt, the shells would furnish useful elements. We prefer to regard the Wallflower as a thing wanting no pampering of any kind. We are sorry to see the idea of artificial manure and like substances prevailing too much in people's minds, some of the noblest gardens we have ever seen never having had a pinch of such material applied to their most important crops or finest plants. We wish people knew how easy it is to grow a great quantity of hardy plants without nostrums, expense, or trouble beyond keeping the ground clean!*—Ed.

13300.—**Chrysanthemum turning yellow.**—Would any of your readers explain the causes of my Chrysanthemums turning yellow and dying? Last May I repotted some young Chrysanthemum plants and then placed them where I intended them to bloom. About a month or six weeks after they began to show bud, and I was told that they were summer-blooming ones, and advised to nip out the buds, as they would then bloom in the fall. I did so, and had a fine display of flowers in the fall, which made me look forward to a large increase in the spring from cuttings; but to my surprise my plants turned yellow and then died. I took special care of them during the winter by placing the pots in ashes and putting an old glazed sash over them and enclosing them with some old boards. During January and February they made good shoots; but, as before stated, in March they all turned yellow, and now appear dead.—J. S., *Exeter.*

13301.—**The Cabbage tribe on loamy soil.**—How is it that on this soil, which is a strong loam, clay bed, all plants of the Brassica tribe set in the autumn are so slow at starting into growth, and some never do at all? Now, if I have plants grown about seven or eight miles from here on a sandy soil, then transplanted on to this, they grow right away from those grown on this land. I have carted on forty loads per acre of farmyard manure besides artificial, but they are no better than where nothing was carted on. The plants grown on a sandy soil can be recognised to a few or to a plant. I grow a few Brassicas for seed—Cabbages, Turnips, &c.; they are just as if they never take hold of the soil. It appears to me that they want something to make root action, as if they only once get started they grow right away. They appear to be unable to start. They run up to seed—little wiry plants, with no laterals whatever. It is very certain it is not condition in the soil that they want, as I have tried almost all sorts of management, and also artificial manures.—Brassica, *Lincolnshire.*

13302.—**White Iris not flowering.**—Can anyone explain the non-flowering for some years past of healthy plants of the tall, old-fashioned, pure white Iris? They used to produce handsome spikes of large flowers in a rather neglected border, facing south-east. The tubers increase and spread, and I have moved several into various other situations but without result, though the young shoots come up freely, and the foliage is in itself rather ornamental.—I. H.

13303.—**Culture of Pansies.**—Would some of the readers of Gardening kindly inform me how I can manage to cultivate Pansies successfully? I have tried them year after year, but always find that they degenerate very much in about three or four months after I have planted them. I got some good Pansies last year, and took great pains to try and keep them up to the standard. I picked off all the buds, with the exception of one or two, as they appeared, and also all the straggling shoots. But in a very few months my labour seemed to be all in vain, and my Pansies were very little better than those you could pick up at any roadside. I took cuttings, but find that they are no better than their fathers were before them. I may mention that the soil in which I grow them is deep black earth, containing no sand. Any hints as to how I can keep up the quality and what sort of soil Pansies thrive in best will be gratefully received.—Omnia Vincit Labor.

13304.—**Blight on Grape vines.**—My Grape vines—Black Hamburgh, Foster's Seedling, and Buckland's Sweetwater, and others that I grow—are all attacked by blight. There has been a plentiful show of fruit the past two years, but just before blooming commences the bunches curl up and appear to rot off. The house is 25 feet long by 8 feet wide inside, border of good loam, marrow bones, manure, &c., and a chalk bottom with a drain 3 feet from top through entire house. The house has a south aspect, and is well protected from east winds by wall. I started the vines each year the end of January at 40 degs., and gradually increased to 55 degs. and 60 degs., syringing the vines each day (dull or fine days). There is a large building some thirty feet off which prevents the sun from shining on the house until the end of March. The foliage is apparently free from insects, and the house was thoroughly cleaned each year. Each day I have admitted air from top ventilators, excepting when the days were very cold.—C. P.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13305.—**Spotted Geranium leaves** (*C. P.*).—The leaves seem to be perfectly healthy, but bespattered with lime-wash, or something of that kind.

13306.—**Treatment of flowering Hyacinths in pots** (*W. B., Essex*).—Plant out in a warm border of light soil—all the better if at the foot of a warm wall.

13307.—**Planting Clematis** (*Pyrus*).—If the Clematises are in pots you may plant now and during the next few weeks, in fact, as long as the shoots are not so long as to receive injury by the removal.

13308.—**Thinning shoots of vines** (*Rifleman*).—You should leave the strongest shoot, and that which bears the best promise of a good bunch of Grapes, thinning out the weaker and remaining shoots.

13309.—**Cultivating Moss for packing** (*T. D.*).—We never knew Moss to be cultivated for packing. It is always gathered in woods and bogs, where, certainly, it is plentiful enough to supply many generations of packers to come.

13310.—**Garrya elliptica on west wall** (*Pyrus*).—This will do perfectly well in any position, and better in the sun than in shade. It really does not require a wall, as it thrives perfectly well planted out in a sheltered shrubbery.

13311.—**Stephanotis losing leaves** (*Miss Peters*).—They are most probably the old leaves, which must at some time die a natural death. We think so because you say the plant is making vigorous growth of young shoots and leaves.

13312.—**Cyperus alternifolius** (*Polyanthus*).—This is a common plant in aquaria, it being quite an aquatic. It wants abundance of water, and the best plan is to submerge the pot in water. It succeeds well in either a stove or greenhouse, but is not quite hardy.

13313.—**Planting annuals for effect** (*Urgent*).—By all means sow in groups, each sort by itself, in broad masses, otherwise the effect, especially of the smaller ones, will be lost. We have no sympathy with the carpet bedding, particularly when applied to annuals.

13314.—**Killing worms** (*G. Archer*).—Perhaps it is not worms that trouble your garden. We hardly think a good answer could be given you unless you state what crop or plants are affected, and whether they are in a glass-house or out-of-doors. The bulbs may be injured by grubs. We will help you if you make this clear.

13315.—**Lomaria gibba in cool greenhouse** (*Polyanthus*).—Probably your greenhouse is rather too cold for this Fern. Try a change by putting it more in the light, and keep it drier. Do not syringe overhead, as that is a frequent cause of the fronds of Ferns becoming brown.

13316.—**Renovating lawn** (*O. K. W.*).—Dress the lawn with a thin surface layer of fine mould; give the whole a good raking, especially stirring the bare parts. Then sow with a good lawn seed mixture, which can be procured from any seedsman. Any time during April will do.

13317.—**Pruning Passion-flower** (*Pyrus*).—If the shoots of the Passion-flower show any signs of softness and decay at the tops cut off a foot of the upper part. Plant in good soil, and allow the plant to have its own way this year. You may prune slightly during the next, so as to keep it within bounds.

13318.—**Oil heating apparatus** (*S. P. E.*).—The question of heating by oil has been discussed again and again in Gardening, and if you refer to the number for Feb. 28 (page 655), and to still more recent articles, you will probably find all the information you desire. See also advertisements.

13319.—**Seedling Primroses** (*Mrs. R.*).—The pips you send are very small, but all seem interesting, and may show colours, or habit, or vigour that you may admire. We like people to raise their own kinds of Primroses and Polyanthuses; it is better than having the same varieties repeated in every garden, and occasionally some of value may be raised.

13320.—**Sunless but warm border** (*F. R. Hilton*).—The particulars you give are not sufficient to enable us to advise you with good effect. If the border is in a kitchen garden a variety of salads and early and late vegetables would welcome the position; if it is not, Camellias would have a good chance, because in Sussex they do pretty well out-of-doors.

13321.—**Removing old Roses** (*M. A.*).—Taking down and putting back the tops is a simple operation compared with moving the roots, and you do not make clear which it is you want to do. Moving the roots is, we fear, a hopeless task, hardly worth undertaking; and if that is what you want to do, we think you had better begin afresh with young plants.

13322.—**Procuring Azara and New Zealand Flax** (*Brandon*).—This is a question for any nurseryman. It should not be difficult to procure either plant; certainly the New Zealand Flax is to be seen in all good nurseries where greenhouse plants are grown. The Azara is a new shrub, but nurserymen growing evergreens should be able to supply it, or get it from their correspondents who have a stock of it.

13323.—**Difference between Heaths and Epacrises** (*C. A. Barker*).—The flowers of Epacris have their parts arranged in fives—thus, five divisions of the corolla, five stamens, and so on; whereas, in Erica the parts are in fours. Epacrises are always of more rigid growth than Heaths, and have stiff pointed leaves, and may be easily distinguished by these characteristics when not in flower.

13324.—**Clematis not flowering** (*M. A. M.*).—You do not mention the kind, and therefore we cannot judge of its nature, but three years' time is not very long for some of the hardy, vigorous species to be planted, and you will probably have plenty of flowers by-and-by. We presume you do not cut it back too strongly, but here again we are in the dark, as you do not tell us the name of the species. There are scores of kinds differing very much.

13325.—**Gas-tar on hot-water pipes** (*Amateur, Derby*).—The gas-tar is undoubtedly the cause of the injury to the plants. It is one of the worst things you could possibly have in a hot house. It will continue to throw off a vapour every time the heat rises to a certain temperature, and your best plan would be to get it off as soon as possible. Procure a dissolvent from a chemist; or a simpler way would be to burn it off the pipes—of course, first clearing the house of every plant.

13326.—**Black Currant trees losing their fruit** (*J. C.*).—We shall be glad to help you if you will write the question a little more fully. How can anyone answer it when you do not say a word as to the position, the soil, or climate in which the bushes grow? You should also say if the thing has occurred repeatedly, and if it is in neighbouring gardens as well. Lastly, you should mention (if you know it) the kind, because there are, even among Black Currants, noticeable difference in the kinds.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—Ed.

Advertisements in Gardening (*Mrs. B.*).—You will find the scale of advertisement charges in any recent number of Gardening. See page xi. last week. Any information respecting advertisements will be given by the publisher.——Address (*M. Grant*).—We do not remember the name. You must refer us to the number in which the firm was mentioned.——Red drop Fuchsias (*Mrs. M., Mayo*).—Had not the information better be given through Gardening?

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to us name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*Pyrus.*—1, A kind of Juniper, specimen not sufficient; 2, Thujopsis dolabrata.——*E. E.*—1, Polypodium peltatum; 2, Asplenium bulbiferum; 3, Asplenium flabelliforme; 4, Platyloma rotundifolium.——*P. D. D.*—We do not attempt to name Camellias or similar flowers.——*W. Scudder.*—Forsythia suspensa.——*E. B.*—Forsythia viridissima.——*R. W. Green.*—Acacia armata.——*W. Y. D.*—1, Send with spores at back of fronds; 2, Polypodium vulgare; 3, Asplenium Trichomanes; 4, Ceterach officinarum.——*Penkridge.*—Habrothamnus fasciculatus.——*Coatbridge.*—We do not name Roses.——*Q. Von Uford.*—1, Pteris quadriaurita; 2, P. tremula; 3, Asplenium rachirhizon, a very scarce plant in cultivation, and very useful as a basket plant. It is a native of tropical America, but not reckoned as a barren Fern.——*Mrs. R.*—1, Thick-leaved Saxifrage, Saxifraga crassifolia; 2, Narcissus cernuus; 3, One of varieties of common double Daffodil; 4, Narcissus incomparabilis, one of the double forms.——*V. Robinson.*—1, Small Daffodil (Narcissus minor); 2, Blood Root (Sanguinaria canadensis).——*C. Field.*—A Japanese shrub, Forsythia suspensa.——*A. Bert.*—The sketch shows a plant, in the young state, of the common Dragon (Arum Dracunculus), but there are certain tropical plants so like it in leaf and stem that it would be hard to say exactly what it is unless one could see the full-grown leaf and the flower.

Catalogue received.—*New Roses, Geraniums, &c.* Wm. Paul and Son, Waltham Cross, Herts.

TREES AND SHRUBS.

Desfontainea spinosa.—I hope some other of your readers will give their experience of this handsome shrub. I have been discouraged in trying from friends telling me that it had perished even in the south of Hants. I saw it, however, a few weeks since on high ground at Tunbridge Wells in a nursery, but I found it had only been out this one mild winter, which is hardly a test.—W. G., *Sussex.*

Daphne indica planted out.—I have had Daphne indica planted out, and it has now stood four winters. It is, however, against a wooden potting shed under deep-thatched eaves, and with a south aspect, and on frosty nights has been protected with a little matting in front. It blooms profusely, beginning in December, and still (April 4th) is not much past full bloom. It is near a cold orchard-house, and I have found it most useful, as it attracts the bees from the other end of the garden by its sweet smell, and then they wander into the orchard-house and set the blooms of the Peaches and Nectarines.—W. G., *Sussex.*

New Zealand Veronicas.—These attain on the south coast the dimensions of large shrubs, and are very useful for supplying cut flowers in September, but they may be turned to good account as pot plants for indoor decoration in autumn and winter; for this purpose young plants, propagated from cuttings the preceding autumn and planted out in spring, like Chrysanthemums, make very fine bushy little plants, covered with flowering shoots. They should be lifted in September, potted in just sufficiently large pots to hold the roots, and kept shaded and moist until well rooted. Situations under the shade of vines will suit them well until they begin to grow freely, when they may be transferred to a cool, airy house, and will flower freely in the temperature of a conservatory.—J. G. H.

13229.—**Propagating evergreens.**—Such evergreens as Aucuba, Euonymus, Laurustinus, Holly, and Bay are easily propagated by cuttings inserted in a trench and trodden firmly in; water them if hot, dry weather prevails. Now is the time to insert cuttings.—C. F. Davis.

INDOOR PLANTS.

WINTER FLOWERING PLANTS.—XII.

Coronilla glauca

Is another very pretty greenhouse under-shrub, somewhat similar in character to the Cytisus. The foliage resembles that of the Vetch, but the yellow blooms are borne in small heads or crowns, not in spikes as in the Cytisus. It is easily got into bloom in January or onwards.

The Correas

Are very quaint and useful plants, flowering naturally under ordinary cool treatment In November, December, and January, and lasting a long time. The flowers are long dropping tubes, generally brownish or greenish above, and scarlet or crimson below, with four short lips of a pale green or yellow colour. They are produced from buds resembling a miniature acorn, and are borne in great profusion. The plants are very difficult of propagation, and the best kinds have to be worked on to a stock of some common strong-growing variety, so that it is better to purchase a few young plants and just grow them on. They need cool greenhouse treatment, with abundance of sun, light, and air, the bright warm climate of Australia being their native place. They require potting on slowly, once in every two or three years being sufficient for good-sized plants, in good sandy peat, such as used for Ericas. The drainage must be abundant and good, and the soil made and kept firm. Old strong plants should have a slight admixture of the best turfy loam, with some crushed charcoal and pounded brick, or crocks broken very small. These plants succeed fairly well in the suburbs of London; but in such a situation should be kept under glass all the year round, with unlimited light and air in summer. In the country they may be exposed to the open air with benefit from June to September, or early in October. All the pruning needed is just to pinch out any over-luxuriant shoot, and so form a well-shaped bush; anything farther than this is injurious.

The Acacias

Are favourite hard-wooded plants, some of which flower in winter and early spring. The flowers are mostly yellow, but they vary greatly in form and size. Some of the varieties, such as A. dealbata and A. oleifolia elegans are so strong in growth as to be much more suitable for planting out against a pillar than for pot-work. The latter of those mentioned is very suitable for planting out, flowers from October to April, and is altogether one of the prettiest and most graceful of all. They should be planted in well-drained borders filled with a mixture of fine sandy peat and light fibrous loam. Like all hard-wooded plants, the soil must be made very firm, whether in pots or beds, and watering carefully attended to at all times, keeping the compost always fairly moist, but never the least too wet. This cannot be done, as some imagine, by watering in driblets, or at regular intervals whether required or not, a system which generally results either in a completely sour and sodden state of the soil, and speedy death to the plant, or else in the upper part becoming permanently wet, and the lower stratum permanently dry, which is scarcely less fatal. The right way is to let the plant alone, especially if at all in a state of rest, until the soil is nearly dry—not sufficiently so as to cause the plant to flag, but just a degree or two short of this; then give a thorough watering, sufficient to moisten every fibre of the roots, and again leave the plant until water is again really required. This system will ensure the soil remaining in a sweet and open condition, and the plant is almost certain to thrive. Of course this is not an absolutely hard and fast rule, as some plants when in full growth and bloom (for example, Spiræas and Fuchsias) can scarcely have too much water; but this exception is more apparent than real, as the roots of such plants are in a state of so great activity, owing to the heavy demand upon them, that they absorb moisture almost as fast as it can be supplied to them, so that if not very frequently applied, the available supply is exhausted in an hour or two, and the plant begins to suffer almost directly. On the other hand this process, in the case of a delicate rooted hard-wooded plant in winter, might not be completed under a fortnight, so that no water would be needed until the end of this time. Other Acacias, notably A. armata, A. grandis, and A. Drummondii, being of moderate growth, make nice bushy pot plants. A. armata is very easily propagated and grown on to neat plants in 48's or 32's, which, if potted in spring and introduced into gentle heat about October, will be full of delicate yellow bloom by Christmas. The best soil for the Acacias in pots is a mixture of sandy peat and fibrous loam, with good drainage.

Monochætums,

Of sorts, are handsome evergreen shrubs, flowering in the depth of winter. They, however, require slightly warm or intermediate treatment to produce satisfactory results. M. dicrananantherum, with rosy flowers, M. ensiferum, rosy purple, and M. multiflorum, pink, are three very fine sorts. Harden off slightly after flowering, cut back moderately, and repot when again in growth, keeping close and warm during these processes. Light sandy peat and loam, with a little leaf soil and charcoal, is the best compost. These plants are better under than overpotted, and should be grown on in a gentle warmth with slight shade during the early part of the season, and exposed fully to sun and air during late summer and autumn.

Thibaudia macrantha, pulchra, and acuminata

Are handsome flowering evergreen shrubs, producing their blooms at all seasons, but most abundantly in winter. They grow best in equal parts of loam and peat, with plenty of sand. Repot in spring, trimming away the useless shoots that have flowered, and encourage fresh growth by keeping warm, close, and moist for a time. In summer water and syringe freely, and shade from scorching sun. In winter give a light, warm, airy position, and avoid over-watering. These are well worth a place in any greenhouse.

The Veronica

Is a very pretty evergreen shrub, with fine spikes of various shades of blue and purple flowers. They are really late summer and autumn-blooming plants, but by judicious

late stopping and careful treatment several varieties may be induced to flower up to Christmas. They are of very easy growth. Cuttings strike readily in a gentle warmth early in spring, or in a cool frame or pit kept close in autumn; and if potted on and grown quickly they will make nice bushy flowering plants in 48's and 32's by the next autumn. Some plant out the cuttings in prepared beds in June, and thus treated they grow very rapidly; but the check of taking the plants up in autumn is very severe, and generally results in the loss of the greater part of the foliage, so that it is much better to keep them in pots. A good sound rich loam suits them best, and the plants should be stood on ashes out-of-doors, or, better, plunged in ashes or Hops during the summer, and kept well watered and syringed. V. speciosa is the most general form, but V. Andersoni and kermesina are both fine kinds. B. CR.

Book on greenhouse, stove, and fine-foliaged plants.—I should be obliged if you could tell me what is the best comprehensive descriptive dictionary or encyclopædia of greenhouse and stove plants, giving information up to the present date. I have the "English Flower Garden," which I find both useful and interesting for outdoor plants, though I may perhaps be allowed to say that I think a little favouritism is displayed. Lonicera are cut very short, L. fragrantissima and other varieties not being mentioned, for example.—Borderer.

*** Mr. Baines' "Greenhouse, Stove, and Fine-foliaged Plants," which is now being rapidly passed through the press, and will be published as a clear, well-printed octavo volume during the present season, is the book you want. As to what you say respecting the brief treatment of Lonicera in the "English Flower Garden," you should remember that most Honeysuckles are shrubs, and should, strictly, be dealt with in a book on Trees and Shrubs. Only the twining and graceful ones, used as climbing and bower plants, and also, by tasteful people occasionally, in borders, are mentioned in a book avowedly and wholly on the Flower Garden.—Ed.

Large flowered or Laurel Magnolia (M. grandiflora).
(See "Hardy Climbers and Wall Plants," p. 82.)

HYACINTHS IN GLASS.

(Replies to Query 12)

As a large amateur grower of these seeds in pots, borders, and glasses, probably as large as anyone, and larger than most, my experience may be of a little service on the point which has arisen in Gardening Illustrated. The object is to get the glass well filled with roots before much upper growth is made. Some I throw out their roots much more readily than others, but with both I have found the safest, and eventually quickest way, and they securing the finest spike of blossom thrown above the foliage is to fill the glass with water as near as possible to the bulbs, but *without* touching them. Place the glasses in a dark closet or cellar until the roots have well filled, and then by degrees expose them to light. I have always found mould, and slime, and [illegible] promptly follow placing the bulbs so as to touch the water. So far as my opinion and experience is of any value it must be in support of "G.P."—J. P., *Lancashire.*

—— May I write a few words on Hyacinths, just to show "T.V., Crouch Hill," that he is perfectly right as to mode of growing them, and to prove to "G. P. M." that either he has made a mistake in supposing his bulbs did not touch the water, or his bulbs must have been exceptionally good. However, the "proof of the pudding is in the eating," and I will venture to say that "G. P. M.'s" Hyacinth blooms were not equal, grown as he says without touching the water, to mine and probably to "T. J. W.'s," which were grown touching the water. I think I know as much about Hyacinths as any other amateur, and I have been told by nurserymen and others that mine are equal to any; they are grown precisely as I described in my article, page 16, in glasses, water just touching the base, and kept in a dark cupboard until their roots were 2 inches long. Some took a fortnight, some three weeks to attain this length. They were then gradually exposed to the light, and finer trusses of bloom than mine this year I have seen nowhere. Another point on which I disagree with "G. P. M." is the window they occupy. He says, on page 17, "Windows having the full benefit of the midday sun should be avoided." I say give them all the sun and air possible. At the time of year when people generally have them indoors the sun has not sufficient power to injure them, and would assist in bringing out their full colour and perfume. I write this, not wishing to create angry discussion in your valuable paper, but to prevent your numerous subscribers from being misled in their treatment of their bulbs next year, as to attempt to start them without water touching their base would simply be time wasted, and result in the bulbs being weakened.—C. F. D., *Letherhead.*

—— The literature of this subject threatens to be voluminous, but, having grown Hyacinths in glasses with almost unvariable success for nearly forty years, I think I can mediate between your correspondents "T. J. W." and "G. P. M." Having tried both ways, I can state that actual contact with water is not absolutely essential, but if the bulbs are sound and carefully cleaned I do not think there is risk of their becoming rotten from merely touching the water, and, more from old habit than from any conviction of its necessity, I adopt this plan. On the other hand, a fortnight is not long enough to test the matter, for I have often found bulbs which have been in contact with water to be longer than that in starting. This is especially the case with those that have buff or red flowers, which are later in starting and in flowering than whites or blues. This brings me to what I find the chief cause of disappointment in this matter—hurrying the plants too much, especially during the formation of the roots. The Hyacinth naturally grows slowly, requiring in the borders from four to five months between planting and flowering; and if we force it into more rapid growth it is certain to be weak in flower and long and weedy in leaf. Instead of the fortnight alluded to, the plants should have eight or ten weeks in the dark that they might get strong roots; and if the flowers are to be early the planting should also be early. My rule is to set the plants early in September, and to place them in a closet in a room which has no fires till about the middle of November, when the points will be just showing. I then place them near a window in the same room, in an open box, which protects the roots both from frost and sun. I do not bring them into heat till the trusses are well formed and beginning to separate, which may be about the middle of December, and then I get good sturdy tops, rarely needing support. I may add that I never use charcoal, or change the water, unless I find that it has become offensive, which I have found always to depend on the rotting of some part of the bulb or its appurtenances. I set 8 glasses on the 15th of last September; a little water has been added occasionally, but there has been no change. I have just emptied the glasses, the flowering being over, and find that the water is not at all offensive, and has only a very slight earthy smell.—W. M. C., *Clapton, April 8.*

REPLIES.

13221.—**Stopping Pelargoniums.**—You will not have learnt the art of exhibiting until you know from experience when to stop for the last time, and no one can give you thoroughly reliable information without seeing the plants to be operated upon, as so much will depend upon the after management as well as upon the habit of the variety; some require less stopping than others. In a general way it will be safe to allow an interval of ten weeks between the last stopping and the time they are wanted in flower.—J. C. C.

13177.—**Treatment of Orchids out of flower.**—I take the different species in the order they are named. Cattleya Trianiæ: If it requires repotting the work should be done at once as the young growths will soon be in process of formation. Odontoglossum cirrhosum may also be repotted if necessary; this species requires a warm house to grow in during the winter months, but it may now be placed with O. crispum (Alexandræ) in a comparatively cool house. Dendrobium nobile should also be repotted if it requires it as soon as it goes out of flower. The young growths of this species have generally made some progress even before the flowers open. It likes plenty of heat and moisture when making its growth. Lælia purpurata requires very much the same treatment as Cattleya Trianiæ—a night temperature of 55 degs. to 60 degs. when making growth, although it will succeed well with a lower temperature when at rest. Anthurium Scherzerianum requires very much the same culture as the Cattleyas. The plants of this ought to be potted once a year—in August. Maxillaria hyacinthiflora and Epidendrum cochleatum are both hothouse plants. The whole of the Orchids enumerated may be cultivated in pots, filled half-full of drainage, the potting material to be composed of about equal parts of clean washed Sphagnum Moss, fibrous peat, and potsherds in about equal portions. The minimum temperature of 50 degs., with the usual rise by day, would suit all of them. Place the Odontoglossums in the coolest part of the house.—J. D. E.

13169.—**Treatment of Hydrangeas.**—I grow Hydrangeas with great success. My plan is to cut back the branches within two eyes after blooming, and top-dress with rotten manure. In spring, as soon as the buds start, feed liberally with manure-water. I have plants now (beginning of April), with twelve or fourteen buds each, just ready to burst into bloom. I thus grow large plants in 8-inch pots, but never pot on when this size is reached. "Rob Roy" would do well to put cuttings into 48 pots in June in a compost of loam and rotten manure. Feed liberally with pure water till spring, then with any manure-water. By this system I have immense single heads of bloom.—Westbury.

—— These will flower well every year if they are well fed, liberally watered when growing, and if they get plenty of air and sunshine. At the close of the autumn, when they cast their foliage, by no means allow them to remain dry at the roots, but water them when they need it. Early in January prune them back to within two eyes of the base of the shoots made the preceding season, thinning out all weakly shoots which do not yield bloom, and which deprive the

stronger ones of light and nourishment. At that time they may be shifted, if so desired, into larger pots, using good loam and some decayed manure. Give them a light position and plenty of air in fine weather, and remove to the open air when all danger of frost is over. Plants may be kept in the same pots for years, but they must have liquid manure when growing, and abundance of water in hot weather.—J. C. B.

—— These plants succeed well in a comparatively cool greenhouse. Cuttings struck now will, with careful treatment during the summer, make nice plants to flower next year. If old plants are encouraged to make vigorous growth they will flower every year; but the young wood must be well matured by exposing the plants to the light, and if this is not possible in the conservatory, they should be turned out-of-doors, where they may be sheltered from north and east winds but exposed to the sun for the greater part of the day.—J. D. E.

12173.—**Plants for bazaar.**—To obtain fine-leaved plants from seed large enough to form a screen in autumn it is absolutely necessary to sow at once in a warmth of about 65 degs., growing the plants along freely when up in a genial temperature of 65 degs. until the beginning of June, and then gradually inuring them to cool treatment. The quickest growing thing we can think of is the Castor Oil plant, and next to that comes the ordinary Tobacco, the Virginian kind being a really noble plant when well grown. Solanum robustum is also a fine free-growing plant. After June all these will be better in the open air, in a sunny, sheltered situation; shift them along as they need it, but get them into the pots in which they are to remain not later than the end of July. With respect to flowering plants to be in good bloom in the beginning of October, there can be nothing better than French and African Marigolds, Japan Pinks (single and double), blue and white Lobelias, Zinnias, and Crown Daisies, or Tricolored Marguerites, notably such kinds as Burridgianum, Lord Beaconsfield, the Sultan, and Dunnetti. The Lobelias, Zinnias, and Marigolds, should be sown in a frame, but the others may be sown at once in the open ground. In the beginning of June they should be pricked out, 2 inches apart, in a piece of free soil, and when they have half-a-dozen leaves they may be put into 4½-inch pots, the Japan Pinks and the Lobelias three together, the others singly. Set them in a sunny place, and see that they do not suffer from want of water during the summer, and by the end of September they will make good specimens. Any free soil will do to pot them in, and one large crock at the bottom. A little Moss (put a pinch of soot on that to keep the worms out) will suffice for drainage. The thing to be guarded against is sharp frosts in September, and after the 15th of that month all of the plants should be under cover, taking care, however, to give abundance of air, and not to let them suffer for want of root moisture.—J. C. B.

13118.—**Violets from seed.**—Few think of raising Violets in this way, because it is so easy to obtain a stock by division of the old crowns or by means of the runners which are thrown from them yearly. Seedlings will, however, grow into good blooming plants by the end of the year. We have some patches of seedlings from self-sown seeds which are quite a blaze of bloom at the present time, and there is no doubt about seedlings growing more freely than old plants. If the seed is sown as soon as ripe fairly strong plants will be obtained by autumn, and these set out the following spring in well-worked and properly-enriched soil will form strong specimens which will yield an abundance of bloom through the winter.—J. C. B.

13132.—**Manure for Carnations and Pelargoniums.**—There is no danger in using manure for these, but the contrary if it is in a suitable condition. It should, however, be quite two years old, so as to be scarcely recognisable from mould. The danger lies in the employment of crude dung, which is almost sure to cause the roots of Carnations to perish in wet weather, and which is much disliked by Pelargoniums. In any case the former should not get more than one-tenth of the bulk of soil, and the latter one-sixth. Some of our large market growers use but little dung now, mixing some concentrated manure with the soil instead. Clear soot water is a fine manure for Carnations; there is no danger in it, and it imports great strength to the foliage.—J. Cornhill.

13228.—**Tabernæmontana dropping flowers.**—Dropping of the flowers is no doubt caused by an excess of atmospheric moisture. Try the plant in a drier air, and keep the leaves and flowers away from the syringe. At best the flowers do not last more than a day or two after they are fully grown. Keep the plant well shaded when in flower; the temperature should not exceed 70 degs. when it can be avoided, and a night temperature of 60 degs. would be better than 70 degs.—J. C. C.

13167.—**Treatment of double Marguerite.**—The seed may be sown at once in a frame or greenhouse, and when the young plants are large enough to handle put them singly into small pots, shifting them later on into 4½-inch or 6-inch pots. Grow during the summer in the open air in a sunny situation, picking off all bloom buds until September.—J. C. B.

13127.—**Growing Cape Heaths from seed.**—I notice some enquiries in Gardening Illustrated about growing Heaths from seed. I have now a pot of seedling Heaths about 3 inches high. The seed was sown last April. I find them do best in peat without any sand.—J. E. Bull, *Cork.*

THE KITCHEN GARDEN.

CUCUMBER CULTURE IN SUMMER.

I have no doubt that many of your readers, chiefly amateurs, who have no means of growing Cucumbers in winter and early spring would be pleased if they could produce them in summer, and there is no reason why they should not do so, as Cucumbers are easily grown during the warmest part of the year. I know of many amateurs who, though they have no glasshouses, grow many good Cucumbers in frames. Many of them have not the manure to make up a bed, but they buy a cartload or two, and, as it comes in for improving their garden soil afterwards, the first outlay is amply returned. Cucumbers are mainly wanted during warm weather, and their abundant production at that time will always give satisfaction. Under ordinary cultivation it takes about eight weeks from the time when the seed is sown until the first fruits can be cut. But the seed will not germinate freely unless it has the assistance of bottom-heat; this must be 70 degs. at least, or up to 80 degs. The seed should be sown singly in a 3-inch pot. Proper drainage must be given, and the soil should be composed of loam, leaf-soil, and sand in about equal parts. In this the young plants will grow and root freely, and they may be grown in the pots just named until they are 1 foot high or so; but when the pots become too full of roots the plants are very much checked, and should be shifted into larger pots or planted out. Where there is a propagating pit or any house with a bottom heated bed near the glass and full in the light, any number of young Cucumber plants may be propagated with ease, or they may be bought from market growers, and this is an advantage in the case of those who have more difficulty in raising the young plants in spring than in growing them in summer.

Where heated material is at command, a bed may be formed at once sufficiently large to get a one or two-light frame on it, and this will be an excellent propagating place for Cucumbers, which may be raised in quantity, to be planted out in extended beds further on. One good frame like this in a village or district might supply plants for many growers. If in proper order such a bed should be amply heated to germinate the seed and carry the plants through the most delicate stage of their growth, and as in a hotbed they are always near the glass and light, robust growth and healthy development is a certain result. The soil in which the seed is sown should be moderately moist, and no water should be given until the young plant is visible and some roots have been formed. Watering freely before growth begins often causes the seed to rot, and too much water before many roots are at work will make the plants yellow and sickly. When once the soil is full of roots it is difficult to give too much water. As soon as growth has developed sufficiently in the seed pots to indicate that more room is wanted they should be potted into 6-inch pots, or if the fruiting bed is ready they may be planted out direct from the seed pots. In potting or planting at this time rough soil should be used, and it should consist only of loam and half-decayed cow manure or horse droppings, three parts of loam to one of manure being a good mixture. We often hear that Cucumbers are fond of manure, and so they are, but too much of it produces soft wood, which is not by any means the most fruitful.

Planting out from a 3-inch pot or a 6-inch pot is done in the same way, and whether they are planted in the bed of a house or in a manure frame the treatment should be the same. In each case a mound of soil should be formed in which to plant. About two bushels of soil will be enough at first, and when the roots appear on the surface and the plants gain size an addition can be made. Top-dressings of this kind put fresh energy into the plants at times throughout the summer, when they seem inclined to stop fruiting, but they cannot be applied so well or so effectively if what may be termed a full quantity of soil is given them at first. In making the mounds ready for planting some very rough pieces of turf should be put at the bottom and thinner parts on the top. As the soil is generally cold when put in, planting should be deferred until it is as warm as that in which the young plants are growing. In turning them out of the pots for planting the drainage may be taken from the bottom of the ball of roots, but the roots must be treated with care, as it is always a gain to transfer them without subjecting them to the slightest check. The soil should be pressed close to the roots, and excessive watering must be avoided until they have found their way into the fresh soil. If potting and planting are carefully done shading need never be necessary, and this is much the best, as Cucumbers love the sun and are most satisfactory when constantly exposed to its influence.

Training.—I have said that whether in house frame planting must be done the same, but training the two are widely different. In a house the only good way of growing them is to train the shoots on a trellis and let the fruit hang when. In a frame the stems creep along the space, and the fruit lie on the soil and among the leaves. In a house the main stem should be taken well up the trellis. Then take the tops off, and many side shoots will break out and push forth rapidly. The thinning of these should be attended to weekly, and at no time should any of them crowd on each other. Thin laterals shoots frequently stopped are the most prolific. In frames the point should be taken off the plant before it has reached the glass, and the side growths which this will be the means of producing should be spread out and trained pegged down in all directions. Stopping and tying must be strictly attended to, and when plants become too full of shoots which have fed themselves barren these should be cut away and young growths laid in to replace them. In while doing this that additions of soil and top-dressings can be most conveniently added. Thorough syringings on fine days and never allowing the plants to suffer from want of water and nourishment at the root will always insure them from insects. The temperature for raising young plants should be from 60 degs. to 70 degs., which will be found to agree admirably with them at all times, but in summer in the hottest weather air can be given freely admitted than in March, April and May. Of varieties there are many. Cardinal is robust, prolific, and good in every respect; Telegraph is larger and also very good. Wheeler's Empress of India is larger still, but a show variety, and in other respects merits.

J. M.

Spring Broccoli.—The great mistake made really is sowing this important vegetable too early. Some years back we always had that important variety, "Snow's Winter," under glass in March, planting it out on land, and grew it from 3 to 4 feet high. But, oh! when a severe frost visited down goes the Broccoli, and of course the crop is ruined. This serves as an illustration every Broccoli grown here at that unfortunate time; we thus have bought our experience dearly. The plan which we follow now all Broccoli, barring Walcheren, is to sow side on or about May 10th. We sow the in drills 1 foot apart, planting all

out on unmanured land, crowbar fashion. This has been so often described that I need not go further. Our Broccoli just now may be termed nice stubby plants, which no frost can kill, if we take the precaution to throw over a little dry Bracken when the frost arrives. If large Broccoli are wanted well mulch the quarters, but I prefer middle size, and my friend, the cook, acquiesces. In conclusion, I beg to say no digging is required, the land should be firm and plants stubby.—R. G., *Stamford.*

Spinach Beet.—Mr. Gilbert does wisely when he recommends your readers to grow this useful vegetable. It is of such easy culture, and so hardy and productive that I always make a point of sowing a little seed early in July. I select a sheltered corner for it, and sow the seed in drills 18 inches apart, and then leave it to take care of itself. If we get a severe winter and spring the Spinach Beet goes through it unharmed, while the ordinary sort will be frozen up or withered by the cold March winds, so as to be useless. Like Mr. Gilbert, we only use this to stop a gap, but it has done this so successfully on more than one occasion that I never omit to provide it.—J. C. C.

13163.—**Grub in Onions.**—This question is constantly cropping up, and it is a very difficult one to deal with. In the first place means must be taken to prevent its attacks. The means used may not be successful; but if they are only partially so, something is gained. If the seeds are to be sown in the spring, strew some salt thinly over the ground in autumn, and dig it in, leaving the ground rough. Previous to sowing the seeds in February (which is the best month) scatter some soot over the ground, and afterwards break down the rough surface with a fork; this mixes the soot with the surface soil only. The Onions are attacked by two species of maggots, that of the Onion-fly (Anthomyia ceparum) being the most destructive. They descend between the leaves into the bulbs, which they rapidly destroy. The plants soon show by their sickly appearance that the maggot is present. All the plants should be pulled up as they are attacked; and the holes filled with soot. Give a good watering with soap-suds or sooty water after. The maggots of the brassy Onion-fly (Eumerus æneus) likewise attack the plants. I have tried nitrate of soda, as a stimulant; it causes a rapid growth of the plants, and thus indirectly aids them to grow out of the reach of these troublesome pests.—J. Douglas.

HOUSEHOLD.

VEGETABLE COOKERY.—III.

(By Miss Annie M. Griggs, Edinburgh School of Cookery.)

Vegetable Soups.

Many pleasantly-flavoured and easily-prepared soups may be made from our vegetable roots, and they will be found not only nutritious but a welcome addition to the family table.

Potato and milk soup.—Take six large Potatoes, four Leeks (or two Onions), three pints of water, one pint of milk, one teaspoonful of salt, a pinch of pepper, a piece of dripping about the size of an egg, and two dessert-spoonfuls of fine Sago. Wash the Potatoes and pare them very thinly, for the best part of the Potato is that next the skin, cut them into thin slices, and put them into a clean saucepan, with the above-mentioned quantity of cold water. Wash the Leeks, cut off the root and the top green part, and chop the white part very small; add these, with the dripping and salt, to the pan. Put the lid on and place the saucepan over the fire, and let the contents cook slowly until the mixture is thick and pulpy, stirring from time to time to prevent any pieces of Potato from sticking to the pan. Rub this mixture through a coarse sieve or a colander to keep back any hard pieces, return to the saucepan with the milk, and shake the Sago gradually into the soup, stirring all the time. Unless the sago is stirred in gradually, it is liable to cake together, and so not get thoroughly cooked. Continue to stir over the fire until the soup is boiling, and then let it cook five minutes longer before serving, or until the sago becomes transparent. Add a pinch of white pepper at the last, and it is then ready for the table.

Jerusalem Artichoke soup.—Take two pounds of Artichokes, three ounces of fat bacon, one small Onion, a sprig of Parsley, another of Thyme, a Bay leaf, three pints of water, half a pint of milk, one teaspoonful of salt, and a pinch of white pepper. Wash the artichokes, pare them thinly, cut them into thin slices, and throw each slice as prepared into fresh cold water containing about a tablespoonful of vinegar. The acid in the water assists in preserving the whiteness of the Artichokes. Peel the Onion, put it into a basin with some salt and boiling water, cover and let it stand for ten minutes; this is to draw out the strong, green and indigestible part of the Onion; afterwards chop it finely. Cut the bacon into small pieces, put them into an iron saucepan over the fire, and, when sufficiently melted, drain the Artichokes, and add them with the Onion to the pan, and stir them in the melted fat for about five or ten minutes, but do not allow them to become coloured. Pour on the water and add the Parsley, Thyme, Bay leaf, and salt. Let all cook slowly, until the Artichokes are sufficiently soft to be rubbed through a colander; and having performed this operation return the soup to the saucepan and add the milk and pepper. Let all boil for five or six minutes, and then pour out into a hot soup tureen and serve with toasted bread cut into small dice.

Carrot soup.—Take six large Carrots, one thick slice from a Turnip, two medium-sized Onions, a ham bone, or a few trimmings from ham or bacon, a small piece of Celery, or a pinch of Celery seed tied in a piece of muslin, Parsley, Thyme, and Bayleaf, two quarts of water, a pinch of Cayenne pepper, and two teaspoonfuls of sugar. Prepare the Onions as directed in the previous recipe, and slice them very thinly. Peel the Turnip thickly, and cut it into small pieces. Put the ham bone, water, Turnip, Celery, Onions, Parsley, Thyme, and Bayleaf into a saucepan over the fire while you prepare the Carrots. First wash them thoroughly, then cut off the top and scrape them with a sharp knife briskly from the thick end to the point, and cut out any discoloured or rotten pieces. Cut off in thin slices all the red part of the Carrots and add to the other ingredients in the saucepan; keep back the yellow part or core of the Carrots, as it will spoil the colour of the soup, which, when completed, should be a bright red. Let all boil until the vegetables are well cooked and quite soft, then pass all through a sieve or colander, so that the soup may be of a uniform consistency. Return it to the saucepan and add the sugar and necessary seasonings, boil for about five minutes, and serve very hot with small dice of toasted bread.

Onion soup.—Take four large Onions, one head of Celery, one small Turnip, a piece of dripping the size of an egg, one ounce of flour, two quarts of water, the yolks of two eggs, pepper, salt, and one large tablespoonful of finely-minced Parsley. Peel the Onions, steep them in boiling salt and water for fifteen minutes, and then cut them into thin slices. Wash and brush the Celery, and chop it small. Peel the Turnip thickly, wash, dry, and then grate it, put all these into a saucepan with the dripping, and stir over the fire for five minutes, pour on the water, and let all cook slowly until the Onions are soft enough to be passed through a colander with the water in which they have been boiled. Season with pepper and salt, blend the flour very smoothly with a small quantity of the soup. Put all again into the saucepan and stir over the fire until the soup is thick and smooth. Beat the yolks of the eggs in a basin together with the Parsley, pour the hot soup on to these, then all back again to the saucepan, stir very rapidly, to prevent the eggs from curdling, for about three or four minutes, but do not on any account allow the soup to boil after the eggs have been added. Serve hot with toasted bread.

Another way.—Take six medium-sized Onions, a piece of dripping the size of an egg, one tablespoonful of flour, small pieces of Carrot, Turnip, and Celery, three pints of water, pepper and salt. Prepare the Onions and chop them very small; melt the dripping in a saucepan, throw in the Onions and fry them to a deep golden brown colour, and while this is proceeding cleanse and chop the other vegetables quite small. As soon as the Onions are brown add the flour and fry it a little, pour on the water very gradually, stirring all the time to prevent lumps, and when it boils add the Carrot, Turnip, and Celery. Put the lid on the pan and let all simmer gently for two hours. Season with pepper and salt. Serve hot with toasted bread.

Any of the soups made from the foregoing recipes must be stirred from time to time while they are cooking, and any froth or scum that may rise to the surface must be skimmed away. They may be enriched by using instead of water the same quantity of broth in which meat has been boiled, or by substituting for the dripping.

POULTRY.

Does poultry keeping pay?—I think so; but imaginary profits in egg-selling should not be allowed to figure in a balance-sheet. "Cheshire" confesses he never sells either eggs or chickens. "West Dorset" probably does; so do I, and find his experience tallies with mine. Before calculating that all his eggs are worth even 1d. each, "Cheshire" should make sure that he would use 1,855 per annum if he had to pay that sum for them. Secondly, I would advise him when he has a good lot to spare to offer them to the nearest egg dealer, and I am very much mistaken if he does not find a vast difference between wholesale and retail buying and selling. I know that in the London market the salesmen absolutely laugh at the notion of paying for eggs at the prices English farmers can afford to sell them for. They justly remark they can get them wholesale from France at much lower prices, and were they to pay 1½d. or 1¾d. for English, they would have to charge their customers at least 3d. a piece to cover all risks. It is in the saving of butchers' meat and the manure that poultry keeping is really profitable for small families.—A. B. T., *East Anglia.*

QUESTIONS.

13327.—**Best fowl for laying.**—Will any reader tell me what kind of fowl lays the most eggs?—Dora.

13328.—**Food for young ducks and chickens.**—Would any reader kindly tell me what is the best food for ducks and chickens when first hatched?—Inquirer, *Prestwich.*

13329.—**Artificial hatching of eggs.**—Will some correspondent kindly tell me whether eggs can be artificially hatched with a fair amount of success? I am handy with tools; would a home-made apparatus work? Any hints would oblige.—M. A.

13330.—**Preserving eggs.**—I am deeply interested in the simple and effective means of preserving eggs, and have carefully perused "J. T. P.'s" letter of March 28th. I should like, however, to know whether "J. T. P.," before placing his eggs in the "egg-store," submits the same to a besmearing of butter, mixture of quicklime, &c., or any other decoction; or does he simply place them on the shelf without any such mode of curing? I am inclined to think that if they are freely exposed to the air decay must begin its work right off.—Julius.

REPLIES.

13113.—**Poultry keeping for profit.**—In reply to "Open Eyes'" question, "Where is that delightful place where Indian meal, corn, and bran can be bought for 15s., 14s., and 12s. a load?" I would remark that I thought that in my former communication I had been perfectly explicit as to what I meant, and what is always considered (at all events in this locality) as a load of meal, flour, Indian corn, or bran, for I distinctly stated "of the weight respectively of 240 lbs." I presume that this explanation must have escaped "Open Eyes'" attention. A quarter of Indian corn is 480 lb., a load, the half of this, and so far from my having overstated the respective values of the three articles named, all of them may be purchased at the present time under the prices I quoted.—Cheshire.

12965.—**Eggs in autumn.**—If you desire to know what fowl will lay while moulting we have only to say that there does not exist such a thing; no hen will lay during that process. We presume, however, you require pullets that can be depended on to lay early in the autumn and through the winter, when older birds are either moulting or recovering from that process. The only plan is to hatch early chickens of any well known winter laying variety, such as the Brahma, Plymouth Rock, Cochin, or Langshau. We give the preference to the two first-named. March is as good a month as any, but good results may be obtained

from April hatched pullets. Every attention should be given to the young birds, in feeding, housing, and other matters, so as to get them to mature quickly, and become strong robust birds before the cold weather of the coming autumn sets in. They should commence to lay in September or October, and continue right through the winter.—ANDALUSIAN.

12966.—**Fence for poultry.**—If it be not convenient for you to have the run netted overhead we should recommend you to keep either Brahmas or Cochins. A fence 4 feet high is quite enough to prevent these varieties from straying; such kinds as the Dorking, Plymouth Rock, Houdan, and other medium size birds would require a fence about 8 feet high. Such flyers as Hamburghs, Leghorns, and a few more cannot, with any degree of certainty, be kept within bounds unless the runs be netted overhead. Hamburghs are very difficult to restrain; in fact they can, and will, fly like pheasants.—ANDALUSIAN.

12968.—**Keeping poultry in confined places.**—In a run 20 feet by 10 feet we should not advise you to keep more than six hens; and then, in order that they should remain in a healthy state, you must observe great cleanliness, and the earth of the run should be changed once a year. The earth that has been used makes capital manure, and is worth the labour of distributing over the garden. Respecting the Ivy hedge, there is no doubt the fowls, unless supplied with plenty of green stuff every day, will pluck off the Ivy leaves. We are not so decided in opinion as are some people concerning the injurious effects of Ivy on poultry, and do not think the birds would come to any harm if abundant green stuff be thrown to them every day. By "Ivy hedge," we presume you mean a wall covered with Ivy. Could you not trim off the leaves and small twigs at the bottom to the height of 18 inches? The Ivy would then be out of the reach of the birds, and they would not touch the bare stalks.—ANDALUSIAN.

12970.—**Fowls with healthy bodies and weak legs.**—There is no doubt from your description that your birds are suffering from cramp or rheumatism caused by damp and cold. Is your run badly drained, or the house subject to draughts? Let the hens affected have their legs and feet bathed in hot mustard and water morning and evening, standing the bird in the bath and gently kneading the toes with the hand. Afterwards a little weak spirit may be rubbed in. Keep in a warm, dry pen, and let the food be of the best, and of a soft nature only. Chopped meat may be given frequently, and some iron tonic in the water. Choose a fine dry day for returning the birds to the run when cured of their complaint.—ANDALUSIAN.

13165.—**American glass cutter.**—This can be got at Churchill's, 21, Cross Street, Finsbury.—W. I.

PANSIES! PANSIES! PANSIES!—Show and Fancy. All the leading varieties. Over 20,000 strong plants in stock. Finer could not be grown. Awarded first-class certificate at Great International Show held at Dundee, 1884, for best collection exhibited. My selection, 4s. to 9s. per dozen, free. All the leading florists' flowers. See Catalogue, free.—ALEXANDER LISTER, Gayfield Nursery, Rothesay. N.B

NEW REGAL PELARGONIUM, Duchess of Albany.—We are prepared to distribute this new Pelargonium on May 1st, which has been pronounced by most competent judges to be a grand acquisition to the Pelargonium tribe. It is of a dwarf bushy habit, producing in abundance fine trusses of beautifully fringed flowers. A very distinct and effective variety.—Price and particulars on application to J. LEWIS & SON, Newtown Nurseries, Malvern.

WALLFLOWERS. — Blood-red Harbinger, dwarf yellow, and new purple, 2s. 6d. per 100; 1s. 6d. for 50; Sweet Williams (mixed); Daisies, red and white, 4s. per 100; Calceolarias, grand Devonshire Polyanthus, and very choice Pansies, 2s 3d dozen; very strong, free next post, securely packed.—SAMUEL GREEN, Romiley, near Stockport.

CORN MARIGOLDS.—Strong plants (sown in autumn) 1s 6d. the dozen, postage free, sold for a charity. —MRS. BOUCHER, Tremean. St. Germans, Cornwall.

40 PACKETS NEW FLOWER SEEDS, 30 varieties, 1s., double, 1s. 9d., free.—HOWELL, Dell Cottage, Woodburn, Beaconsfield

PANSIES! PANSIES!—Best varieties of show and fancy Pansies, 2s. 6d. doz, correctly named; bedding ditto, 2s. doz., free.—W. & F. WHEELWRIGHT, Oldswinford, Stourbridge

VIOLA, New COUNTESS OF KINTORE, most beautiful, 1 doz. plants, 2s. 4d.; Viola Freedom, Tory, &c., 10d. dozen, 4s. 6d. 100. Sweet Williams, Daisies &c., 2s. 9d. 100, post free. - W. & F. WHEELWRIGHT, Oldswinford, Stonrbridge.

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12 Fuchsia, immense size, double and single, 1s. 9d.; 100, 12s.
12 Geraniums, scarlet and pink, 1s. 6d.; 100, 10s., autumn struck. 12 Geraniums, double pink, and Wonderful, 1s. 9d.
12 Geraniums, Mrs. Pollock, 2s.; 12 Happy Thought, 1s. 9d.; 100, 10s.
12 Lobelias, best blue, 9d.; 100, 3s. 12 Heliotrope, 9d.; 100, 5s.
12 Petunias, splendid strain, double and single, 1s. 9d.; 100, 6s.
12 Coleus, beautiful colours, 1s. 6d.; 100, 6s
12 Chrysanthemums, 6 pairs, fine sorts, 1s. 6d.; 100, 6s.
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SUPERB GREENHOUSE CALCEOLARIAS in every imaginable colour, spotted and tigered in the most beautiful manner, splendid for conservatory, greenhouse, or window, 12 plants, 4s.; 6, 2s. 3d. post free.—HARKNESS & SON, Grange Nursery, Bedale.

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12 BEAUTIFUL SHOW AND FANCY PELARGONIUMS, such as Kingston Beauty, Dr. Masters, Fireman, &c., 5s.; 6, 3s., post free.—HARKNESS & SON, Bedale.

12 HANDSOME SHOW AND FANCY PANSIES (6 of each), to include Thos. Grainger (crimson), Rev. Dr. Taylor (maroon), Jas. Grieve (claret) Mrs. Horsburgh (orange), Mrs. McMillan (pearly white), Countess of Minto (magenta-edged, white), Duchess (primrose), Inspector (purple and yellow) &c., fine plants, 2s., carriage paid.—HARKNESS & SON, Grange Nursery, Bedale.

CHEAP OFFER OF PLANTS from seed pan. —Lobelia (blue), Ageratum (dwarf), Perilla, Petunia (striped), Dianthus Heddewigii, Pyrethrum, Gaillardia, Celery (red and white), German Scabious, Everlastings (mixed), Cineraria maritima, Tagetes, and Antirrhinum, 50 of any 1s.; 100 for 1s. 9d. post free.—S. COOPER, Hadleigh, Suffolk.

SEEDLING PLANTS.—Single Dahlia (from best named varieties), Eccremocarpus, Nicotiana affinis, Tomatoes, Pentstemon, Egg plant, Solanum, 1s. per dozen; Centaurea, Clematis Flammula, and Cannabis gigantea (Giant Hemp), 2s. per dozen post free.—S. COOPER, Hadleigh, Suffolk.

HARDY CLIMBERS. — Clematis (white), Gum Cistus, blue Passion-flower, Japanese Honeysuckle, American Blackberry, Vinca elegantissima, Cotoneaster, Periploca, Pyracanthus (red-berried), Virginian Creeper, New Veitchii (clings to wall), Ivies and Eccremocarpus, all good strong established plants, 2 and 3 years old, 1s. 3d. each; any three, 3s., carriage free.—S. COOPER, Hadleigh, Suffolk.

ACHIMENES, choice named, 1s. 6d. dozen. Gloxinias, best kinds, 3 for 1s., carriage free.—S. COOPER, Hadleigh, Suffolk

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100 PLANTS, in 50 finest varieties in cultivation, for 17s. 6d.; 50, in 25 varieties, for 10s.; 24, in 12 varieties, 5s. 6d.; 12 separate for 3s.; 6 for 2s.; 3 for 1s. 6d. All free for cash with order.—JAMES GUYTON, Florist, Belton, Great Yarmouth.

LETTUCE PLANTS.—Cos and Cabbage, 100 for 1s. 3d., 50 for 9d, free.

TOMATO PLANTS.—Large Red Nisbets, Victoria, and Conqueror, strong plants, mixed or separate, 1s. per dozen, 3s. for 50, 5s. per 100; in thumbs, fit for immediate planting, 4s. per dozen, 25s. per 100, free.— JAMES GUYTON, Florist, Belton, Great Yarmouth.

HARDY BRITISH FERNS.—Lastrea æmula, rigida, collina, Oreopteris, dilatata, erosa, Parsley, Asplenium marinum, crenatum, viride, Polypodium semilacerum, Oak, Beech, calcareum, Athyrium, shield, 15, 1s. 6d.; 20 large rockery roots, 2s. 6d.; 50, 5s. 6d.; 100, 10s., named, carriage paid.—JAMES BELL, 6 and 15, Stramongate, Kendal.

GARDENING ILLUSTRATED.

Vol. VII. APRIL 25, 1885. No. 320.

OUTDOOR PLANTS.

PANSIES ALL THE YEAR ROUND.

The continuous blooming character of the Pansy is much in its favour. Seedling Pansies are hardy enough, and beds of them planted out in the autumn seldom fail to do well; but when we come to deal with propagated plants of the best-named varieties we find that they do not always come safely through uncertain winters. The largest proportion of them form good sturdy plants and stand fairly well; others are of weak, straggling growth, and these often succumb. What we want to do is to get them established before winter sets in with undue severity. To this end the plants should be planted out at the same time as the Pinks—that is, early in October. In six weeks or so they will be firmly established, and are not likely to be thrown out of the ground, even with sharp frosts. Early autumn planting gives us large plants which flower early the following season. During April and May the flowers are most esteemed. They are usually of better quality in May and June out-of-doors than they are in any other month. The temptation to leave the same plants in the beds to bloom again during next season is very great, but they will not produce nearly such good blooms the second season, even if the beds are, as they ought to be, well dressed with rich manure. The plants speedily exhaust the ground in their immediate vicinity; they form quite a mat of fibrous roots, which not only spread out near the surface, but descend to a considerable depth in the ground. They are much benefited by the soil being well enriched to a depth of about 18 inches with good rotten cow manure; and in heavy soils a plentiful dressing of leaf-mould should be laid on the surface, and be dug into the ground. In addition to the manure, river sand is also an excellent substance to use in equal proportion with the leaf-mould. In order to obtain a grand and interesting display of Pansies with little trouble seedlings are the best, and they also bloom most continuously. Sow the seeds in June, and place out the young plants in rich deep ground in September. They should stand a foot from each other.

Cuttings should be put in about the end of July. The best are the small offsets which branch out from the base of the plants. These can usually be pulled out with a small portion of roots attached, and, if they are dibbled out 2 inches or 3 inches apart in a shady part of the garden, they will do as well there as coddled up under glass. In hot seasons the plants are usually infested with a small reddish insect of the aphis tribe. This can easily be destroyed by dipping the cuttings in rather strong soft soapy water; they should be laid aside for half an hour or so, and then be washed in clean rain water.

The largest proportion of the plants may be put out in the open ground, but if there is a cold frame to spare, it is best to pot up a single plant of each variety and make sure of saving it under glass; in fact, independent of this, it may be as well to flower a collection in frames. If the plants are of large size in the autumn, they may, if weather permits, be potted in 6-inch pots by Christmas, which is as good a time as any other for this purpose, and 6-inch pots are the best to flower the plants in. It is easy enough to destroy any aphis by fumigating when the plants are under glass. The plants must have plenty of fresh air. In the first place they should be raised up on a trellis-work near the glass, and, whenever the weather is fine, it is best to remove the lights. A gentle shower will do no harm, but they should be protected from heavy rains, and also from frosts. As the plants increase in growth, the stems ought to be pegged close down to the surface of the soil, until the whole of it is covered with stems and foliage, closely hugging the pots.

Some ten years ago the Royal Horticultural Society offered prizes for Pansies in pots, which did not bring out a very large competition, although some fine pots of them were exhibited. In some country districts, where attention is given to their culture, and gardeners or amateurs vie with each other to produce the best productions, the results are highly satisfactory. The varieties are so numerous, and many of them so fanciful, that selection is all a matter of taste.

Some people like self-coloured varieties; others admire the white and yellow beltings of the show section; but the best effect in the garden is produced by the fancy or Belgian kinds. A. J. D.

Portion of small rectangular garden. (See "Gardens of Light and Shade," p. 93.)

GENTIANA ACAULIS FOR EDGINGS.

We grow plants of this lovely Gentiana in lines by the sides of walks and on slightly raised mounds. The lines by the sides of walks are about 1 foot wide. About once in six or seven years the plants are taken up directly they go out of flower; we find it necessary to take them up occasionally, as they get so matted together that the growth becomes weak and the flowers reduced in number and get smaller, that is, after they have been growing in the same soil for any length of time. Our plants are growing between flat pieces of stone set up edgewise. Both plants and stones are taken away and laid on one side, the soil is then taken out to the depth of 9 inches, and its place supplied with good turfy loam that has laid for a few months in a heap. About 6 inches of this is put in, and then the stones are put back in their places in an irregular manner, except that they are made level with the surface; we leave about 2 inches of space between the stones for the reception of the plants. The latter are then divided into such pieces as will conveniently go between the stones, and planted so that they do not touch one another. As they are put in some soil is carefully packed about their roots, sufficient being used to cover all but the surface of the stones. The whole is made pretty firm and then well watered. We prefer taking them up and dividing as soon as they go out of flower, as that gives them ample time to get re-established before the flowering season returns. Planting thus early, however, entails a little more labour than would otherwise be the case; they require, for instance, to be watered in dry weather to assist them in getting established, and we shade them as well, when the sun shines brightly, with green branches laid lightly on them. Where these attentions cannot be given them the planting had better be delayed until early in September, a season when we mostly have moist and growing weather that enables them to take care of themselves. Those that are late planted will not, however, flower so well the first year as stock planted earlier. Those grown on slightly raised mounds are dealt with at the same time and in the same way as the others. The masses are irregular in form, about 4 yards in circumference, and when first planted the centre is about 9 inches above the surface, but I find they get lower as the soil settles down, so it is best to allow for this sinking down at the time of planting. When so raised they are certainly more effective than when growing level with the surrounding surface. The stones that we use are from one inch to 2 inches thick, and about the size of a man's hand. The way in which the roots wrap themselves round them is sufficient evidence that they afford the plants just the conditions they like, and although we never put them close together, they make a carpet of green sufficiently close to cover the whole surface in one year. I have never met with the same success when I have attempted to grow this Gentian without the aid of stones. Our loam, too, seems to suit them; it is rather heavy, although it comes off the red sandstone. J. C.

The old double Wallflowers.—At this season of the year, or later, when every garden is fragrant with single Wallflowers, I always remember the old shrubby double kinds (orimson, brown, and golden yellow) which grew in my mother's garden when I was a child. How comes it that these old kinds are now so rarely seen? That they are not rare nor hard to cultivate I know, and yet for some reason I cannot now explain they are grown abundantly in very few gardens. Perhaps the seedling double German strain has to some extent supplanted them, but for sweetness and elegance of habit these seedlings are not to be compared with them. That the single Wallflowers are most sweet and lovely, I, of course, admit. A great handful in an old brown jug before me as I write lends emphasis to the fact; but I think it a pity, nevertheless, that the old double orimson blood Wallflower and its golden flowered form are not more generally to be met with in all good gardens. Wherever old-fashioned English flowers are appreciated they certainly should find a place.—X.

13286—**Destroying green fly.**—I should say the receipt you mention would aid in destroying green fly. Another similar one is boiling Laurel leaves in four gallons of water and syringing with that. I have found hand picking and syringing with soft soap the two best remedies. —C. F. Davis, *Leatherhead.*

FRUIT TREES IN PLEASURE GROUNDS.

There are few more beautiful objects just now than fruit trees; yet, strange to say, they are, as a rule, banished from the ornamental parts of our gardens. Even the orchard on Grass, frequently the most enjoyable spot in the domain, is hidden by some screen from the best portion of the grounds, as if any tree that produced useful fruit must necessarily be objectionable. Nevertheless, varieties of the same family that do not produce fruit, such as Almonds, Crabs, double-flowered Peaches, &c., are placed high in the list of flowering trees and shrubs for lawns and shrubberies, though not a whit more ornamental than fruit trees in flower, to say nothing of their beautiful fruits. Occasionally one comes across some fine old specimen that has been left where an old orchard has once stood, or where some seedling Cherry, Apple, or Pear has been allowed to grow to maturity; but I refer to trees allowed to grow at will, as some large unpruned orchard trees do in Kent, or cider trees in Devon or Somerset; if shorn or trained into shape, beauty of form becomes lost. Then there is the highly ornamental foliage of the Fig aud the Mulberry, which, when allowed to grow into large spreading trees, are able to hold their own with any of the orthodox subjects employed in the decoration of dressed grounds. In this locality the Fig is one of the most ornamental trees we have, its foliage withstanding rough gales better than that of almost any other tree, while the crops of fine fruits which it produces as a standard are surprising when compared with the produce of trees on walls. The Mulberry, too, when allowed plenty of space to form a large tree, spreads out broad and high, and the outer branches droop down in a most graceful manner. There is no better method of growing Mulberries than having them on the Grass, and allowing the fruit to drop naturally. As an ornamental tree in parks and pleasure grounds, the Mulberry is surpassed by but few. It may be urged that the orchard is the proper place for fruit-bearing trees, and so it is if all could have orchards on Grass; but why those who only have a limited area should grow useless cumberers of the soil on their lawns, not in any respect more ornamental than fruit trees, passes one's comprehension. Where all are so lovely it would be difficult to select the most beautiful. The drooping branches of the culinary sorts of Cherries, such as the Kentish and Morello, are very graceful, and scarcely less so are the large-flowered Apples, such as Hambledon Deux Ans. In fact, it is to its fruit trees that Kent owes the title of "the garden of England," and I feel sure that any who may be induced to plant on their lawns and in their shrubberies fruit trees as ornamental subjects will be well satisfied with the results.

Gosport. J. G.

GLADIOLUS.

One of the most effective and striking flowers in the garden is the Gladiolus. When planted among Rhododendron beds, or in the borders in front of shrubs, their beauty can hardly be conceived, the green background of the shrubs showing off their beautiful colours. They are useful for cutting, too; if the unopened spikes are cut and put in water they open much better and last longer than if cut when fully open. The French adorn their flower borders with the cut spikes of Gladiolus by putting the flower into a bottle of water and burying it in the ground; although this reminds me of the way in which many of us decorated our gardens when we were children, still for the time the borders look charming thus treated. They are very useful flowers for London gardens as they are not affected by a smoky atmosphere. The varieties may be divided into two sections—summer and autumn flowering, ramosus and its seedlings being the former, and Gandavensis and its seedlings the latter. The ramosus varieties bloom in July and August, and for culture out-of-doors should be planted in December, January, February, and March. Plant the bulbs 6 inches deep, and surround each with a handful of silver sand. If the ground intended for these should be occupied with spring bulbs, plant them first in pots, and put into the ground when it is cleared of its spring occupants. Much disappointment will be avoided in dry weather by copious waterings and mulchings of manure. Another cause of disappointment is purchasing the bulbs of Gladiolus ramosus too late. They come over from Holland in November, and should then be bought and kept in a cold, dry place till wanted. If kept in shops they are apt to get dried up with gas and heat, and are useless. The following are some of the best varieties of G. ramosus: byzantinus (rich purple), Colvillei (lilac), Colvillei alba (white), communis alba (white), communis rosea (rose), communis rubra (red), these may all be bought at 5s. per 100. On light well-drained soils the Gladiolus gandavensis may be planted at the end of March, but it is safer to wait until the end of April; then plant like G. ramosus. These plants arrive in December from France, and are to be purchased from 15s. to 16s. per 100. Among the many varieties the following have been considered the best: cardinalis (fiery scarlet), floribunda (white), insignis (scarlet), psittacinus (bronze), Queen Victoria (vermilion), ramosus (rose and white). The chief thing to remember in growing Gladioli is to keep the soil moist round them by mulching and watering; what the soil is I have not found so material, because some of the best Gladioli I have seen were growing in soil where one had only to put one's penknife in to get to chalk, and some bloomed equally well in another part of this village (Leatherhead) in rich, heavy soils. I have found it by far the best plan to leave the bulbs undisturbed, only taking them up every three years to separate the young ones from the parent bulb. If severe weather sets in, cover them with leaves. C. F. D.

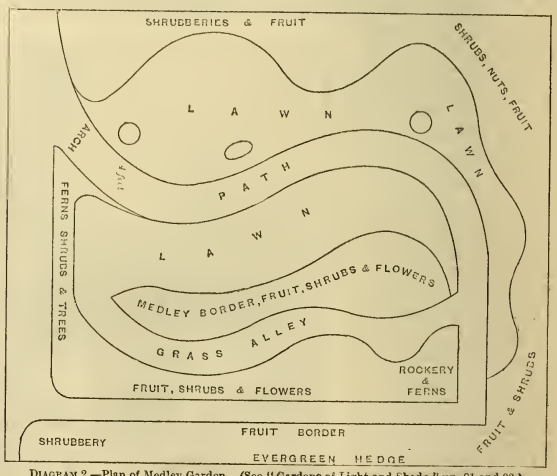


Diagram 2.—Plan of Medley Garden. (See "Gardens of Light and Shade," pp. 81 and 93.)

Hardy Ferns for cutting.—Spring is the best time of the year for forming a hardy fernery, and scarcely anything in a garden will be found more useful for supplying foliage fit for garnishing vases and for other indoor decorations. One great advantage, too, of growing these beautiful plants is that they make any shaded nook, too dark for flowering plants, look verdant and interesting at all times of the year. If the soil is too poor or full of roots of trees for anything to grow in it, collect together some fresh light soil and large stones, clinkers, or roots, and make a raised bed, and in it plant any of the hardy Ferns procurable just as they are pushing up their young fronds. Large growing kinds should be placed at tolerably wide distances apart either towards the back of the bed, if built against a wall or trees, or, if open all round, as central objects, filling in between with dwarf spreading kinds. Some low-growing and trailing plants, such as Aubrietias, Alyssums, Vincas, and the like associate well with Ferns, and clumps of Narcissi, and other bulbs that last for years when once planted, make any waste place or barren corner look well at all times. The great charm of a garden lies in every inch being made the most of, and in fresh features presenting themselves at every turn.—J. G., *Gosport.*

Hint to intending Dahlia exhibitors.—Knowing that the garden of the person who for several years had taken first prize at the Dahlia show in the Isle of Wight was situated on the south-western side of a hill (from which direction the autumnal winds generally blow), I could not think till one day last autumn I happened to be passing that way how he could be so successful. I found that he had a tall row of Scarlet Runners on the exposed side of his bed of Dahlias. I thought it was a capital expedient. It was not only inexpensive, but the crop from the Scarlet Runners made the rank, as it were, self-supporting; and it could be cleared away as seen to be necessary. The rank should be a double row, the wider at the base the stronger it will be; 2 feet in most instances would not be too wide. The stakes and the plants in row should be closer together than in ordinary cases. If a strong wind cut up the windward side the plants on the lee-side will be found to be uninjured.—L. C. K.

Freesias indoor and outdoor.—I have found Freesia Leichtlini and F. refracta alba a very great success. I have had them two years. I plant the bulbs from six to ten in a pot at the end of August, and put them in a cold frame. They have leaves in November; they throw up one or two spikes per bulb, each spike having from four to eight flowers, and for window decoration they cannot be excelled. They are now (beginning of April) in full flower. I have also tried a few bulbs in the open borders in a sheltered situation, and they are showing flower. They appear to me quite as hardy as Sparaxis, and much better. The bloom of alba is very like Anthericum (St. Bruno's Lily). I have Sparaxis now four years in the border without taking up. I have been told that there are two or three other Freesias. If so, I should be much obliged if you would tell me their names, for I should like to buy them.—South Devon. *** The only other distinct Freesia is F. refracta itself, which is also known as F. odorata. By raising seedlings you may get intermediate forms between these species, but they are really not distinct enough to be named.—Ed.

Pansy Cliveden Yellow.—I find this to be the earliest to flower of all yellow Pansies or Violas; I therefore use it largely for spring bedding. In the middle of March the beds in which this Pansy is growing are generally quite bright with hundreds of flowers, but of course a mild winter and warm bright spring weather have a good deal to do with its early flowering. Nevertheless, in any season it is always the first

to make any show of flowers, and it possesses yet another useful property: I allude to the easy way in which it can be increased and the stock of plants kept up. We lift our plants from the beds late in May, and transplant them again on a north border; early in August they are taken up and divided into three or four parts and put back in the border; by the time we want them to fill the beds for the winter they have become nicely rooted, and move with comparatively little injury.—C. C.

Polyanthuses as cut flowers are most useful if grown strongly, so as to get spikes of bloom with good long stalks; for this purpose seedlings raised from a good strain of the laced kinds answer well. The plan that I find to answer best is to sow as soon as the seed is ripe on a partially shaded border, keeping it moist until the seedlings have become well established. Let them remain in the seed-bed until the following spring, when they should be transplanted and placed on well-enriched ground in a partially shaded position, such as between rows of bush fruits. There they will grow into fine plants, and the following spring will send up a quantity of strong flower-spikes that will not only be very effective in cut-flower decorations, but that will last for a long time, and the great variety produced by a good packet of seed is not the least of the advantages belonging to the raising of seedling Polyanthuses.—J. G., *Gosport*.

Early-flowering Chrysanthemums.—Having cultivated most of the early-flowering Chrysanthemums by hundreds, I send a list of those which I have found to be best in most situations: *La Petite Marie, Madame C. Desgrange, Précocité, *St. Mary, *Anastasia, Crome, Stella, Lyon, *Fedora, *Madame Jolivert, *Illustration. Semi-early: Le Neige, Mrs. Callingford, General Canrobert, *La Vierge, Mons. A. Dufour, Sœur Melaine. Plant out the first week in May in not too rich earth. After they have got hold of the soil stop at once, with the exception of those marked (*), which grow dwarf and bushy without it.—J. A.

Curious Primrose.—I enclose an abnormal blossom of Primrose found in our woods, thinking it may, perhaps, be of interest to you. The peculiarity is this, that the normal form having five as its base—five sepals, five petals, five stamens, one pistil—the specimen has them all nearly tripled; instead of the number of petals being increased by disappearance or conversion of stamens, there are 14 stamens, 13 petals, and 12 sepals. I could not ascertain the state of the pistil without dissection, and prefer sending it to you perfect.—Wm. Gover, *Worthing*. *** Although the Primrose is formed in the peculiar way described by the Rev. Canon Gover it is none the less a very beautiful flower, large (almost 2 inches across), the overlapping and bulging of the petals causing it to be beautifully fringed. If such a form could be fixed it would be a charming addition to our garden Primroses.—Ed.

REPLIES.

13289. — **Summering Arum Lily.** — Planting out this Lily in trenches as Celery is done is undoubtedly the correct way of growing it. I cannot understand yours flagging when lifted; mine never do. They are planted in the border during the summer and lifted in autumn, and now they have been in bloom in succession since Christmas. Perhaps you did not lift a sufficient ball of earth with them; they should be dug up with plenty of earth.—C. F. Davis, *Leatherhead*.

—— You are under a mistake—Arums grown in pots do not flower earlier than those planted out in summer and potted in autumn. When carefully lifted and potted, and stood in a shady place where the wind cannot reach them, they do not suffer to any appreciable extent from being lifted. These plants do not rest, as you seem to suppose; if they do not make many leaves before the autumn, the roots are active, and for that reason they require plenty of root moisture at all times.—J. C. C.

13284.—**Pansies and Violas.**—Certainly you can have Violas in bloom at the same time as Wallflowers, Daisies, Myosotis, and Arabis. About the first week in October you should make a bed of them by selecting all the strong plants you can get, and setting them in rows, 12 inches apart, in soil composed of leaf-mould, rotten manure, and silver sand. They will require watering in hot weather, and that is all the attention they need. To prevent degeneration of the varieties, take cuttings from them in April or May, and insert these again in beds when struck, which they readily do in silver sand. The Cliveden Blue is considered one of the best varieties, and Beauty of St. Osyth is a good bedder.—C. F. Davis.

—— If seeds of Pansies are sown at the end of June the plants will flower the following spring at the same time as Daisies, Wallflowers, and Myosotis. Violas can only be had true to colour from cuttings, or by dividing the old plants in the autumn. We have no time to strike them from cuttings, so we set aside a few old plants, and in July cut off all the long flowering shoots and place a little fine earth round the stems. In September we find the old stools bristling with young shoots sent up from the bottom, and some of them with young roots attached. These we select and dibble into a fine bed of soil, and at the end of October they are put in the beds for spring flowering.—J. C. C.

13231.—**Lily of the Valley for forcing.**—If you can plant your Lily of the Valley roots out in the ground without their getting a severe check, the crowns may be strong enough to bear forcing next year. Still they would be greatly improved if left in the ground until the following year. Your best plan is to harden the plants off and plant them out in some good soil; disturb the roots as little as possible, and give them a good watering-in. Beyond an occasional watering in dry weather, they will need no further care until the foliage dies down, when, if the crowns are found to be strong enough for forcing, they should have a slight mulching of manure.—Bohemian.

—— Crowns that were "good for nothing" this year will be good for less than nothing next year. Throw them away, or plant out in some good ground for a few years. You must obtain imported crowns or home grown clumps for forcing.—J. D. E.

13234.—**Nitrate of soda for lawn.**—This is a highly stimulating manurial agent, and has a tendency to cause Grass, or any other green crop, to grow rapidly for a time and to assume a deep colour. Guano acts in the same way, but its effects are more lasting; hence I prefer it for Grass. I have frequently used this to cause a vigorous and lasting growth.—J. D. E.

13292.—**Hardy climbers for east wall.**—For rapidity of growth nothing beats the Virginian Creeper, but, of course, this is not evergreen. Why not, however, plant some of this and some Irish Ivy, which is a quick-growing plant? Both are indifferent to the soil in which they grow.—C. F. Davis, *Leatherhead*.

THE COMING WEEK'S WORK.

Glasshouses.

Allamandas and Bougainvillea glabra.—Where Allamandas have made very straggling growth without showing flowers they may have their points nipped out; the shoots should then be trained regularly over the trellis, bringing the points low down. This will cause a quantity of the back eyes to break, and in due time show bloom. See that the plants are now liberally supplied weekly with manure water. Keep the strongest shoots of Bougainvillea glabra, which are those that must be depended on for flowering, in an erect position, as, if allowed to droop, they break back and interfere with the blooming. If it gets a check from want of water at the root, before the bloom is formed, the shoots usually do not extend further, but set a few flowers at the points in place of the long wreaths that are forthcoming when all goes well with the plant. Both this and Allamandas will stand manure water in a stronger state than most things.

In the case of soft-wooded plants of quick growth a continuous supply of manure water at short intervals is indispensable at this season, and it must never be given too strong. For quick-growing plants, like shrubby or herbaceous Calceolarias, Cinerarias, Fuchsias, Pelargoniums, Hydrangeas, Petunias, and tender annuals, I have found no better plan, when once the pots get thoroughly full of roots and the flowers are formed, than to use it continuously every time the soil requires moistening until the blooming is over. Hard-wooded greenhouse plants, such as Azaleas, Aphelexis, Boronias, Acacias, Chorozemas, Correas, Daphnes Myrtles, Eriostemons, Pimeleas, Polygalas, Pleromas, Neriums, Hoveas, and Genistas, at this season of the year, when taxed with the development of their flowers or with shoot growth, are greatly benefited either by manure water or the use of some solid fertiliser applied to the surface of the soil; it will not only assist the current season's bloom, but its effects will be still more apparent on the ensuing growth. T.

Seedling Primulas and Cinerarias.—Those who have really good strains of Cinerarias, and who are desirous of saving seed which they can rely on, should select plants that possess the best form and colour of flower. Each plant possessing these properties should be isolated from the inferior stock while in bloom, as in this way only can seed that will produce flowers of the requisite stamp be secured. As regards Primulas, the later sowings made last year, which have not been so much weakened by blooming as the earliest, will be in the best state to seed freely; these should be set on a shelf or stage under the influence of strong light and sufficiently supplied with water; nip out the successional flowers formed after enough for seed purposes have been secured. M.

Roses.—Tea Roses in pots that have been forced and flowering for some time will, if strong, yet keep on making wood that will yield flowers, but to have them of large size and sufficient in quantity the plants must be regularly and liberally fed with rich surface dressings. Where any falling off occurs in this matter the after-growth will come too weak to flower; or, if a portion of it does bloom, the produce will be thin and poor. It rarely happens that pot Tea Roses in the hands of private growers yield nearly the quantity of flowers of which they are capable, and this is due to want of liberal feeding. The nature of these Roses is to keep on growing all but continuously when in a temperature that permits of such taking place, but, unless they receive a regular and liberal supply of manure in either a solid or liquid form, they neither increase in size nor produce flowers in abundance. They require and will bear much more in the way of stimulants than is generally supposed, and they have a much better effect than any quantity of solid matter added to the soil at the time of potting. Where the plants are turned out in beds, and their roots have thus unrestricted space in which to extend, they naturally are better able to take care of themselves, but even in this case a free use of manure water will be found advantageous. Whether cultivated in pots or planted out, they should be regularly syringed every day to keep down red spider—not merely sprinkled in the way often thought sufficient, but given water without stint, so as to drench the foliage. Where Rose culture under glass is ever expected to be above mediocrity, there must be a ceaseless outlook for mildew, especially during this and the ensuing month, and wherever a curled leaf is seen sulphur should at once be applied. T. B.

Flower Garden.

Dracænas.—Most of the varieties of Dracæna are so tender as to be only suited for indoor decoration, but there are a few so hardy as to be all but indispensable for open air use in the summer flower garden. These are D. australis, which has broad, bright green foliage; D. lineata, a sort with narrow green foliage; D. gracilis, a kind with very narrow striped green and brown foliage; and D. Veitchii, a species much like australis, but stiffer in the foliage, and therefore better able to withstand the force of the wind. For sub-tropical bedding arrangements these Dracænas are invaluable, and a few plants serve for a large bed, as, owing to the recurved and drooping habit of some and the spiral and perfectly round form of others, in order to show them off to the best advantage it is necessary to give them plenty of space, nine or twelve good plants being ample to furnish a bed 12 feet in diameter. Thus planted, and the ground beneath them carpeted either with Sedum acre elegans or Golden Thyme, no more beautiful sub-tropical effect could be desired. They also make capital lawn plants, and in warm, sheltered positions stand our average winters. Several large plants of them stood out here for years, but they all succumbed to the severe weather experienced in 1880 and 1881. They may be propagated at any season from seeds or cuttings. Ours are obtained by cutting up the old stems and corm-like roots in pieces of about 1 inch long; these are placed in pans

of sandy soil just in the way in which vines are propagated, and plunged in a brisk bottom-heat, in which they quickly form roots and break into growth.

Summer bedding arrangements.—These, at the present time, demand all but a monopoly of attention as regards propagation, arrangement, and planting. Winter effect having to be considered as well as summer, in order to avoid muoh autumnal removal, every hardy plant anything like suitable is pressed into the service; this to some extent excludes as unsuitable many plants which we should otherwise like to use, and in some degree robs the summer garden of its gaiety, but this loss is more than repaid by the extended season during which it is effective. Space will not admit of giving in detail all the arrangements now being made from the standpoint just alluded to, but the following treatment of a large circular bed may be taken as a fair example of the many ways in which hardy and tender bedders may be planted in combination. It is edged with Herniaria glabra, green, and the groundwork, or divisional lines, which cut up the bed into smaller circular or oblong beds, consist of Veronica incana, greyish white, the smaller angles being filled with Ajuga reptans purpurea, and the central and smaller beds as follows: In the centre is a large plant of Phormium tenax variegatum; this is surrounded by Viola Blue Bell and Ageratum Cupid in mixture. The oblong beds have for the centre small plants of Cupressus erecta viridis, and a surrounding line, next the Veronica of Coleus, the centre being filled in with tricolor Pelargonium, Sophia Dumaresque. The small circles have as centres small plants of Retinospora pisifera aurea; one-half of them is filled with Lobelias of the pumila section, and the other half with Alternantheras. It will thus be seen that the whole of the framework of the bed, including the centre, is entirely composed of hardy plants, and therefore its conversion to a winter bed is an easy matter. Some of our beds have more, and others fewer, hardy plants than that here given, so that the bed just described may be accepted as about the average. We are now planting Sedum glaucum, corsicum, and acre elegans, Saxifraga rosularis and oppositifolia major, Cerastium arvense and tomentosum, Echeveria, Sempervivum, Lamium maculatum aureum, Gold and Silver Thymes, Gnaphalium lanatum, Helichrysum plicatum, Veronica incana and rupestris, small shrubs, Yuccas, Chamæpeuce (Fish-bone Thistles), Viola, and Calceolaria. W. W.

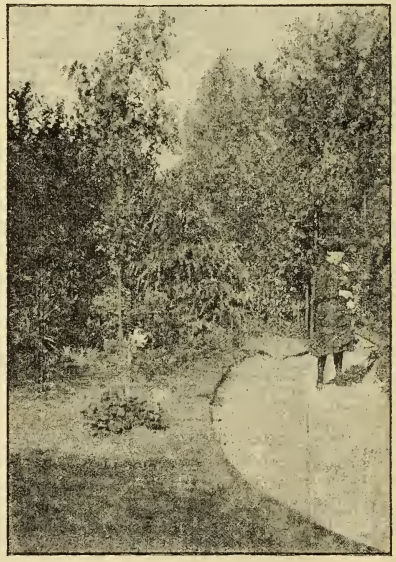
Fruit.

Orchard houses.—When the stoning process is complete make the final thinning. Always give the preference to Peaches and Nectarines which point to the sun or can be coaxed into doing so, otherwise the stalk instead af the apex will receive the colour so much admired. A general pinching of all the strong shoots will be beneficial to the rapidly swelling fruit, but weak ones will be best left alone, as the only wood bud which they make is at the point, and stopping would render the shoot useless for another year. Good syringing and liberal feeding must have daily attention, and sharper forcing may be indulged in by day, particularly when the house can be closed with plenty of solar heat and moisture, but hard forcing is not advised, as it invariably ends in pale, watery apologies for Peaches, which nobody thinks of eating. The house must be closed every afternoon for the attainment of size, but night air should be given, and the temperature should range from 56 degs. to 58 degs. when the fire is banked up for the night, and 50 degs. in the morning, with a steady rise to 65 degs. or 70 degs. by day.

Melons.—Early Melons now swelling will require liberal feeding with warm liquid until they have attained their full size and show signs of changing for ripening, when a moderate quantity of pure water to prevent flagging will keep them going and improve their flavour. If the plants are well oropped, lateral growths will no longer be troublesome, and as the size and quality of the fruit will depend upon the health of the old foliage, this must be kept clean and free from insects by copions syringing every afternoon at closing time. Morning syringing in light, bright houses must now be given up, otherwise the foliage will scald; but all paths, walls, and surfaces may be well damped with warm water as soon as the morning heat begins to rise. Ventilate early to allow moisture to dry off the foliage, then gradually raise the heat to 85 degs. or 90 degs. with sun; close at these figures, and descend to 70 degs. for the night. Grow on successions with plenty of heat, air, and water, but carefully avoid producing a gross habit by feeding until after the fruit is set and swelling. Keep the glass clean, never shade after the plants get established, thin out, and train the young growths, also remove male blossoms, and allow a wild, abandoned style of growth during the time the fruit is setting. W. C.

Vegetables.

Vegetable Marrows, ridge Cucumbers, and Gherkins—all useful vegetables—should just now claim attention. We make trenches 8 feet wide and 1 foot deep, building up the soil at the edges of the trench and filling it up with old material used for Seakale and Rhubarb forcing in the spring. Mixing with this a few loads of fresh manure from the stable soon gives the whole mass a nice gentle heat. We then earth it over from each side of the trench, and it is ready for hand-lights placed in the centre. I always sow the seed about the first week in May, taking the nurserymen's advice to sow thick and thin early. Early Potatoes now showing above ground should be earthed over to keep them safe from frost; when caught and blackened they never turn out so good a crop. The frost seems to paralyse them and does them much injury. Turnips, Spinach, Parsley, Brussels Sprouts, and a pinch of Cabbage seed may now be sown, the Brussels Sprouts being for late use; but all spring Broccoli keep in the seed store until the beginning of May. Beet should now be sown; also make successional sowings of Peas. Broad Beans should be sown according to the demand. "Witloof" sow at once if wanted. The ground lately occupied with Broccoli should now be made ready for Celery by taking out the trenches. Lettuces may be planted on the ridges. Well manure the trenches and dig them up a good depth if the soil admits of it, and by the time the plants are ready the soil will be well pulverised through the action of the weather. Mustard and Cress, Radishes, &c., sow in accordance with the demand. R. G.



Portion of side plot, semi-detached house, trees and shrubs planted four years.
See "Gardens of Light and Shade," page 93.)

Work in the town garden.

Many shrubs, especially of flowering and free-growing sorts, may still be planted, and in very smoky places will do better than if put out earlier. Slow-growing Evergreens, however, will not now do much good, unless very carefully attended to, and plentifully watered both at the root and overhead in dry weather.

Make successional sowings of Mignonette and other hardy annuals if required, and carefully thin out, water, and otherwise attend to the patches of those already sown and up.

Shrubby Calceolarias (yellow) will succeed much better if planted out at once in deep rich soil than if left till the other bedding plants are put out; being almost hardy, there will now be no frost to hurt them. Obtain plants of the many beautiful varieties of Pyrethrums, both single and double, and put them out into beds of rich soil in a sunny position. No plants are better adapted for town culture, and the blooms, being of a very enduring character, are very useful for cut flowers. Hollyhocks, Phloxes, Pentstemons, and other hardy and half-hardy perennials, may also be planted at the present time with every prospect of success.

In the greenhouse everything grows apace, and constant attention is now an absolute necessity. Cinerarias should be making a fine show. Shade from hot sun will greatly benefit the plants, as well as prolong the bloom. Above all, keep aphis well under. The simplest way is to have a rather deep frame or pit set apart for the purpose, with a few shelves for the plants to stand on, so as to allow the smoke to get all round them. When a plant, or a few plants, are seen to be getting infested, remove them here, shut up closely, and fumigate gently but thoroughly. Calceolarias are showing bloom also, and must be kept cool and clean; for these as well as for the Cinerarias a little shade is far preferable to excessive watering on hot, dry days.

Pot off young struck Fuchsias, and grow them on quickly in a warm, moist, and rather shady house or pit. If sprinkled overhead three or four times a day in bright weather, it is wonderful how fast these grow. Thus treated, and potted on as soon as needed, fine plants, 4 feet or 5 feet in height, may be grown from cuttings in one season. Shift choice zonal Geraniums from 3 inch pots into 4½-inch ones for summer blooming, and pot off singly any that may be still in the cutting pots. Seedlings of all sorts still need to be constantly pricked off as ready, or they speedily become spoilt and nseless. Petunias sown early and pricked off some time since should be potted into 3-inch pots for early flowering. If grown on in a warm, light, and airy house or frame, and kept properly watered, these seedlings will make mnch more handsome plants, with larger and finer flowers, than any from cuttings.

Sow at once a box of Cineraria and Primula for early flowering next winter. A greenhouse shelf, protected from sun, is the best place for the former, and a gentle hot-bed, or a damp bottom in a warm house for the latter.

Plants in rooms.—Keep plants in rooms clean and well watered. One frequently hears complaints at this season that plants taken from a greenhouse "go off" so when placed in a room. Gas has a great deal to do with this, but the chief cause is the change to the parching air of the room, as compared with the mixtnre of a genial greenhouse. Careful watering and a frequent damping overhead with a syringe, or brush dipped in water, will go far to counteract this evil, but the best plan is to have a wooden tray constructed, 3 inches or 4 inches in depth, and large enough to comfortably hold the desired number of plants. Place this on a stand

or table near the window, and fill it with fresh Cocoa-nut fibre. Nothing can be cleaner or sweeter, and if the plants are stood upon, or partially plunged in this substance, and this is kept constantly moist, the plants will flourish wonderfully, and no dropping of buds or any unpleasantness of that sort will take place.

Again, if plants are to do well the atmosphere of the room must be frequently changed—that is, the window must be opened a little, preferably at the top, for at least two or three hours every day, unless very cold. With many this is the usual practice, and a highly commendable one in every way; but plants cannot thrive in the stuffy atmosphere to be found in some houses.

Ferns starting into fresh growth should be repotted into fresh peaty soil and clean pots. A liberal supply of water will be required as the growth advances, but do not give too much at first. Pay great attention to Grevillea robusta, which is one of the very best, as well as most elegant, of room plants. If not already grown, a plant or two should at once be secured, as they will just now be commencing to grow freely. B. R.

GARDENS OF LIGHT AND SHADE.—IV.

Medley Gardens (*continued*).

Next we have an arrangement suited to the side plot of a semi-detached villa. The measurement of the ground upon which this design has been already worked out is 65 feet by 34 feet. The result is partially depicted in the illustration (reproduced from a photograph) on page 92.

Diagram 3 shows the ground plan.

The conservatory upon the north rests against the outer wall of the house. On the south and east is a flower border; then a pathway 5 feet wide; then the lawn, and on the south a dense shrubbery screening the fence and adjoining premises; on the east another shrubbery hides the public road.

List of Trees and Shrubs Growing in Garden Represented in this Illustration.

Number.	Name.	Cost each. s. d.	Totals. £ s. d.
24	Laurels	0 6	0 12 0
2	Portugal Laurels	0 9	0 1 6
1	Cedrus Deodara	3 6	0 3 6
3	Aucubas	0 9	0 2 3
2	Hollies	0 9	0 1 6
1	Scotch Fir	1 0	0 1 0
2	Thujas	0 9	0 1 6
4	Box (Handsworth)	0 6	0 2 0
1	Cupressus Lawsoniana	1 0	0 1 0
10	Rhododendrons	0 6	0 5 0
4	Privet ovalifolium	0 9	0 3 0
3	Common Privet	0 9	0 2 3
3	Variegated Elder	0 9	0 2 3
2	Flowering Currants	1 0	0 2 0
4	Scarlet Thorns	1 0	0 4 0
2	Lilacs	0 8	0 1 4
2	Spiræas	1 0	0 2 0
1	Sycamore	1 0	0 1 0
2	Silver Birch	1 0	0 2 0
1	Pendulous Birch	1 3	0 1 3
1	Lombardy Poplar	1 6	0 1 6
2	Laburnum	1 0	0 2 0
3	Abele Poplar	1 0	0 3 0
3	Standard Roses	1 6	0 4 6
4	Climbing Roses	1 0	0 4 0
1	Honeysuckle	1 0	0 1 0
2	Clematis	1 6	0 3 0
1	Japanese Honeysuckle	1 0	0 1 0
			£3 12 4

The shrubberies may be continued on the west, if desired, or that side of the garden may be left open with advantage where the surroundings are agreeable. If the garden ground extends some distance in that direction the plan of the medley garden might be advantageously combined, making such modifications as circumstances render necessary.

When the ground in rear of the house is of small capacity some such plan as that shown in Diagram 4 might be adopted, although it is always desirable, if possible, to obtain curved and flowing lines. Still some pieces of ground in rear of houses are met with so small as to be unsuited to any such arrangement, and this design at least possesses the advantage of a screen of greenery upon the importance of which, when the surroundings are unpleasing, we very strongly insist.

This plan, like the others, has been worked out, and the illustration on page 89 shows the effect in part.

The following is a list of the trees and shrubs, and their cost, planted in the garden photographed:—

Number.	Name.	Cost each. s. d.	Totals £ s. d.
3	Abele Poplars	0 9	0 2 3
1	Chestnut	1 0	0 1 0
1	Laburnum	1 0	0 1 0
1	Phillyrea	1 0	0 1 0
1	Spruce Fir	1 6	0 1 6
4	Privet ovalifolium	0 9	0 3 0
1	Silver Birch	1 0	0 1 0
1	Scarlet Thorn	1 0	0 1 0
8	Rhododendrons (Ponticum)	0 6	0 4 0
1	Irish Yew	1 0	0 1 0
8	Laurels	0 6	0 4 0
6	Handsworth Box	0 6	0 3 0
1	Scotch Fir	1 0	0 1 0
1	Sycamore	1 0	0 1 0
2	Lilacs	0 8	0 1 4
2	Sweet Briers	0 9	0 1 6
2	Euonymus	1 0	0 2 0
1	Magnolia grandiflora	3 6	0 3 6
2	Clematis	1 6	0 3 0
1	Clematis	3 0	0 3 0
2	Jessamine	1 0	0 2 0
2	Climbing Roses	1 0	0 2 0
2	Standard Roses trained on wall	1 6	0 3 0
1	Ampelopsis Veitchii	1 0	0 1 0
1	Arbor-vitæ	1 0	0 1 0
			£2 9 1

Additional designs for laying out pieces of garden ground of various sizes, such as are commonly found attached to modern suburban

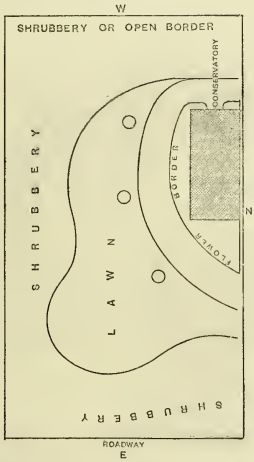


Diagram 3. (See "Gardens of Light and Shade.")

houses will be published. In all there is a similar effort to suggest a garden secluded amid masses of greenery, originating in the obviously reasonable notion that suburban surroundings usually supply much which may be hidden with advantage. Where more fortunate conditions prevail no great exercise of ingenuity is needed so to modify the arrangement that the eyes are secured access to the landscape beyond.

12779.—**Fairy Rings.**—I extract the following from the *Popular Science Review*, of April,

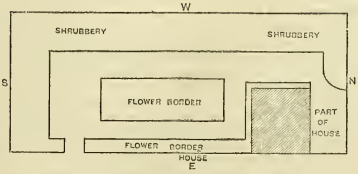


Diagram 4. (See "Gardens of Light and Shade.")

1862; "The true explanation of the phenomena of Fairy Rings appears to be, first, the natural process of vegetation advancing from exhausted to virgin soil; secondly, the impoverishment of the turf by the investing mycelium of the fungi; and, thirdly, the revivifying and fertilising effects of the decaying mycelium upon the same turf once withered and dried." Mycelium is the interlacing filament from which the fungi spring up. I think the above will satisfy "Enquirer."—W. J. G., *Crouch End.*

FRUIT.

MANURING FRUIT TREES.

It is singular how long some fallacies retain their hold, even after they have been disproved by facts, and of these one of the most mischievous is the belief that fruit trees and bushes are liable to injury rather than benefit from the application of manure. All sorts of diseases, such as canker and other ailments to which fruit trees are liable, are set down as the result of applying manure to the roots; whereas, in nine cases out of ten it arises from poverty of the soil, causing the roots to run down into the bad subsoil. I am continually hearing complaints from owners of fruit trees as to their unsatisfactory condition, and on examination have invariably found scarcely any surface roots or fibres of any kind, nothing but large, thong-like roots, that run right down into the subsoil. On inquiry I have usually found that manuring or top-dressing had not been practised for many years, their owners having come to the conclusion that such practices were dangerous. I do not say that manure will prove to be a cure for fruit-tree ailments of all kinds, but I will briefly detail a few facts that have come under my observation at various times, to prove that starvation of the roots is a far more prolific source of injury than abundant feeding of the surface roots, both with solid and liquid manures, and growers must form their own conclusions as to the best course to pursue. In the first place, I may mention that

Fruit trees grown in pots show us how trees may be kept in perfect health for years by simply giving them rich surface dressings annually. Even stone fruits (such as Peaches, Plums, and Cherries), that are supposed to be the first to suffer from manure in the soil, are kept in far better health in the small area in which their roots are confined by high feeding than one usually finds them in positions where they rarely get any manure, either solid or liquid. I have frequently plunged pot trees of various kinds in beds of manure, and allowed them to root through into it the entire season without a trace of disease appearing in the wood or fruit. In the case of wall and trained trees such as cordons, espaliers, pyramids, and bushes, I can positively assert that the best I ever saw, not only as regards healthy wood, but clear-skinned, high-class fruit, had the soil, as far as the roots extended, covered with good manure annually, and no orop of any kind was allowed to be near enough to rob the roots of their supply of nourishment. In fact, planted in good kitchen garden soil, trees usually make plenty of growth the first year or two; it is after they begin to carry crops of fruit that they need rich feeding on the surface to keep the fibrous roots at work where the beneficent influence of sun and air can reach them. It should also be borne in mind that trained trees are wholly under artificial circumstances, and, therefore, need especial care to guard them from injury. If the tops were allowed to grow naturally, they would form a leafy canopy and screen the roots from the scorching rays of the sun, and the falling leaves in autumn would form a friendly shelter in winter, and also enrich the soil as they get drawn into it by worms; but all these benefits are denied to trained fruit trees. Even the fallen leaves are gathered up, on the plea of tidiness, and bare clean raked surface soil is more the rule than the exception. The surface under such circumstances gets as hard and uninviting to tender rootlets as a brick. But with a coating of manure on the surface, all violent and sudden changes are avoided, and the roots, finding moisture and food, soon fill the surface with a network of fibres, producing hard well-ripened wood full of fruit buds. Fibrous roots and bearing wood go together, while gross tap roots strike down into the ungenial subsoil, being unable to find nourishment on the surface, and produce gross watery shoots that fail to ripen. If any blossoms are produced by such wood they fail to set. Year after year these watery shoots are cut off, and the energy of the tree wasted to no purpose; unripened wood is undoubtedly the most fruitful source

of canker. Severe frosts split the sap vessels, causing dead or dying branches, and these sappy shoots are set down as the result of over-luxuriance—but it is of a kind that yields but very poor results. When, through neglect, trees have been allowed to send their roots down too deeply, the best remedy is to lift them carefully and replant, spreading the roots out near the surface, and finally mulching with some good half decayed manure. The most fruitful trees I ever had received a good coat of manure in spring every year. There is no fear of fruitful trees getting over-luxuriant, for the crops they bear are the best remedy for superabundant energy. Once get trees into a fruit-bearing state, and but little attention will keep them in a satisfactory condition.

Orchard trees are the most important, for on them depends the market supply of home-grown fruit, and their fruitful or unfruitful state in nine cases out of ten is entirely dependent on the attention which they receive as regards manuring. In the fruit-growing parts of Kent, where large orchards of standard trees planted on Grass land is the rule, it is a well-established fact that if the Grass is cut for hay and carried away, the trees soon become unfruitful and die out; while, on the contrary, if the Grass is fed off, so that the nutriment is returned to the roots in the shape of manure, the trees keep fruitful and healthy. I have seen some of the most Moss-grown, miserable specimens of starved orchard trees restored to fruitful condition by making the ground beneath them the winter quarters of sheep and pigs, fed as if they were in the farmyard with roots and corn. The finest old specimens of Apple and Pear trees are generally those in an orchard next to the homestead that is used as a run for calves, sheep, pigs, and poultry the whole year round. In these orchards the turf is short, and, it being full of nutriment, the trees keep healthy and prolific for an indefinite period. Ashes, garden refuse, or any kind of road scrapings, or even scavengers' rubbish, may be utilised for increasing our supply of orchard fruits. They should be spread roughly on the surface in winter, and in spring harrowed and rolled down firmly. The result will soon be a marked improvement in the size and quality of the crop. Difference of opinion prevails as to pruning or non-pruning trees, some adopting one system and some another; but, be that as it may, I never knew fruit trees continue to yield good crops for any length of time unless the roots were supplied with manure in some form or other. J. G.

Gosport.

Portion of a medley garden—trees and shrubs planted four years.
(See "Gardens of Light and Shade," pp. 81 and 93.)

BUD DISEASE ON BLACK CURRANTS.

Having now made out the cause of theso-called black Currant disease, I will, with your kind permission, describe it, as far as I am able, to your readers; but before proceeding to do so, let me say that the mite whose ravages I am about to describe is well known, and that I lay no claim to any discovery; nor (as my observations have only extended over some two months) can I speak with any great authority as to the remedy. Early in February, in consequence of a letter in Gardening of January 31, I received several consignments of the attacked buds. Upon dissecting them I found a large number of what I took to be the larvæ of some insect, and accordingly watched for them to change, but at the end of the month I discovered that the supposed larvæ were laying eggs and increasing rapidly in numbers; this proved the larval theory to be false, as that is the intermediate stage, and they do not reproduce till the perfect insect appears. I then examined them under a much higher power, and found them to be insects having only four legs, slightly hairy, each foot having a stout central claw, with a bristle-like appendage on each side; there were also six sharp spikes on the sides, and two longer at the tail, tapering off so fine that they trailed along behind. The body was covered with small wart-like protuberances, giving it a very rough appearance; they are too small to be seen by the naked eye, and one gentleman to whom I wrote replied that he had often seen these tiny specks with a magnifying glass, and thought I should find they were only a gummy substance that collects between the folded leaves and the bud. I have since sent a description of it to Miss Ormerod, the consulting entomologist to the Royal Agricultural Society, who very kindly identified it for me as the gall mite, Phytoptus rihis, belonging to the Arachnoidea, or spider family, and distinguishable from the true spiders by their peculiar form and smaller number of legs. Having said this much as to the cause, a few words will suffice to point out the remedy. The infected buds are easily recognised, and, therefore, the first and most important thing would be to cut off and burn all infected shoots. This, if done by the beginning of February, when, I believe, there would be few, if any, crawling about, would destroy the majority at once. Miss Ormerod also suggests dusting with lime and syringing with soft soap. It must take such small and sluggish creatures a considerable time to crawl from tree to tree if the branches do not touch, but I suspect they are very much distributed by the fall of the leaves.

Maidenhead. W. E. H.

REPLIES.

13304.—**Blight on Grape vines.**—I think "C. P." may look for the cause of the blight which he describes in the humid and sunless atmosphere which must pervade his house from the end of January to the end of March. Forcing without sunlight is a process directly opposed to the natural growth of the vine, and the syringing is an aggravation of it. With a vinery situated as "C. P.'s" is, the vines, I think, ought to be left to be stimulated by the sun's light and heat alone. After the buds have unfolded by this means, then, if Grapes are wanted a little early, I would apply fire heat, but only in that case. Syringing at any time is of doubtful benefit; carried to excess it is positively injurious. A better plan is to have some open troughs or other vessels filled with water for evaporation. This furnishes all the moisture required by the Grape vine, which is very little, considering that in its most natural climates scarcely any rain falls during the growing season. A great preventive of mildew or blight is the use of flowers of sulphur, blown over the fruit or foliage twice or thrice, at intervals, during the spring and summer.—J. M.

—— Your vines are evidently wrong at the roots, because your treatment appears to have been right. As I read your question, the border for the roots appears to be inside the house and a drain beneath it. The drain is a mistake, and no doubt it is the cause of a weak root action, which makes the bunches curl up and die away. An inside vine border does not want draining unless it is below the outside level, and it is very probable that your vines are suffering for the want of root moisture. Search out the drain and cut it asunder in two or three places, and give the border more water.—J. C. C.

13220—**Soot for Strawberries.**—This is a good stimulant for Strawberries, as anyone can prove for himself by using it over the drainage of the pots. The roots will run freely into it, and show by their healthy state that the stimulant agrees with them. It should be applied very early in the year. Spread it over the surface of the ground, and hoe it in. After doing so, place a dressing of short manure over the surface of the ground. Strawberries succeed best on stiff soil; but it ought to be trenched at least eighteen inches deep, and a very liberal dressing of manure should be worked into the ground with it.—J. D. E.

13248.—**Peaches not ripening.**—I obtained the Alexandra Noblesse Peach almost as soon as it was sent out; but I did not think it so good as many others, and discarded it. Its fault was not stone-splitting. This is alleged to be caused by imperfect fertilisation. Early York, Hale's Early, Royal George, Grosse Mignonne, and Violette Hative are all better. The fruit of this last-named variety would not be hard; it is evidently one of the clingstones that has been sent in error. Dig it up, and plant Royal George in its place. Alexandra Noblesse may succeed. Use a small brush to convey the pollen from the anthers to the stigmatic portion of the flowers; this may prevent splitting. Such fruit never ripens well.—J. D. E.

13224.—**Strawberries for market.**—One of the best Strawberries for market is Sir J. Paxton. Where British Queen succeeds it is the best of all Strawberries for market or any other purpose. President is also a very popular and good sort, but Stirling Castle is not so well known in the market.—J. D. E.

12981.—**Blood manure for vine border.**—I suppose T. D. Davis refers to the blood manure obtained from the slaughter-houses, not the manufactured article sold in a powdered state. I have used the former, and found it a very powerful dressing for well-drained borders. It is best applied in spring, and, if strong, should be diluted with warm water. The warm water will be beneficial in other ways.—E. Hobday.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

QUESTIONS.

13831.—**Sweet-flavoured Pea.**—I shall be glad if any reader will tell me the name of a good sweet-flavoured prolific old Marrow Pea, analogous to Old Green Windsor among Broad Beans.—Mrs. R.

13832.—**Four best Carnations.**—I wish some experienced reader would kindly inform me of four of the best-named Carnations for the garden in four distinct colours that will supply good exhibition flowers. I have the old Clove kinds,—L., *Stourbridge.*

13833.—**Yellow Peas and Beans.**—I have some Peas and Broad Beans that look very yellow—in fact, to all appearance, are worthless. Will any reader tell me whether I can do anything to them? When planted, I put ashes on them to keep slugs off; is this the cause?—T. B.

13834.—**Sticking Sweet Peas.**—I should be very glad to know of a neat and inexpensive way of sticking Sweet Peas at the back of a flower border. I have hitherto used the usual Pea-sticks, but find that the wind blows the whole thing about to such a degree that untidiness and distortion of the flower-stalks are the result. How high ought the supports to be?—Roath.

13835.—**Profitable plants for large garden and greenhouse.**—I have a large garden and three greenhouses heated with hot water, and should be glad if any reader would tell me what would be the most profitable things to grow for sale. I wish simply to make the garden, &c, pay expenses. If I could make £60 or £70 a-year I should be satisfied.—African, *Bristol.*

13836.—**Raising Wallflowers, Sweet Williams, and Pansies.**—Will someone kindly tell me if it is absolutely necessary to sow seed every year of Wallflowers (Blood-red and double German), Sweet Williams, Forget-me-Nots, and Pansies? The man I have in as job gardener says it is; but cannot one take cuttings or divide the roots instead?—Master Giddy.

13837.—**Sowing Stocks and Asters.**—In sowing Stocks and Asters I filled the frame with stable manure to act as a gentle hot bed. Would some good grower tell me whether it would do to put 2 to 3 inches of compost on top of this and prick out plants into it? I treated my Stocks in that way last year, and though they did well in the frame they did not succeed after they were planted out.—C.

13838.—**Plants for greenhouse during summer.**—Would any reader kindly tell me what plants can be kept in small greenhouse during the summer? I have some Geraniums and Fuchsias in it, and should like to have a few more of easy culture. I have no garden, so am obliged to keep them in greenhouse in summer. It is isolated, gets sun all day, and can be heated up to 70 degs. in winter. Is there any kind of Pinks, Picotees, or Carnations that would do?—Naples.

13839.—**"Flora Conda."**—Can anyone give me information respecting a plant known by this name? One only of a number—some single, some double, and some treble—has survived the winter in a cold greenhouse. It resembles the Tobacco plant, has a yellow bell flower extremely fragrant, and is a native of Callao, S. America. In its native habitat it thrives on moisture, but mine was kept dry, and is now putting out leaves. Any hints will be gratefully received.—A. S. C.

13840.—**The Skipton or Cherry Plum.**—"Mrs. M." is much obliged to "Aleph" for the information he gives about the Cherry Plum, and would be very glad if he could give her an address in England from which she could get either the fruit or a young tree. The Cherry Plum, for preserving, excels any hardy fruit with which "Mrs. M." is acquainted; certainly, no Plum is to be compared with it.

13841.—**Plants for room facing south.**—I have a small, unused room, 11 feet 6 inches long by 6 feet wide, with sash window, measuring 3 feet 4 inches long by 2 feet 6 inches wide (not including frame), facing south. I should be glad to know if such plants as Geraniums, Cinerarias, Heliotropes, Azaleas, and Chrysanthemums could be grown and flowered in it during the winter; and would one of the many oil lamps or stoves spoken of in Gardening be of any service to them?—A. M. B., *Cheshire.*

13842.—**Plants for shady town garden.**—I have a garden in Kensington about 24 yards long by 12 yards wide. Half-a-dozen lime trees give good shade in summer. What seeds and plants will thrive best under them?—P. H. B. *** *We should not be very grat-ful for much shade in such a case. We fear you will have to resort to shade-loving plants The Italians say "Where the sun does not enter the doctor will," and we fear the small garden where the sun does not enter will almost be beyond the skill of the gardening doctor. In our issue for April 4th, however, and in several very recent numbers, you will find practical information as to what plants are suitable for shady gardens.*—Ed.

13843.—**Raising Cinerarias from seed.**—Will any reader kindly tell me the simplest way of raising Cinerarias from seed?—T. C. U.

13844.—**Making "Crown" and "Peacock" Yews.**—My employers wish me to cut some young Yew trees in the form of a crown, and others in that of a peacock. Will any reader give me any information how to do this? They are now grown high enough for the upper tier of branches to form the lower part of the bird or crown. Should the leader be cut off or worked in with the side branches?—Somerset.

13845.—**Spiræa Lindleyana.**—Is this an evergreen shrub? A book of reference describes it as such, but a nurseryman tells me it is not. I shall be glad to receive information as to how it may be propagated.—Pyrus. *** *Spiræa Lindleyana, as we know it, is not an evergreen shrub, but a very beautiful deciduous one—perhaps the most graceful hardy one known to our gardens. Some of our readers will, no doubt, tell you how to propagate it.*—Ed.

13846.—**Treatment of Angelica tree.**—Will any of your readers kindly give me information as to the treatment of the Angelica tree, a native of America, and said to have a beautiful scarlet flower. For three years I have had it in my vinery in a large pot, and, though it appears in good health and puts out leaves, it has not flowered.—E. B. C. *** *We fear you have been misled by a wrong description. The Angelica tree, as we know it, is Aralia spinosa, which is a very distinct and, in its way, handsome tree, bearing immense plumes of cream-coloured flowers, and quite hardy and free over a great part of England. We saw trees in Kent strikingly beautiful late last year.*—Ed.

13847.—**Marechal Niel Rose in vinery.**—In the autumn of 1883 I planted a Maréchal Niel Rose at the back of a lean-to vinery, in a border prepared for the purpose. It threw up a strong shoot, which I trained to the wall at the east end of the vinery. This shoot grew 9 feet long and then formed three strong shoots, which I trained at full length. These three branches have thrown out from every eye strong shoots, that are now 16 inches or 18 inches long, but have no signs of bloom. What must I now do with those laterals? Should they be cut back or allowed to grow until the autumn? If they are cut back now would they bear later?—Somerset.

13848.—**Destroying cockroaches.**—Will any reader who has overcome an army of them tell me how I can get rid of cockroaches? They have hitherto infested the house, but the number has been reduced by pouring water into their haunts. However, they cannot all be reached in that way, and they still exist in considerable numbers. They are making their way into my greenhouse, which I have erected against the house. The first intimation I had of their presence there was the disappearance of a number of seedling Tomatoes. I was advised to sprinkle paraffin, mixed with water, over the plants, and this killed what the vermin had left. They are particularly partial to Cucumbers, and to prevent them getting to mine I have placed four squares of glass round the plants. What will kill or drive them away?—W. H. H.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13849.—**Obtaining varieties of Rhubarb** (*J. J. P.*).—Apply to any large nurseryman or seedsman.

13850.—**Handbook on the culture of Pansies** (*C.*).—We know of none; many articles on the subject have appeared in Gardening.

13851.—**Injured buds on Apple tree** (*W. J. H.*).—The buds look as if some bird—tom-tits or bullfinches—had been at work.

13852.—**Simple book on vine culture** (*J. F. T. P.*).—"Simpson on the Vine," published by Routledge, is a very cheap and very good work.

13853.—**Poultry manure** (*H. G. R.*).—This is an excellent manure. Mix it with any other you have, and use it in a general way.

13854.—**Insects in Black Currant buds** (*J. H. Yorkshire*).—See article on the "Bud Disease on Black Currants" in this week's issue.

13855.—**Blood Oranges** (*Roath.*).—The Blood Orange is a variety of the common Orange, from which it differs in no way except in the flesh being red.

13856.—**Plants from seed sown now** (*W. H. H.*).—Select any hardy annual that you admire most, say Lupines, Nasturtiums, Nemophila, Stocks, Larkspurs. Any seedsman's list will assist you in making a selection.

13857.—**Book on agricultural pursuits.**—The volumes and current numbers of *Farm and Home* contain the most practical and useful recent matter on agriculture.

13858.—**Alsophila excelsa** (*W. F. L.*).—This is a Fern of considerable value and beauty. Its size and health would be elements to be considered in judging of its commercial value.

13859.—**Manure for Pelargoniums** (*J. G. Dover*).—Water occasionally with weak liquid manure, made by immersing a bag containing cow or sheep manure in a tank of water.

13860.—**Propagating Broom** (*G. H. E.*).—It is a difficult thing to strike cuttings of the common Broom. It is better raised from seed, or it may be increased by layering the branches in autumn.

13861.—**Procuring seeds of species of Poppy** (*T. B.*).—Any good seedsman ought himself to supply you with, or to obtain from his correspondents for you, the seeds of all the Poppies mentioned in the recent article in Gardening.

13862.—**Camellia flowers dropping** (*Lieut.-Col.*).—If the soil is, as you say, permeated with fungoid growth, the better way would be to remove the old soil entirely, and replace by good loamy soil, made lighter by the addition of turfy peat and leaf-mould. This is considered the best compost for Camellias. The sooner the flowers are off the bush the better, and when growth is active a little weak manure water now and then would benefit the plant.

13863.—**Obtaining Rollisson's Unique Pelargonium** (*A. A. B.*).—We have previously stated that we have no doubt that this well-known Pelargonium can be obtained from any nursery where soft-wooded plants are grown.

13864.—**"Distinct varieties" at exhibitions** (*A. C.*).—It is generally understood that the different varieties at shows should belong to distinct classes of plants; thus it would not be proper to show two kinds of Stocks or two kinds of Asters.

13865.—**Treatment of Narcissus** (*M. L. H.*).—If they are in pots plant out in a border of light soil. We should advise you to procure new bulbs for forcing next year, as the same bulbs rarely force well two years in succession

13866.—**Flowers for window box** (*L. B.*).—Bulbous plants would furnish a supply of flowers for your window box until the Geraniums come in. Just now the rear Hyacinths, Crocuses, Narcissus, and early Tulips, and later on will be the late-flowering Tulips and Narcissus.

13867.—**House Leeks (Sempervivum) not flowering** (*Mrs. B., Dorset*).—They flower frequently, and sometimes abundantly, but they should be fully exposed in a sunny position in the open air. We have seen many thousand blooms open at one time, and clouds of bees over them.

13868.—**Growing Echeveria secunda glauca in the open air** (*Mrs. R.*).—It thrives in any good soil in a warm, sunny place, and with such treatment as is usually given to bedding plants, and it is very easily increased by careful division of the shoots, which anybody can carry out.

13869—**Spiræa salicifolia** (*Pyrus*)—This is a Californian shrub, which may be obtained at any good nursery at a cheap rate. It is hardy, and will thrive in any ordinary soil. It looks well in a group in the shrubbery or associated with other shrubby Spiræas on the lawn.

13870.—**Repotting Clianthus magnificus** (*G. H. E.*).—Something depends on the strength of the plant in relation to the mass of soil it is growing in, and of this you say nothing. If it is a young plant and in want of a shift we should not hesitate to repot it carefully after it has done blooming.

13871.—**Potting soil for Anemone japonica alba** (*Naples*).—This Anemone should always be planted in the open air. It will grow in almost any ordinary garden soil, though like most other plants it will show greater vigour in good rich and moist soil. The plants will bloom when strong enough.

13872.—**Geraniums, Fuchsias, and Petunias, for window boxes** (*B. M., Surrey*).—They would do well enough if you gave them rich loam and kept it moist during the summer. The best time to put them out will, in your position, be the end of May. You might prepare them a few weeks before in a cold frame if you have one.

13873.—**Purchasing Desfontainea spinosa** (*Stella*).—Our note came from a correspondent who does not, so far as we know, sell plants. You should have no difficulty in getting this from any good nurseryman, certainly from any of the Exeter nurserymen, or those in the south of England, where it does very well.

13874.—**Crinum capense not flowering** (*R. S.*).—If the plant is in vigorous health it is evident that it receives the right treatment, and it will flower when strong enough. Being almost hardy, it does not require any heat, and a light, airy, and cool greenhouse is just what it requires.

13875.—**Violet plants for frame culture.**—Violet plants will do for two years under frame culture, provided you do not allow the lights of the frame to be on later than the beginning of spring, so that the plants may regain vigour by the time the lights are put on again in the autumn. In order to get good plants you should well mulch the surface with decayed manure, and during dry weather water the plants. Cut away the runners as they appear.

13876.—**Growing Turk's-cap Lily from seed** (*L. C. W. T.*).—Sow, as soon as the seeds are ripe (which will be indicated by the bursting of the capsule), in pans on the surface of light soil, sprinkled with a little sand. Keep moderately moist in a cold frame. Probably the seeds will germinate in a few weeks. Keep them in the pans during the next year, then either transplant them or repot each seedling separately the following season. In four or five years you may expect the plants to flower.

13877.—**Hyacinths and Crocuses after flowering** (*C. W.*).—By all means keep them. Let them complete their growth in a cold frame or pit. Give plenty of water until they ripen off; then, as soon as they have died down, shake them out, and plant at once in any position out-of-doors in which you would like them to grow. They will come up next year and flower, and, if in good soil and in positions that they like, will flower every year.

13878.—**Weeds on lawn** (*Vicar*).—Your lawn is overrun with Milfoil or Yarrow, a troublesome weed, and one that it will be difficult to eradicate, as it must be rooted out. If the lawn is entirely overrun with the weed your best course would be to remove the surface, taking care to get away all the roots. Top-dress with soil and sow seed, or lay with clean turf. The present is a good time to sow seed, and in a few weeks you may have a fairly good lawn.

13879.—**Growing Spiræas** (*John Strawberries*).—This is a very large family of plants and as you do not mention any kind we can only guess what you want. Many shrubs belonging to the family are quite hardy and do in almost any soil, wanting only plenty of room and sun. Perhaps you mean the herbaceous kind, which is now so popular as a forced flower, and which also does fairly well in the open air.

13880.—**Crocus nudiflorus** (*Pyrus*).—This is not a native plant, but has become naturalised in some districts, particularly in the meadows in the midland counties. It is a Pyrenean species, flowering in spring. It is a common hardy plant—very hardy, and of easy culture; a capital plant for naturalising in places where there is no chance of the bulbs being disturbed by digging, and where there is not much Grass.

13381.—**Sheep droppings and old Mushroom beds for Dahlias** (*H. Edwards*).—You cannot possibly have better manure for Dahlias and most other hungry plants. Don't be afraid of giving too much if it is well decomposed and well mixed with soil.

13382.—**Cucumber shrivelling** (*W. H. H.*).—It looks as if a bit of sulphur escaped from the flue. Are you not much too early with your guano water? Young plants do not want this if the soil be rich. We should say the cause is a burst of sun on an escape of sulphur, but nobody could be certain who had not examined the house. Show it to some grower in the neighbourhood, if you can.

13383.—**Treatment of Chrysanthemums** (*Ada*).—As you are too late now to take cuttings you had better repot the plants; remove the old soil, and pot in good fresh compost. Thin out the shoots, leaving but two or three of the strongest. The flowers may not be so large as those from plants raised from cuttings and grown strongly, but for ordinary greenhouse decoration they will be satisfactory.

TO CORRESPONDENTS.

Notice. — *Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—ED.

SUBSCRIPTIONS FOR GARDENING (*B. C.*).—GARDENING is sent post free for six months for 3s. 3d.; twelve months, 6s. 6d.——STEPHANOTIS LOSING LEAVES (*L. C. W. T.*).—See reply to No. 13311 (April 18th, p. 83); but, if you want help from our readers, kindly state where the plant is growing, the nature of the soil, the temperature, &c.——PORTRAIT (*H., Bristol*).—The engraving is being carried out, but the only obtainable photographs part of a group, and so small that it is difficult to engrave it.——TIME TABLE FOR SUNDIAL (*F. McDonnell*).—Your best way would be to apply to a house that deals in horological and other instruments. Try Negretti and Zambra, Holborn.——CHEAP DAHLIA STAKES (*Mrs. M.*).—Your question was inserted in GARDENING of the 11th April, and you will find an answer in last week's issue.——VALUE OF A BOOK (*E. A. King*).—To carry it from place to place seems more than good old "Miller" is worth. We know of a place where it passed from hand to hand of successive generations of gardeners at about 8d.; the parting man felt it was too much to carry, and sold it to a friend at that convenient price. It is probably worth a little more to a bookseller, as even gardening books are getting of some value through age. ——QUERIES (*Considerate Lilia*).—If you refer us to the numbers in which your communications were inserted, or tell us what it is you want to know, we will endeavour to supply you with the information desired.——NAMING PLANT (*Dublin Amateur*).—As there are many thousand species of plants it is impossible to name one that we have never seen. We should only be deceiving people if we said we could do so.——LIQUID MANURE (*Aqua Pura*).—Mix it with any other liquid or solid manure. Nothing of the kind should ever be used in a fresh state.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

*** *In the midst of the flower season it may not be amiss to impress upon those of our readers who want plants accurately named that it is only fair to us to send us complete specimens always with flowers. Single leaves and bits of shoots, unless the plant is of the most remarkable and unusual distinctness in these points, are quite useless for the purposes of nomenclature. It would be as easy to identify a man from a hair of his head.*

Names of plants.—*Mrs. Loder.*—The bits of plants you send, without flower or fruit, are not such as can be named with certainty. One is a Sedum, another appears to be Stachys lanata, or Woolly Wound-wort, and the third seems to be a Tansy. Each of these belongs to a very numerous family, the leaves of the different members of which often resemble each other; and to name the plants properly it is absolutely necessary to see its flowers, its perfect leaves, and even its fruit.——*J. F. Thomas Peter.*—1, Sparmannia africana; 2, Libonia floribunda.——*J. Muscroft.*—Sedum arboreum will flower when large enough.——*Iris.*—1, Too much decayed; 2, Narcissus Tazetta var.; 3, Narcissus poeticus; 4, Allium Cluslanum. ——*Scotch Subscriber.*—Common Daffodil (Narcissus Pseudo-Narcissus).——*Malden.*—Variety of Mossy Saxifrage, S. cæspitosa.——*Somerset.*—Common Sycamore or Maple (Acer Pseudo-Platanus).——*J. P.*—Double Anemone fulgens; propagated both by seeds and tubers.——*Rector.*—Doronicum cordifolium.——*H. T. S.*—1, Coltsfoot (Tussilago Farfara); 2, French Lavender (Santolina incana); 3, Sedum Anacampseros.——*Mrs. B.*—Libonia floribunda.——*South Devon.*—1, Cupressus Lawsoniana; 2, Specimen insufficient; Omphalodes verna (blue); Narcissus Burbidgei.——*F. Gosney.*—Apparently a species of Doodia. Send when spores (seeds) come at the backs of the leaves.——*Rev. J. C.*—Next week.——*Scotch Subscriber.*—You probably allude to the white Lily, Lilium candidum, so common in cottage gardens in the south.

Catalogue received.—*Barr's Daffodils and Supplementary List of Bulbs and Plants for Spring Planting.* Barr and Son, King Street, Covent Garden.

Book received.—*Drink.* By Lord Bramwell, Liberty and Property Defence League, 4, Westminster Chambers, S.W.

INDOOR PLANTS.

STEPHANOTIS FLORIBUNDA.

THERE are few plants that have so many good properties as this well-known fragrant favourite—easily grown, a profuse bloomer, the flowers opening in succession over a considerable period, and lasting well individually. From the time when it first became sufficiently known it has always been admitted as one of the best of all bouquet flowers, its pure white, long tubular blooms arranging admirably with anything else. Those who grow flowers for the London market treat it so as to have a long succession of blooms. Even a single plant, when it has attained a considerable size, will keep on flowering for several months. It will grow in either peat or loam, but as it does not like shaking out or its roots disturbed often, it is better to grow it in loam, as this will last longer than peat. It strikes freely from cuttings made of the preceding season's shoots, and portions that have not got too hard should be used. If cuttings consisting of a couple of joints of these are, during the winter, put in thickly in 5-inch or 6-inch pots and stood in a temperature of 60 degs., they will callus over in a few weeks, when they may have 10 degs. more warmth, which will enable them to root freely, or young shoots such as break from the old stems in spring may be taken off, when 8 inches or 9 inches long, with a heel of the old wood. These, if kept a little close and in a temperature similar to that recommended for cuttings of the mature wood, will root directly. When well rooted put them singly in 4-inch pots in good fibrous loam, with sand added proportionate to the nature of the soil. They will grow away if kept in a temperature of 60 degs. or 65 degs. in the night, with a rise by day. Stephanotis floribunda is of twining habit, and as soon as the plants begin to grow each will require a stick as support. When the shoots have reached a couple of feet in height remove two or three of the top joints to cause the production of two or more growths. The plant comes from Madagascar, and can stand a good amount of heat; consequently, through the summer months it will bear a temperature of 65 degs. to 70 degs. by night, with from 70 degs. to 80 degs. in the day. It does best with a liberal admission of air in the daytime so as to permit of the air of the house getting drier than where less is given. It requires no shade further than is found necessary to keep the leaves from scorching. If by the beginning of July the pots are found full of roots, move into others a couple of inches larger. Syringe the plants in the afternoon during the growing season until September, when give more air and reduce the root moisture as well. From 55 degs. to 60 degs. night temperature will answer through the winter, with just as much moisture in the soil as will keep the leaves from shrivelling. About the beginning of March raise the temperature, and increase it still further as the sun gets warmer. Give more water to the roots, and as soon as growth has commenced move into pots 4 inches or 5 inches larger, using loam, which should be of a good turfy character, and such as will not soon decompose. Ram the soil quite firm, and fix trellises on the pots whereon to train the shoots, or run them up wires or strings over the roof. Before the shoots begin to grow stop the points or cause them to break. The young growth will most likely produce some flowers, but the principal object this second season should be to get the plants as large as possible, for upon the size and strength they acquire and their condition depend the quantity of bloom they make the ensuing year. Treat in every way as in the preceding season, keeping the shoots regularly trained. Give plenty of air through the latter part of summer and autumn, with a drier condition of both atmosphere and soil, so as to get the growth fully matured. Winter as before. Do not reduce the shoots at all previous to the commencement of growth, and if all goes well the plants will produce a large quantity of flowers. When the blooming is over the shoots may be shortened back, and pots from 4 inches to 6 inches larger should be given. Treat during the summer as previously, and also through the autumn and winter. The pots to which the plants were last season moved will be large enough for the next two years; manure water should be given at the time of active growth. Cut the shoots back so far as necessary after blooming, as advised the preceding season, and treat as before. The plants will last for many years if a few inches of the surface soil is removed and replaced with new. I have spoken of their being grown on trellises in specimen fashion, but they do better close under the roof near to the glass, and even if they are wanted to bloom on the trellises the shoots should be trained near the glass during the growing season, and then wound round the trellis when fully matured. But the plant is never seen to so much advantage as where permanently trained under the roof, and if, in addition, it can be planted out in a bed of well-prepared soil 4 feet or 5 feet square, it will keep on growing and flowering for many years. Where there is plenty of room for the head to run, a plant will continue blooming for months.

INSECTS.—From the leathery texture of the leaves Stephanotis is not liable to the attacks of such insects as aphides and red spider, and if these make their appearance they are easily removed by syringing, but the worst pests, like scale and mealy bug, are very partial to it. Should these affect it, a thorough dressing with insecticide ought to be given when the plants are in a dormant state during the winter, and the dressing repeated, so as to make sure of destroying both the mature insects and also their eggs. T. B.

WINTER FLOWERING PLANTS.—XIII.

SOLANUMS.

THOUGH grown for their fruit or berries, not for the bloom, are, when well done, exceedingly ornamental in autumn and early winter, and scores of thousands of bushy, well-berried plants are annually disposed of in the London markets every autumn. The great thing with Solanums is to get them struck early. A few old plants shortened back and placed in a gentle warmth in autumn will produce a quantity of young side shoots. These must be taken off with a heel when about 1½ inch long, and inserted thickly in pots half full of drainage, and filled up with a mixture of good loam, peat, cocoanut fibre, and sand, with a surfacing of fine silver sand. Water the cuttings in well, and place in a propagating house or close pit at about 70 degs. If well looked after they will be rooted in three or four weeks, and must then be hardened slightly and potted off singly into small 60's, using sandy loam, with a little leaf-mould and sand. After potting return to the warm house or pit, and keep close till rooted out and growing. Large growers generally place them on fresh spent Hops in a good pit—these give off a genial warmth for some time, and afford a very favourable moist growing atmosphere about the plants. When strong enough, or about April or early in May, the plants are potted into 48's, or the strongest into 32's, using sound rather rough loam, with a little leaf-mould or old hotbed manure; they are potted very firmly, and again kept close in houses or pits for ten days or a fortnight. When rooted out again the plants are placed on ashes in an open situation out-of-doors by some growers; others grow them on in light houses, with abundance of air admitted at top and sides. In either case they must have plenty of water at the root, with liquid manure occasionally when pot-bound, and frequent syringing overhead while growth is being made, though when the berries are setting the atmosphere should be kept somewhat dryer, to assist the proper distribution of the pollen. If at all behind-hand the ripening of the berries may be hastened by the application of a moderate warmth, but if struck in January, and grown on as directed, the berries will be nicely ripened by November in a cool house with a fair amount of sun. Solanums from seed are very easily raised, and perhaps make better plants than those raised from cuttings, but they do not berry nearly so well the first season, and are seldom employed by trade growers. Old plants should be cut back hard in spring, syringed and kept close to induce fresh growths, repotted when these are an inch in length, and afterwards treated as above. Pinching must, of course, be resorted to with any kind of plant to form a bushy, many-shooted specimen; but this must be done as early as possible, or the shoots will not have time to mature and bear

fruit. Solanums do not "berry" well in smoky or town air.

THE HABROTHAMNUS,

Of sorts, is one of the best of winter-flowering plants, and is only too little known. It is of strong growth, and requires plenty of root-room—in fact, the Habrothamnus is far better planted out than in pots. The best position is a border, with plenty of space for the roots to run, at the foot of a conservatory or greenhouse wall. It is not necessary that there should be a great deal of light, as the Habrothamnus will stand more gloom than any other flowering plant. Naturally, however, the growth will be shorter and firmer, and the blooms more numerous and finer in colour when grown in a light position than in a dark one. Any fairly good soil of a loamy nature is suitable, but the drainage should be good. Being of strong growth when healthy and well-established, the Habrothamnus will cover a considerable space of wall or trellis in a short time. To prevent a too rapid increase, however, or to reduce the size of a plant that may have become too large, severe pruning may be advantageously resorted to. This should be done immediately after flowering is over in spring, the plant producing its blooms on the points of the summer's growth, so that even the stopping of over-luxuriant shoots should not be practised after the middle of July, or the bloom will suffer. Old plants should have a good top-dressing of rich soil when started again after pruning, and plenty of liquid manure during the late summer and autumn, as they are gross-feeding plants, and require a great deal of nourishment. Four kinds of Habrothamnus are all that are usually found in gardens: H. elegans and H. fasciculatus, both with carmine red flowers, and H. aurantiacus, and H. magnificus, with orange blooms. The first three are very suitable for planting against walls, or at the foot of pillars or arches. The last-named is dwarfer in growth, and makes a good pot plant. All are fine for cut flowers. B. C. R.

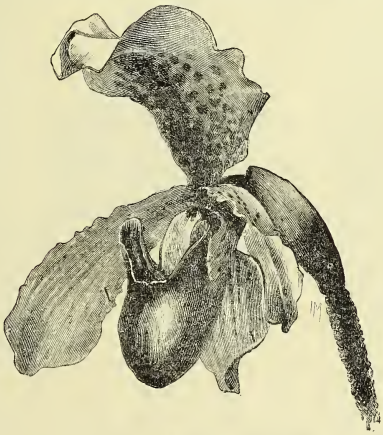
ORCHIDS FOR EVERY GARDEN.

When the cool country Orchids were first introduced into this country in quantity they were eagerly sought for, and cultivated by almost the whole of the Orchid fanciers, and some who had no special houses for them were put to various shifts to give the plants the treatment under which they were supposed to thrive best. Our own small collection was housed, in the first place, in a cold frame behind a north wall. They remained in that position during the whole of the summer and autumn months, and made very clean healthy growths. When the first late autumn frosts set in the frames were covered with mats, to keep an equable temperature during the night, and in the morning the leaves of the Odontoglossums and Masdevallias were covered with a heavy dew.

When cool Orchids are received during the summer months from recent importations they will start as well in cold frames as anywhere else. The frames ought to be shut up as the sun is going off them in the afternoon. The plants should be watered, and the woodwork of the frames first sprinkled with water. I would not advise keeping the plants in frames very late in the autumn or during winter and early spring. But it is only right to say that I saw a frame full of Masdevallia Harryana growing remarkably well in a nursery at Clapham early in February last, and they had been there all through the winter. They were merely matted up at night to protect them from frost. Perhaps the Masdevallias would not have been placed in cold frames if a better position could have been afforded them; but the heated houses were already filled to overflowing, so that the necessity of the case was the means of this experiment being made.

There were many failures in the early days of cool Orchid culture, and in many cases the failures were owing to over anxiety to give the plants the treatment that would most nearly resemble that of their native habitats, while those who were at least expense were sometimes most successful. I attribute our success in growing Masdevallias more to the form of our house than to any superiority in culture. It is a small span-roofed one, and admits air over the plants in all directions while they are placed in juxta-position with the glass roof. I have not seen these charming plants grown better anywhere than in our small house; and they always pass through the most severe winters without the least injury to any of the leaves; whereas the plants grown and wintered in the lean to houses often suffer by the leaves dying off in patches, as if they were diseased. This disease, as we may term it, is doubtless caused by the plants not being sufficiently matured in their growths; and in a lean-to house facing the north the plants do not get a blink of sunshine during four months in winter. If they could be grown in such a house and wintered in a more airy one, with more heat than they receive in a cool house, they might not suffer.

People who keep their greenhouses up to 40 degs. or 45 degs. during winter might grow the Masdevallias in them well. The small house where I used to grow them so successfully was not well heated, and it would often fall as low as 35 degs. in winter; but the house being well exposed to the sun would get moderately warm in the daytime. This is a point that must not be lost sight of in Orchid culture—the relation between night and day temperature. Even in India, where Orchids that usually require a warm house temperature in this country grow, the nights are very cold, while the days are warm. A gentleman called here recently who had lived in India, and told me that he had seen Vanda cœrulea with frost on the leaves in the early morning; but by-and-by it becomes excessively hot. If we were to imitate those conditions here, perhaps we would not be so successful as we are now, when the night and day temperature does not run into extremes.



Twin-flowered Lady's Slipper (Cypripedium insigne).

Among the Oncidiums there are some very beautiful Orchids, which can easily be grown in a cool temperature. The finest and most remarkable of them is O. macranthum, a plant that will grow and flower freely in a cool, moist atmosphere. The finest plant I ever saw of this was grown close to the glass in a very cool house; it was tied on to a branch of an Apple tree, and well supplied with water. Usually the plants are potted in the same way as Odontoglossum crispum, and they root freely enough in the loose Sphagnum and turfy peat; but a large proportion of the roots will form outside the potting material and run over it down the outsides of the pots. The spikes are thrown up with the young growths; and while the bulbs are forming the spikes are being developed at the same time. The spikes grow very long—as much as 10 feet sometimes—and they continue to increase in length for nearly twelve months before any of the flowers open. The flowers are like golden butterflies, placed together in pairs, and at intervals of from 6 inches to a foot on the twining stem. Slugs are remarkably fond of the succulent flower-stems or fresh young roots. We puzzled them this year by inverting a flower-pot in a saucer of water, and placed the pot containing the plant on it. O. bifolium majus is a charming species, but it does not seem to be so easily grown as some, and perhaps requires rather more heat. The flowers are large sepals, and petals marked with brown, and the lip rich yellow. O. cucullatum is a charming little plant, and quite a contrast to O. macranthum, but, like that plant, it is from the mountainous districts of New Granada, and does with little artificial heat in winter, and none at all in summer. The flowers are richly coloured, and produced on erect spikes about a foot high. O. ornithorhynchum, a pretty plant, is easily grown, and the flowers are withal sweetly perfumed, and of a purplish rose colour. It also forms a small plant which occupies but little space. These are a few of the best Oncidiums, and such as can be grown in almost greenhouse treatment all the year round. A very distinct and handsome species of Odontoglossum ought to be included, O Edwardii. It is of recent introduction and forms long branched spikes of deep violet-coloured flowers, and I find it does well with the very coolest treatment. Newly-imported plants take a long time to form fresh roots; but when they do start, water them freely, and they will speedily form flowering specimens. Among the Lady's Slippers (Cypripedium), C. insigne is now cultivated in most gardens. There are several distinct varieties of it, some of them being highly valued for their handsome form, and beautiful white and spotted dorsal sepal. We have kept a large specimen for many years in a corner of the cool Orchid house, and from it we cut flowers at intervals during the three winter months; they will remain in beauty for quite three months. Pot them in turfy peat, Sphagnum, and clean potsherds. C. spectabile is one of the most distinct and handsome greenhouse plants. It is quite a terrestrial Orchid, and flowers well potted in turfy peat with good drainage. Another easily-grown and handsome plant is C. pubescens. It grows and increases freely in the greenhouse. I would mention one more, in the hope that some correspondent may have been successful in growing it—namely, C. Irapeanum. It is altogether a most handsome species, which seems to grow in marshy, peaty ground in Mexico, whence it was introduced in 1844. I have tried it in the greenhouse and in a warmer house, but have quite failed to flower it. Its flowers are large, of a bright golden colour, and very distinct. J. DOUGLAS.

CULTURE OF VALLOTA PURPUREA.

Now that the time has arrived when Vallotas are starting into growth, a few hints as to their management will probably be welcome to many of your readers. Complaints are continually being made in GARDENING that the leaves turn yellow, and that the bulbs do not flower well. These are the effects of defective root action, or of too little light and air. It cannot be too well understood that the Scarborough Lily is an evergreen. Its home is at the Cape, where it revels in the growing time in fierce sunshine, and where the roots are never shrivelled for want of moisture. What a mistake, then, to subject it to anything like drying off at the resting time. Frequently, as soon as done blooming, the plants are stood under a stage, where they either get no water at all, or catch the surplus water from the plants above them. In either way they are bound to suffer, and often sustain such loss of vitality that they require a season or two to recover. When a plant has gone wrong turn it out of the pot, and if the roots look black and are decayed at the tips, prompt measures must be taken to infuse new life into it. This is just about the best time for doing so, as root action is beginning, and fresh growth commences to push up. Having procured your compost, which should consist

of peat and loam in equal parts, with quite one-fifth of silver sand, shake away all the old soil from the roots, and with a sharp knife cut off all diseased parts. Let the pot be only large enough to contain the roots comfortably, press the compost firmly in around them, only just burying the base of the bulb. If buried deeply in the soil the bulbs are apt to rot off in winter. Drainage is an important point. There should be one large crock and half an inch of small ones in a 4½-inch pot, with a layer of some kind of fibrous material on that. Use the soil moist but not wet, and after potting give a moderate watering so that the compost is thoroughly moistened. If you are careful in watering, not giving any water until the soil is nearly dry, and then enough to fairly wet it, you will have the satisfaction of soon seeing your plants start into fair growth. Now the requirements of the Vallota are so simple that they may be easily met by anyone having a sunny window. The position that suits Pelargoniums is just the one for the Vallota. With plenty of sun and air through the summer, and strict attention in the matter of watering, the bulbs will make a stout growth, and will bloom year after year with much freedom. Plants that have quite filled the pots with roots may be shifted, but it is surprising how long the Vallotas may be kept in the same pots without manifesting the slightest decrease in blooming power. I have had as many as five good bulbs in a 4½-inch pot for six years, and they every season made good growth and bloomed well, producing five good flowers on each stem. Such plants as this are very ornamental, but to see the Vallota at its best a dozen good bulbs should be put in an 8-inch pot. I doubt if there is anything finer than a large specimen of the Scarborough Lily when in flower, the brilliant scarlet blooms on their stout, erect foot-stalks, being set off to such great advantage by the deep lustrous green gracefully-arching foliage. One can easily imagine how fine this evergreen bulb must look growing vigorously in colonies in its native land. In some of the warmer districts of England it ought to do well in the open air, as it is capable of resisting a considerable amount of frost without injury. It is indeed only in very severe winters that it is liable to get killed, and if the bulbs were earthed up with some light material they would undoubtedly escape the hardest of English winters. Complete success could, however, only be guaranteed by the selection of a sunny position, as, owing to the late flowering nature of this plant, it would not come into bloom before autumn was over unless it enjoyed through the summer a maximum of sunshine. Those who care to do so may plant the bulbs out the latter end of May, and take them up again after flowering. I think it was last year that a correspondent sent some very fine trusses of bloom taken from plants grown in the open-air all the summer to the Editor of Gardening stating that the bulbs were planted in May and taken up again late in autumn every year, and that they made a fine effect when in bloom. This shows that the Vallota may be treated as an open-air plant if so desired, and those having more bulbs than they care to retain in pots would do well to try some in this way as they may be stowed away in a small compass in winter. Those having but the convenience of a cold frame will find the Scarborough Lily a most useful plant, as it is not liable to damp in winter. I once knew an amateur who in his small town garden grew Vallotas remarkably well in this way, so that in the blooming time his windows were all aglow with this showy flower. During the spring some care in watering will be necessary, the rule being to allow the soil to become dry before giving water. As the season advances and growth progresses frequent supplies will be needful, especially in the case of plants that have remained several years without change of soil, and which are, consequently, in a root-bound condition. Indeed, in the case of such plants some extra provisions will have to be made to ensure their getting as much moisture as they need, as the bulbs, increasing in size, thrust the soil up above the rim of the pot, thus rendering it difficult to thoroughly moisten it. In such cases, stand the pots in saucers, and in hot weather, when the earth becomes dry, fill them up. If Vallotas do not get enough water in hot summer weather the foliage loses that lustrous hue and freshness which distinguishes it when the plants are doing well, the leaves have a shrivelled appearance, and many of them turn yellow. As I have before stated, Vallotas love sunshine, and they must get a large amount of it to ensure the solidity of bulb necessary to the production of strong flower trusses; but the small greenhouses of amateurs are often so placed that they become very hot in summer, and a little shade during the middle of the day in a time of strong heat is really beneficial. The foliage comes to a richer green when slightly protected from the most searching rays of a July and August sun. After flowering, the amount of water must be reduced, but on no account allow the soil to become dust dry, as this causes the roots to shrivel and ultimately decay. The rule in winter is to water only when dry, just enough to keep the roots plump and the leaves fresh and green. Byfleet.

Japanese Climbing Fern (Lygodium scandens).—This is one of the most distinct and beautiful cool or cold greenhouse Ferns grown; yet it is seldom met with, even in large collections; in fact, when you tell people there is a Fern that will twine round a wire or cord and grow 10 feet or 12 feet in a season, they look at you with astonishment. Such however is the case, as anyone who has grown it can testify. The Climbing Fern is of very easy culture, liking a compost of loam and peat, equal parts, with a little sand or leaf-mould added. For cutting purposes, to twine round an epergne or other ornament, it is simply perfection.—V. V. V.

*** There is another Climbing Fern, Lygodium palmatum, which is perfectly hardy in England, and we have seen it growing in parts of North America where the cold is very much more severe than it ever is in England. In our country it does best in a peat bed or border, in which it can climb up among the shrubs and enjoy their shade. An important, and it may be a difficult, point is to get healthy young roots to begin with.—Ed.

Preserving bedding Geraniums in winter.—Having annually to plant some borders and shrubberies with Geraniums, and not having pots nor the proper means of preserving them in winter, I have been compelled to try the following method, which has acted fairly well: In the back end of the season the plants are lifted and packed in ordinary propagating boxes, "on the faggot principle," and placed in a cold frame until the severe weather sets in; the boxes are then carried into a cellar under the house, there to remain dry till some time in the following March, according to the season, when the frames are again prepared for their reception. A good bottom is made of ashes; 2 inches of rotten dung, and about 4 inches of old turfy soil are put on top. The Geraniums are then planted about 2 inches apart, well watered, the lights put on the frame, and they soon begin to shoot. As soon as growth gets far enough advanced several cuttings are taken off and struck. The plants remain in the frame until bedding-out time, when they are lifted with good balls, and seldom lose any of their foliage after planting.—D. D., *North Surrey*.

Propagating double Bouvardias.—When the double white Bouvardia Alfred Neuner was first sent out, a good deal of correspondence ensued relative to its propagation, the view maintained by some being that cuttings of the leading shoots alone produced double flowers, while those taken from the side branches reverted to the single form. That this Bouvardia did, especially during the first season, produce a good many single flowers, is well known; but I could find no difference in this respect between those struck from the principal shoots and those struck from the side ones. The double-flowered variety having originated as a sport from the single kind, there was probably, during its earlier stages, a tendency to revert to the original form; but as time wore on and the double character got better fixed, cases of reversion became rarer. During a late season, out of some thousands which I propagated there were but very few that produced single flowers; before that the number was much greater, though, as just stated, I could find no difference in that respect among cuttings taken from any part of the plant except the roots. Some few hundreds propagated by means of root cuttings turned out to be at least one half single. I have not, however, propagated any by this latter method since the first season; therefore I cannot say whether the result would be the same now that the double-flowered character seems to be more thoroughly fixed than it was then.—A.

REPLIES.

13288.—**Sowing Tropæolum Lobbianum.**—For blooming during the winter months the seed of this should be sown during August in pots, which may stand out-of-doors until the frost comes. All varieties bloom well in rich light soil. The following are the best varieties:—T. Brilliant, T. Schultze, and T. von Moltke, which are of good habit and brilliant colours. T. majus Scheuermannianum is a fine cream colour, with crimson blotches.—C. F. Davis.

13233.—**Maiden-hair Ferns not growing.**—The spring was a suitable time to repot them. That they have not done well is, no doubt, owing to some error in the after treatment. A moderately-heated house would do well for them; so it is just possible that they received too much water. It is stated that they were "well watered." At the time of repotting the roots should be moderately moist, and it is better not to water them for a few days (perhaps a week) after repotting; by that time the young rootlets will have penetrated the new soil, and will be ready to absorb the moisture. Water carefully until the new compost is well filled with roots.—J. D. E.

12992.—**Greenhouse for amateur.**—The greenhouse should have what is termed a side-hipped roof—*i e*, the south of the roof should be larger than the north. Assuming the back wall is 6 feet high, the ridge from which both north and south sides spring should be 8 feet high; the lights or the glass on the north side need not be more than half as wide as the southern lights are. If the house is 12 feet long and 9 or 10 feet wide, a small slow combustion boiler will heat it very well, or a flue that will burn the waste from the house may be easily constructed.—E. Hobday.

12974.—**Primulas done flowering.**—Many people raise young plants every year from seeds, and throw the old plants away. This refers to the single-flowered kinds only. The double Primulas, of which there are now many beautiful varieties, are at this season cut to pieces, each cutting having a small crown of leaves. The cuttings are planted firmly in small pots singly, in sandy peat, and plunged in the propagating bed till rooted; afterwards grown on near the glass, and moved to a cold frame in a shady situation in June, shifting them into 48 sized pots. Very choice varieties of the single kinds may be treated in the same way, or they may be shaken out and repotted in pots of the same size, shifting into 32's in July, and growing in cold frame under north wall till the end of September.—E. Hobday.

12993.—**Plants for greenhouse.**—Without heat the Cucumbers will not succeed before the end of May, but from then onwards till October they may be grown without injury to other stock, if kept clean and healthy. For cut bloom plant one each of Maréchal Niel, Isabella Sprunt, Catherine Mermet, Niphetos and Cheshunt Hybrid Roses, and train them just under the roof. On the stages may be Pelargoniums of various kinds, Double White Primulas, Richardia (Calla) æthiopica. For winter and spring: Tree Carnations, Paris Daisies, Rhynchospermum jasminoides, Camellias, Rhododendrons, Epacrises, Winter-flowering Heaths, Eupatorium odoratissimum, Daphnes (various), Spiræa japonica, and bulbs of various kinds.—E. Hobday.

13238.—**Culture of Microlepia hirta.**—This Fern will not succeed in a "rather cool greenhouse" during the winter months. It does well, however, in what is termed a cool stove or intermediate temperature; 50 degs. to 55 degs. as a minimum during winter would suit it well.—J. D. E.

13049.—**Soil for Pomegranate.**—The Pomegranate will succeed admirably in two-thirds turfy loam and one-third leaf-mould, or peat broken up with a spade, but not sifted. The loam should have been cut about six months.—E. Hobday.

13221.—**Stopping Pelargoniums.**—When the plants are sufficiently large they ought not to be stopped at all; but if it is necessary to do so, it ought not to be done later than the end of January. The object of stopping the young shoots of a Pelargonium is to cause them to branch out to furnish a more bushy plant. In most cases the specimens are bushy enough, and some of the shoots have to be thinned out to give those that remain sufficient space to develop good leaves and flowers.—J. D. E.

TREES AND SHRUBS.

MOUNTAIN LAURELS (KALMIAS).

The mountain Laurel of the American States (Kalmia latifolia) is one of those plants which, if of recent introduction, would be eagerly sought after; but having been an inhabitant of our gardens for nearly a century and a-half, it receives but little attention. When in robust health, as one often finds it among the Surrey hills, its dark glossy evergreen foliage alone stamps it as a plant of the highest merit, but when in flower in June and July its true value becomes apparent, and it remains strikingly showy even after the beauty of the Azaleas and Rhodendrons is over. When raised from seed, as it often is in quantities, the individual plants vary a good deal both in size and colouring, and also in the profusion in which the flowers are produced; thus, among seedlings the produce of one plant may sometimes be found greatly superior to that of another, and these, when once obtained, if propagated by grafting on the common type, become fixed. A well-marked variety is the kind called mytifolia, which has leaves much smaller than those of latifolia, and the growth is also less vigorous. The flowers, too, are smaller; indeed, the whole plant may be described as a miniature form of latifolia.

Of a totally different character is Kalmia angustifolia, a small upright shrub, 2 feet to 3 feet in height, and earlier in flowering than the others just named. Its leaves are generally about 1½ inches long and ¾ inch broad, but they vary somewhat in size as well as in colour, some being deep green, others of a pale hue, while a glaucous form is also sometimes met with. Its flowers are, as a rule, deeper in colour than those of K. latifolia, while some of the selected kinds known under the names of rubra and superba are deeper still. There is also a very dwarf variety called nana, which seldom grows more than 1 foot in height, and another in which the leaves are edged with creamy-white, but not worth growing. In K. angustifolia ovata the leaves are broader and the plant more vigorous than in the common type, while the very glossy foliage of a kind called lucida renders it worth growing for the sake of variety.

Kalmia glauca is a charming little plant, very distinct from all the others, and its season of flowering is much earlier, it being often in blossom in April. This and the dwarf variety of K. angustifolia are seen to the best advantage when planted in dense masses.

Culture and position.—Kalmias, like most other Ericaceæ, like a peaty soil and a position that even though exposed is such that the roots are kept moist; if dry, they soon assume a sickly aspect. K. glauca succeeds best in very damp places; in planting it, too, it is well to bear in mind the fact that rabbits are very fond of it and will crop it close down to the ground. Suitable spots may be found for all the varieties of Kalmia in what is known as the American garden. The large kinds associate well with Rhododendrons and similar plants, while the smaller ones are available for carpeting. Many of the Kalmias make good plants for forcing in spring for the embellishment of the greenhouse and conservatory. Owing to their having a dense mass of fibrous roots they can be taken up and potted during winter, after the bloom is well set, without injury; and when assisted by a gentle heat and frequently syringed they flower freely and continue in beauty for several weeks in succession. A.

The Cherry Plum—I have three large trees of the Cherry Plum, or Myrobalan, in my garden. It is an extremely early bearer, and very hardy, but, owing to the early bloom, it is often injured by severe frosts. The blossom of my trees (unprotected and in the open air) is now (April 10th) just over, and the ovaries (some of which I enclose) are, so far, uninjured. The bloom is a magnificent sheet of white, and a great ornament to the garden while it lasts. The habit is branching and thorny, and I believe the tree has been advertised for fences on that account in the north. The fruit is under medium size, nearly globular, and very pretty, being the colour of a nearly ripe Mayduke Cherry, shaded to orange and yellow. The flavour is most excellent, resembling that of the Apricot, but, unfortunately, becomes flat and mawkish when long-gathered or over ripe. It makes splendid jam and capital pastry. The tree is so prolific that in favourable seasons two-thirds of the fruit must be removed to give the rest room to grow. I shall be pleased to send a specimen fruit early in August or at the end of July to any person sending a directed and stamped envelope.—J. Aubrey Clark, *Leigh Cottage, Street, Somerset.*

Pyrus japonica.—How seldom one sees this fine old deciduous spring-flowering shrub in good form, and how seldom it is seen at all, yet it is without exception one of the hardiest and most beautiful subjects of the kind that we possess. As a rule, it is pinched and pruned to death, and usually presents the appearance of a scraggy bush with long ungainly spurs projecting from the wall like an old Apple or Pear tree. This is not the way in which to treat the plant. It is a true Apple in habit, and no matter how old it may be, the branches should always be as close to the wall as the neatest Ivy, if nailed in periodically. The young growths are slender and wand-like, sometimes 3 feet long, and all of these that room can be found for should be laid in their entire length in autumn, either upon the older and barer limbs or against the wall, and the remaining shoots should be cut clean out at their base. Not the least pinching or spurring is needed, for although the young shoots break freely their whole length, they produce little or no breast wood, but develop flower and leaf-buds

American Mountain Laurel (Kalmia latifolia).

alone, which blossom the third year like the Apple. Trained in this way, young plants soon form large specimens and flower beautifully at this season or earlier, and the dense, closely set foliage is almost as pretty as the flowers. A few years ago we planted a number of young plants against a wall, subjecting them to exactly the same treatment as young extension-trained Apples, and they are now all 12 feet high, proportionately broad, and perfectly clothed in every part—living testimony of the system as applied to shrubs as well as fruit trees. This is a plant that deserves one of the warmest and best places on a wall. The shoots may be disbudded, and if those left are nailed in in November, it will be soon enough. —M.

13244.—**Stopping bleeding of trees.**—I have a large Chestnut tree which for some time bled badly from a crack in the trunk about 18 inches long; this, I was told, would in time kill the tree. I thoroughly scraped out all the soft matter, and dried the crack well. I then gave it a thick coat of paint, rubbing it in with a hard brush, and I then completely filled the crack with putty, firmly forced into every chink. I made the putty as nearly as possible of the colour of the trunk of the tree. In about a month it got quite hard and cannot be noticed, and the bleeding has quite stopped.—Lt.-Colonel, *Colchester.*

Desfontainea spinosa.—I planted this beautiful shrub three years ago on a slope in the vicarage garden at Lyme Regis. I protected it during the winter with matting from the east winds, but in other respects it was without any protection. It flourished well, and its beauty richly repaid me for the care bestowed upon it.—Canon Smith, *The Vicarage, Motcombe.*

THE KITCHEN GARDEN.

CELERIAC.

I am very pleased to see brought into notice this long neglected wholesome vegetable, neglected not because our climate is unsuited for it, as I consider we are more favoured than the French as regards climate for the production of fine vegetables, the above included. I have seen this vegetable growing in France, both in private and market gardens, and in the peasant's garden also it is much grown and appreciated. But as the Editor very truly says, "Celeriac will not grow like Mint;" like every plant, be it flower or vegetable, it needs the best attention to get the best results. Having grown Celeriac with success I would at once recommend all who can enjoy a good vegetable to procure seed at once. Select a piece of ground that is in the open, and that has been well dug last back end; if in a small garden one or two trenches should be at once got ready, as for common Celery. After putting a good coat of rotten manure in the trench fill in with the soil that was taken out of the trench, tread firm, but do not quite fill in the trench, so that in case of very dry weather you may the better apply a good watering. Rake smooth, draw a very shallow drill, and sow the seed from now (middle of April) until the first week in May. I have found this a much better plan than sowing in hotbed, as when sown where they are to stand the plants receive no check. Care must be taken to thin them out when they show the rough leaf, and in dry weather a good watering twice a week will be required.

Of course, if you want an early crop you may sow inside and transplant; but for general crop sowing you will get the finest of roots by following the plan that I have described. If you require a large supply a bed or beds can be made 6 feet wide. I have also grown fine roots on the flat in favourable seasons, but prefer the trench system as the best in every way. Keep free from weeds and remove suckers. Lift at the end of September, and store away in sand, and you will have one of the most delicious of vegetables.—W. C. Leach, *Stamford.* *** It is a common error in English gardening books to speak of this as a salad. While, no doubt, any raw root can be called a salad, and this is better than most treated in this way, it has no pretensions to merit as a salad compared with the tender Lettuce and various other things. Its true use is as a boiled vegetable, and it is by far the best vegetable of a root-like nature to be had in winter.—Ed.

—— Years ago, when in Germany, I noticed that plants of Celeriac, after they had fairly started into leaf, were crushed with the foot, the foot being placed right on the heart of the plant and gently but firmly pressed down. A few days after this operation the lot was examined, and any that seemed to have recovered too quickly were again operated upon. To my inexperienced eyes the whole proceeding seemed a very foolish and hurtful one; but I was assured that the practice was general, and that its effect was to cause the root to swell, instead of the plant running to leaf. Possibly my German friends are right, and that the ill-usage to which they put the plants causes them to become diseased, the disease resulting in an abnormal swelling of the rootstock. Before imitating the example, however, on a larger scale, I should personally content myself by experimenting on, say, a dozen plants, and be guided by results next year.—P. H.

Seaweed for Asparagus.—I consider Seaweed the best manure for Asparagus, and I never use anything else when I can get it. Although mine are very old beds—no doubt fifty years old—my Asparagus are always considered splendid. The Seaweed should be put on in the autumn and turned in in the spring, not raked off; should the roots not be deep enough to allow turning, then spread a little soil on it just sufficient to cover the weed so as to rake the bed to make it tidy.—J. Luxon, *Cornwall.*

Asparagus or Buda Kale.—Although these are sometimes catalogued separately, I believe they are generally considered to be identical. We, at any rate, are growing three varieties of

this kind of Kale, but which are Asparagus and which Buda I cannot determine. All are extremely hardy and serviceable in a green state, but if blanching improves them good will be done by calling attention to the fact. I consider it the best of all the Kales, the slightly bitter flavour being very pleasing to many people. Besides planting out a breadth we sowed several rows between the late Peas early in June, and lightly thinned out the plants.—I.

A good Cucumber.—I advise all amateurs who have not grown the Reading Cluster Cucumber to give it a trial, as it is well adapted for the purposes of amateurs who have not the necessary means at hand for a more tender sort. Sow the seeds towards the end of April, and plant out at the end of May, if the weather will permit; if not, delay for a week or ten days. Any spare pit or frame will suffice. Put the soil in and plant out, stopping and training until the frame is full, and after a short time you will be rewarded with clusters of medium-sized fruits. When the weather is dry and hot a strict look-out should be given for red spider, as it will play havoc with them; free ventilation and frequent application of manure water are all that is required. I have seen this Cucumber after Michaelmas Day in a cold frame, with a little covering at night, grown as stated above.—C. C. S., *Buckingham.*

REPLIES.

13163.—**Grub in Onions.**—The ground must have been infested with wireworm, and, having tried the experiment of sowing oilcake over ground so infested, I can speak from experience as to its success in clearing the ground of these pests. If the grub mentioned be something else, of course the remarks do not apply, and nothing will prevent the Onions attacked from destruction; but the wireworm eats the oilcake, which kills it.—J. N. L.

13153.—**Best sorts of Rhubarb.**—For early sorts plant Paragon and Prince Albert; for midseason, Linnæus and Red Champagne. The Victoria is the best late Rhubarb, and for general cultivation this has taken the place of the other large kinds.—E. Hobday.

13052.—**Vegetable seeds germinating.**—The time varies according to season and temperature and moisture of land. But, speaking roughly, Onions sown about the middle of March, if the seeds are good, should appear by the 20th or 25th of April; and Carrots sown now (in the middle of April) should appear in a month. Peas and Beans planted now should be up in three weeks. A fortnight will suffice later in the season, when the soil is warmer.—E. Hobday.

ROSES.

REPLIES.

13295.—**Marechal Niel Rose buds decaying.**—It is not unusual for Rose trees—or rather the buds upon them—to collapse from two causes; one is an excess of atmospheric moisture that settles round the base of the petals, and this, together with a low temperature, causes the lower part of the petals to decay. The other is that the tree is allowed to bear more flower buds than it can support, and, as a consequence, the growth and flowers advance so far, but, the roots not being equal to the strain, there is a sudden cessation of the vital forces flowing up to the flowers, and instead of expanding they decay. You must be the best judge which of these two causes affects your tree—J. C. C.

13287.—**Artificial manure for Roses.**—Guano will do, if applied to the roots once a fortnight at the rate of half an ounce to one gallon of water, but I find any of the concentrated manures in a dry state the most lasting. Take off the top soil over the roots, and apply a large tablespoonful to each plant—one application now and another in July. If the soil is very dry when it is put back on the roots give it a gentle watering, but not otherwise. These manures do most good when they dissolve gradually by the action of the soil.—J. C. C.

13246.—**Rose leaves dying.**—Probably the reason the Roses do not succeed is that the position is not light enough; and the remark, "I give little water, just keeping plants from flagging," would suggest the idea that they have not had enough water. Roses do best in a house well exposed to the sun, and they should also be placed close to the glass, where there is the greatest circulation of air. When growing the supply of water must not be stinted. Water should be applied whenever the soil is moderately dry, and sufficient given to soak the mass of roots to the bottom.—J. D. E.

HOUSEHOLD.

VEGETABLE COOKERY.—IV.

(By Annie M. Griggs, Edinburgh School of Cookery).

Seakale.—The Seakale is a native of Britain. It is sometimes found in a wild state upon our shingly sea-coasts; but it is more delicately flavoured, and easier of digestion, after it has been properly cultivated and blanched by gardeners. In this latter condition it is frequently recommended by doctors as a nutritive vegetable for invalids. The process of blanching is accomplished by excluding all light from the Seakale during growth, and, when once commenced, this operation must be strictly adhered to, or the young shoots will acquire a bitter and biting taste. It must also be borne in mind that exclusion from light is necessary not only while the vegetable is growing, but also after it is dug from the earth, and until the moment it is plunged into boiling salt and water. This fact may be proved by purchasing some Seakale which has been exposed to light in a shop-window. The Kale will then have acquired a slight green colour, and the flavour and appearance be spoiled. After the Seakale is dug from the earth, it should be kept in a dark cellar, or covered with a thick matting, so as to exclude all light; when required for use, wash it well and quickly in plenty of cold water, using a brush to remove all grit from each shoot. Cut away any decayed or worm-eaten portions, and tie four or five shoots together in bundles ready for cooking. When thus prepared, throw them into a basin containing cold water, covered with a plate or board to exclude the light. We now give a few recipes of the different methods of preparing this excellent vegetable.

Boiled Seakale with sauce.—Prepare the Seakale as previously directed, plunge it into boiling salt and water, and take care that the water boils very fast during the whole time of cooking the Seakale, otherwise it will become macerated and sodden, and the flavour will be partially lost. Should the Seakale be old, or have been unavoidably exposed to light during or after growth the bitter taste acquired thereby may be partially removed by transferring the Seakale to a fresh saucepan of boiling salt and water when it is half-cooked; the whole process should be accomplished in from twenty minutes to half an hour. The object of boiling vegetables in salt and water is, that when salt is added to the water its temperature can be raised higher than the boiling point of water alone. When the Seakale is cooked enough, which fact may be ascertained by trying it with a skewer or fork, lift it on to a cloth or sieve to drain. Have ready a slice of toasted bread, dip it into the water the Kale has been boiled in, then lay it upon a hot vegetable dish and the Kale across it; pour some sauce, made as follows, over the centre part of the Seakale, leaving both ends clear.

Sauce.—One ounce of butter, half an ounce of flour, one gill of water, a pinch of pepper and salt, the juice of one Lemon, the yolks of two eggs, and one tablespoonful of finely-minced Tarragon or Parsley. Melt the butter in a small saucepan, then add the flour, and stir until the two are thoroughly amalgamated and no lumps remain; pour the water gradually on to this mixture and stir briskly until boiling; season with pepper and salt, drop in the yolks one by one, taking care to mix one thoroughly into the sauce before the other is added; then stir in (off the fire) the Lemon juice, or, if more convenient, a tablespoonful of white wine vinegar may be substituted for the Lemon juice; lastly, add the Parsley and pour the sauce over the Seakale as directed above.

To re-dress Seakale.—Take some cooked Seakale, quite cold, and cut it into pieces about two inches long. Prepare a mixture thus:—Half a teaspoonful of salt put into a small basin with a pinch of dry mustard and ground white pepper; add to this gradually two tablespoonfuls of salad oil, beating briskly all the time. When these are thoroughly mixed, add one tablespoonful of white wine vinegar. Dip the pieces of Seakale into and cover them entirely with this sauce. Then pile them high in the centre of a dish, and serve with or without slices of cold meat placed around the sides of the dish. Garnish with hard-boiled eggs cut in slices.

Stewed Seakale with brown sauce.—Wash and prepare the Seakale, tie it in bundles of four or five shoots together; plunge into boiling salt and water, and cook for about ten minutes. Pour away the water and cover with some good brown stock. Simmer gently for fifteen minutes. Lift the Seakale on to a hot dish, thicken the sauce with a little flour or cornflour. Reduce the sauce by boiling it until it thickens; add some Lemon juice and seasonings of pepper and salt if necessary. Boil well and pour it over the Seakale.

Baked Seakale.—Take nine shoots of Seakale, two eggs, half a pint of new milk, 1 ounce of butter, two tablespoonfuls of fine bread crumbs, pepper and salt to taste. Wash and dress the Seakale, plunge it into boiling water, and cook it for fifteen minutes. Drain the Kale, and cut it into pieces about an inch long. Butter a pie-dish, sprinkle some bread crumbs at the bottom, then lay in some pieces of Seakale, pepper, and salt, more bread crumbs and Kale, and so on until all are used up. Break the eggs into a bowl, and beat them with a fork until quite frothy, mix the milk with the eggs, and pour the mixture over the Seakale in the pie dish, cover with bread crumbs, break a few pieces of butter on to the top, and bake in the oven for fifteen or twenty minutes. This same preparation may be placed in a round-rimmed basin instead of the pie dish, covered tightly over the top with a piece of buttered paper, and put into a saucepan with enough boiling water to come half-way up the basin, and so steamed for half an hour. Lift out the basin, let it stand for two or three minutes, then reverse it over a hot dish, give it a shake, lift the basin, and leave the pudding standing. Serve very hot.

A salad of Seakale, Potatoes, and Beetroot.—Boil about six shoots of Seakale until quite tender. Chop very small, and mix with a very little pepper, salt, oil, and vinegar. Boil two kidney Potatoes, taking care that they do not break; cut them in slices lengthways. Have one small Beetroot boiled, which cut also into thin slices. Place the mixture of Seakale in the centre of a dish, and arrange a thick wreath of slices of Potato and Beet alternately around it; sprinkle over all these some very finely-minced Parsley.

"A HANDFUL OF SALT."

After much experience I still maintain that all vegetables (especially green vegetables) are improved by being cooked with salt (see page 49). One reason for adding salt to the water is to raise the boiling temperature, which for most vegetables should be as high as possible. The rapidity of the boiling assists in preserving the green colour of the vegetable. The digestive and health-giving properties of any vegetables are largely in proportion to the amount of mineral matter present. Many vegetables contain phosphates, salts of potash, &c., these being necessary constituents for health, assisting in bone-making, and renewing the saline matter contained in the blood. Should vegetables, however, be cooked without salt in the water, there will frequently be found a deficiency in these matters, although to a healthy and robust appetite the vegetable may appear good. Thus, common-sense suggests that a small quantity of common salt should be added in the cooking of green vegetables. It is my desire not only to give recipes for preparing and cooking various vegetables and fruits, but to choose those which will be most likely to aid in the promotion of health and strength. It is too grievous so frequently to find good and wholesome vegetable food dressed in such a manner as to have all the health-giving properties crushed out of it.

Annie M. Griggs.

Vegetable soups.—The soups described by Miss Griggs are no doubt very good, but I think the most delicate soups are made of the green parts of vegetables. I may instance Spinach soup, which, properly made with a clear, delicate stock, is one of the most delicious soups have ever tasted. I hope Miss Grigs will turn her attention to the soups made of green vegetables, fresh and good.—Experience.

THE VILLA GARDEN.

(Continued from page 76.)

The Pea.

With every suitable appliance the Pea season may extend from the beginning of May till the end of October, and I have, in exceptional seasons, gathered a dish of Peas as late as the 10th of November. But those Peas gathered early in May are grown under glass, and the very late Peas are, of course, mainly dependent upon the season. The best months for Peas are June and July. In warm situations the produce of the early south border begin to turn in about the end of May, and green Peas are common enough in June, but July is the month for excellent Marrow Peas. In August and September, unless the land is good and the treatment very liberal and first-rate in every respect, the Peas are very likely to fall away, and if they do not cease to bear the pods lose their fresh green colour, and the Peas in the pods are infested with maggots, and if mildew makes its appearance the chapter of ills is complete. Most of these evils may be successfully combatted, as I shall show presently. But we will begin with

The First Early Peas.

These, where glass can be had sufficient for our needs, will comprise several small dishes in pots of the American Wonder, or some other approved dwarf kind, which should be sown in 8-inch pots in November, and be brought on steadily in a pit close to the glass with just the smallest modicum of artificial heat, as Peas do not force well in the ordinary acceptation of the word; and therefore it will not do to be impatient. A steady, regular growth, in a very light position, with a temperature never exceeding 45 degs. to 50 degs. at night, will achieve successful results. Ventilation must be given at every suitable opportunity. The first sowing in the open air may take place any time from the beginning of November till March, and the probabilities are that if the same kind of Peas are planted at both these extreme limits of time, there would not be more than ten days difference in the time of gathering. But even then the week or ten days gained is thought much of, and many men are striving and struggling all their lives for a much less tangible result. In cold, wet districts it is as well not to sow till after Christmas, as in such situations the early sown crops are not unfrequently cut off by the cold winds in association with cold rains. Very often the first early Peas are raised under glass, and when hardened planted out early in March. I have often adopted this plan. The seeds of a white round Pea, such as Ringleader or Sangster's No. 1, are sown in pots or troughs, or on sods of turf, and placed in heat where they soon germinate, when they are hardened off and planted on a warm south border the first week in March. A ridge of earth is drawn up on each side as a shelter, and a few evergreen boughs are added as a still further protection. The second early Peas, such as Hundred Fold and Huntingdonian, may be sown at the same time as the early kinds, when these latter are not sown before the end of February.

To keep up a regular succession, there should be frequent sowings; taking account of and giving due weight to the fact that all Peas sown during the months of January, February, and the first half of March, will not vary more than a week or ten days at the time of turning in. There will not be much use in making successional sowings during these months. As a matter of fact I have often sown at intervals of a fortnight or so in order to test the matter, and I have always found that to obtain a succession from first sowing the best plan is to sow at least three or four sorts at the same time, including an early kind, a midseason one, and a late variety. After April comes in sow the succeeding crop as the preceding one is just through the ground. The following dates may be taken as approximately correct. They are founded upon a good deal of experience and careful note-taking; and, making due allowance for the effect of latitude upon climate, and the variations of soil and seasons, may be safely acted upon. Early white round Peas, of which Ringleader may be taken as the type, sown before Christmas, or not later than the first week in January, should be fit to gather the last week in May. William I. and those of a second early type, sown from the end of January to the end of February should be fit to gather from the 10th to the 20th of June; Huntingdonian and Telephone, sown from 20th of February to 10th of March, should be fit for use from the 20th of June to the middle of July, or later. Marrow Peas, such as Veitch's Perfection and Ne Plus Ultra, sown from middle to end of March, should be ready about the middle of July and onwards. The tall Marrows, sown first and third week in April and first and third week in May, should produce a supply from the middle of July till the close of the Pea season. But most people sow second earlies once or twice in June, and I have had the late Marrows do well sown as late as the middle of June.

The Late Marrow Peas.

The crop is so important that every expedient should be adopted which can in any way enable it to pass through its difficulties without much suffering. I have seen men labouring heavily with watering pots in a dry, hot time, when less than half the time and labour in preparatory work at this season would have given more satisfactory results. I don't care so much about planting the late Peas in trenches, especially if it decreases the depth of soil; but I do believe in marking out the sites, say, in January or February, opening a trench, and filling in with a manurial compost — Peas dislike rank manure—of the usual decaying matters which accumulate about a garden, mixed with a proportion of manure from the stables or pigsty, with a little soot, &c., and the whole blended together and worked into the trench, where the Peas will by-and-by be planted. When this is done early in the season the added compost has become mellow, and in a fit condition for the roots of the plants to work among at once. As much of the soil taken out of the trench may be thrown back and worked up with the compost as will fill the trench to the original level. The bottom of the trench will also be stirred up and incorporated. All the stations required for the late Peas should be got ready at the same time, and a stump driven down at the end of each row, so that when one wants to put in a row of Peas all we have to do is to place a line along the line of stumps, draw a drill about 3 inches deep, and plant the Peas. As regards the

Manner of Planting the Peas,

I should like to say a few words. The large Marrow Peas should be allowed room to branch out, not only below the surface, as the preparation of the site suggested above will provide for, but also above the ground, as must be provided for by thin planting. From 2 inches to 3 inches apart all over the drill will not be too much space to allow; and this will necessitate the careful distribution of the seeds individually by hand. In dry weather the drills should be soaked with water, and then covered with the dry soil drawn from the drills. If mice are likely to be troublesome, dress the seeds with red lead, or else keep traps set in the neighbourhood of the Pea row. To do the late Peas justice the rows should be isolated, with other dwarf crops between. Mulching with manure is a very valuable expedient, and in connection with a good preparation of the land at this season should render watering, even in the driest weather, unnecessary. The mulch, which should consist of half-decayed stable-manure, should be spread on both sides of the rows of Peas, 18 inches or so wide, and 3 inches or 4 inches thick.

Gathering the Peas.

This should be done carefully, and as soon as they are fit for use, and in many cases a second crop of young shoots and blossoms will put forth, and a second crop of Peas, which will be very useful, will be produced. All annual plants especially will make a supreme effort to produce seeds, and Peas are no exception to this rule.

Tall and Dwarf Peas.

Dwarf Peas are very useful where sticks or supports cannot easily be obtained; but where sticks do not cost much, I should prefer, for the main crop, tall Peas, as they are more prolific. In the case of all Peas requiring support—and, if possible, all Peas, even those of dwarf habit, should be supported—the sticks should be placed to the rows early, and the tops of the sticks should be levelled with the shears, and the pieces cut off be used between the large sticks at the base, to prevent the plants straggling through, and to give them an upward tendency. In the lists which follow I give the heights of the different varieties, although, of course, my readers will understand that soils and seasons have much to do with the height attained by Peas.

Varieties.—*First Earlies:* Beck's Gem, 1 foot; American Wonder, 1 foot; Ringleader, 2 feet; William First, 3 feet. *Second Earlies:* Hundredfold, 4 feet; Culverwell's Telegraph, 4 feet; Huntingdonian, 4 feet. *Main Crop:* Blue Scimitar; this is a very useful old Pea, and very reliable for bad seasons—2½ feet. British Queen, 6 feet; Ne Plus Ultra, 6 feet; Omega, 2½ feet; Telephone, 4 feet.

E. Hobday.

BEES.

SEASONABLE NOTES.

The best time in the whole year for commencing bee-keeping—swarming time—will soon arrive. From the middle of May to the middle of June swarms of bees can be obtained of bee-keepers and hive dealers at reasonable prices, and there is, no doubt, sufficient encouragement to induce many persons living in the country to engage in the culture of the honey bee. It is not the cultivated flowers of the garden that afford the bulk of honey (although very useful in their way), but those which abound in the fields and woodlands. There is plenty of room for many more bees than at present kept, much honey being every season left ungathered. The number of bees in a swarm varies from ten thousand to thirty thousand, and even more; fifteen thousand may, however, be considered a medium swarm. The strength of a swarm may be judged by its weight, five thousand bees weighing about one pound. Swarms should be obtained, if possible, from hives that have swarmed the previous season, as these will contain young queens in their second year and in full vigour.

Subduing bees.—A great drawback to some persons who would be glad to become bee-keepers is the dread of being stung. Now the chances of being stung may be greatly reduced by taking the precaution of wearing a bee-veil when performing any operation upon a hive, and then bees can be subdued by fumigation with the smoke of lighted brown paper, touchwood, fustian, &c., used in a smoker, by which the smoke can be puffed into any part of the hive desired. The smoker will, if fed with any of the above-mentioned materials burn for hours, and is a most useful attendant upon the apiarian in bringing his bees into subjection. The effect of smoking bees is to cause them to fill themselves with honey, in which state they are but little disposed to use their stings unless injured. The reason of swarming bees seldom using their stings, is that each bee has gorged itself with honey before leaving the hive. Again, a great secret in the manipulation of bees is gentleness; they are easily excited to anger by any quick and sudden movements of the operator, by the scent of the poison arising from a crushed comrade, and by being breathed upon, nothing being more offensive and irritating to bees than the human breath.

Bee veil.—Taking the precaution of having the face protected by a veil insures in the beginner in bee-keeping that coolness and confidence which are such essential qualifications in a successful bee-keeper. Gloves are sometimes worn, made of double thickness, as a precaution against stings upon the hands, but they are much in the way, and are soon discarded as confidence and coolness take the place of timidity. A veil to protect the face and neck may be made of coarse net 3 feet by 1½ feet, made in the form of a bottomless bag; a hem is added round the top, and a piece of elastic put in to fit round the hat, the rim of which keeps the veil from the face, the lower part being tucked in under the coat-collar and about the neck. A better kind of veil can be obtained of dealers in apiarian appliances, made of finely-woven wire in lieu of net, which cannot be blown against the face in windy weather, and does not hinder the sight or confine the breath. When the bees are in full work, and honey is plentiful in the fields, and the bee-keeper has obtained experience and courage, the use of the veil will in all probability be dispensed with.

Cure for stings.—The bee, as a rule, leaves its sting in the wound, which causes its death; thus it sacrifices its life in the defence of its community. The sting should be removed as quickly as possible, as the poison continues to be injected into the wound for some time after the sting is inserted. All rubbing of the part stung should be avoided, as by this means the poison is diffused. The barrel of a small key pressed over the puncture will remove some of the venom. There is said to be over two hundred specifics for bee stings; one of the latest, supposed to be the best, is carbolic acid. Liquid ammonia applied will sometimes give relief, the poison being an acid. Tobacco, in some cases, moistened and rubbed on the affected part, will stop the irritation. In many instances the remedy applied proves worse than the sting, as, owing to various constitutions, what will relieve pain in one case produces a contrary effect in another. There is, however, a happy consolation in knowing that the oftener one is stung the less is the effect produced thereby, so that after a time little or no pain or inconvenience is experienced.

Boxworth. S. S. G.

Arrangement of frames.—I have been waiting to see my stock of bees increase so as to know when to replace the three bars left out last autumn, and was very surprised to-day to find I had a difficulty in raising the quilt covering the empty space, on account of a mass of bees clinging to it. I immediately gave a little smoke, so as to get a look, and found every part smothered with bees, and the outside bar of empty comb covered to the depth of 2 or 3 inches, and newly-made comb on quilt and sides of hive. I want to know if all the bars should be put in, and whether they need any preparation, or is the little wax left from old comb sufficient; also if I ought to continue feeding.—White Elephant. *** There should have been no empty space left to permit the bees to build comb on the quilt and hive sides. The frames should have been drawn close together, and the whole closed up with the division board. The bars may now be replaced, one at a time, as the colony increases. Each frame should be furnished with a strip of comb foundation fixed along the under side of the top bar. Continue to feed slowly, till stores come in abundantly. The syrup given now should be thin, consisting of ten pounds of sugar to seven pints of water.—S. S. G., *Boxworth.*

POULTRY.

MEAT AND EGGS *VERSUS* FEATHERS.

I am only an amateur poultry-keeper, but hope you will find room for these few remarks in reply to Sir Henry Thompson. I believe, in the first place, it is generally admitted that "thoroughbreds" of any class are not as profitable as "crossbreds;" good bred birds, however, are valuable for crossing purposes, if judiciously mated. Of course, breeding in and in, without introducing fresh blood, will cause hens to lay badly or eggs to be barren, or chicks weak and small. This is not only so in the poultry world. I have a terrier dog very highly bred, and she is "so good as to be good for nothing." Surely we cannot expect, even in this practical age, to make money out of everything. Some things will always be ornamental, and others useful. Sir Henry Thompson should have made up his mind before starting poultry whether he wanted eggs or chickens for table. He seems to expect both. With my small experience, I know of no breed good all round. For example, a short time ago, when deciding what roosters I should keep for this season, I had to decide if I wanted large eggs and plenty of them—say a Houdan cross—or birds with breast meat—say half-bred game. Again, we must not expect fruit, flowers, and foliage from one plant, or feathers, flesh, and eggs from one fowl. I see Sir Henry refers to a "new yard." I have yards only, but if going into poultry as a trade, I should take a field, and even now I have to allow a few hours on the grass daily. I am sorry to say we can never compete with foreign eggs—carriage rates in this country are so prohibitive. My grocer has been charging a penny each for cooking eggs, and I am offered the same price or less for eggs just laid. Good food and warm housing only causes them to be produced, and I find the only way to make fowls pay is to set the eggs, or use them. I think at country shows prizes should be offered for table fowls and rabbits. This might be done without annihilating "thoroughbreds."

Red Hill. Partridge Cochin.

I have read with great interest the letter of Sir Henry Thompson in Gardening, and can endorse every word of it. From the little experience I have, and experiments made, I fear the highly-bred prize poultry are very infertile and unprofitable. B. C.

Instinct in chickens.—An instance of instinct in chickens came under my observation some time since, which struck me very forcibly. One morning last autumn while staying at my father's shooting cottage in Berkshire we were disturbed by a great noise at the back of the house; and, upon running out to know what was the matter, we learned that a carrion crow had swooped down among a brood of small chickens, but that the hen had fiercely fought the crow, and driven it away. The old hen was moving about in a very excited state, making a great cackle, but not a single chick could be seen or heard. The attack took place in a meadow, which was full of tufts of tall Grass. We looked carefully about, chirping as we went by way of call. Still there was no reply, and much we wondered what could have become of the brood—ten in number. After awhile, when all was quiet again, the mystery was solved by the emergence out of the long grass of first one chick, with a chirp, then another, and another, and so on, until, at last, the whole brood was counted. Thus, in these little creatures, which were only a few weeks old, there was planted an instinct which taught them, in time of peril, not only to conceal themselves from view, but to keep perfectly silent in their place of concealment, until the danger was past.—C. S., *Porchester Terrace, Hyde Park.* *** We believe the instinct of hiding in time of danger is common to all young creatures, and old ones, too!—Ed.

REPLIES.

13160.—**Keeping eggs for sitting.**—Eggs can be depended on to produce a good proportion of chickens when they have been laid a fortnight, but after that a great many will prove unfertile, although out of batches quite a month old good results have been obtained; this, however, is the exception, not the rule The best way of storing eggs intended for sitting is to provide boards pierced with rows of holes large enough to admit the end of the egg, and so keep it upright, but yet not large enough to allow of its passing through. Let the eggs be kept large end downwards. The boards should be fixed as shelves in a moderately cool place, and not disturbed until the eggs are required to be placed under the hen.—Andalusian.

13327.—**Best fowls for laying.**—We unhesitatingly say that the Hamburgh is the fowl that lays the most eggs in the course of the year. The eggs are small, but of good quality, and the birds themselves are rather delicate and small in size, so that if you require a bird now and again for table use you will find them wanting. We strongly recommend you to try Minorcas or Houdans as being good all round birds, and very little inferior to the Hamburghs as layers. Leghorns and Spanish are also very excellent layers.—Andalusian.

13328.—**Food for chickens and ducks when first hatched.**—There is nothing so good for chickens as hard-boiled egg, chopped fine, and mixed with about the same quantity or more of stale bread crumbs. This should be moistened with a little milk. It is necessary to give the hen a good meal of barley before offering the egg and bread crumbs to the chicken, otherwise she will eat the lion's share of the latter food. For young ducks nothing is better than hard-boiled eggs, chopped fine, and mixed with equal portions of hard-boiled rice and barley-meal.—Andalusian.

12971.—**Poultry dying.**—We are of the opinion that neither the rabbit entrails nor the pot liquor had anything to do with your fowls dying. They have been poisoned in some other way, and your suggestion of rat poisoning by your neighbours is very feasible. The fact of the fowls in another run remaining perfectly healthy shows that there was nothing wrong with the corn or meal with which you supplied them. Are your water fountains clean, and is the water regularly renewed?—Andalusian.

12969.—**Specks in eggs.**—We know the marks to which you refer and have often noticed them, but cannot give you the cause of their being there. We should have no hesitation in using such eggs for hatching purposes, as we feel certain the specks can have no effect on their fertility.—Andalusian.

13329.—**Artificial hatching of eggs.**—We advise you not to attempt to make an incubator yourself, however handy you may be with tools, as it has often been tried, but never, to our knowledge, been a success. You had better obtain one from a good firm.—Andalusian.

DO PIGS PAY?

May I again ask you to allow me to give your readers my experience in the matter of pig-feeding? My remarks relate to the past year. I have just made up my pig accounts, which have been kept very accurately, and I venture to think that the result is a very favourable one.

Last May I bought three pigs, for which I gave respectively £2 1s., £1 2s., and £1 7s. 6d. These were killed during December and January, and produced, in the aggregate, 859 lb. of meat, "green" weight. To produce this, in addition to the refuse garden stuff, and the very small quantity of house-wash supplied by an economical bachelor's kitchen, I spent as follows: Coarse pollard, £1 9s. 8d.; fine, £1 19s.; toppings, £2 13s. 6d.; Acorns, 4s. 6d.; Beans, £1 1s.; Barley meal, £7 1s. 6d.; amounting to £14 9s. 2d.; butcher and smoking charges, 8s. 6d. Thus the entire cost of my pigs amounted to £19 8s. 2d., and in return I received 859 lb. of pig-meat, which means that my meat cost me, green weight, 5½d. per lb.

Then, in addition, there was the manure, which my gardener values at £2, but I think he is rather under the mark. On the other hand, I had to buy straw for litter. I cannot estimate this, as some of the straw was used for other purposes—clamping Potatoes, thatching hurdles for frame covering, and the like. Anyway, I bought no manure during the year, except a couple of loads for my hot-bed. What the pigs produced was quite enough for my large garden, and I have a quantity in stock now.

Only the other day I was talking to a farmer here as to whether pig-feeding answered, and he told me that he and his neighbours generally reckoned upon getting the manure as profit and nothing more, taking the average price of 10s. a score, which the green meat would fetch. I cannot understand this, because no man who fed pigs for sale would do it in such an expensive way as I do. My pigs always have the very best food that I can give them, but then the meat is intended for my own and my friends' eating, and the following fact will sufficiently testify to its quality.

A friend of mine, a business man in London, who has a large family and knows how to spend his money to advantage, asked me last December to let him have a flitch of my bacon. As he had frequently tasted mine, I asked him to name his price. He sent me the weekly tariff issued by the firm with whom he usually dealt. Sides were quoted at 8½d. per pound, but my friend offered me 9d., saying that if that sum would answer my purpose it would answer his, as my meat was superior in quality to what he could buy in London. People usually are not aware how much cheaply-fed and cheaply-bought pig meat loses in the cooking, quite apart from the question of quality. Besides, three-quarters of a pound of good meat will go as far in the way of satisfying hunger as a pound of an inferior sort. I wish some other amateur would give us his experience, as, apart from the interest afforded by watching the animals grow, the economical view of the question is by no means unimportant in these days of dear butcher's meat.

Crondall. J. Edward Vaux.

13222.—**Forming village flower shows.**—In the first instance you must have a sufficient number of persons in the village who take a pleasure in gardening, and who would take an interest in the show, to form a committee to raise money, draw up rules for competitors, arrange the prize schedule, and make all other arrangements. You should get the prize schedule of some other village society to assist you.—H. G. P.

GARDENING ILLUSTRATED.

Vol. VII. MAY 2, 1885. No. 321.

INDOOR PLANTS.

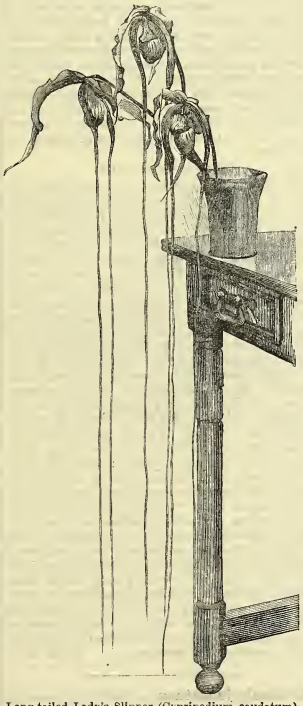
THE LONG-TAILED LADY'S SLIPPER (CYPRIPEDIUM CAUDATUM).

This is not only one of the most remarkable of Lady's Slippers, but also one of the most singular plants in cultivation. Its narrow petals are but an inch or two long when the flower buds first expand, but they gradually extend until, in ten or twelve days, their length varies from 18 inches to nearly a yard. This remarkable species is a native of Bolivia, and a variety of it is also found on the Peruvian Andes. Its foliage is about a foot in length and of a bright green colour. The flowers are produced two and three together on a stout scape from a foot to 16 inches in height; the sepals are of a pale yellowish green, streaked with dark green, while the lip, which is large and pouch-shaped, is of a yellow and rosy-purple colour, the interior being white, spotted with clear purple. The petals are of a yellowish green colour, striped with reddish purple. It grows freely in an open, well-drained, compost of turfy loam and peat, surfaced with fresh Sphagnum. Well grown plants of it flower regularly every year, and last a month or six weeks in perfection. Like its congener, C. villosum, this is a fresh looking plant when not in flower, and does well in an intermediate house. Our illustration represents a spike of the highest coloured variety, roseum, and the tail like sepals are of unusual length, being 33½ inches from the centre of the flower to the tip of the tail.

CULTURE OF ARUM LILIES.

The Trumpet Lily, by whatever name one may call it—Richardia æthiopica, Calla æthiopica, or the Arum Lily—is a most useful and accommodating plant; and a description of my method of managing it may be interesting. In the beginning of June part of our stock is turned out of the pots and divided, the largest and strongest growths being placed together, the second size in another heap, and the smallest by themselves. A piece of ground is selected, if possible, not too much exposed to the sun, such as an east or west aspect of a kitchen garden border. The ground is marked out for the strongest, 30 inches or three feet plant from plant. The holes for their reception are then made, and into each is placed a good shovelful of rotten manure, which is well mixed up with the soil to a good depth. The plants are placed in position and the soil filled in around them and made moderately firm. This is followed up until the whole are planted. After planting is completed the whole should have stakes placed close to their side, to which their leaves should be fastened, for if allowed to be blown about they would be prevented from taking fresh root, which they should do before losing their leaves, and when properly supported they should have a good soaking of water, so as to thoroughly settle the soil about their roots. The dividing system is not always practised, but, from experience of both methods, I prefer it to planting in clumps. The latter should be planted out in every way like the foregoing, except that the distance apart may be greater; but do not forget the supports to their leaves, for although they will eventually lose them, it is necessary that they be preserved for as long a period as possible. The after-treatment consists in keeping them occasionally supplied with water, according to the dryness of the season, but they will not require nearly as much attention as they do when grown in pots during the whole of the summer months.

About the beginning of September the whole must be lifted, and that is the time to decide what kinds of plants are to be had; those planted in clumps will have made considerable progress, and if not large enough for your requirements two or even three may be placed together in one pot. The larger plants that were planted out singly also make excellent specimens when placed three, four, or five in a large pot. If they have done well, three of the largest single plants will be found as much as can be got into a 12-inch pot, a size which we find ample for our purpose, as one can conveniently move them about. For ordinary decorative purposes plants in pots ranging from 6 inches to 10 inches will probably be found the most useful, and among the single specimens numbers will be found suitable for those sizes. If they have done well, everyone of them will produce spathes. The pots should contain a good amount of drainage, and a little partially decayed manure should be placed over it. The plants should have no more room in the pots



Long-tailed Lady's Slipper (Cypripedium caudatum). Length of tail-like sepals, 33½ inches.

than they require, and when potted they should be placed in a shady position out-of-doors, and should receive a good watering to thoroughly settle the soil about their roots; after that they should be kept on the side of dryness, but should never be allowed to suffer from want of water, and they should be syringed overhead two or three times a day for a few days. In a week or little more they will have taken to the soil in the new pots, when they must be gradually inured to light. Under this treatment we have know them to lose scarcely a single leaf.

They should be housed before the approach of frost in any light frost-proof structure if not required to flower before, say, Easter, but if required to flower before Christmas or thereabout they must be treated to a little warmth soon after housing in autumn. For this purpose large clumps should not be chosen, but the strong single crowns. They are gross-feeding subjects, and the best results are obtained when the plants are liberally supplied with liquid manure—that is, when they have got proper hold of the soil or are at all pot-bound.

C. W. C.

Amaryllis culture.—A reader of Gardening has been asking for information about the culture of the Amaryllis. It is now being better understood than it was ten or fifteen years ago; the bulbs flower sooner from seeds and the propagation is more rapid. This of course follows naturally, although, even in the matter of propagation, some sorts are much slower than others. Keizeri, for instance, which I have had for nearly ten years, grows well, and is a strong vigorous plant, but it has never given off a single young plant. Other varieties have been grown for three and four years and have made no increase. The offsets should not be removed from the parent bulb until they are of good size, and can be detached readily with plenty of roots adhering to them. No offsets should be removed during the growing period. Allow them to remain until potting time in the early part of January. In order to grow the plants well they ought to have a house to themselves, and the pots should be plunged in a bed of tan. They will succeed well in a vinery, where the good old system of making a bed of leaves and manure inside the house is adopted. When the bulbs are potted, they can be plunged on this hotbed, but care must be taken that the heat is not too great. The heat of the vinery would be about from 45 degs. to 50 degs. to begin with, and this is just the temperature for the Amaryllis. The increasing heat and moisture as the season advances will suit the requirements of the bulbs, and by the time the leaves of the vines have covered the roof many of the Amaryllises will be in flower. Removing them into the greenhouse during their flowering period does them no harm, but they require more heat again during the months of June and July while making their second growth. They like a little peat added to the potting soil, which should be good sandy loam, with a fifth part of rotten stable manure added to it. During the growing period water must be applied with care, especially during the early stages, before the roots have grown much. At no time should they have any manure water. The resting period, too, is almost as important as the growing period; they require a decided period of rest, and this is during the four last months of the year. At that time they require no water, sufficient moisture being stored up in the bulbs to last them until the end of January. Water very sparingly, or not at all till the leaves appear; and even then once a week will be sufficient if the pots are plunged.—J. D.

Tuberous Begonias.—How often do my amateur friends say, "What beautiful Begonias you have—but mine never grow and bloom like that!" On asking how they were treated, as a rule, the reply is, "We potted them up in garden soil, and grew them in the warmest corner of our greenhouse." No wonder, indeed, that two-thirds of would-be Begonia growers give up in disgust! This superb flower ought to be potted in a compost of peat, well-decayed manure, and fibrous loam, equal parts, with a good dash of sharp sand, giving plenty of drainage. Once potted, place on a light shelf in cool or cold greenhouse, and when growth commences give water as often as soil seems to require it, but avoid keeping too damp at first. Also grow as cool as ever you can from May onwards, as there is nothing that the Begonia dislikes more than heat, except in its early stage of growth. Once they commence to flower, give abundance of water, also occasionally weak liquid manure, and you will be rewarded with a rich harvest of bloom.—V. V. V.

CULTURE OF ACHIMENES.

The various members of the Achimenes family are a very accommodating class of plants, as they are of easy culture and free flowering. Being deciduous, the small tubers occupy but little space during winter, for they can be stored almost anywhere, provided they are out of the reach of mice, frost, or wet, while, on the other hand, too hot and dry a spot is not desirable. We winter ours in the pots in which they have grown, and place them underneath a stage in one of the greenhouses where there is but little artificial heat, so that they will remain for a great part of the winter in a uniform state of moisture, as the stage is so arranged that there is no underneath drip. About the early part of March the tubers are taken from their winter quarters, laid in pans, and just covered with light soil, which is kept slightly moist, thus causing the plants to start into growth, and when the young shoots are about 1 inch long they are taken up, and potted in whatever way they are required. Some are placed three together in a 4-inch pot, being needed for some of the smaller floral arrangements, while others are grouped in pots or pans, or employed as basket plants, for which purpose they are well adapted. The soil used consists of about one part loam to two parts of thoroughly decayed leaf-mould, to which a liberal admixture of sand is added. The same compost is employed for the baskets, which are first lined with Moss; the young plants are then in position. Some are allowed to peep through the sides, and the upper part of the basket is also planted with them. They are then placed in a house where the temperature does not fall much below 60 degs., and, a nice growing atmosphere being maintained, they make rapid progress. As the pots become filled with roots manure water may with advantage be given, but care must be taken not to use it too strong, or great damage will be done, as it is far better in all cases to use weak manure freqnently than to occasionally give a strong dose.

The plants should be staked before they are too far advanced, otherwise they get entangled and can scarcely be separated without injury. These last remarks do not apply to those grown in hanging baskets, as they are far more pleasing if allowed to develop in an entirely natural manner, as they droop gracefully in all directions, and are quite a mass of bloom. During the growing season a gentle syringing is of great service, but this must be discontinued when the flowers expand, though water at the roots must be given even more liberally than before. As the Achimenes delight in plenty of water when in full growth, and are very impatient of moisture at other times, drainage must be thorough, and will be helped by the open nature of the soil. After flowering the plants are dried off gradually, and when completely at rest re moved to their winter quarters. Insect pests are easily kept in check, as the principal are aphides, and if they make their appearance they can be easily kept in check by gentle fumigation.

Propagation is usually effected by dividing the tubers, but in the case of a scarce variety cuttings of the shoots are sometimes resorted to. They are taken when the plant is a few inches high, and if put in small pots and kept close they quickly root, when they can be treated like the others. In taking off the tops of young plants to serve as cuttings, the operator should be careful to leave at least a couple of eyes on the portion that remains, from which new shoots will be quickly pushed forth, so that in a little time the plant is none the worse for its decapitation. Seeds may also be used as a means of increase, but, from the readiness with which the Achimenes can be increased by other means, seeds are rarely resorted to. However, if any are sown they should be just sprinkled on the surface of the soil and covered with a pane of glass till germination takes place, as from their small size many of the seeds would be buried too deeply if any soil whatever was sprinkled over them.

A selection of a few good distinct varieties would include—Ambrose Verschaffelt (white, dark centre), Carl Woolforth (purplish), Dazzle (bright scarlet crimson), Diadem (magenta crimson), Gibsonii (mauve), longiflora major (blue), and longiflora alba (white), Meteor (crimson scarlet, golden centre), Mauve Queen (mauve), Williamsii (bright scarlet), purpurea (deep purple), Pink Perfection (magenta rose), Unique (pinkish), and picta (bright vermilion). This last, apart from the vivid hue of its blossoms, is valuable for late blooming, as it can be had in flower long after any of the others. T.

WINTER FLOWERING PLANTS.—XIV.

Luculia gratissima is a great favourite on account of its sweet-scented and beautiful rosy-lilac blooms, which are produced in autumn, winter, and early spring. Unfortunately this plant is very seldom seen in good condition, as it does not as a rule succeed well in pots, and, when planted out, very frequently suffers from injudicious watering. The Luculia should be planted in an extra well-drained border, filled with a compost of four parts fine fibrous loam, two parts of peat, one of leaf-mould, and one of sand, brick rubbish, and charcoal in small lumps, mixed. It does better in a warm conservatory, or intermediate temperature, than in either a very warm or very cool house, and it is necessary to give frequent syringings in summer to keep down thrips and green fly, to which it is rather liable. But the great point is the watering; this should be ample, at least while the plant is in full growth, but not a drop should be given as long as the soil is at all moist; rather allow the plant to flag slightly than water too soon, but, when required, give a thorough soaking, and then leave until wanted again. This treatment will keep the soil sweet and the plant in health, but too frequent watering is almost always fatal. Lastly (in this class of plants) we will take the

Citrus, or Orange,

with its many varieties. C. aurantium, the common Orange tree, is always admired, and the best of its congeners are C. Limonum (the Lemon), C. nobilis (the mandarin Orange), C. decumana (the Shaddock). The general treatment, is, on the whole, the same as that required by the Camellia, previously treated of, and, when well attended to, these plants are always very ornamental, having at almost all seasons of the year fruit or flowers, and often both, in various stages of development. They may be cultivated either in pots or planted in borders prepared in the same way as for Camellias, and in this case will do well and produce a fine effect, either as single specimens in an open border, or planted against a conservatory wall, to which the growth is neatly trained and nailed. Plants are raised by nurserymen by grafting healthy seedlings with scions of the variety required; cuttings, even if they are induced to emit roots, never grow satisfactorily, or make good plants, and seedlings that have not been "worked" too often turn out worthless. Plants in 6-inch pots may by careful cultivation be made to produce from four to six nice Oranges, while very neat and dwarf in character, and, if nicely coloured, the fruit shows up well, and a very pretty table ornament is the result. But large specimens in pots, or planted out, may be had bearing hundreds of handsome fruit, as well as a long succession of the sweet and graceful flowers so much prized on the occasion of a wedding. B. C. R.

Crassula jasminea.—This plant seems to have become popular within the last two or three years, and it is likely to be still more extensively grown. It is a dwarf, dense-growing plant with erect stems, each of which is terminated by a cluster of white tube-shaped flowers somewhat resembling those of a Bouvardia. These blooms are very valuable for use in a cut state, especially in the smaller kinds of bouquets, such as button-holes, for which their somewhat fleshy character eminently befits them, remaining as they do a considerable time without any signs of fading. The plant is so floriferous that a few potsful of it will yield a considerable number of cut blooms, but besides that, when grown in 5-inch or 6-inch pots they form attractive little masses, very suitable as an edging to groups, or indeed for many other purposes. So floriferous is this plant that, when in good condition and viewed from above, the flowers alone are visible, being produced in sufficient numbers to completely hide the foliage. Its propagation and culture are of the easiest kind; cuttings of the young shoots root readily if put in well-drained pots of sandy soil without even the protection of a close frame or bell glass. In potting, good open loam with a liberal admixture of sand forms a suitable compost, and during summer the plants may be set out-of-doors on a bed of ashes, or if the weather is very wet the protection of a frame should be afforded them. During winter a light shelf in the greenhouse is the best place for them, and during that time care must be especially taken not to over-water them, as, like most succulent plants, they are at that season rather susceptible of damp.—H. P.

13343.—**Raising Cinerarias from seed.**—Fill the pans with equal parts of peat and silver sand; cover the seed slightly, and place on slight bottom-heat. When the plants appear keep them shaded from the hot sun, and as soon as they will bear handling put them in 3 inch pots; as the roots reach the sides put them in larger pots until September, when they must receive their final shift. Stand them out-of-doors during the summer, and put them in a cold frame in September, and they will flower the next month. Do not delay sowing, as it is late now.—C. F. Davis.

Panicum variegatum.—Wherever there is a stove or intermediate house, a good stock of this prettily variegated drooping plant should be grown. It looks well in hanging pots or baskets, and is never seen to better advantage than when forming an edging, so as to hang down in front of the side stages. A sufficient quantity of cuttings should be put in from time to time, as old plants get too large for some purposes.—C.

REPLIES.

13279.—**Culture of Acacias.**—When the plants have done blooming, cut them back just below the flowers, and give them water when dry only, until they break into new growth. When the young shoots are about 1 inch, shift, if required, but do not do so unless the pots are full of roots. Hard-wooded plants are often put into large pots before they are really ready for them, and then they are apt to go wrong. Acacias will live healthily in the same pots for years, if well attended to in watering, and they can always have a little liquid manure when in full growth. The great point is to encourage them to make a free growth by syringing twice a day in hot weather, giving plenty of air, avoiding draughts, and shutting up rather early in the afternoon when the nights are cool, but leaving on some air when they are mild. Slight shade from very hot sun is beneficial. By August growth will be completed, and then the plants may be turned out in the open air until the middle of September. Choose a sunny, but sheltered place, and attend well to the watering. Seed should be sown in April in a frame or cool house, and when the young plants are large enough to handle, prick them out a dozen together in a 6-inch pot, using sandy peat. The following year they may be put separately into small pots. The best compost for shifting on is fibrous loam and peat in equal parts with a good dash of white sand in it.—J. C., *Byfleet.*

—— After flowering straggly-growing plants should be pruned into shape, and those plants that require it should be repotted. About equal parts of turfy loam and peat, with a liberal addition of silver sand, will be found a suitable compost for them; they should be potted firmly and the pots well drained. After potting the plants should have a light position in a frame or greenhouse, till they get established in the new soil. Through the summer they may be placed out-of-doors in a sunny position; stand the pots on coal ashes or slates to prevent worms from getting into the soil. Acacias may be readily raised from seed. For this purpose the seeds should be raised in pots, in a soil somewhat lighter than that used for established plants. The pots should be well drained and the soil made moderately firm; the seed should be sown thinly and lightly covered with soil. It will germinate in a greenhouse, but will do so more quickly if the pots are placed in a warm house, or plunged in a gentle bottomt-heat. A soon as the young plants are fairly up they should be placed in a light airy position in a greenhouse or frame, keeping the soil moderately moist. When the seedling plants are large enough to handle they should be potted singly into small pots, care being taken not to injure the roots during this operation. Some useful

information on these plants by "B. C. R." appeared in the same number as your query.—Bohemian.

13233.—**Maiden-hair Ferns not growing.**—Your Ferns may be in a satisfactory condition. I should examine the roots, which may have filled the pots. If so, shift into larger ones. But, on the other hand, having been "well watered," the fault, if any, may arise from an over supply, and so retard root growth, the soil being perhaps too sodden. If so, repot into clean pots, using a mixture of equal parts of black fibrous peat and good loam and a dash of silver sand, giving quite two inches of drainage. Most nurserymen keep a stock of the compost referred to. You might also raise a few young plants by root division. Keep close and moist till established, in about 68 degs.—A. E. A., *Stamford Hill.*

13297.—**Camellias out of health.**—From the information given in this query it is difficult to say why the plants are not in good health. The cold greenhouse is the best place for them; and as one plant made splendid growth it cannot be said that the potting material is not of the right kind. I should say the plants have received a check in some way, either from too much or too little water at the roots. Camellias require careful repotting, as the roots are very brittle, and are thus easily injured. They also require very careful attention as to subsequent watering.—J. D. E.

13296.—**White substance on Plumbago.**—Make a strong mixture of soft soap water, and wash off the white substance (which, no doubt, is mealy bug) with a tooth brush. Syringe after the washing with clean water. You may thus clean your Plumbago, but to be kept clean it will require attention.—East Suffolk.

13172.—**Constructing bottom of Fern case.**—Our Fern cases are made of zinc, and there is a false bottom of perforated zinc, with a small space or cavity between them to permit of the water draining off to one end, where there is a small tap. In some cases a cork answers the purpose. Cement might answer, but it would be heavy to move about, and in any case there should be a false bottom for drainage.—E. Hobday.

13332.—**Four best Carnations.**—Woodley's (scarlet), Mary Morris (pink), Souvenir de la Malmaison (cream), and Wilson (white) are four of the best Carnations you can have; they will bloom perpetually in a greenhouse.—C. F. Davis, *Leatherhead.*

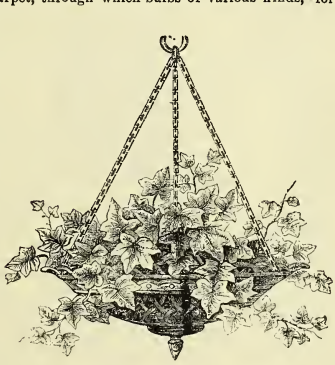
13338.—**Plants for greenhouse in summer.**—You can have all kinds of Lilies, such as Lilium auratum, L. lancifolium rubrum, L. lancifolium roseum; cool Amaryllises, such as Belladonna, and Vallota purpurea; Musk and Mimulus; Tea Roses in variety; Mignonette and Calceolarias. Mary Morris and Woodley's Scarlet Carnations would do well.—C. F. Davis, *Leatherhead.*

Culture of Ice plant.—All the varieties of Ice plants are easily raised from seed. The seed I sow in a small box in April, and place in a moderately warm frame in a good sandy compost, with a little peat and good loam mixed, and the plants as soon as large enough I gently transplant into 6-inch pots with a good drainage and soil as above. At present I have two pots full of bloom. Cuttings I sometimes take off during May and June, and these I let get dry a little before planting into the pots. After they are potted I place them in a warm room, when they very quickly root. I mix a little more sand with the soil in which I strike my cuttings, and the slips are not placed too close together. In May you can cut them back to any required size, without the least injury to the plants. They keep green during the winter and look very charming; they grow well on grottos and rockwork, and look very gay and brilliant during the summer months.—G. H. Mortimer, *Pimlico.*

Agathæa cœlestis.—I find that a few little bushes of this yield an almost continuous supply of cut blooms the whole year round. It is a plant of the easiest possible culture, doing well under liberal greenhouse treatment. The blooms resemble those of the Paris Daisies (Marguerites); indeed, they are sometimes called Blue Marguerites. Their usefulness in a cut state is increased by their long, stiff stalks, as the blooms can be used in different arrangements without wiring of any kind. With a little more heat than that of an ordinary greenhouse this Agathæa will flower throughout the winter, the best results being obtained by growing the plants on liberally out-of-doors in summer and pinching off the blooms as they appear, so that the plants may be bristling with flower buds by the autumn, and when moved under cover commence to flower at once and continue throughout the winter.—H. P.

HANGING BASKETS.

This is a good time of year to fill baskets of any kind with plants, whether they be of wire, wood, or any other material. The plants will mostly be starting into active growth, consequently the baskets will soon present a full and perfectly furnished appearance, and when well arranged they add quite a distinct and pleasing feature to conservatories or plant houses of all kinds. For indoor decoration, too, they are extremely well suited. Most plants of trailing habit look best when elevated, and the best way to show them off to advantage is to plant them in good-sized baskets, so that their roots may be readily kept moist. Ferns, Lycopods, and some kinds of fine-foliaged plants do well in baskets all the year round. The most serviceable baskets I have ever had were filled with Ferns, such as Nephrolepis exaltata or Goniophlebiums, growing out of a carpet of Selaginella Kraussiana. Such baskets last for years if kept well supplied with water. The Selaginella may be renovated by pegging it down close to the surface if it gets loose, and working some fresh soil in about its roots. Of flowering plants, too, there is an abundance for all seasons; for instance, a pretty spring basket may be quickly filled as follows: Take large flakes of the common Sedum or Stonecrop turned upside down, and with them cover the entire bottom of the basket; thus arranged, the green tops will grow through the wires or woodwork and form a carpet, through which bulbs of various kinds,



Variegated Ivy-leaved Pelargoniums.

such as Scillas, Crocuses, and others of dwarf habit, placed inside, may peep; then fill the basket half full of soil, and around the edge put Violas or Pansies mixed with Tulips, and in the centre Hyacinths, Spiræas, Narcissus, or whatever else fancy may suggest. I filled some last year in this manner, and in a cool conservatory the Sedum was the prettiest carpeting plant I ever tried. The Ivy-leaved Pelargoniums, both green and bronze-leaved kinds, are suited for hanging baskets, but the variegated varieties are the most attractive. In addition to their graceful habit of growth they possess the advantage of entire immunity from the attacks of insects, and this is a great desideratum, especially in the case of plants suspended above others. B.

Lapageria rosea.—Among greenhouse climbers this superb flower stands without a rival—beautiful thick, waxy, rose-coloured, bell-shaped flowers, borne in long sprays, the blooms springing from the axils of the leaves. It is almost hardy, and has a great objection to being coddled. Planted on a mound of peat and loam, in a light position, but shaded from bright sunshine, and given a thin stake or wire to cling to, it will soon reach the roof, and hang in graceful festoons. All who have a cold greenhouse should grow it. It will flourish under pot culture, but thrives best when planted out. Frequent syringing during warm weather is advisable. The white variety is very beautiful, but, alas! too expensive for most people.—V. V. V.

THE COMING WEEK'S WORK.

Glasshouses.

Stove and greenhouse plants.—The earliest tuberous Begonias are now fast approaching the flowering state, and should receive a liberal amount of air in order to keep them dwarf and stocky, a condition that will ensure them a long season of beauty. Young Cyclamens that were sown in autumn will now be best grown on in close frames; they should be given very liberal treatment all through the growing season, when they will make fine blooming plants by autumn. Others sown early in spring will require pricking out into pans, in rich, light soil, and should be kept growing in warm quarters. Push on a good batch of Amaranthus salicifolius and A. tricolor; those will be found useful in the conservatory by-and-by. Attend carefully to Vallotas now that they have commenced growing, and endeavour to get a good development of healthy foliage on them. Anyone requiring a beautiful miniature basket plant for a small conservatory or a Wardian case should now divide Sibthorpia europæa variegata, and place it in small baskets or pans, over the edges of which it will grow and show its beautiful habit and variegation to perfection. Where only one house is devoted to stove plants it will be necessary to make use of heated frames for forwarding young soft-wooded stock. Most of the winter-blooming plants will now do equally well in warm frames as in the stove. These should now be pushed forward rapidly, and, as fast as they fill their pot with roots, should be moved into pots a size larger. Maintain a moist atmosphere around them, and shade moderately during bright weather, closing up early on fine days. Quantities of fresh cuttings should now be put in; these will make smaller but useful plants if grown on freely during the remainder of the season. Keep the different varieties of Coleus well up to the light and in full sun, in order to get up their colour early, as they are among the most useful plants for the conservatory to succeed the early-forced plants of Rhododendrons, Azaleas, &c., which will now soon be over. Attend to the pricking out and potting on of young Gloxinias and other seedling plants in this house.

Ferns will now be throwing up a mass of young fronds, which must be carefully watched, in order to prevent them from getting spoiled in their upward course by becoming entangled with the old fronds. The centres should be kept well opened out while the young fronds are developing. Large supplies of water will now be required by all kinds growing freely, and the tree varieties will require their stems damped several times daily during hot weather. Plants growing in baskets will require more attention than those in pots, as the air, having full access to the outsides of the baskets, quickly dries them up. Among the finest kinds for growing in baskets are Goniophlebium subauriculatum, Asplenium caudatum, and A. Serra. Among the smaller growing sorts suitable for baskets may be named the different varieties of Adiantums; those that form underground rhizomes are the best, as they quickly travel to all parts of the baskets, and soon form a perfect ball of delicate verdure. Two of the freest growers in this way are A. assimile and A. amabile; but the most beautiful and distinct of all the Adiantums for a basket is A. lunulatum.

Flower Garden.

General work.—Lawns should be mown and grass verges clipped. Apart from the untidy aspect of uncut edgings, it is desirable to cut these regularly to prevent seeding Grasses making weedy walks, and the same remark applies to grass margins of shrubbery clumps. Continue to plant out all the hardy section of bedding plants, also thin out hardy annuals sown in the open borders, and plant out those sown in warmth. Stake Sweet Peas and make another sowing. Place in sheltered positions, easy of protection, out-of-doors all the hardiest kinds of bedding plants, such as Pelargoniums, Ageratums, Lobelias, Verbenas, &c., which will allow of the potting on of recently struck plants of the same kinds, and also the tender sorts,

such as Coleus, Amarantus, Iresine, and seedling subtropicals, which require plenty of space and warmth.

Rock garden and hardy fernery.—Pick off seed vessels and decayed flowers from the earlier flowering plants, and keep the whole free from weeds. Couch Grass and Spergula are at this season very troublesome, and unless destroyed betimes quickly overrun the weaker growing plants. The dwarf Phloxes, Aubrietias, Myosotis, Omphalodes, and two or three varieties of Saxifrages are now finely in flower, but, handsome as they are, they should not be permitted to encroach on others, which, like weeds, they quickly do if permitted to grow unrestrictedly. Formal walks or edgings do not harmonise well with the surrounding irregularities of a rock garden, but where these exist keep the edgings clipped and the walks hard and clean. Ferns from which the old fronds have not yet been removed should have that attention at once, and additional soil should be given to all that need it; transplanting, too, may yet be done. When there is not sufficient to well furnish the ground, plant at long distances, and fill the intervening spaces with the common Wood Mosses, Sedums, and Stonecrops. The common wild Hyacinths, Wood Anemones, Violets, Primroses, Snowdrops, and Daffodils are all in their season most effective as undergrowths for Ferns.

Fruit.

Late vines.—Take advantage of every ray of sunshine in the management of late houses by closing about 3.30 with moisture, when the fire-heat may be kept shut off until the temperature falls to within 5 degs. of the night heat, which need not exceed 60 degs. for the present. If inside borders are well drained they may be copiously watered without fear of injury; indeed, a large percentage of inside borders never get half enough water. Another mistake which many people make is giving their late vines too much root room, particularly in low, damp situations, where everything but the moisture-laden atmosphere is unfavourable to good Grape growing. In such situations I have always found that internal borders 6 feet wide, and external borders 9 feet wide, will give a maximum of good Grapes at a minimum of cost, simply because they are full of active roots which can be fed without watering half the garden, and, being warm, the Grapes invariably set, swell, and colour well.

Early vines.—Early houses in which the Grapes are ripening may have more air on fine days, but draughts must be avoided, and if the inside borders are sufficiently moist the usual damping down may be continued, as spring Grapes require more moisture than can be given to late ones. Let laterals grow without a check if they seem inclined to start, and keep a sharp eye on the old foliage, as spider is almost sure to be present, and injury to the primary leaves at this early season is very often the cause of early vines breaking prematurely in the autumn. Timely sponging of the upper and undersides of the leaves with soapy water is undoubtedly the most effectual, as it is the most economical mode of dealing with this troublesome pest. W. C.

Vegetables.

Brussels Sprouts should now be ready for pricking out. Get some old manure, spread it on the surface of any out-of-the-way corner (1 inch deep is ample), and finish off with another inch deep of fine soil. Burnt refuse is the best of all mixtures for young plants, say four barrow-loads of soil to one of refuse; on this prick out the young plants 4 inches apart, and when planting out finally force the spade under the bottom of the bed, and each plant will come up with a ball. Set your line across the site to be planted, and take out one side spit, and at every 3 feet apart lay in your plant, pressing the soil firmly round it. Nothing more is needed except keeping the ground free from weeds. Spring Broccoli I sow on May 1, and find that date, or about that, preferable to any other time. I always sow in drills 1 foot apart, and plant out the plants from the seed beds to their permanent quarters, the site being that occupied by early Potatoes. When the Potatoes are all lifted we give the land a rough rake over with an implement called the agitator, set the line across the site, and make the holes with a crowbar; one man drops in the plants while another fills the holes with water. The work of planting is then complete. Of all winter Broccoli I have ever seen I pronounce Snow's (when true) to be the very best, followed by those two really fine varieties Leamington and Watts's, both well known. For the latest I find Burghley Champion and Cattell's Eclipse to be the very best. Keep plenty of Lettuces tied up for blanching. Black-seeded hardy Cos is the sort to grow for the winter. In these Lettuces one finds something crisp and good, but French Cos Lettuces grown under cloches are soft, like tissue paper compared with brown paper as regards thickness and substance of leaf.

R. G.

Work in the town garden.

Outdoor garden.—Things are now coming on so rapidly that constant attention will be necessary. Grass will require cutting at intervals, and if at all thin or patchy scatter a little of the finest lawn Grass seed over the turf, after having loosened the surface with a sharp toothed rake, and over this sift a little fine mould. If done at once, this will greatly improve the appearance of any lawn in a short time. Prepare beds for the reception of bedding and other summer plants. For Asters and Calceolarias, also for Cannas, Ricinuses, and other free flowering plants, the soil can scarcely be made too rich; while Geraniums, Petunias—especially if seedling plants are employed—though needing a fair amount of nourishment, are yet very apt to run too much to leaf at the expense of bloom if afforded a too highly enriched soil. Now is a good time to make a liberal sowing of Convolvulus major, as well as of Tropæolum canariense, at the foot of a warm wall or fence; Phlox Drummondi may also be sown in well-prepared beds about this time. This last is one of the most showy and useful of all annuals; it thrives well treated as above, though, of course, will not come into bloom until late in the season. If required to flower early, it must be sown in a gentle warmth in March, and be pricked off and planted out when sufficiently strong.

Greenhouse.—Everything here seems to need attention at once. Cinerarias are now in full bloom, and make a beautiful show. Give Calceolarias coming into flower an occasional dose of manure water, shade from strong sunshine, and maintain a moist atmosphere round the plants; this will be far preferable to excessive root watering during the present dry warm weather. Give such plants of Fuchsias, Petunias, Zonal Geraniums, &c., as are well rooted in 3-inch pots, a shift into 5-inch ones, some of the strongest into 6 inch ones if required so large; try to keep them a little close and shaded for a few days after this operation, and do not make the fresh soil too wet before the roots have begun to work in it. Afford Pelargoniums of the show and fancy sections a light airy position, with exposure to all but the very strongest sunshine; these require abundance of moisture at the roots on bright days, and a dose of guano or soot water twice a week will greatly assist them.

Sow Balsams in light, rich soil, and keep them close to the glass when up. If already started, pot the plants singly in 3-inch pots as soon as they have a pair of rough leaves, setting them deeply in the soil. See that some nice plants of Plumbago capensis are coming on for summer flowering. If they cannot be planted out against a wall give them a good shift when well in growth, and train the young shoots to four or five neat stakes stuck round the sides of the pots. If nicely done these make fine specimens. Cuttings of this plant, also of Myrtles, Acacias, Cytisus, and most other hard-wooded greenhouse plants, will now strike very easily in sandy soil under a hand-glass in the greenhouse, or even in a plain wooden box, with a sheet or two of glass for a lid. Boxes of Stocks, Indian Pinks, Lobelias, Pyrethrums, and other half-hardy plants that have been pricked off and are well established will now do much better in cold frames, with plenty of air on fine days, than in an even moderately warm house.

Make up at once hot-beds for growing Cucumbers, and put the plants out as soon as ready, or, if there is room in a house at 65 degs. to 75 degs., a few plants may be put out on mounds of rich soil placed on the front stage or shelf. Dielytra spectabilis, with its long, drooping racemes, is now a very beautiful object as a pot plant for a drawing-room or window. Kept cool and moist, this plant retains its lovely appearance for a long time.

B. C. R.

HOUSE & WINDOW GARDENING.

PALMS FOR INDOOR DECORATION.

Where Palms are grown for indoor decoration it is often a desideratum to have them in pots as small as possible consistent with perfect health; therefore, when they have reached a stage at which it is necessary to repot them, a moderate shift only should be given—just enough to allow the plants to push forth a few new roots, and thus maintain themselves in vigour for a time. The principal points to be borne in mind regarding Palms used for decorative purposes are having them well rooted and thoroughly hardened off, and, if kept properly watered and sponged when necessary, many Palms will do well for a long time in a dwelling-house, provided, of course, suitable kinds are chosen. For this purpose we grow a great many different kinds, and in the case of all of them much the same mode of procedure is pursued. The seed is sown in shallow boxes filled with good loamy soil, mixed with a moderate amount of sand. The depth at which it should be covered depends upon its size, but, as a rule, the amount of soil above the seed should be about equal to its diameter. When the sowing is completed the boxes are placed on a stage in a stove, where the seeds readily germinate if the soil is kept in a regular state as to moisture; if allowed to get too dry many often perish, while equally bad results spring from allowing them to get too wet. In this way we raise great numbers of Areca, Latania, Phœnix, Chamærops, and Seaforthia, as well as the more delicate kinds, such as Cocos, Geonoma, Calamus, Dæmonorops, and Thrinax—all with perfectly satisfactory results. As soon as the young plants are well above ground they are potted off in the same soil as before; a deep pot of about 2 inches in diameter is used. The pots are then plunged in a gentle bottom-heat in the stove, and the syringe is liberally applied—so much so, indeed, that it is seldom necessary to resort to any other mode of watering. This frequent syringing, by maintaining a moist atmosphere, greatly assists the growth of the plants, and also tends to keep down insect pests. The plants are shifted on as they require more pot room, but by the time they are in 5 inch pots they are plants useful for decorative purposes.

The soil which we use after the first potting is good yellow loam with an admixture of well-decayed manure and silver sand, but less of the latter than in the compost in which the seed was sown. As it is the habit of most Palms to send down a few strong roots, that mat themselves together at the bottom of the pot, and frequently lift the mass of soil bodily upward, it is often difficult when potting to get the plant deep enough in the new pot without sacrificing some of the roots, which must on no account whatever be done, as the loss of a few of the principal roots often results in death to an otherwise healthy Palm. The better way to proceed under such circumstances is to dispense altogether with drainage, for the roots, being matted around the bottom of the old ball, will hold the broken crocks in their places; therefore the ball of earth may be simply dropped into the new pot, allowing its base to rest on the bottom, when, if thought necessary, a few bits of broken crocks can be dropped down by the side of the ball before the soil is worked in around it; this is, however, seldom necessary in the case of vigorous kinds and in pots not more than 6 inches or 8 inches in diameter. New roots will be soon pushed out in the fresh soil, and I have frequently observed that, as a rule, most kinds, when potted in a compost principally consisting of loam, produce more vigorous and healthy roots and stouter foliage than if leaf-mould or peat be employed. Care should be taken that they do not at any time get overcrowded, as a weak and ill-balanced growth will be the result; moreover, when drawn up in a young state, they are apt to get loose at the collar, and when that is the case they seldom do well. This latter result is often brought about by potting too deeply when young, as plants so

treated will sometimes remain in an almost dormant state for a long time, and then need repotting to start them.

Water plays an important part as regards their welfare; a liberal syringing greatly assists their growth, and tends to keep them clean and free from insect pests. Palms are notoriously gross feeders, and can hardly be over-watered, provided the drainage is in good condition and the pot full of healthy roots. But the case is different when the roots are few and the plant in rather a large pot; then, if over-watered, it will soon be reduced to a sickly state, from which it will be long in recovering, if ever it does recover. When Palms of any kind have been allowed to get unhealthy it is difficult to induce them to assume their original condition. The first thing to do where the roots are bad and the surrounding soil sour is to turn them out of their pots, remove as much soil as is necessary, and repot in fresh compost. After that the plant may be plunged in a slight bottom-heat in a moist and shaded part of the house till the roots again start into growth. Even greenhouse kinds when treated as above will be better kept in the stove a little while in order to start them. When the unhealthy appearance results from a cramped and starved condition of the roots, of course some other means must be resorted to; thus, if giving the plant a larger pot is not objected to it is the best thing to do, but if that is not possible some food of a stimulating character must be supplied. Soot water will greatly tend to impart a healthy hue to the foliage, but in using any stimulating substances it should be borne in mind that the plants will derive far more benefit from several small doses than from one large one.

Seeds of most of the commoner decorative Palms are offered by our large dealers, and even young plants may now be obtained at so cheap a rate that they are quite within the reach of everybody. We find one of the best draught-resisting kinds to be Rhapis flabelliformis, which when grown cool may be used with impunity where many others would suffer. This Palm produces suckers freely, and is very useful either in the form of a large mass or confined to a single stem. In order to propagate it we take off the suckers when rooted and pot them into small pots, care being taken not to separate them until they are at least fairly well-rooted, otherwise they are difficult to start into growth. If possible, after the suckers are taken off they should be kept close till the roots make a fresh start. H. P.

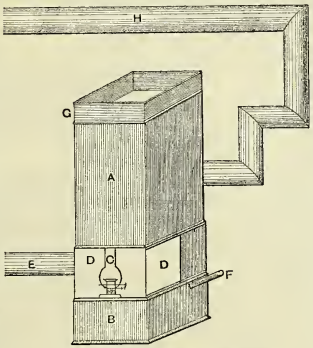
13269.—**Plants for gas-lighted room.**—I should like to supplement the limited adornment afforded by the "cast-iron American Aloe," &c., by telling "Leicester Curate" that in a gas-lighted room he may have green, healthy-growing plants all the year round by planting in a small Fern-pan common Hedge Ivy and hardy Ferns. I have had these in a similar position for years. For further information see answers to queries 12466 (Feb. 14, p. 638) and 12877 and 12883, March 14, p. 18. Shade with a bell glass.—A. E. A., *Stamford Hill.*

A suggestion to flower-pot makers.—May I suggest that if small-sized flower-pots were to be had of a square instead of a round shape it would be a boon to amateurs who grow annuals more particularly. The pots would then fit into boxes, no room would be lost, and no packing required, so that one plant per pot could be grown on to planting out time, and then have very little check in removal. The whole box of pots could be covered with glass to keep up uniform moisture with facility.—W. B.

An amateur's propagator.—Having a lot of trouble with manure hot-beds, I determined a month ago upon buying a propagator that I saw advertised in your journal. Its success has been complete; although an amateur, almost a novice, I have succeeded in a little over a week in rooting Geraniums, Pelargoniums, Coleus, and other cuttings, in addition to starting my Begonias. I have a town garden with greenhouse 16 feet by 9 feet, and employ a gardener one day a week. I do not know the makers beyond your advertisement, but it is the best little thing I have ever seen, and if you will allow me, I strongly recommend it to amateurs like myself.—J. R. D., *Belper.*

HEATING SMALL GREENHOUSE.

In answer to various inquiries in respect to heating small greenhouse, I venture to send you a sketch of an oil stove that answers admirably, as it does away with all smell and smoke. The case (figure A) is 9 inches square and 20 inches in height; B, the oil container, is fitted flush with case, and is 3 inches deep; C is an ordinary duplex burner and glass fitted in centre of container; D D a piece of thick glass, which acts as sliding door, and fits tight; the door being glass, the house is lighted, and one is enabled to see that all is right; E is a pipe fitted to side of case, opposite burner, running to outside of house; F the oil filler; G a partition across the case, 2 inches from the top, forming a cistern in which water is placed, giving a damp, moist warmth—of course the top of the water tank is left open; H is the smoke pipe, fixed in centre of back, carrying away all smell; the pipe E is the air pipe supplying air to burner. The elbows in the pipe H are for the purpose of modifying the draught, as with a straight pipe I lost some of the heat. The whole thing is made of sheet zinc. The pipes are 2¼ inch in diameter, and the cost for oil is about one penny for twelve hours. My



Oil stove for heating small greenhouse.

house is a lean-to, 12 feet long, 6 feet 6 inches wide, and on the coldest night I can keep temperature up to 40 degs. A. B.

COTTAGE GARDEN SOCIETIES.

The distribution of seeds is a proper and, indeed, necessary step in the case of those who are interested in the subject of cottage garden societies, and the more isolated the locality the greater the want of some such help, for cottagers have few opportunities and less means of securing improved varieties of vegetables. They often devote both time and space to inferior sorts, because they either do not know that there are better kinds to be had, or they are unable to purchase them. What is wanted is a moderate outlay on new and improved varieties, the selection being made by competent individuals, and the proceeds to be distributed amongst the cottagers who take part in exhibiting. Take, for example, the Potato. Amongst the newer varieties likely to be popular we may mention Covent Garden Perfection; one bushel of this, or, indeed, any other variety, of Potato would suffice for rather a large district, sufficient quantities being distributed to enable the recipients to make a fair start. The same remarks apply to Peas. Such sorts as Advancer and Pride of the Market are likely to be known to but few, yet they are excellent cottagers' varieties. As they only grow about 2 feet high, they do not require long sticks; moreover, they are both excellent in flavour and good croppers. The Kidney Bean is another vegetable that may well be taken in hand. No one could wish to say a word against the cropping qualities of the Scarlet Runner, but obtaining sticks to support it entails expense, and even when money is forthcoming they are often difficult to get. This trouble might be avoided if cottagers could be prevailed upon to grow the dwarf form of this Bean. It is, therefore, desirable that they should be made acquainted with it by having the seed distributed amongst them; and as this class of cultivators require something obviously good to induce them to take kindly to it, I should suggest that the sort known as Canadian Wonder be selected for that purpose; it is a great cropper and produces edible pods of extraordinary length. The vegetables just named and other improved varieties that could be selected would not only awaken fresh interest in small gardens, but increase their produce.

Prizes.—These induce cottagers to take greater pride in their gardens, and, such being the case, unsuitable prizes should not be offered. What I mean is that prizes should not be offered for anything which is not adapted or necessary for the consumption of a cottager's family. The offering of prizes in the middle of August for Celery, Leeks, and Parsnips I think a mistake, that being an inducement to expend time and space on subjects that are not seasonable. In many districts there is a lamentable lack of useful fruit in cottage gardens even where there is sufficient space for Strawberries, Gooseberries, Currants, and Raspberries; more encouragement should, therefore, be given in the shape of prizes for these, and this brings me to a very important consideration, viz., the extension of the number of prizes. I am quite aware that it is a question that seriously affects the funds of the societies, but it must be brought forward, nevertheless. Having had on many occasions opportunities of seeing the disappointment felt by exhibitors when no prizes have fallen to their lot, and the injurious effects it had on their future behaviour, I cannot too strongly urge upon those who frame the schedules the desirability of offering fourth and fifth prizes to such subjects as Kidney Beans, Potatoes, Peas, Cabbages, Cauliflowers, Onions, and Broad Beans, and I have advocated a reduction in the sums given for first and second prizes, and an addition of fourth and fifth, and, in the case of Potatoes, a sixth prize, because I found, when I was taking part in the management of such shows, that more value was set on the name of getting a prize than on its actual value. As to the desirability of giving certificates or commendations of any kind, I am satisfied that they are useless. To be valued, a prize must consist of coin of the realm or its equivalent. From my experience I am convinced that large prizes are not essential to the success of a show. Where four prizes are allotted to any one subject the first need not be higher than 4s., if funds are low. Probably only those who have taken an active part in the management of such institutions can realise the amount of good they do. Some years ago I was deputed to inspect and report upon the condition of the gardens of competing cottagers in several parishes, and I am pleased to be able to state that the intercourse resulting therefrom was both profitable and instructive; profitable, because affording an opportunity to see how in the management of their gardens difficulties had been overcome, and results obtained that did honour to their cause, because accomplished in many cases under unfavourable conditions; instructive, because these visits twice a year gave me an opportunity of seeing that in the cottage both the strictest integrity and morality were maintained more generally than cottagers are accredited with. The gardens of exhibitors should be inspected the day before the show, and to accomplish this in a satisfactory manner every exhibitor should be compelled to send in his entries four clear days before the day of the show: J. C.

13171.—**Substitute for turfy loam.**—It is very difficult indeed to find a good substitute. The best is the decayed roots of couch Grass, gathered from the fields and laid in a corner until the vegetable portion has decayed. Ordinary garden soil will answer for potting if it is mixed with a third part of its bulk of Cocoa fibre, and a fourth part of decayed stable manure; as much leaf-mould may be added to it if it can be obtained. Soil that has accumulated in garden corners from refuse out of garden would be vegetable mould, and might be too rich for potting purposes.—J. D. E.

TREES AND SHRUBS.

CEDARS OF LEBANON IN THE GARDEN LANDSCAPE.

NOTWITHSTANDING the many evergreen trees that have been brought to our country, we doubt if there are any more important than this—it is so huge in size, so distinct in habit, and so beautiful, when it does well, as it generally does in the southern counties and even in the London district. A great deal of nonsense has been written in books about getting the right kind of tree to associate with a particular kind of architecture. We have never seen anything in it but mere childishness. The noble Cedar of Lebanon will look well with any kind of architecture, or, indeed, with anything else. Part of the curious æsthetic doctrine that we are speaking of held that trees with horizontal branches should be associated with architecture of a Gothic type, but here we see how beautiful such a tree is with a classic temple in a garden. The Cedar of Lebanon may, in a sense, be called everybody's tree, inasmuch as it grows without care, and, if the climate suits it, lives for a long time. Of late years the Atlas Cedar, which is a greener form of the Cedar of Lebanon, and which grows more to the west on the mountains, has been supposed to be more hardy and free than the old type, but we fancy there is not much to choose between them. With the exception of the Scotch Fir, we doubt if any conifer ever introduced into the country is quite so beautiful a tree as this. Many things of which we have to speak our readers will have some trouble in getting, but an evergreen nursery that does not supply young plants of Cedar of Lebanon will not have much to boast of in the way of stock.

Desfontainea spinosa.—It will only end in disappointment if any one treats this as a hardy plant outside the boundary of south Devon. Here, in Somersetshire, it is hardy only on warm and very sheltered walls. The genial climate of south Devon is well-known, and only those who have seen some of the many gardens with which the county is studded can be aware of the many reputedly hardy plants which thrive in them, but which, if taken even farther south, are killed by the first severe winter. Benthamia fragifera is not rare in the shrubberies in Devonshire, and Pittosporum Tobira stands out in sheltered corners; but even here, in Somersetshire, it requires the protection of glass all the winter. I always think it unwise to tempt amateurs, and indeed all with limited space, into cultivating plants of doubtful utility; inexperienced people will always find enough disappointments in their gardens without investing time and space on what is not likely to prove satisfactory.—J. C. C.

Cedars of Lebanon in the garden landscape.

13178.—**Procuring Datura Stramonium.**—Having received seed of this, I will send some to "The Beeches" if the enquirer will send me a stamp. I had some difficulty in procuring it.—H. D., 10, *Wigmore Street, London.*

HARDINESS OF LAURELS.

IT seems to be established beyond a doubt that among Laurels the common Laurel is the least hardy—whether from natural tenderness or from depletion of constitutional vigour is not apparent, and it is also an established fact that the kind known as the Colchic Laurel is the hardiest. I have seen the latter in many places green and flourishing all through winters when the common one was killed to the ground. With regard to the other sorts, my experience is that the variety caucasica ranks next in degree of hardiness, rotundifolia next, latifolia next, and the variety camelliæfolia (the foliage of which, however, in no sense resembles that of the Camellia—voluta would have been a better name—it being only a form of the common sort) is equally tender. There seems, however, to be different experiences in regard to these various kinds. A large grower told me the other day that rotundifolia with him was hardier than caucasica, growing side by side. This is just the opposite of what I noticed, and my main object in writing is to induce others to record their testimony upon the subject, for although Laurel planting has in many places been grievously overdone, it is a shrub we cannot do without, and it will be desirable to have a concurrence of opinion as to which is the most to be depended on during severe winters.

I may mention in passing (and it is only another evidence of the greater hardiness of variegated over green plants), that we have here both golden and silver variegated form of the common Laurel, and both have come through the severe winters with scarcely any injury, although in every case the green ones were killed to the ground. T. S.

ROSES.

REPLIES.

13176.—**Pruning Roses.**—Roses should in the main be pruned according to their strength, and strength is, in some respects, dependent on soil and treatment. The strong robust wood should be left from 8 inches to 12 inches long, according to the object in view, whether the blooms are for exhibition or to be cut for home use. As a rule, exhibitors prune harder than any other people. The weakly growers should be cut hard back to enable them to gather strength. Most of the varieties named in "Mrs. M's." list are robust growers, and, unless the plants are recently planted, may be left 10 inches and 12 inches long. But a good deal of the pruning of Roses consists in thinning out weakly shoots. These should be cut out altogether, to give more space and more light and air to the wood which will by-and-by produce the flowers. All newly planted Roses should be cut hard back.—E. HOBDAY.

13287.—**Artificial manure for Roses.**—Good Peruvian guano may certainly be used as a substitute for forcing and manure; a fair dressing consisting of as much as will cover the ground; rake or fork it in. When the buds are formed, give them another dressing. Choose, if possible, a rainy time, or give them a good soaking of water, if the weather is dry. Many Rose growers have a preference for Clay's Fertiliser; and last year a London florist exhibited a group of Roses which were marvellously fine, although they had been in the same pots without change of soil for four years. It was stated that their great vigour was due to occasional timely top-dressings of Clay's manure. Our own experience shows this to be both a strong and, with ordinary care, a safe manure.—J. CORNHILL.

—— Guano is a good manure for Roses. It should be sprinkled over the ground near the roots, and may be worked into the surface of the soil with a Dutch hoe. These artificial manures have great stimulating properties, but they cannot supersede farmyard manure. The latter acts mechanically upon the soils by keeping their texture open, and thus making them more pervious to air and water.—J. D. E.

13295.—**Marechal Niel Rose buds decaying.**—This is not an uncommon occurrence during dull, cold weather. The outer petals decay, with the result that those inside the flowers are not able to develop themselves. The only cure for it is a drier, warmer atmosphere.—J. D. E.

Cloches or large bell glasses.—These can be obtained of Messrs. Breffit, as mentioned in your issue of April 18th. I obtained some of three different sizes this winter without knobs—1 foot 1s., 15 inches 1s. 3d., 18 inches 1s. 6d.; with knobs they are 3d. more. These prices are exclusive of carriage and packing. I may say that two dozen reached me safely without a single breakage. They have been most useful this spring for various purposes.—UPTON CHEYNEY.

ILLUSTRATION COMPETITION.

WHILE we write (April 25th) parcels for the first Illustrated Competition are being received; and, as we go to press early, we cannot this week state the result. We have to thank contributors very heartily. Large numbers of illustrations have been sent to us, and among them are some that are beautiful, as our readers will see during the coming months. Next week we shall publish the names of the winners—more numerous than we expected, as there are so many good photographs that the work of selection is difficult.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

QUESTIONS.

13334.—**Pansies.**—Will any reader tell me what is the best time to strike cuttings, and how I should preserve them though winter for spring bedding?—C. D. A.

13335.—**Clematis montana.**—How many years does Clematis montana take to establish itself before flowering?—J. D. E. R.

13336.—**Treatment of White Plume Celery.**—I shall be obliged if any reader would tell me whether White Plume Celery requires treatment different from that given to any other variety?—CELERY.

13337.—**Staging for greenhouse.**—Will any practical reader tell me what is the best kind of stage for a greenhouse 38 feet by 12 by 12, and how it should be spaced?—BARMEN.

13338.—**Killing aphides.**—Can any correspondent tell me the simplest mixture for syringing wall trees to kill black fly and other aphides, as they were a great pest last year?—H. H. H., *Norfolk.*

13339.—**Boiler for heating houses.**—I have a 4-horse power vertical boiler, and should be obliged if any reader would tell me whether I can heat a lean-to greenhouse, 28 feet long and 12 feet broad, with it?—STEAM.

13390.—**Apples on the Paradise as bushes or pyramids.**—I should be much obliged if some of your correspondents would give their experience of the comparative advantages of training the above as bushes and as pyramids.—UPTON CHEYNEY.

13391.—**Seedling vine.**—I have three vines grown from seed last year. I cut them down when the leaves were yellow, and they are growing fine again. I should be obliged if any reader who has grown vines from seed will tell me how to treat them, and if they are ever likely to bear fruit?—G. T., *Galashiels.*

13392.—**Treatment of Lapagerias.**—Will any reader kindly tell me the best compost for Lapageria rosea and alba, and what is the general treatment required?—F. O. *** *Use peaty soil. For details as to cultivation see* GARDENING, *Nov.* 29, 1884 (*p.* 475), *and other articles on the subject.*

13393.—**Tomato culture in frames.**—I should be glad if any readers who grow Tomatoes in frames would give me any cultural directions. Should they be grown in pots, upright, or planted out and pegged down to the soil? Should some leaves be cut off, and do they require much water?—AMATEUR, *Warwick.*

13394.—**Treatment of Marechal Niel Rose.**—I have a Marechal Niel Rose under glass which has just blossomed profusely. I planted it more than a year ago, and afterwards cut the young shoots back to two-thirds of their length. What treatment should I give it now, and will it blossom in the autumn?—L. S., *Tipperary.*

13396.—**Tennis ground and worms.**—I made a new tennis ground in March (with seeds); it is now nearly all covered with worm hills. Will any reader tell me what I can do to get rid of the worms? Some months before it was made a quantity of gas-lime was put on.—RIPONITE.

13396.—**"Orange gourd."**—About the year 1869 a friend of mine had a plant climbing up the inside of his window upon strings, whether clinging naturally or having to be tied I don't remember, but it had fruit like an Orange. I believe he called it an "Orange Gourd." He gave me a few seeds from the inside of the fruit, but, leaving the district at the time, the seeds got lost. I should be very glad if any of your readers could give me a clue to this plant, and say if it will do well in a greenhouse.—A READER, *Sunderland.*

13397.—**Chrysanthemums for summer flowering.**—Will any Chrysanthemum grower tell me whether there are any summer varieties, such as Pompones, that will flower in the middle or end of August, and, if so, give me the names of a few good sorts whose flowers are very compact and neat?—F. B.

13398.—**Cabbage running to seed.**—Would any Cabbage-grower kindly inform me why my Red Cabbages are running so early into seed? I planted them about the 18th of December. They were very fine plants when I put them in, and are running instead of hearting. Could anyone oblige me with a method for stopping the running?—I., *York.*

13399.—**Birds and gardens.**—My garden is sadly injured by the great number of birds that attack the flowers, vegetables, and fruit trees. Will any readers who have suffered as I do, and have found relief, tell me what is the best way to destroy them, and what birds, looking to the late protection laws, may be destroyed? When were those laws passed?—PUSS.

13400.—**Liquid manure.**—As I keep fowls I am desirous of using droppings from roost for above for Pelargoniums, Fuchsias, Geraniums, &c. Will any reader tell me whether it is necessary to let the manure heat before mixing with water, and how much should be used to the gallon. Should it be given always when watering, or only occasionally?—C. D. A.

13401.—**Destroying earwigs.**—Can anyone tell me of an easy and effectual way of destroying earwigs? They infested my garden during the last two summers, were very destructive of things like Carnations, and even invaded the house at times. Failing their destruction, perhaps someone can tell me how to keep them out of the house at any rate?—R. F. L.

13402.—**Poultry and blood manure for Roses.**—Will any leader tell me whether poultry manure and blood from a slaughter-house would be beneficial to Hybrid Perpetual and Tea Rose trees? If so, how and when must they be applied? The soil is sandy. Would they increase the quantity and size of bloom?—SUBSCRIBER.

13403.—**Plum tree not bearing well.**—Would some kind reader give me advice in the following matter? I have a Plum tree which bears Greengages and a Blue Plum, but for the last few years there has only been about two or three on it. The tree is in the middle of a small Grass plot, and appears to be in good condition. The soil is a black kind and the tree a large one.—LEICESTER. *** *The tree is probably starved in the Grass.*—ED.

13404.—**Growing Melons.**—Will any reader kindly tell me how to grow Melons (Monro's Little Heath) without bottom-heat? I have plenty of cold frames at command after May.—J. B., *Grange-over-Sands.* *** *If you have not got the seed yet we fear you are too late. A note on page* 659 (*Feb.* 28) *may assist you; there are numerous references to Melon culture in the last volume of* GARDENING.—ED.

13405.—**A Londoner's Geraniums in pots.**—Last year I had upwards of one hundred Geraniums, Calceolarias, Fuchsias, &c., in pots (no saucers) on a flower stand, exposed to the sun all day. There was no sunshade over the stand, and they were watered well every evening. The lower leaves on all the plants died off; only ten or twelve of the plants blossomed, and the few that did appear lasted but a week or so. How may I attain success this year?—LONDONER.

13406.—**Roof opening in span-roofed orchard house.**—"P. G.," in No 313, in his paper on "The Orchard House," says: "There are no roof openings" to the span house he shows; while "B. C. R.," in what I consider a very practical paper on "Greenhouse Construction," in No. 211, shows roof openings. Will any of the fruit-growing readers of GARDENING ILLUSTRATED decide whether roof openings should be used in a span house?—J. H. O.

13407.—**Carnations in cold greenhouse.**—Will any reader kindly tell me whether Carnations do well in a cold greenhouse, and what treatment they require?—T. C. U. *** *Carnations do admirably in a greenhouse, especially the tree or winter-flowering kinds, which are grown to an enormous extent both in America and England. Tree Carnations are treated of in* GARDENING, *page* 53 (*April* 4*th*); *but we are sure "K. L. D.," or other readers, will help you.*—ED.

13408.—**Azalea mollis not flowering.**—Two plants of Azalea mollis, bought in flower last year, repotted and wintered in Greenhouse, have not flowered at all this spring, though they seem quite healthy and the leaves are coming out well. How should I treat them to ensure their flowering another season? Should they be pruned, and, if so, when? Would they want repotting again this year?—L. D. *** *Kindly take notice of our rules as to separating different questions, and send us the query as to the other Azaleas again.*—ED.

13409.—**Climbing Clematis in pots.**—We have a wood porch, trellised, and I want to grow a Clematis upon it. It is sheltered with walls all round, and the plant will have to grow in pots. Will anyone kindly tell me the name of one, with a kind of earth is best, and whether I should use plants or seeds; also what time it should be sown or planted?—RIPONITE. *** *If you could touch the earth anywhere, and take a long shoot of the Mountain Clematis from it to your porch that would be best. Failing that something might be done by bricking in some earth; but we fear the growth in pots in such a position would be too limited. Doubtless, however, some of our readers have dealt with a similar case, and will kindly help you.*—ED.

13410.—**Utilising frame in summer.**—I have a frame in the garden which is filled all the winter with Calceolarias. When they were turned out last summer the gardener who contracts to keep our place in order left the frame entirely idle till the time came round again for the Calceolaria slips. I should be much obliged for suggestions for utilising the frame in the meantime, as I should then have definite instructions to give the man.—IGNORAMUS. *** *An excellent use to put the frame to would be the growing of a nice little crop of good Tomatoes. Plant out as soon as the Calceolarias are taken away. You do not give us your name and address, and we cannot tell what part of the country you are living in. The locality might affect the use to which the frame could be put.*—ED.

13411.—**Black beetles in vine pits.**—Will any reader give me information as to the character of a black beetle which, during the last two months, has infested one of my vine pits, where we get early fruit? My gardener caught about 1,200 on the vine stems and on the leaves, chiefly about midnight. They are now in the other larger vinery and plant houses, and one to-day is found in his cottage close by. Their company is not very pleasant; they have eaten nearly through the stems of some of the early Grapes, and thereby cut them off. I shall be very greatly obliged by information whether this insect is of a dangerous type, and what we should do to exterminate it.—G. M. *** *There are, unhappily, many hundreds of insects that go under the name of beetles. How are we or our readers to tell you their character without having seen them or having been told what they are? If you send us a specimen we will try to assist you.*—ED.

13412.—**Vine not flowering.**—I have a greenhouse with five vines (Black Hamburgh); they are, I believe, some twenty years old. The roots are outside. Last season I got about fourteen bunches in all—small, but sweet and good; these had been in fire heat the winter before. Last autumn I put in a new boiler, &c., and gentle heat has been given all winter when wanted. The vines were pruned by a skilled hand. Last autumn they broke beautifully and evenly all over. The stems are clean and healthy, the canes equally so. Shoots and leaves have come out as well as could be wished. Everything looks as healthy as possible, but little or no flowers have appeared. The border has clay below, but has some 2 feet of soil in depth and plenty of lateral room. The shoots now are getting quite long, but they have not been stopped when no flowers have appeared. Will any experienced vine grower tell me what I ought to do?—W. R., *Southampton.*

13413.—**Failure with hardy flowers.**—I shall esteem it a favour if you, or some practical reader will advise me in the following matter:—I am very fond of hardy perennials, but though I have tried all I could for the last two winters to keep them from dying off in spring, I have utterly failed. In the early autumns preceding both the winters named I planted a goodly number of so-called hardy perennials in the hope of having a good show the following year. They seem to stand the hard frost, but as soon as spring arrives, and they should begin to push growth, they die off. My garden is open to the north-east, and is very cold and exposed.—DICKY, *Yorkshire.* *** We cannot understand your difficulty. You probably have been raising annuals and biennials, more or less tender, in an unfavourable spot. The real hardy perennial plants will stand any amount of cold in any part of the country, and of those you should get strong tufts. You cannot, by any possibility, in any part, fail to grow such plants as—among those that first come to our mind—Yucca filamentosa, the perennial Larkspurs, herbaceous Pæonies, the Narcissus in its many varieties, the hardy Lilies (many of them as hardy as the common Dock), the Iris, in splendid varieties, the alpine Sea Holly (Eryngium), and the Globe Flower (Trollius). It is surely a mere question of selection. The different plans you describe may be all very well for a choice delicate alpine or biennial, or florists' flower, but otherwise are perfectly needless. As to the list that you send us of flowers with which you have failed—Foxgloves are not among the hardy perennials we speak of, and will not grow well in some soils, do what you will. Gentiana acaulis is as hardy as the rocks near which it grows in the Alps. You probably do not get strong plants. To coddle such things is to kill them. Pinks will not do in all soils, although there are some very hardy ones that seem free everywhere. Phygelius capensis wants a warm soil at the foot of a wall. See what other people do with hardy flowers in your neighbourhood. You can get many a "winkle" by looking over the cottage garden walls. You could fill up your garden with Narcissus alone, scores of kinds all perfectly hardy.—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13414.—**Procuring Manetti Stock** (*H. S.*).—Apply to any good Rose nursery in the autumn.

13415.—**Book on Roses** (*L. F.*).—Canon Hole's "Book about Roses" will probably suit you.

13416.—**Chrysanthemums after flowering** (*F. B.*).—Pot as soon as you possibly can; you are too late already. See reply to "Ada," page 96, last week.

13417.—**Mildew on plants in greenhouses** (*G. C. H.*).—Dust the plants with flowers of sulphur, and pay attention to the ventilation.

13418.—**Green fly on Sycamore** (*C. B. Woolley*).—Syringe the tree with Quassia or Tobacco water solution; but probably some bitter rain will wash them all off.

13419.—**A new Pansy** (*A. Bateman*).—The Pansy you send us seems a very large and beautiful pale yellow blossom, with a nice purple centre. If you want a pretty name for it, why not call it after your wife?

13420.—**Cucumbers dying** (*One in a Fix*).—Your best course by far would be to call in some neighbouring gardener, who would examine the plants and judge of the conditions of their growth.

13421.—**Increasing Dahlias** (*S.*).—The crown throws out buds, each of which will make a plant if carefully separated. The tubers of Dahlias will not produce buds.

13422.—**Marechal Niel Rose in greenhouse** (*Th. C. U.*).—The Maréchal Niel Rose will do admirably in a cold greenhouse in good soil and manure such as you describe.

13423.—**Pruning Clematis Flammula** (*L. D.*).—You may cut some of the old stems away, but you need not mind their being untidy for a time, as the young shoots will probably cover them.

13424.—**Repotting Heliotrope** (*C. D. A.*).—Certainly you may do it now, or you may soon plant them in the open air, where they will flower charmingly all the summer.

13425.—**Coleus for bedding out** (*C. D. A.*).—Coleus are perfectly suitable for bedding out in the warm parts of England. We do not know how far north they may be tried with safety, but perhaps some of our reader will enlighten you.

13426.—**White Spiræas after flowering** (*R. M. L.*).—Do not cut them down. If you have a good border plant them in the open; keep them well watered till they perfect their growth. After they have died down you can lift them and pot them for forcing.

13427.—**Name of plant from description** (*A. C. R. Le M.*).—It is, as a rule, very difficult to name plants without seeing them, but your description is so clear that we have not the slightest doubt that you refer to the common Crown Imperial (Fritillaria imperialis), of which there are different varieties.

13428.—**Disposing of flowers and fruit** (*Subscriber, Ireland*).—We feel sure that flowers could not, with profit, be sent from such a distance to Covent Garden. We give, however, the names of firms to whom you might refer:—*Flowers*: Mr. Buck, Mr. Dixon. *Fruit*: Messrs. Pankhurst and Co., Messrs. Skinner and Sons, Mr. Gulliford, and Messrs. Draper.

13429.—**Apples on the Paradise** (*T. U.*).—On the French Paradise they do admirably as cordons or small bushes. For the larger kinds of pyramids use the English pyramids, or the French Doucin, or English Paradise; but for little things and cordons there is nothing so good as the true Paradise, which also does admirably on heavy and clay soils.

13430.—**Heating greenhouse** (*Barneen*).—Many articles on the heating of greenhouses have appeared in GARDENING from time to time, and there is one in the present number. If you procure the lately published index you will find reference to various communications on the subject. The other portion of your enquiry, which is really a separate question, you will find elsewhere.

13431.—**Taking cuttings of Rhynchospermum jasminoides** (*Showler*).—It is never worth while propagating a plant like this. The best way is to buy a young plant. As to its culture, it seems to flourish in a good moist peat border in a greenhouse, and extremely well, grown in pots; and we have seen it thrive in the open air in the southern and western parts of the country.

13432.—**Are Larches injurious to plants?** (*J. P.*).—Larches are not, we think, so hungry as other trees, but you cannot expect, in growing a forest tree, that it should not eat up the nourishment around it. You cannot grow trees, and vegetables, and flowers together without something suffering; the earth itself would rebel. But we know no object more beautiful, or more deserving of its patch of earth, than the Larch.

13433.—**Campanula muralis** (*J. C. Turner*).—The other name is Portenschlagiana. It is occasionally confused with Campanula cæspitosa, of which there is a white variety, also called pumila alba. There is considerable confusion among the Campanulas, and if you have a plant, and will send us a specimen, we will name it for you. There should be no difficulty in procuring C. muralis at any nursery where herbaceous or alpine plants are grown. A seedsman would, perhaps, not have it. Many hardy flowers are not easily to be obtained from seed unless one saves it one's self, but some seedsmen might have this.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—ED.

LAWN MOWER (*Gardener*).—We cannot insert the testimony of anonymous correspondents as to the value of particular machines. —— REPAIRING MOWING MACHINE (*J. F. M.*).—If you cannot get it repaired by a local workman, your best plan would be to apply to the maker.—— ILLUSTRATION COMPETITION (*C. E. Clutterbuck*).—Certainly, you can continue to send in drawings for every competition.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

*** *In the midst of the flower season it may not be amiss to impress upon those of our readers who want plants accurately named that it is only fair to us to send us complete specimens always with flowers. Single leaves and bits of shoots, unless the plant is of the most remarkable and unusual distinctness in these points, are quite useless for the purposes of nomenclature. It would be as easy to identify a man from a hair of his head.*

Names of plants.—*J. C. Turner.*—Double-flowered Anemone fulgens.——*A. B. T.*—There are two forms of the Pampas Grass—the seed-bearing and the barren or pollen-bearing kind. One has erect spikes, the other loose and drooping. The spike you send is from a barren plant.——*F.T.H.O.*—Japanese Quince (Cydonia japonica).——*G. W.*—1, The Campernelle Narcissus (N. odorus); 2, Alyssum saxatile; 3, Alonsoa incisa; 4, Aubrietia deltoides violacea. —— *Field.*—1, Cotoneaster microphylla; 2, Lamium maculatum; 3, Cydonia Japonica. —— *H. Hamer.*—Kalosanthes coccinea. —— *A. Smith.*—Arabis albida (white): Dog's Tooth Violet (Erythronium Dens-Canis) (lilac); Common Double Daffodil (Narcissus Telemonius fl.-pl.).——*D. C.*—Cuckoo Pint (Cardamine pratensis). Dig out the roots if you wish to get rid of it ——*Mr. B. (Inhurst).*—Abutilon vexillarium variegatum. ——*Miss Foster.*—Blue Polyanthus; not common though not rare. ——*E Beardon.*—Snake's Head Fritillary (Fritillaria Meleagris). Your question will be inserted.——*W. G. Wright.*—The "Red Acacia" is the Bottle Brush Plant (Callistemon rigidum). 1, Cannot name; 2, Diosma ericoides; 3, Orobus vernus; 4, Saxifraga sarmentosa —— *South Devon* —Rhododendron Dennisoni.——*E. Baden.*—Kindly send us another specimen.

OUTDOOR PLANTS.

ANEMONES FROM SEED.

THESE are undoubtedly among the most valuable of early spring flowers, and yet only a few here and there grow them. A. coronaria is one of the most popular, under whatsoever name it may be known, whether Dutch or French, or Poppy Anemone. In the case of a mild winter, this group of Anemones blooms with almost unbroken succession; and, could a cold frame be filled with them in early autumn, the flowers would be more certain and larger, and better finished, owing to such shelter. This has been well named the Poppy Anemone, and really the flowers of the improved strains now in cultivation greatly resemble Poppies in their size and striking colours; and it can be said of this Anemone that if the roots are taken up in early summer, after they have done flowering, and replanted in autumn, they will bloom early in the spring. As it is so easy to raise seedlings, and, further, as they produce such fine flowers, lovers of this Anemone should, as far as possible, raise them. Sow the seed as soon as it is ripe, and if the soil be good, the seedlings will come up strongly the same season, and the next season the bed will be a mass of beautiful flowers. It is really astonishing what fine blooms the small roots will produce, and as to varieties, they are plentiful—light blue to purple, rose to intense crimson, through all the various shades, and some mottled, variegated, and margined most beautifully. Not a few of the flowers are finely double, but we prefer the single forms, though both are intensely beautiful. The best way to commence a collection is to buy a few dry roots of the best imported Dutch varieties in autumn, plant them, and save seed from the best colours and finest flowers. The florists of forty years ago used to make much of the Anemone, and looked forward to a time when this flower would become as double as the Rose, and as full of stout rounded petals. But this is still an achievement to be looked for in the unknown future. Up to this time we have not got beyond flowers with two rows or so of rounded petals, and a centre of small petals The double and single scarlet so much grown by some come under the head of A. coronaria. A. apennina, and A. blanda are two lovely Anemones. The latter may be best described as a large-flowered form of the former and deeper in colour. Both make charming tufts, and the wonder is that gardeners who have to supply large quantities of cut flowers do not attempt to naturalise A. apennina in their gardens. Imported roots can be bought at quite a cheap rate in the autumn when in a dry state, large quantities being imported to this country. There are many semi-wild places where a patch of roots could be planted with great advantage, and especially on the fringes of shrubbery borders. A. hortensis is so far eclipsed by the fine varieties of A. coronaria, and A. stellata, and its varieties by A. fulgens, that they are not nearly so much grown now as formerly; but in old-fashioned gardens they can be met with. They are very attractive in spring, and deserve a place in the mixed border. There are both double and single forms of A. hortensis and of A. stellata. A. ranunculoides is a very pretty dwarf yellow-flowered species, charming in early spring. This will grow freely, and establish itself among rockwork, making the spring-time gay with its nodding flowers. Then there is A. nemorosa, common in woods. This should be naturalised in cool, shady spots of a semi-wild character, overcanopied by trees. If anyone will go into a wood rich in these Anemones, they will find that there are not a few diversities of colour; some deepening to rose; and double forms can be met with also, white and rose alike, and both very pretty. A. Robinsoniana is a fine rose-coloured form of A. nemorosa, and well worth a place in any garden. R. D.

Late-blooming annuals.—Where annuals are used to supplement the permanent plants in the flower garden, and fill up vacant spaces, April and May are good months to sow for a display in July, August, and September. Many annuals, such as Candytufts, Virginian Stocks, Sweet Alyssum, &c., are soon in flower, and soon over, and hence to prolong their display it is needful to sow twice—in April and June—removing the first sown plants as soon as they run to seed. There can be no doubt about annuals producing a very bright and gay effect among hardy plants when most of the latter have done flowering, and for that reason they should be freely employed—the really good species at least. The striped pot Marigold Meteor is a really fine thing and very enduring; so are both the double and single French Marigolds, Everlastings, Dianthus Heddewigi, and Phlox Drummondi, all species that flower as long and as well as the best kinds of bedding plants. They should, however, be sown early in boxes in a warm pit, hardened off, and planted out in May or June. In sowing hardy annuals, it is a bad plan to scatter the seed thickly in patches, as the plants come too thick, as a rule, and get starved before they are half grown, hence they never flower well and are soon done. Isolated patches of annuals should be sown in rings, making a shallow furrow in the shape of a large O, and sowing in the furrow only. The plants meet at their tops when fully grown, and the patches are just as full as if all the space inside the circle had been sown, as the roots have more room and more food. Stocks and Asters are, of course, indispensable, and there is no better plan than sowing them early under handlights or in cold frames, and transplanting as soon as soon as they have made a pair or two pairs of rough leaves. Beware of plants out of warm frames, such as are sold in the markets at the beginning of summer. They are handsome and really fine plants, but they need hardening off before planting where they are to grow, or the slugs will soon destroy them. The best plan is to sow in a few inches of fine, light, rich soil laid on hard ground, and simply covered by a glass light of any kind. When the plants have grown a little the light is removed; a few days harden both roots and tops thoroughly, and the plants lift readily out of the fine soil with all their roots attached to them, and transplant successfully.—J. S. W.

Plan of suburban garden.—I noticed with pleasure the plan of a suburban garden in GARDENING of April 11th. It is an interesting subject to many who live in the houses which have, as advertised, "Gardens front and rear." A few practical articles by some who have succeeded in varying the dismal monotony of these rectangular plots of ground by courtesy termed "gardens" (which are for the most part composed of a thin veneer of earth, then bad subsoil, lime rubbish, ashes, and empty tins), would be a boon to those who, perhaps, coming from a country garden of light and shade, waving boughs and ferny dells, find themselves with the square of Grass in front and the bare three walls at the back, and would, if they could, bring a little of the country they have left into that dry and unsightly patch of land. To conceal these bare walls, to make those straight walks bend but a little, to cover the ugly black walls of the house, must be done somehow, but the task is surely not easy. The plan given is very picturesque, but very unpractical. A garden full of shrubs, Ivy, and Yuccas, is not a productive one. The dweller in that suburban house would surely like to have a few vegetables, and at any rate a bed of perennials, such as Larkspurs, Poppies, Canterbury Bells, and such like. A greenhouse, potting shed, and frame, might be useful additions. I would suggest Apple trees instead of Oaks and Planes; Cherries, and some wall-fruit, instead of some of the Poplars and Hollies. I hope some one who really understands the subject, will take it up, and interest, along with many others—A DUBLIN AMATEUR. *** An important point is to secure variety in such gardens and in all others. The one with which "Dublin Amateur" finds some fault is suitable to its owner, as every garden ought to be. The great bane of gardens is monotony, but we confess we despair of making beautiful gardens of the small patches of ground in large cities like London and Dublin. It seems to us that some system of co-operation, some throwing of the gardens together, both in front and rear, is the only true way of breaking through these slimy plots called gardens, walled round so that the sun can never shine upon their surface. Many thousands of pounds are annually wasted in London in the planting of flowers, shrubs, and trees in such places.—ED.

THE COLUMBINES OR AQUILEGIAS.

Those among us whose memories date far back in the present century will recollect how popular these beautiful hardy border flowers were at that time, and with what care they used to be cherished; but since then fashion has changed many things. I think it is much to be regretted that many choice hardy perennials and biennials that once had prominent positions, and which were so attractive in shrubbery and mixed borders should now be so seldom seen, for, after all, there is nothing to equal them either in form, colour, or interest; and, being of a hardy enduring character, there is not that ever-recurring expense which there is in the case of bedding plants that have to be worked up annually and wintered under glass.

Common as many of the Aquilegias may appear to be from the persistent way in which they seed and propagate themselves, they are in certain situations even more desirable on that account, as, for instance, in semi-wild places, where with Foxgloves, hardy Geraniums, both native and foreign, and many other plants of similar habit and character, quite a wealth of beauty may be enjoyed, and that of a kind far more satisfying than is afforded by long lengths of ribbon border or the most intricately worked patterns which it is possible to devise. All that is required when it is desired to establish them in such places is to dig over a patch of ground, and either to sow the seed at once, or raise plants in nursery beds and transplant them in the spring, or as soon as they are large enough to be handled; but it should be borne in mind that only the more common and robust kinds will thrive without good cultivation. One or two of the choicest Alpine species of recent introduction succeed really well only in very favoured situations where the conditions under which they grow somewhat resemble those of their native habitat in regard to moisture, shade, and shelter.

Aquilegia cœrulea.—This is by far the most beautiful and perhaps also the most difficult to keep and cultivate. To get strong healthy plants that will flower freely, seeds of this kind should be sown annually, and treated after the manner of Canterbury Bells or other biennials, as it rarely does well after standing the second year, and in many cases dies out altogether at or before that time. The flowers are, however, so lovely and so useful for cutting, that it is deserving of any amount of trouble and attention to have it in good condition, a result which can only be attained by treating it in the manner just indicated. All the Columbines delight in a deep rich sandy soil where they can find plenty of moisture below for the roots, and as they make their growth early, the friendly shelter of shrubs or rock to keep off cold cutting winds and frosts is of great benefit, if not too near to rob them or restrict their root-room. The best way to treat them when they are to be grown in single patches in borders is to dig up the soil to a good depth, and, while doing so, to work in some rotten manure, keeping the same well down in order that the plants may have it to feed on as they come into flower. If when this is about to take place a slight mulching of leaf-mould be afforded, and a soaking of water given, the bloom will be much finer and more lasting than it otherwise would be.

A. chrysantha stands next in point of merit, and is one that affords a rich contrast as regards colour. It has canary-yellow flowers of the same form, and nearly as large as the foregoing. This by many is considered only a variety of A. cœrulea, but although the botanical distinction may not be great, they differ considerably in habit and time of flowering, A. chrysantha being at least a month later, and altogether of stronger growth and constitution. Although it has the same spur-like appendages, the flowers are smaller than, and not nearly so much distended as, those of A. cœrulea.

A. canadensis was till witbin the present century the only representative of the New World Columbines, and is, compared with the two kinds just named, a very slender grower, rarely exceeding 12 inches high. Its flowers, too, are much smaller, but what they lack in size is made up in brilliancy of colour, the sepals being scarlet, and the petals bright yellow. A. canadensis lutea, introduced in 1835, is, as its name implies, a yellow form of canadensis, which it in other respects resembles.

A. glandulosa is a charmingly beautiful species, but one which does not succeed well, except in favoured, cool, shady situations, where its roots can find plenty of depth and moisture. It is a native of Siberia, where it is found near the margins of mountain streams.

A. californica.—This, the strongest and most robust of all the American species, grows to a height of 3 feet, and bears flowers of a shell-like form, which, from their pendent position, are not seen to advantage unless turned up and examined.

A. vulgaris, with which most of us are more or less familiar, used to be at one time an occupant of almost every cottage garden, and a more graceful or ornamental plant than it there formed cannot well be imagined. Although it has in most places been lost or eradicated to make room for others of more recent date, it is not yet surpassed either in utility or beauty by its more favoured rivals.

There are many more named kinds, but those enumerated above are the kinds most deserving of cultivation, and by growing them near together and sowing seed, there is no end to the variety of colour and form that may be obtained, especially among our native kinds, which are the most suitable for growing near the margins

Choice Columbines.

of drives or woodland walks, where, once fairly established, they would take care of themselves. Excepting these, all should be looked on as biennials, and, as before observed, raised annually by sowing the seed under glass early in spring, and afterwards pricking the plants out and nursing them on till strong enough to plant out in August; or if sown at that time keep them under protection till the following spring; but the first is the best way of treating them, as they have the whole summer for making their growth. J. Sheppard.

Hyacinths after flowering.—Some time ago I sent you, with reference to the question "What to do with Hyacinths that have done flowering," an account of some bulbs. I now enclose a flower from one of them. I purchased the bulb in 1873, and grew it in water for the first year; for the next two years it was in a box on a London balcony, and since then it has been undisturbed in a rockery here (Wimbledon). I don't understand how people, in face of such a result from a bulb in its thirteenth flowering year, can counsel throwing away as worthless all bulbs the same year that they are bought.—A. M. *** The flower sent was a most graceful one, much more so than the over-fat spikes that one sees at flower shows, as stiff as if the essence of a kitchen poker had been infused into them.—Ed.

THE DAFFODIL.

We have to acknowledge the receipt of a very beautiful collection of Daffodils from Messrs. Collins Bros. and Gabriel, another evidence among the many now forthcoming of what a great reaction there is in favour of such plants. The time is within the memory of young men when the bedding-out *furore* had not left a single Narcissus in the gardens round London; now people begin to see how much there is in these beautiful flowers, so characteristic of our spring, as good in colour as tropical plants, and yet hardy enough to withstand our wet and cold springs. Nobody would have believed a dozen years ago that so much beauty was possessed by one single genus of plants hardy everywhere in our own country. We wish all our readers could have seen the collection at the Horticultural Gardens recently—marred as that was by the fearful braying of a band of music in the same house, as if the flowers themselves were not enough to attract the people! A glance at a good collection in each country district would probably do good in showing people how much there was in these flowers for the early garden.

The Great White Bindweed.—There are several recommendations to plant this as a climber; but, although a lovely object, it is one of the greatest enemies a gardener has to contend with, and, as every tiny bit of root grows, most difficult to get rid of. Anyone growing it should take efficient means to confine the roots—say by a tub sunk in the earth, or, better still, by a kind of stone box, as that would not rot. In country districts it is such a nuisance that a clergyman here pointed the moral of his text by a reference to this plant.—J. R. Neve, *Gloucestershire.*

Polyanthuses.—I send you a bouquet of cut Polyanthuses. I have made them my study for four or five years, and all the specimens sent were grown from half a dozen roots in the first instance only; my busy little friends, the bees, have assisted me greatly, and I have now several thousands in endless variety and very beautiful at this time of year. Are any of those I send you good enough to exhibit?—Rochford Amateur. *** Your Polyanthuses are very beautiful for general garden use, and, according to our notions, could not be surpassed; but if you mean strictly named florists' flowers which are usually grown in pots, you would, to exhibit among such, probably have to get named varieties. We should strongly recommend you to develop distinct forms for the open air, getting as great a variety of pure and good colours as you can, and not caring for variegated sorts, of which we see you have a few. The rich darks and reds, and sunset colours that you send are very pretty.—Ed.

A speedily-made summer bower.—A very beautiful summer bower may be reared and quickly covered by getting half a dozen long supple poles of Ash or Hazel, such as are plentiful where coppice is being cleared; have them of about equal strength; sink their ends firmly into the ground, and draw the tops together, and firmly secure them so as to form the framework. At the foot of each pole may then be sown a few seeds each of Sweet Peas, two varieties of Convolvulus major, two of Tropæolum Lobbianum and of the Canary Creeper (Tropæolum aduncum), enriching the soil well first, either by replacing the old with new, or by well mixing with it a quantity of good rotten manure. A wide network of string can be carried round the poles on which to train the plants as they grow, and by autumn the result will be a pleasant bower, the ingress to which should be near a walk; the floor can readily be made dry and clean by laying down on it a few flat tiles or boards, or a thick carpet of beautiful velvety wood Moss lifted in large flakes. The seeds named ought to be sown at once in good soil; all of them will grow with great rapidity when once started, and they will speedily clothe the rough framework with leaves and flowers both showy and fragrant.—A. M.

Coronilla glauca out-of-doors.—One of the most conspicuous plants in gardens on the south coast at the present time is this old inhabitant of our greenhouses. As an open-air plant in sheltered gardens, or trained to a sunny wall, it is most floriferous, being completely

weighted down by the wealth of blossoms, and out-of-doors it is not affected by insect pests, such as white scale, that so soon spoil their appearance indoors. The Coronilla is much hardier than is generally supposed, as not only on the south, but also on the east coast of Suffolk and Norfolk, I have noted this plant in most gorgeous bloom out-of-doors, and doubtless as a wall plant it may be successfully cultivated in any part of England. It does best planted at the foot of a wall and allowed to grow in its own shrub-like form, as it then gets the benefit of the reflected heat to thoroughly ripen its wood; and, when this is done, its hardiness is greatly increased. Anyone having old straggling pot plants cannot do better than plant them out at once, so that they may make their growth in the open air. It is folly to expect a plant coddled up under glass to prove hardy when suddenly removed to the open-air at the approach of winter; but if the change is effected at the beginning of summer, or when danger of frost is over, it gets gradually acclimatised, and many plants that we have been used to look on as half-hardy prove able to resist a considerable amount of frost. There is no method of cleaning hard-wooded greenhouse plants yet discovered like exposure to the open air in summer.—J. G., *Hants.*

Cotoneaster Simonsi.—This is a neat evergreen wall plant, unfailingly producing its crop of coral red berries which alternate on the shoots in such a symmetrical manner as to look as if they had been pinned on artificially. In this respect it is one of the most formal-looking subjects in the garden, and it is only on a wall that this peculiar habit is shown to advantage. The shoots may be trained in any direction, being very accommodating in that respect, and when they are so trained lovers of perfectly formed shapes in trees will find this Cotoneaster a model in its way. Any way it is a fine wall plant, a rapid grower, hardy, and a good grower in any soil.

REPLIES.

13290.—**Destroying worms on bowling green.**—Take about a peck of unslacked lime, such as is used by bricklayers (that made from chalk is best); put it into a tub and pour about 20 gallons of cold water on to it, and let it stand until clear. With a watering-can pour it, through the rose, all over the bowling green, giving a good soaking. You will soon be able to pick up the worms wholesale, without the least injury to the Grass. You should use only the clear lime-water.—East Suffolk.

13303.—**Culture of Pansies.**—Pansies are hardy plants, and very easily grown. They do in almost any kind of garden loam except peat. The mention of "black earth" in this question would lead us to believe that it is peat soil. We have planted out our Pansies to-day (April 18th) in very common soil, and in order to give them a start at once they are planted with some refuse soil from the potting bench round their roots. The plants delight in cow manure and leaf-mould.—J. D. E.

13336.—**Raising Wallflowers, Sweet Williams, and Pansies.**—Wallflowers are perennials and therefore it is not necessary to raise them every year from seed; they are in their best the second and third year of their flowering. Sweet Williams are also perennials. Neither of these can be propagated by cuttings or division of root. Forget-me-nots are annuals so must be sown every year about August for blooming next year. Pansies are increased by cuttings and seed—cuttings are best; if this is not done the old plants degenerate, and eventually become as wild Pansies.—C. F. Davis, *Leatherhead.*

13256.—**Culture of Sunflowers.**—This hardy flower can be grown anywhere—that is to say, wherever a little mould is scraped together, and the seeds are planted, it is sure to flourish. They grow extremely well against a wall or fence, and attain a great height, viz., 6 feet to 8 feet, bearing a large yellow flower for the centre and a number of smaller ones up the stem. They will be much finer if grown in a deep and rich soil than in a poor one, for they are terribly greedy things, and can scarcely be overfed. Sow the seeds out-of-doors any time during March and April about one foot apart, transplanting afterwards, if necessary; water well on dry days, giving occasionally a little liquid manure, and look well after caterpillars, &c.—G. H. Mortimer, *Pimlico.*

13289.—**Summering Arum Lily.**—After flowering, our Arum Lilies are repotted, and kept warm until growth recommences; then gradually given cooler treatment. In June the pots are plunged in the ground, and kept well supplied with water until September, when they are lifted, fresh mould being added to the top, and placed in a warm greenhouse, where they immediately begin to throw up their flower-stems, continuing to bloom from Christmas until after Easter. This is undoubtedly better than turning the plants out of the pots, as it prevents all mutilation of the roots, besides doing away with the flagging of which "Westbury" complains.—Cora Brea, *Portsmouth.*

—— Those who can grow good Celery in trenches will be equally successful with the Calla æthiopica. The plants that have been forced in heat during the early months of the year, should be gradually inured to stand the weather out-of-doors, and, from the middle to the end of May, turn them out of the pots, and plant in rich soil in the Celery trenches. Give plenty of water during the summer months, and by the end of September, when the plants should be re-potted, they will be such strong, robust specimens as pot culture never does produce; they do not require so much attention planted out as they do in pots.—J. D. E.

—— I grow the Calla during summer as follows: After those that require it are repotted and established, they are put outside about the end of May; they are plunged in ashes and receive plenty of water, with occasional doses of manure water. In fact, they receive the same treatment as the Chrysanthemums. Nearly all mine are in 6-inch pots, as they are mostly used for filling vases in the house. They always flower very well. The foliage is large and hardy, and the plants stand well when they are put into the house. I may state that some of my plants have not been repotted for two years, but the drainage is seen to before they are put out, and they are fed well afterwards. I have been very successful in having large plants in small pots. Since I adopted this plan they are better than when I used to plant them out, as they had to be put in larger pots when they were lifted.—W. G., *Perth.*

13229.—**Propagating Evergreens.**—"H. G.," Finsbury Park, should undertake this operation in the early part of the winter; it is too late now for this season, as growth has commenced in nearly all kinds. The plan I find answer best is to select a partially-shaded spot, such as a border next to a wall, or under the shade of fruit trees or bushes, and in November or December take cuttings of the ripened wood, if possible with a heel, or junction of the shoot with the main branch; smooth the rough edges of the base with a knife, and remove the leaves for about 6 inches; cut out trenches about that depth, insert the cuttings, and tread the soil firmly. Laurustinus, Bays, Aucubas, Laurels, Euonymus, Privet, and other common evergreens strike freely, and make nice little bushes in a year or two. They may be placed thickly in the rows at first, and transplanted as they require more space.—J. G. H.

—— Cuttings of Euonymus, Bays, Veronicas, and similar evergreens, may be struck in the open ground in summer. Add a little silver sand to the soil. Choose fresh, firm cuttings of recent growth. With a little bottom-heat Veronicas may be put in new.—A. E. A.

13292.—**Hardy climber for east wall.**—You might cover your wall during summer with Runner Beans; the situation is sufficiently sunny. Meanwhile, you can strike cuttings of Ivy and green Euonymus. The latter can be treated very successfully as a climber. Present year's growth will strike freely in summer. Ivy will afford suitable cuttings now.—A. E. A., *Stamford Hill.*

13298.—**Lost Wallflower.**—I have a splendid double flower, colour orange yellow, both in pots and in the open garden. These in pots have been in full bloom ever since the middle of March; to those in the garden I have given no protection, and they are now getting one mass of bloom, being very strong plants. The pots are in a greenhouse, which they perfume beautifully.—East Suffolk.

13175.—**Annuals for east aspect.**—Sow the annuals in the garden facing east at once. The following will succeed: Candytufts (all the colours), Indian Pinks (several varieties), Godetias in variety, Nasturtiums, Larkspurs, Sweet Peas, Poppies Clarkia elegans, Sunflowers in variety, Antirrhinums, Linum grandiflorum, Mignonette, Cornflowers (blue and white). Pansies and Violets alone will make such a garden gay at small cost.—E. Hobday.

FRUIT.

Insects on fruit trees.—I send herewith a small bit of branch of Marie Louise Pear tree, on which you will find closely adhering a large number of small red insects' eggs, which are easily seen through a small magnifying glass. I was led to look for them through some remarks in a late number of Gardening Illustrated attributing canker on trees to insects rather than to subsoil. My trees have for some years suffered considerably from canker, and I have often been recommended to dig them up and prune the roots that were finding their way down to bad soil. But as I had repeatedly done this in former years, and the canker still continued, I was struck with the remarks referred to, and looked for insects. On all the trees having canker I find similar small red eggs, and in some instances the very active grey insects with their long proboscos have already come to maturity. I shall be glad to know what these insects are, and what should be done for the destruction of their eggs and of the insects themselves, and also whether you think the canker breeds the insects by affording them shelter and scope or whether the insects produce the canker?—J. C. *** The small red nodules on your Pear branches are fungi and not eggs; they have nothing to do with the cause of the canker. The origin of canker is not definitely known, but it is generally supposed to be an unhealthy condition of the tree, very probably caused by want of proper root action. If you will forward some of the active grey insects you mention, I shall be very glad to tell you what they are and how best to get rid of them. Trees and plants in an unhealthy condition are more liable to the attacks of insects than others.—G. S. S.

REPLIES.

13304.—**Blight on Grape vines.**—Under the conditions named in this question the vines ought not to be blighted. There is evidently a good border, but it is inside. Now, an inside border requires a great deal of water. It will, doubtless, be very dry when the vines are started in January, therefore it ought to be thoroughly soaked with tepid rain water at the time of starting, and again when the vines have started into growth, and also when they are just beginning to flower. As the house is shaded to a considerable extent, it would be better not to syringe the vines at all after they have started to grow. We do not syringe our vines except to moisten the wood before the buds start into growth, after that time we never syringe. The surface of the soil inside the house is sprinkled with water twice a day. The temperature should be 65 degs. to 70 degs. at night when the vines are coming into bloom, and the atmosphere ought to be kept rather drier until the fruit is set. Try withholding water from the syringe. Give plenty of water to the roots, and keep up the temperature at blooming time.—J. D. E.

—— As you say that you have syringed the vines daily, fine or dull, you ought not to feel surprised that the bunches have rotted off. The too frequent use of the syringe is productive of many evils in plant culture, and there cannot be a greater mistake than wetting the foliage day after day in dull weather. If, as you say, the house does not get the sun till the latter end of March you would scarcely need to syringe at all before that time. Another year do not wet the foliage unless the sun has been shining on the vines the greater portion of the day, and then only in the afternoon when closing early, so that the leaves get dry before night. In other respects the treatment seems to have been right; but owing to the sunless nature of the structure the wood might not ripen, and this alone would cause the bunches to come malformed. In such a case we should make a point of giving a little fire heat in autumn if the summer happens to be a cold one. Starting the vines early is, of course, in favour of the wood ripening, but it requires a large amount of sun heat to thoroughly mature the wood of vines.—J. C. B.

13224.—**Strawberries for market.**—In this locality hundreds of acres of Strawberries are cultivated, and Sir Joseph Paxton is grown more largely than all other kinds put together. It is a strong grower, and bears heavy crops of very fine fruit, of a high colour, and above all

they bear carriage well. President and Stirling Castle are excellent sorts, also Eleanor and Sir Charles Napier, and where British Queen succeeds no finer Strawberry can be grown. Stiff soil produces the heaviest crops, but Strawberries may be grown on very light soil, if of sufficient depth. In this locality the soil is light and stony, yet magnificent crops are gathered every season. The finest are picked and packed in punnets for market, to be sold for dessert; and the small fruit is picked in large quantities and sold for jam making. One of the principal points of successful Strawberry culture is to cultivate the soil deeply before planting, and afterwards to keep the surface soil firm; if stirred, for destroying weeds close to the crowns, it is trodden firm again, as the surface roots suffer if the soil is deeply stirred. A good mulching of stable litter put on at the end of April not only keeps down weeds, and provides a clean bed for the fruit to rest on, but prevents evaporation, and the Strawberry suffers from drought sooner than most fruits. Copious supplies of liquid manure are of the highest importance to swell off heavy crops of fruit.—J. GROOM, *Gosport*.

—— President is one of the best Strawberries, and no one can err in growing it for market. It does well in both light and heavy soils. Stirling Castle will also do well almost anywhere, but it is only of value to grow for preserving, being too small for other purposes. It is very largely grown now, being firm of flesh (which is scarlet throughout) and a most abundant bearer. The best of all market Strawberries, however, is Sir Joseph Paxton, which bears freely, travels well, and is very hardy. In strong soils it should be planted 18 inches apart in the rows, which should be 2 feet from each other. We would also try Sir C. Napier, which, though rather tender, makes a good succession, and succeeds better in rather heavy lands than on those of a porous nature. —J. C. B.

—— Sir J. Paxton is the variety mostly grown for market purposes, for which it is far more suitable than the varieties you mention. As you will probably not be able to grow very early fruit on stiff soil, this is the sort I should advise you to plant.—BOHEMIAN.

THE KITCHEN GARDEN.

GROWING CELERY FOR EXHIBITION.

(REPLY TO QUESTION 13174.)

FILLING a trench full of fresh stable manure is not likely to answer, as the Celery would probably bolt. The fresh manure, when it has parted with its heat, becomes dry, and it is exceedingly difficult to keep the roots of the Celery moist. It is always better to give what help is needed from artificial heat before the plants are put in the trenches. The following notes upon growing Celery for exhibition are based upon a considerable experience.

EXHIBITION CELERY.—Size and firmness are essential; if the heads are small, even though they have solidity and are crisp and of good flavour, they will not beat large heads which possess the same good qualities. Firmness and flavour are partly inherent in the variety, and partly obtained by cultivation. If a bad variety or strain—*i.e.*, a variety which has been grown for a series of years exposed to deteriorating influences—be obtained, the same result will not follow, even where the cultural conditions are right, as if a better selected, better bred variety had been grown.

SOWING THE SEEDS.—For the first crop a pinch of seeds of a good white and a good red kind are sown in a pot or pan early in February, and placed in a pothouse where the temperature is about 55 degs. to 60 degs. The seeds are rather slow in germinating. Keep a light position and guard against chills. When large enough to handle prick off, 3 inches apart, into boxes 4 inches deep, filled nearly full of light rich soil; keep them always moist and near the glass. At this stage a pit filled with leaves, or leaves and manure, supplying a nice steady genial heat, will be best for them. Sometimes some of the plants are potted into single pots, shifting on into 48's, and doing everything possible to guard against chills being given which may afterwards develop into piping or bolting

HARDENING OFF is done by removal to a cool frame or pit and a gradual exposure. By the first of May this treatment will have plants in fine condition for turning out into the trenches. It is a common practice, and not always avoidable, to delay preparing the trenches till the plants are ready to put out, but it is not a good one. Rank manure is not good for Celery; it is of too forcing a nature, and often leads to premature bolting and the formation of hollow stalks. A compost that returns to the land the chief constituents which the crop requires is the most suitable manure, and this will include thoroughly decayed manure, mixed with a proportion of the decaying *debris* of the garden, and including a proportion of soot, salt, and lime, which not only acts as manure but tends to keep down slugs and snails and other insects that are fond of congregating where there is moisture. The trenches should be 5 feet apart, 18 inches wide, and 12 inches deep, and should be nearly filled with the compost.

THE PLANTING should be done during dull, showery weather, or early in the morning or in the evening. Shade and water must be given as required. Each plant should have space enough to attain full development according to its kind—1 foot will in most cases suffice. Until required for earthing up the spaces between the rows may be planted with Lettuces.

WATERING AND MULCHING.—Celery is a marsh plant, and should be kept in a fairly regular state as to moisture. Liquid manure, when the plants are growing freely, may be given often, and a mulch of short manure be spread among the plants to check evaporation and keep the soil cool.

THE EARTHING-UP should be done chiefly at one operation. I say chiefly, because a little earth may be placed around the plants before the main operation takes place, and still leave room for the application of water when needful. The leaves should be carefully drawn together and enveloped in a sheet of paper, but leaving the upper or leafy part of the stems clear, securing the paper with a piece of matting. The earth should then be placed on each side of the plants on a bank in the usual way, pressing it carefully around the neck with the hands. If the earth is at all lumpy it must be broken up well with the spade, and the work should be done in dry weather.

PREPARING FOR EXHIBITION.—Three heads is the number usually demanded, and they should be all of one size. The digging and washing should be delayed as long as possible for the sake of freshness, which always carries weight with the judges. If it has to be taken any distance pack in Rhubarb or Cabbage leaves and surround with damp Moss. A few of the small leaves which hang loosely should be removed if there are any, but in most cases these would have been removed before the earth was applied. Roughness should be avoided. Compactness and symmetry are always valuable. In awarding prizes the judges will take into account everything, and mere size, unless it also possesses firmness and finish, will not avail. To test the latter quality a knife will be passed through the heart of the plant, laying it open the whole length, and exposing defects if there are any.

VARIETIES.—*White:* Turner's Incomparable, Wright's Grove. *Reds:* Sulham Prize Pink, Carters' Incomparable Crimson.

E. HOBDAY.

REPLIES.

13280.—**Culture of Horse-Radish.**—"W. B." should trench his ground 2 feet deep for Horse-Radish, putting plenty of good manure at the bottom; then take an iron or other dibble, and make holes about 1 foot apart, and down to the bottom of his digging, say 2 feet deep; then cut off the crowns of strong pieces of Horse-Radish, and drop one into each hole, making sure it goes to the bottom. He will soon find that he has a good supply of long straight Horse-Radish. The soil should be rather stiff or sandy. —EAST SUFFOLK.

13294.—**Celery piping.**—It has a greater tendency to run when sown early on a hotbed than it has if sown out-of-doors. We had much trouble at one time with our Celery piping, but have had none since we sowed the seeds out-of-doors early in February and cultivated Major Clark's Solid Red. Put plenty of well-decayed manure in the trenches and never allow it to suffer for want of water. Any check to the development of the plants during the season will have a tendency to cause them to pipe.—J. D. E.

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12 Fuchsia, immense size, double and single, 1s. 9d.; 100, 12s.

12 Geraniums, scarlet and pink, 1s. 6d.; 100, 10s., autumn struck. 12 Geraniums, double pink, and Wonderful, 1s. 9d.

12 Geraniums, Mrs. Pollock, 2s.; 12 Happy Thought, 1s. 9d.; 100, 10s.

12 Lobelias, best blue, 9d.; 100, 3s. 12 Heliotrope, 9d.; 100, 5s.

12 Petunias, splendid strain, double and single, 1s. 9d.; 100, 6s.

12 Coleus, beautiful colours, 1s. 6d.; 100, 6s

12 Chrysanthemums, 6 pairs, fine sorts, 1s. 6d.; 100, 6s.

12 Calceolarias, yellow, 1s. 3d.; 100, 6s.

12 Golden Creeping Jenny, fine for edging or rockwork 1s. 6d.; 100, 5s. 12 Gazania splendens, 1s. 9d.

12 French Lavender, pretty edging plant, 9d.; 100, 5s.

12 Tropæolum, Fireball, 1s 6d.; 100, 6s.

12 Dahlias, single, magnificent strain, was admired by hundreds of ladies last year, 2s. 6d.; 100, 12s.

12 Mesembryanthemum, variegated, 1s.; 100, 6s.

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J. DIBBINS, Wickham Park Nursery, and 166, Brockley Road, Brockley, London.

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LARGE African yellow DAISY, invaluable for church or table decoration, seed, 7d. post free. Also gigantic Lemon Sunflower, very rare seed, 6d. Sold for a charity.—Miss W. B., Wrentham Rectory, Wangford, Suffolk.

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100 " " " " "	"	0	6	6
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100 " " " " "	"	0	6	6
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100 " " "	"	0	6	6
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CHRYSANTHEMUMS.—Finest and best sorts of Japanese Incurved, Reflexed, &c., cuttings, my selection, 1s per doz., or with names attached 1s. 6d. post free.—CHAS. DABBS, Newcomon Road, Tunbridge Wells.

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CARNATIONS AND PICOTEES, 12 strong plants named varieties, 6s.; 12 strong plants, unnamed, 4s.; 12 Anemone japonica alba, 3s 6d.; 12 Anemone japonica rosea, 3s. 6d. Package free for cash with order.—R. W. PROCTOR, Nurseryman, Seedsman, and Florist, Ashgate Road, Chesterfield.

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LILIES.—Lilies of the Valley, 100 good crowns, 2s. 6d.; 50, 1s. 6d., for early blooming. Satisfaction.—J. BAKER, Horncastle.

GOOD PLANTS (Carriage Paid).—3 Tea Roses, 1s. 6d.; 3 Tree Carnations, 1s. 6d.; 3 Pelargoniums, 1s. 6d.; 6 Auriculas, 1s. 6d.; 12 Fuchsias, 1s. 6d.; 6 Superb Ivy-leaf Geraniums, 2s.; 12 Exhibition zonal Geraniums, 2s. 6d.; 12 Show Chrysanthemums, 1s. 6d.; 12 Yellow Calceolarias, 1s. 3d., or the 69 plants for 10s. 6d. Also 3 Maiden-hair Ferns, 2s.; 3 Pteris Ferns, 2s.; 3 variegated Ferns, 2s., the 9 for 5s.; 6 Begonias Pearcii, 2s.; 6 Abutilons, 2s.; 6 double Petunias, 1s. 6d.; 12 Heliotropes, 1s 3d.; 12 Coleus, 2s. 6d., the 42 plants for 6s.—JOHN FOX, Florist, Banbury.

FUCHSIA CUTTINGS, double and single, from my world-famed collection. A child can strike my cuttings. Why? Because they are so strong and healthy. 9d. doz., 4s. 100.—J. JAMES, Nurseryman, South Knighton, Leicester.

NEW FLOWER SEEDS.—40 packets, 30 varieties, 1s; double, 1s. 9d; florists' imported, &c., 12 varieties, 1s. 2d. post free.—HOWELL, Dell Cottage, Woodburn, Beaconsfield.

PANSIES.—100 well-rooted, autumn transplanted plants from open ground, post free, 3s. 6d.; in eight separate varieties or three separate colours for bedding as desired.—J. W. GALVIN, Nurseries, Roscommon.

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CLIMBERS.—Clematis (white), Gum Cistus, blue Passion-flower, Japanese Honeysuckle, American Blackberry, Vinca elegantissima, Cotoneaster, Periploca, Pyracanthus (red-berried), Virginian Creeper, New Veitchii (clings to wall), Ivies, Cobæa scandens, Eccremocarpus, Tacsonia Van Volxemi, Habrothamnus elegans, and Ceanothus azureus, all good strong established plants, 1s. 3d. each; any three, 3s. Alpine Auriculas, 2s. doz. Carriage free.—S. COOPER, Hadleigh, Suffolk.

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CHEAP OFFER OF PLANTS from seed pan.—Lobelia (blue), Ageratum (dwarf), Perilla, Petunia (striped), Dianthus Heddewigii, Pyrethrum, Gaillardia, German Scabious, Everlastings (mixed), Cineraria maritima, Tagetes, and Antirrhinum, 50 of any 1s.; 100 for 1s. 9d. post free.—S. COOPER, Hadleigh, Suffolk.

SEEDDLING PLANTS.—Single Dahlia (from best named varieties), Eccremocarpus, Nicotiana affinis, Tomatoes, Pentstemon, Egg plant, Solanum, 1s. per dozen; Centaurea, Clematis Flammula, 2s. per dozen post free.—S. COOPER, Hadleigh, Suffolk.

FOXGLOVE, new white and spotted varieties. Canterbury Bells, splendid collection, newest varieties, double and single, extra strong plants; sure to flower this season, 1s. 6d. dozen; small plants, 1s. dozen, carriage free. S. COOPER, Hadleigh, Suffolk.

PALMS, strong plants, 6d., 1s., and 1s. 6d. each. Carnations and Picotees, very strong plants, from single pots, 3s. 6d. dozen, carriage free.—S. COOPER, Hadleigh, Suffolk.

MARGUERITES, yellow, blue, and white; New double Nasturtiums, Grasshoff (scarlet), Majus (yellow), Impatiens Sultani; Ivy-leaf Geraniums, double and single; Ambitious, best named; double Hollyhocks; Mimulus, new spotted Queen; scarlet Delphinium; Veronica; Grevilles robusta; Libonia floribunda; Aquilegia chrysantha, yellow; tuberous-rooted Begonias; Gloxinias; Lemon-scented Verbena; 6d. each, any three for 1s. 3d., carriage free. Every satisfaction given for last seven seasons. Gratifying testimonials from many old customers.—S. COOPER, Hadleigh, Suffolk.

CALCEOLARIAS! Strong, clean, healthy, autumn-struck plants. Golden Gem, the best kind grown, 1s. 3d. per dozen, 7s. per 100; Dahlias, 12 choice named single varieties, including Paragon, White Queen, Golden Prince, Painted Lady, and other splendid kinds, 2s. 6d.; 12 splendid Exhibition double varieties, named, 2s 6d.; Juarezii (Red Cactus Dahlia), Constance (White Cactus Dahlia), and Glare of Garden, 6d. each, three for 1s. 3d.; Verbenas, 12 magnificent exhibition named kinds, including Simon Kremser (most telling variety), 2s. 6d.; all good plants, packed securely in damp Moss in boxes manufactured expressly. The following received from a gentleman in Scotland:—"Sir,—I was so well pleased with plants I had from you last summer, that I send again another order, which please send at your earliest convenience."—All carriage free.—S. COOPER, Hadleigh, Suffolk.

GARDENING ILLUSTRATED.

Vol. VII. MAY 9, 1885. No. 322.

TREES AND SHRUBS.

A BEAUTIFUL NEW SHRUB (ANDROMEDA JAPONICA).

As a rule, we prefer writing of good old things to calling attention to new ones; but this is really such a beautiful hardy evergreen shrub that our readers cannot too soon know of it. It is a Japanese shrub, introduced some years ago, first into French nurseries, and eventually into our own evergreen nurseries in Surrey. We were the first to send living specimens to the country, and these were figured in the *Garden* some years ago. Since then nurserymen have been getting as good a stock of it as they can. Our engraving gives a very good view of it. The whole gets covered with, as it were, a veil of cream-coloured bells. The habit is compact, and the flowers are very pretty and gracefully posed on the bush. It is suited best for peat beds or beds of good light soil in which American flowering shrubs have a chance. Nurseries of flowering shrubs and evergreens should have it or be able to procure it for any of our readers who wish to try it among their choicest and most beautiful flowering shrubs. The plants with which it will associate best are the hardy Azaleas, choice Rhododendrons, Heaths, and the Camellia, where it grows out-of-doors. The largest bushes we have seen have not been over 4 feet high, but probably it will grow taller.

Pyrus japonica.—Attractive as this plant is when grown on a wall, it is ten times more so as a shrub on a lawn. I have seen a bush in Warwickshire quite 6 feet high and 8 or 10 feet in diameter. It was rarely pruned, but every year or so it was cut back somewhat hard. It bloomed freely almost every year, and was a beautiful object upon the lawn. Bullfinches were its great foes, and I have seen two pairs on it at once eagerly devouring the buds.—Patience.

Desfontainea.—Many years ago I saw in a pleasure ground at Glanmire, co. Cork, a bush with Holly-like foliage and Cuphea-like flowers. I was struck by its singular appearance, and was told by a botanist that it was Desfontainea. It had been raised from a spray given in a bunch of flowers, had rooted easily, and grown and flourished. The climate of Glanmire is mild and the situation sheltered. In the same grounds was a bunch of Calla Lilies grown on a miniature island in a brooklet, but the plants were killed by an exceptionally hard winter.—Aidyl.

Huon Pine (Dacrydium Franklini).—I send you a specimen of Dacrydium Franklini. I have had it some years in my garden, and it will never make a tree, or be anything more than a shrub. It has four equal leaders each, between 4 feet and 5 feet high. I have been told the reason is because nurserymen will send out conifers struck from cuttings instead of seedlings. A friend of mine who has been in Australia tells me the seed of Dacrydium is easily produced in its native country, and yet even the chief nurserymen in England take no trouble to get it. I should like to have the opinion of some of your readers if striking Conifers from cuttings is the cause of worthless specimens.—South Devon.

The "Burning bush."—It would be worth while to enquire whether any of your correspondents can throw further light on the statement that the Dictamnus may be set fire to and remain uninjured. Your correspondent of the 7th of March ridicules the idea; but there is evidently something extraordinary about the plant from the peculiar odour it has, not exactly disagreeable but very powerful. Is it not possible that in a different climate to ours, where odours and colours are often far more intense than with us, the phenomenon mentioned may be observed, and the light be no more hurtful than that which comes from the dancing fire-fly whose darting gambols may be seen in the near neighbourhood of this plant? I found it last summer on a grassy hill by the Lake of Como, and, as it was new to me, I was much struck with it. On learning the name afterwards in Switzerland there was also given some tradition about its burning.—M. A. P.

Rhododendron, Countess of Haddington.—I send you a Rhododendron, Countess of Haddington, which I have had twelve years in the open border. It is perfectly hardy. It has now about 70 spikes of bloom and is about 5 feet high. I also have fragrantissimum, but this is not so hardy and requires protection in winter.—South Devon.

Choysia ternata.—Choysia ternata is now a mass of bloom with dark green aromatic leaves. It is about 14 feet high and grows so luxuriantly that I find the best way to keep it in position is by driving staples in the wall and connecting them with spun yarn. It is one of the best wall shrubs I know.—South Devon.

A beautiful new shrub (branch of Andromeda japonica).

13344.—**Making "Crown" and "Peacock" Yews.**—By far the best way is to leave the trees to grow in their own natural manner. Cutting Yews into the form of birds and beasts, or even into the form of a crown, is a barbarous custom of bygone days that should now become obsolete.—J. Douglas.

13286.—**Destroying green fly.**—Bitter Aloes are very effective in keeping green fly from infecting Roses, &c. I do not find that it kills the fly so much as it prevents it from appearing. I take twopennyworth of powdered Aloes and ½ lb. of soft soap, and mix a fourth part of each in a quart of boiling water, and then fill the pail with cold water. If the plants are infested, syringe twice a week till the fly leaves, and afterwards occasionally. Larger quantities may be mixed in proportion to quantity required; but I do not find, used in this way, that it is necessary to cleanse the plant after, or that the mixture does harm.—G. W. F.

—— This pest is so easily destroyed with soft soapy water that it is not worth while to use any other mixture. The soapy water has most effect if it is used warm. Two ounces to a gallon of rain water will be found quite sufficient.—J. D. E.

ROSES.

ROSA RUGOSA AS A LAWN SHRUB.

In selecting shrubs for a lawn, one scarcely thinks of using Roses singly, or even grouped as shrubs. A number of Roses are usually huddled together in a bed for the purpose of making their somewhat sparse and oftimes mildewed foliage more presentable. A better way, says the *Rural New Yorker*, would be, in order to secure the benefit of their flowers, to dispose them in the nooks and corners of a shrubbery in clusters of threes or fives, or even singly. Here their flowers would develop well and their mildewed foliage be less conspicuous, while the plants themselves would occupy a position properly and naturally related to the other members of the shrub group. The Japanese Rose (Rosa rugosa), however, needs no sheltered nook wherein to hide the deficiencies of its leaves, for in the excellence of its foliage under all circumstances lies its greatest charm. Dark, rich, green leaves, curled and wrinkled (whence the name), make up this foliage in the most luxurious abundance. Nor do mildew or worms seem ever to attack it. Broad and rounded, and of vigorous habit, these solid masses give rise to the doubt whether after all the plant can be really a Rose. The shape of the leaf and the flowers, however, at once dispel any such doubt, and we find, moreover, the rich, full, single, distinctive flower a charming addition to the beauty of the foliage Flecked with numerous clustered yellow stamens, these flowers stud the surface of the solid-looking leaves with brilliant effects of mixed red and green. Usually about 3 inches in diameter, the flowers are to many persons specially admirable for their simple character. The innumerable double flowers of every shape and hue seen nowadays make it a pleasant change to revert once more in Rose novelties to the simple combination of petals, such as we find in the old Sweet Brier of the roadside. Rosa rugosa is hardy, easily transplanted, and readily propagated. A lovely, excellent shrub in many ways, it is somewhat strange that it is not planted more extensively. Nurserymen have not offered it for sale until recently, but now that it has become well known to many, its popularity should rapidly increase. As an illustration of the length of time during which a good plant may grow and thrive in a country without gaining recognition, we may cite the fact—well known to several—that down on Long Island there exists a large hedge of what is evidently Rosa rugosa, apparently twenty or thirty years old, and doubtless brought over from Japan by some ship-master a generation ago.

13347.—**Marechal Niel Rose in late vinery.**—If the vines cover the roof and shut out all the sun and light, there is not much hopes of your getting many flowers on your Maréchal Niel. To induce it to flower in a satisfactory manner the growth must be hardened up in the autumn by the aid of plenty of light and air. So far your plant appears to be making good progress. Preserve all the growth by carefully nailing to the wall, and, if it gets a proper rest during the winter and the conditions above suggested, it should flower well next year.—J. C. C.

Rose Isabella Sprunt.—Last spring I bought a small plant of this Tea Rose growing in a 4-inch pot. It bore three blooms in May, and was then repotted into a 5-inch pot, During September it produced five more blooms,

and in December, though in a cold house, the thermometer in which on one occasion fell to 32 degs, it bloomed again, three blooms being in perfection on Christmas Day. Repotted into a 6-inch pot in February, it is now expanding a crop of twenty-four blooms. The plant is untrained and growing in the form of a natural standard, with a stem of 1 feet 6 inches, and a head about 2 feet through. If it is the nature of this Rose to bloom so freely and in such a low temperature, it should be invaluable to the possessor of an unheated glasshouse.—Wraith, *Devon.*

THE COMING WEEK'S WORK.

Extracts from Garden Diary, May 11th to 16th.

Sowing Mignonette in pots; potting Caladiums, Achimenes, and Epiphyllums; tying, stopping, and potting Schizanthuses, Mesembryanthemums, Petunias, Alyssums, and Fuchsias; potting Camellias and Amarantusses; propagating double Primulas, sowing in pots seed of Dianthus, Crimson Belle, and Eastern Queen; also Eschscholtzia Mandarin and Sweet Pea Violet Queen; propagating Bouvardias and double white Primulas; pruning and nailing Fig trees on south walls; also tying Figs in houses; thinning out and tying shoots of Melons, and fertilising all open blossoms; putting supports to Melons, swelling their fruit; hoeing between Strawberries; mulching them and dressing them with lime; shifting Tomatoes for fruiting into cold houses; pricking out first-sown Celery into prepared frames; potting a second batch of plants of Vegetable Marrow; sowing another bed of Broccoli, Cauliflower, and Savoy; hoeing between growing crops of Onions and Potatoes; earthing up the latter where necessary; planting out Vegetable Marrows on prepared bed, and sowing more seed under handlights on manure bed; tying up Lettuces to blanch; sowing crop of summer Spinach; earthing-up Peas and Potatoes; hoeing between growing crops of Potatoes, Onions, Greens, and digging trenches for Celery, and planting summer Lettuces on the ridges.

Glasshouses.

Hydrangeas.—A sufficient stock of cuttings of these should, if not already put in, be seen to at once. Use the young shoots, which the spring-flowering plants usually produce freely; and if the cuttings are kept moist, close, and in a little heat they will root in a fortnight. More plants intended to bloom should be pushed along to precede those that have been retarded, giving them plenty of manure water as growth progresses. Quick-growing, gross-feeding plants, such as these, are only seen in their best condition when liberally supplied with nutriment. Dip them in Tobacco water or fumigate as soon as aphides appear.

Lilies.—As the shoots of these extend keep the pots well up to the glass. For the summer and autumn-flowering kinds a cold frame in a light position, with the lights off in the day-time, will favour stout, sturdy stems much more than will a plant-house. If the stems are at all drawn up quickly the lower leaves will be proportionately thin in texture, rendering it impossible to keep them on until the plants bloom. As the earliest will now be growing freely, supply them regularly with manure water, so as to get them strong, as on this to a great extent depends the quantity of flowers which they produce. Some Lilies form a quantity of roots from the lower joints of the stem above the bulb; means should be taken to preserve and encourage these by adding soil, so as to cover them, or by potting them lower in pots a size larger.

Gloxinias that were started early will now be pushing up their flowers, and need all the light that can be given them so as to keep the foliage stout and give strength and substance to the flowers and the stalks on which they are borne. The flabby, weak, half-prostrate condition in which these plants are often fonnd destroys the character of both the foliage and flowers.

Chrysanthemums. — Late-struck cuttings should at once be placed in 5-inch or 6-inch pots, and treated so as to get them on, stopping the shoots of those that are intended to be grown bush fashion. Do all that is possible to keep them sturdy; if they are at all drawn up in their earliest stages it is useless to expect the lower leaves to stand until blooming time.

Sparmannia africana is easily grown, and one of the freest of free bloomers. Its white flowers, set off with quantities of singular filaments, have a distinct appearance unlike anything else, and, being produced during a considerable part of the winter and spring, render the plant doubly useful. To secure large specimens of it, cuttings ought to be struck in the usual way in a moderate heat about the beginning of March, and grown on with plenty of room, as required, in summer. For such plants 12-inch pots will not be too large in which to bloom, but cuttings put in now will make good flowering examples in 8 inch or 9 inch pots. Ordinary sandy loam will suit them, and they like plenty of light.

Camellias.—Camellias that flowered earliest will now be in active growth, and, if at all deficient in vigour through want of root room, soot water should be given once a week; this will speedily show its effects in the increased size and deep colour of the leaves.

Bulbs. — If the latest bulbs, such as Hyacinths, Narcissi, Tulips, Crocuses, and Scillas, which will have bloomed without much forcing, are well cared for by being turned out in the reserve ground and sufficient water given, they may be made useful in different ways, as all but the Hyacinths will, after an interval of a year, bloom in the open ground as well as if they had never been subjected to pot culture.

T. B.

Cool Orchids.—With hardly any artificial heat the thermometer seldom falls in this house below 55 degs. at night, except, perhaps, an hour or two before daybreak, when the thermometer is low outside; under these circumstances it is desirable to remove any cool-house plants that have been wintered in the Cattleya house to their summer quarters in the cool house. Such Masdevallias as M. tovarensis and all those of the Chimæroid section, also M. Wagneri, &c., would now do better in the cool house. Indeed, our plants of M. tovarensis were removed long ago, as we found, by trying half of them in the cool house and the other half in the Cattleya house, that they did best where they were coolest. It may be, if the winter were severe, that they would succeed best in warmer quarters. Numbers of plants of the M. Chimæra section of Masdevallias have been recently imported, and all of them, except the true Chimæra, which produces its flowers from an upright stem, should be planted in baskets, the flowers being produced from the base of the plants, the flower-stems having a downward tendency. They like a position near the glass, but require a moist atmosphere, and, like the rest of the Masdevallias, plenty of water at the roots. The cool house is now gay with flowers of Odontoglossums, and the earliest flowering Masdevallias, such as M. Veitchi and M. Chelsoni, are in flower and form a striking contrast to the wealth of white, blush, and variously spotted forms of Odontoglossum cirrhosum, Pescatorei, and Alexandræ. While there are so many plants in flower we are anxious to keep them in good condition as long as we can, and are careful not to sprinkle too much water about at night. The flowers do not damp off so much when there is a little heat in the hot-water pipes as they do when these are quite cool. A circulation of air night and day promotes the health of the plants and tends to the better preservation of the flowers.

J. D.

Flower Garden.

Sub-tropical garden.—The beds may now be edged and raked down ready for planting, but previous to doing this give such beds as are to be filled with plants that require abundance of manure a good scattering of guano or other fertiliser, which will thus get covered with soil at once. A commencement may then be made to plant out the hardier kinds, such as ornamental shrubs, Australian Dracænas, Eucalypti, Hemps, Funkias, Fishbone Thistles, and also the hardier edging and groundwork plants, such as Cerastiums, Ajugas, Sedums, Veronicas, and Harrison's Musk; the last is a fine groundwork plant for large-growing dark-leaved plants in the way of Gibson's Ricinus and Canna Van Houttei, and the partial shade which these afford seems to be just what is needed to keep the Musk in continuous flower from early in summer until late in autumn. The tender section of plants will still need attention indoors; it will not be safe to plant them out till quite the end of the month, and some of them not till June. They should not be allowed to get root-bound, but be grown on freely, and given plenty of space and air. A single plant well-grown affords more real satisfaction than, and does as good service when planted out as, a dozen that have been huddled together in heat. Tobacco, Chilian Beet, Love-lies-bleeding, and Perilla do best when planted in a very young state; they will now be ready to prick out into boxes, which, when filled, place in frames, and keep rather close till the roots have begun to work in the new soil; then give air freely, and plant out in the last week in May.

Mixed flower borders. — Stocks, Asters, Marigolds, Larkspurs, Zinnias, and indeed all kinds of annuals, may be utilised for filling up vacancies. They should be planted in clumps containing five or seven plants each, and care should be taken to have the taller growers at the back part of the border; not that uniformity of height in such a border is desirable —far otherwise—but simply that the arrangements may not look too lop-sided. The commoner kinds of plants may still be sown for late flowering—viz., Delphiniums, Pyrethrums, and Dielytras. Tall Veronicas will now need tying up, in doing which endeavour to avoid a bunched-up broom-like appearance. Tie them as closely as is compatible with their freedom from injury by wind or heavy rains. If continued gaiety of the borders be desired, and time can be devoted to the matter, many of the earliest kinds of spring flowers, such as Primroses, Daisies, and Arabis, that have now done flowering, may be taken up and planted in the reserve garden, and their places filled with any of the annuals mentioned above, or with ordinary kinds of bedding plants, such as Pelargoniums, Calceolarias, Petunias, and Verbenas; single and double Dahlias, Hollyhocks, Marvel of Peru, and any spare Cannas and Castor-oils that there may be will look well at the back part of the borders.

General work.—Weeding and, after rain, rolling walks, and mowing with the scythe for the first time new lawns that are being formed will need attention. Get vacant beds in readiness for bedding plants. Transplant spring flowers and bulbs to the reserve garden, and at the same time increase the stock of desirable kinds by division and offsets. Clear Roses of green fly by syringing the plants with soap-suds, and in bad cases with Tobacco water. Tie up climbing Roses, and direct the growth of recently-planted climbers, such as Ivy, &c., by tacking in the principal shoots.

Fruit.

Melons.—When the fruit has attained the size of ducks' eggs, select the fittest for swelling away evenly together, cut off duplicates and all lateral growths, top-dress with heavy loam, bone dust, and dry cow manure, and feed liberally. Avoid wetting the foliage at the morning syringing, but damp all paths, walls, and surfaces; ventilate freely until noon, and syringe overhead after closing for the day. Pay particular attention to young plants, and carefully avoid producing a check by stopping or cutting during the time the fruit is setting. Fertilise all female blossoms, and at the same time draw them up above the foliage to the influence of solar heat and light. When a good set has been secured, pinch two joints beyond the fruit, elevate those intended for the crop on inverted flower-pots, and trim away all surplus growths. If the bed of soil has been made between two planks placed 2 feet apart, the advantage of the plan will now be discovered in the facilities offered for top-dressing and feeding. Melons in pits and frames should never be shaded, neither should the soil at the outset be enriched with manure, but food of the richest quality may be given to them during the time the fruit is swelling.

Hardy fruit.—The performance of some operations, notably that of disbudding, will soon require prompt attention, but, considering that we are just out of April, the little-and-often system of taking off a few shoots at a time should be strictly adhered to; and although the trees may be the better for having the covering removed, it should be kept within easy reach, and temporary copings should remain on the walls for some time longer. Give regular attention to the thinning of Apricots, and wage incessant war with the active grubs, which soon do serious mischief, particularly where the trees are heavily cropped and there is a dearth of foliage. Wash the trees well with clean water when days are mild and cloudy. Mulch the borders with good rotten manure and old lime rubble, as calcareous matter will be in great demand at stoning time, and water copiously to insure its reaching every part of the soil in which the roots are embedded. Take the fore-

right growths off Peaches, also the small fruit from the shoots. Wash well with clean water, and always have the usual insecticide ready for application to parts affected on the first appearance of green fly. Examine the borders and see that the recently root-pruned or old trees do not suffer from the want of good mulching and feeding. The usual mode of training a Peach tree against a south wall or within a few inches of a glass roof, so as to expose every leaf to the sun, is a most trying position, and unless a liberal supply of water is given to the roots and foliage, insect life will soon be abundant, and heavily cropped trees will ripen the fruit prematurely if they do not cast it when stoning. Look over Cherries and Plums on walls, destroy the grub by pinching the points of the shoots, and dip or syringe with Tobacco water on the first appearance of black or brown fly.

Vegetables.

Herbs.—Sweet Basil should be sown in a frame under glass, and for a very early supply in pots in heat. When fully grown and just showing flower it should be dried, powdered, and kept in bottles corked up tightly; in fact, all herbs retain their flavour when kept in this manner. Mint should now be planted, both the Spearmint and Peppermint. The usual system pursued is to lay in three roots in a shallow drill, but the better plan is to take cuttings of them—*i.e.*, the shoots that come away from the old roots with a small piece of white stem, and which are sure to grow if bedded in nice light land. Sage should be planted in May; slip the side shoots from the parted plant, and plant them with a dibber. This herb makes a good edging plant where trim Box edging cannot be had. Borage needs but little attention; where once grown scores of seedlings make their appearance, and supply all our wants gratis. Perhaps the most useful of all herbs is the knotted Marjoram; this should be sown under glass, and planted out in small tufts the latter end of May. Tarragon is a useful herb, but in many places does not do well. With us it grows fine and strong. We part the old plants yearly, and replant them in a different place, giving them a few barrow-loads of burnt refuse. Such herbs as Savory, Thyme, Marigold, and all the more common varieties do well sown outside the first week in May. Lavender we strike from cuttings under handlights, and also Rosemary; both are very useful. Lastly, our good friend Parsley must not be neglected.

Tomato plants ought now to be 1 foot high, and should worthily occupy 6-inch pots, before the 15th of May. They will be showing flower, and when planted by the side of south walls, will begin fruiting at once. Tomatoes should not be large; on the contrary, about six to a pound is above the right size. The green fruits gathered in autumn, and laid on shelves under the glass to ripen, certainly become red, but as regards flavour can only be compared with that of box fruit from our neighbours across the Channel. English Tomatoes fetch from 2s. to 2s. 6d. per pound, while French ones only realise from 1s. to 1s. 6d.

Hoe between all growing crops whenever the weather is suitable. Plant double rows of Lettuces on the top of Celery ridges. Keep a sufficient quantity tied up in the winter quarters to meet all demands. Sow successional crops of Turnips, Lettuces, Radishes, Mustard and Cress, &c. Now is a good time to thoroughly clean walks, cut Box edges, and finish by putting a little gravel on the walks, so that all may be smart and trim for the summer.

R. G.

Work in the town garden.

Out-of-door operations will not differ materially from those directed last week, viz., keeping grass and gravel in order and preparing the beds for the reception of the summer bedding plants. Attend to the thinning out of the beds and patches of annuals; if the soil is rich and the seed good they will do much better if each plant is allowed a considerable space.

Sow now Phlox Drummondi, Balsams, Asters, and even such things as Amarantus, Perilla, Ricinus, and other tender annuals may be sown now outside with a fair prospect of success; that is, of course, if they have not already been started under glass. Plant out beds of German Stocks from the earliest sowing when the plants have become strong and well hardened. These plants require shade from hot sun for a week or two after they are put out.

Greenhouse plants are now growing apace, and many things require more room. To this end remove all bedding Geraniums, Lobelias, Petunias, &c., to cool frames, or even a turf pit under a sheltering wall with a moveable covering of calico will do. This will benefit the plants and afford more room indoors. Prick off Gloxinia seedlings in fine sandy peat, with good drainage, and keep them close and shady in a house, pit, or frame, at 70 degs. to 80 degs., or as near this as possible. Keep the spring-struck and indeed all kinds of Fuchsias growing on fast in a moist, warm atmosphere. These delight in a frequent shower overhead from the syringe three or four times a day at the present time; be sure to keep them moist at the roots as well.

Pot Maiden-hair and other Ferns just starting into growth into fresh sandy peat and loam, and keep them moist and shaded while growing. Stop the laterals on vines at one joint beyond the fruit as soon as this can be perceived; barren shoots should be stopped beyond the third full-sized leaf, and weak shoots should be taken out altogether.

Room Plants.—Such plants as Palms and Dracænas, that are usually kept in rooms, should now, if possible, be removed to a warm, moist greenhouse. The growth of these, though very robust and enduring when once matured, cannot be properly made in the dry, harsh air of a sitting room. If they are to be done justice to they must be treated as above, and, when the growth has been made and matured, they may be replaced with impunity. B. C. R.

THE KITCHEN GARDEN.

THE MOREL.

I have before me at this moment a fine basketful of Morels. They are a species of Mushroom greatly prized on the Continent, and but little

The Morel (Morchella esculenta).

known in this country. As I enjoy them every year, having learnt the use of them abroad, I thought it a pity not to let the readers of Gardening hear something about them—those of them, at least, who do not already know their value. They are found during the months of March and April in woods, are conical-shaped, very much furrowed or crimped, of a pretty fawn or brown velvety appearance, and so much the colour of the withered leaves and Mosses and bits of bare ground where they like to grow, that it is difficult to perceive them at first; the larger ones are sometimes round. They stand on a white, thick, short stem, and are hollow and white inside, and of a pleasant odour like the common Mushroom. When cooked they are as good, if not better, than the Mushroom. They have been found in many parts of Ireland by persons who have seen them here. Their botanical name is Morchella esculenta.

The Doon, Athlone, Ireland. A. M.

ARTICHOKES.

The Globe, or French Artichoke (Cynara Scolymus), is a valuable and wholesome vegetable, which can be obtained in good perfection for at least six months in succession. Commencing with the old-established plants that have been well protected through the winter, these will afford the first supply in May and June; and, for the next two months, crowns may be had from a planting of strong suckers made in March; and, from the end of summer and autumn, from a successional planting made in May. Another very good plan is to cut back, close to the earth's surface, a few old plants early in spring, and occasionally afterwards. These will produce a thicket of shoots, which should be early thinned by pulling and cutting the weakest, and allowing only a portion of the strongest suckers to remain. These will produce, in succession, nice young heads. The Artichoke, if cut when about half grown, possesses a very pleasant flavour, and is a very delicate vegetable, almost the whole of which is eatable; but if the heads are allowed to attain to their full growth, or nearly so, they are not so fine in flavour, and have lost most of their tenderness, so that only the base of each scale and the base of the head are fit to eat.

The Artichoke will grow very luxuriantly and rank in rich boggy land in summer, and it is not at all a bad-looking plant in large borders and wild gardens, with its noble foliage of a kind of blueish green, and with its large heads of flowers of a Borage-like blue colour; but it will not stand our winter in wet quarters. As a kitchen-garden plant, it will grow on any kind of soil, if well manured, trenched, and pulverised; but no soil suits it better than a good, open, sandy, rich loam, trenched, and well manured. The plant is in its best perfection at the second and third year after planting. Plants are to be seen in some places standing in a half-starved state for years, producing nasty little, hard, bitter heads. This is why, to a great extent, no doubt, the Globe Artichoke is not so generally appreciated as it should be. Artichokes are best for table when cut at about half-growth, when they have attained their delicate, bitter-like flavour. In a clear, open piece of good soil, well manured, deeply trenched up into rough ridges to get well pulverised and sweetened by atmospheric influences, free from trees and hedges, planted methodically—the first batch in March, and for succession another planting in May—and afterwards kept thoroughly clean and an open free surface maintained by frequent hoeing and scarifying of the ground about them, a dozen stools will produce as many fine rich heads as double the quantity will do by the old-fashioned crowding neglectful system of planting. To plant properly, make choice in early spring of good strong suckers, taken off the stools carefully with a sharp strong paddle-trowel or Asparagus knife, with some root to them or heel of the old stool, to hold them in the ground; plant them singly 2 feet apart, in rows at least 4 feet apart, or in groups of three in triangles, at 4 feet apart at least in the row.

Protect them as soon as planted against the sun and cutting winds, with the Seakale pots, or with evergreen boughs, or some other convenient protecting material. Those thus early planted will produce nice free crisp heads the same summer and autumn. If the stems also are cut close to the ground as soon as the heads are cut, new suckers will soon appear, and if duly thinned will produce a late crop; thus, by treating the Artichoke systematically with a little method and forethought, a good supply of nice heads may be obtained in succession from May till October. This plan is much better than that of growing a large piece of Artichokes, and allowing them to come in in June and July, at one and the same time, by the hundredweight, when Peas, Cauliflowers, French Beans, Asparagus, Spinach, and a host of others of our most useful vegetables are in full season; and when the spring and summer vegetables are getting more scarce there are no Artichokes to succeed them. To say the least, it is a lack of forethought not to have them in full succession all the summer, without having a great glut of them all at once and when only a few are required. B.

REPLIES.

13281.—**Cucumber culture in the open air.**—Although Cucumbers are largely grown in some parts of England in the open ground, they are an uncertain crop, being more subject to climatic influences than any other kind of esculent grown as an open air crop. The best way is to make up a bed some 4 feet or more square, and sow the seeds about the latter end of May on it. It is better to sow than to put plants out, plants from seed sown on the place go away more freely, and last out better. If they can be protected when up for a time it will be better; four bricks and a pane of glass on the top will do. The only kind suitable for open air cultivation is the Ridge, Shilling's Incomparable being the best variety.—J. C. B.

—— Last year I was situated like "W. B.," and was obliged to grow Cucumbers without a frame. I bought a small packet of Long Prickly Cucumber seed and planted it in two small pots towards the end of April, and placed them inside a sunny window, and nearly all the seeds germinated. In the garden I dug a hole 2 feet square and 1 foot deep, and boarded it round, and filled this up with a few pails of stable manure and mould. I then made a framework to roughly cover the top, with four panes of glass, the cost of which was a mere nothing. As soon as my plants seemed large enough I planted in the bed and kept close for a few days, but several of them damped off. However, nine good healthy plants lived, and some of these I trained up a piece of wire netting and the others I allowed to rove just where they pleased. I occasionally gave them a shower with liquid manure, and every evening after a hot dry day gave them a good syringing. The result was that I had several very good Cucumbers of a nice size and good flavour. This year I am going to grow them in a different style. The framework I moved after the plants got well established.—G. H. Mortimer, *Pimlico.*

13280.—**Culture of Horse-Radish.**—Dig the ground moderately deep, and work in a quantity of manure. About January or February is the best time, but it is not too late at present. With a crowbar make some good holes, from 12 inches to 16 inches deep, 12 inches apart, in rows about 18 inches from each other; and into these holes drop your sets of Horse-Radish. Those sets should be good stout pieces of root, about 2 inches or 3 inches long, either with or without a crown bud. Afterwards fill these holes up with fine soil or well-sifted ashes, the latter being preferable. When once your bed is made it is difficult to kill or eradicate it.—G. H. Mortimer, *Pimlico.*

13294.—**Celery piping.**—If "Manning" sowed his Celery seed the first week in April and kept it growing without a check until it is fit for moulding up he would not have cause to complain of his Celery piping. It should be raised in a little bottom-heat.—East Suffolk.

13331.—**Sweet-flavoured Pea.**—Ne Plus Ultra is the best, but it is a tall-growing variety, which is sometimes objectionable. The best dwarf Marrow Pea is Veitch's Perfection.—J. D. E.

13065. — **Gillingham's heat radiator.**—I have used this heat radiator since last October, and have found it easily managed, free from smell, and clean. My greenhouse, span-roofed, 5 by 12, has never gone down to freezing, and all the plants are very healthy. The troubles of "Roger" and "Dublin Amateur" are, no doubt, caused by carelessness in lighting and trimming. If the maker's instructions are attended to, a child can manage the radiator.—S. B.

13247.—**Cheap Dahlia stakes.**—These should be from four to six feet long, and, as they require to be moderately stout to support the weight of a heavy plant, a penny each is not a high price to pay for them. Labels and sticks are sold of all sizes, the prices being regulated by their size. We bought some sticks for our Dahlias in the country last year from the men who clear the brushwood, and they are quite a penny each. Labels are cheap enough, and they ought to be purchased unpainted. It is best to paint them just before writing the names, as it is better to write on the paint when it is wet.—J. D. E.

—— Twelve feet of inch quartering costs 2d. Cut into four this will give four stakes, measuring 3 feet long, at half the price paid by "Mrs. M." This may be had from any timber-yard. I find that they will last for many years. Steep the ends in tar or pitch.—A. E. A.

INDOOR PLANTS.

LILIES FOR GREENHOUSE.

There are a few Lilies than can be readily grown in pots and employed for greenhouse or conservatory decoration during their flowering season, and that, too, not among the rare or high-priced kinds, but those that are easily obtainable and cheap. One of the earliest is L. longiflorum—if it is grown with the intention of blooming it early in the season, but if treated as the others—*i.e.*, potted and just protected from frosts—it does not flower till the summer. A useful class are the varieties of L. elegans or Thunbergianum, all of which are of dwarf growth, and have comparatively large, erect blossoms. A few distinct varieties are: alutaceum, rich apricot; atro-sanguineum, deep crimson; Van Houttei, bright red; venustum, deep orange; marmoratum, crimson marked with orange; and Prince of Orange, yellowish buff. L. davuricum, or umbellatum, as it is sometimes called, and its varieties are, like the last-named, an early blooming class, producing erect heads of flowers, but as a rule taller in growth than L. elegans. Three good distinct forms easily obtainable are grandiflorum, orange-red; fulgidum or Sappho, bright crimson; and incomparabile, intensely dark crimson. L. pulchellum and tenuifolium are two pretty little early flowering Lilies; the first has erect flowers of a glowing red colour, and the second bears drooping blossoms of the Turk's-cap type, but bright crimson. This Lily has lately been largely imported and sold by auction. Some of its bulbs have been very large, and fine blooms may be expected from them. L. pomponium flowers pretty well in pots, but cannot be depended upon with so much certainty as the preceding, which in general character it much resembles, but than which it is in all respects larger. L. Krameri is a very pretty Lily, and one quite distinct from the others; its flowers are borne on slender stalks, frequently solitary; they are funnel-shaped, and as much as 6 inches or 7 inches long. Their colour varies from almost white to a sort of pale rosy lilac. It is seldom of much use the second year, but it is now imported from Japan every season in such numbers that during the spring months it is comparatively cheap. To a later section belong auratum, speciosum or lancifolium, and tigrinum, all of which flower well in pots. L. auratum is too well known to need description. Of L. speciosum the most distinct varieties are Schrymakersi, an improved form of roseum; Krætzeri, white with greenish stripe down the centre of the petals; punctatum, white with rose-coloured spots; and cruentum, of a deeper colour than roseum or rubrum. Of the Tiger Lilies the most effective is the old tigrinum, which must, however, not be allowed to get too dry, otherwise a number of the leaves will be lost. The double-flowered variety is also distinct and pretty.

The above constitute a good selection for growing in pots. L. longiflorum is most useful for general purposes when three bulbs are placed in a 6 inch pot, though, if desired, large masses of it can be made up. The varieties of L. elegans, davuricum, and tigrinum we also grow in the same way. L. auratum and speciosum are potted singly in 6-inch pots, except a few for forming large masses in pots 1 foot in diameter. Our practice is to pot the bulbs as soon as received. They are then placed in a cold frame just to protect them from frosts and heavy rains, and the lights are kept off whenever possible, in order to ensure a sturdy growth. By the middle of April they are all plunged out-of-doors, with the exception of a few of the early kinds, which are kept indoors to flower early. L. longiflorum will thrive in a warm greenhouse provided it has plenty of light and air, but none of the others here mentioned should be forced in this way; otherwise they will run up thin, and many flowers will go blind, while those that open will be deficient in colour. We never allow the blossoms to expand out-of-doors, as the wet there soon spoils them. When the buds are in an advanced state we move the plants under glass. L. auratum and tigrinum sometimes lose their bottom leaves if not well and regularly supplied with water. The Tiger Lily and the varieties of L. speciosum are very useful for conservatory decoration at a time when summer flowers are beginning to get scarce. A.

WINTER FLOWERING PLANTS.—XV.

Fuchsias,

Though not usually reckoned among winter blooming subjects, may yet, if suitable varieties be selected, be depended upon to produce a fine effect during the dark days. Of the named sorts usually found in a good collection, very few can be induced to bloom before early spring, but such kinds as Mrs. Marshall, Scarcity, Sedan, and Pink Perfection, if struck early in summer, potted, and grown on freely through the autumn, and assisted with a nice warmth and a moderate amount of stimulating manures in a liquid state, as they approach the flowering point, will bloom freely soon after Christmas. The last named especially is a very vigorous grower, and, if induced to develop a free growth previously, will bloom well at almost any season, under careful pot culture. The recently introduced "Mrs. Rundle," however, and, to a less degree, its parent, "Lord Beaconsfield," surpass all others in this respect, and strong plants that have been growing throughout the autumn can scarcely fail to bloom well at mid-winter in a temperature of 60 degs. to 70 degs., if the situation is open and the air pure. The grandest results are, however, obtained where some of the species of Fuchsias can be planted out permanently in a large greenhouse or conservatory, where the roots can have a good run in a deep, well-drained border of fairly rich and open loamy soil. This condition being granted, with facility for the shoots to be trained on wires near the glass, and a genial warmth and sweet atmosphere given, almost any of the species may be depended upon to produce grand results.

The best kinds for treatment as scandent or semi-scandent shrubs for winter flowering are:—Fuchsia penduliflora, a very robust-growing variety with long acuminate downy foliage, producing its blooms in immense clusters at the points of the shoots. The blooms are of a rich crimson colour, with very long tubes and small sepals; very effective. F. splendens, orange-scarlet blooms, freely produced from the axils of the leaves, quite unique. F. corymbiflora, very fine, and F. rubra, a new and very striking variety. Other kinds, more suitable for growing into large, compact specimens in pots or borders are, F. Dominiana, F. boliviana, F. serratifolia, and F. fulgens. The growth and general character of these species is quite distinct from that of the ordinary named varieties, and they are well worthy of the attention of those who have the space they require, with the advantage of pure air. As small plants, or in a smoky atmosphere, they are not worth troubling about. B. C. R.

Freesias in pots.—I know Freesias to be capable of much better things as pot plants than "South Devon's" note on them in your issue of April 25th would lead one to suppose. I have grown a few 4½-inch pots of them, six in a pot, for the last two years, and, with the exception of one batch of bulbs, which I shall presently refer to, have never had less than eleven flowers from one bulb, twenty flowers being not uncommon, and in the case of one bulb twenty-seven being produced. My best pot this year had one hundred and nineteen blooms. My treatment has been similar to "South Devon's," with the exception of potting at the end of September as against August, in spite of which mine seem to have flowered earlier, as they came into bloom the second week of March. The beauty and fragrance of these flowers and the grand results obtainable without any artificial heat, ought, in spite of their comparatively high price, to make them universal favourites if the certainty of obtaining bulbs capable of flowering well could be ensured; this, unfortunately, is not the case. In 1883 I bought some bulbs from a well-known firm, whom we will call A; the results were all that could be desired. In 1884 I again procured some from A and others from another firm, B. A's were again above praise; but B's, although planted on the same day, have never shown above the soil, and, on turning them out yesterday, proved to be in precisely the same state as when potted—sound, but without root or shoot.

Two of my friends who purchased Freesia bulbs in 1883 from two other seedsmen of good repute, C and D, have also been disappointed, the result being weakly leaves and nothing more. What the reason of the bulbs from B, C, and D failing, whilst A's bloomed so magnificently, was, I do not pretend to say; but that the possibility of such failures is sadly against the popularity of a very beautiful flower is certain.—Wraith, *Devon.*

A successful amateur.—As an amateur with a very small garden and glasshouse, the garden being about 20ft. each way, and the glasshouse 15ft. by 9ft., I should like to say how I treat Arum Lilies and other plants, as it is not possible to dig trenches in such a small place. I bought a Calla in flower for sixpence last spring, and repotted it about May, using a 28lb. lard keg and pure leaf-mould, taking care not to disturb the old earth. I then set it in the full sun on my path, and during hot weather watered it twice a-day. I took it in the house about Oct. 1st, and it has had two blooms, which are dead, and is showing eight more nearly open. A common Cactus I treated the same way, using clay and brick rubbish and a good-sized pot; that is showing at least thirty blooms, some nearly out. Of other plants in flower I have about 150 various Geraniums, and some Heliotrope, Lavender, Auriculas, and Abutilons also in flower. To come on I have some Balsams (of which I sowed one in each thumb pot, and out of sixty not six have failed), some Nicotiana affinis, and Fuchsias (of which Avalanche, Mrs. Marshall, and Rose of Castile do best). I started gardening about 18 months ago, and owe my success, such as it is, to your paper, as I knew nothing of the work before. Please accept my thanks. With regard to heating I have a 15s. coil boiler, set in bricks, and 3-inch pipes; the cost for fuel this winter has been 8s., and it has burnt sixteen hours without being touched.—R.

Clerodendrons planted out.—When the twining species of stove Clerodendrons, such as Balfouri, Thompsoni, speciosum and others, are planted out, they acquire a luxuriance seldom attained when grown in pots, and, moreover, their free root-run does not render them less floriferous; on the contrary, they seem to flower more profusely, and, as regards their immunity from insects, they are incomparably better grown in this way. The other day we saw some plants of C. Balfouri and C. speciosum covering the whole of one end of a stove, and we thought at the time that we had rarely seen a more beautiful sight in a stove. Formerly these plants were grown in the conventional pot style, and were always a trouble as regards watering and cleaning, but since they were planted out they have grown strongly and rapidly, and have been little or no trouble. There are many other stove plants, especially climbers, usually grown in pots that would flourish much better if planted out; in fact, we have much to learn respecting the embellishment of greenhouses and stoves in the least costly way.—S. E.

The Wax-flower plant in baskets.—As a hanging basket plant in a stove it would not be easy to name a more beautiful object than a well-flowered specimen of Hoya bella, which is, without doubt, the gem of the genus. Its clusters of flowers look like stars of frosted silver set in polished amethyst, and, being borne on slender drooping stems amidst Myrtle-like foliage, their beauty is increased. Its near, but less graceful, relative, H. Paxtoni is not so well suited for basket culture, as its growth is more erect. Anyone fond of beautiful basket plants should make a note of these two Hoyas, and particularly of H. bella.—S. E.

Boronia megastigma.—This is an easily-cultivated and excellent cool greenhouse plant. It grows from 2 feet to 3 feet in height, and has twiggy branches, on which during the spring and summer months flowers of a dull chocolate colour outside and yellow inside are borne in great profusion. They are not particularly attractive, but their aromatic perfume makes them great favourites. For drawing-room decoration one plant is sufficient, more emitting too strong a scent. Sprays of it when cut and placed in vases last fresh for several days, provided the water is changed every second morning and a small piece of charcoal put into it to keep it fresh.—W. C.

A cheap and useful propagating frame.—Will you allow me to draw the attention of any of your readers who want a cheap and useful propagator to the excellent design given in Gardening Illustrated, of 31st March, 1883, by Mr. B. C. Ravenscroft, of Granville Nursery, Lewisham. The design is so simple, the directions are so clear, that any handy amateur can make one for himself at a cost of about 15s. A steady and permanent moist heat can be maintained in it, ranging from 50 degs. to 90 degs., according to requirements. On reading Mr. Ravenscroft's account, I immediately set about making one. I have now had it in use for about 6 weeks, and it has answered in every way beyond my expectations.—A. Bolton, Lt. Colonel, *Kent.*

REPLIES.

13130.—**Failure of spring blossoms.**—It is difficult to account for the failure to flower such ordinary spring bulbs as Hyacinths, Tulips, Narcissus, &c., except on the supposition that the bulbs have not been well grown the previous season. Even Spiræa and Dielytra spectabilis will not flower in the spring if they have not been well cared for the previous season. The spike in the bulb of a Hyacinth, and the flowers in that of a Tulip are formed the year previous to that in which the flowers are developed. The same remark holds good with the crowns of Spiræa and Dielytra. All that the cultivator has to do is to develop these incipient flowers. They ought to be potted in October, and be plunged in Cocoa-nut fibre refuse out-of-doors until January. They may then be removed into the greenhouse. Over dryness in the atmosphere of the house would account for the buds turning brown. It is not necessary to have both a flue and hot-water pipes in a small greenhouse.—J. D. E.

13343.—**Raising Cinerarias from seed.**—The simplest way of raising Cinerarias from seed is as follows: If from plants in your own possession lay some soil about 4 inches deep on a cool house or vinery floor. As you require them place the pots on the soil, and let them sow themselves. If you have bought the seed proceed in the same way, and I have no doubt you will succeed. It is the simplest way of any I know.—Young Nurseryman.

—— Sow the seeds in pots or small pans, covering them over very lightly with fine soil. The seeds will vegetate best in a hotbed, from which the heat has almost passed; but if this arrangement is not available place the pots or pans containing the seeds in a shady part of the greenhouse. When sown so late as June and July the best place is a hand-light behind a north wall.—J. D. E.

12895.—**Hyacinths in glasses.**—Unless the subject is quite exhausted, I should like to add my experience respecting Hyacinths in glasses. I always use soft water, with a lump of charcoal the size of a Walnut in it, the water not touching the bulb when placed in the glass; but I am careful as the fibres grow that every one shall touch the water. I keep them in a cool, dark cupboard till the roots have well started, and also the flower-shoot, when I remove them to a shelf in a window facing east, open night and day, and with no fire. During severe frost I place them in the room, and avoid freezing if possible; but mine have often been frozen (twice last winter) with no ill effects, as I am careful they shall thaw very slowly, and not by fire-heat. They have done very well with this treatment.—Patience.

13337.—**Sowing Stocks and Asters.**—It is a good plan to sow the seeds of these in a hotbed, as the seeds vegetate best in that position. They ought not to be pricked out over a hotbed, as that would cause the plants to make a rank growth, and when planted out into ordinary soil they would not speedily get over the check. They should either be pricked out in a cold frame or in boxes to be placed there afterwards.—J. D. E.

BEES.

SEASONABLE NOTES.

The time of swarming varies a good deal, so much depending upon locality, the state of the weather, and autumn management. Hives well filled with bees in autumn are always in a far more forward state in spring than those that have received no attention in the way of stimulative feeding, uniting, and so forth. It is not, however, the heaviest hives that contain most bees; on the contrary, hives that have but little honey in them in spring afford plenty of room for hatching brood, and, consequently the population rapidly increases.

Swarming.—The chief indications of swarming are the appearance of drones, general restlessness, and crowding at the mouth of the hive. Bees make preparation for swarming by beginning to raise young queens about a week before the swarm quits the hive. When the queen-cells are sealed over the swarm prepares to leave the hive, as the young queens arrive at maturity in from twelve to seventeen days from the egg. The old queen leaves with the first swarm, while the young queen, to take her place in the hive, is yet in embryo. Two queens are never permitted to be in a hive at one time; should, therefore, the swarm be unable, on account of unfavourable weather, to leave the hive at the proper time, the queen cells are destroyed. When actually swarming the bees are seen to pour out of the hive in a constant stream in a great state of excitement. They usually alight on some bush or tree near the hive, where they remain for a short time, but, if not speedily hived, again take wing in search of a permanent habitation; therefore, no time should be lost in getting them into a hive as soon as the cluster is formed. Another reason for hiving the bees quickly is that the longer hiving is delayed the more difficult they are to handle, being much more inclined to use their stings.

Hiving.—It is of immense advantage to put a swarm into a hive containing clean empty comb, as this enables the queen to commence laying at once. Otherwise comb-foundation, which contains sufficient wax in its projecting walls to enable the bees to completely lengthen out the cells, should be fixed to the frames, or strips of foundation may be fastened to the under side of top bars as guides to the bees to work out the combs within each frame.

Swarms sometimes settle in places very difficult for hiving. If on the thick branch or stem of a tree, the bees should be swept very carefully into a skep with a goose wing, a brush irritates them greatly; if the queen is swept into the skep the bees will soon join her; should it, however, happen that the queen is not brushed into the hiving skep the bees quickly return to where they clustered, when the whole operation of hiving has to be again gone through. If the swarm cluster on a small branch of a tree it is easily hived by placing the skep under it and giving the branch on which it is hung a smart and sudden shake which causes the bees to lose their foothold and fall in a mass into the skep. The frame-hive which the swarm is to occupy, should be placed upon the ground, as near as possible to the cluster, and a cloth or newspaper spread in the front of it, bringing one end over the floor-board. The front of the hive should then be raised about 2 inches above the floor-board, which will enable the bees to speedily enter when thrown from the hiving skep on to the sheet or newspaper placed in front. They can also be shaken from the skep into the top of the hive, first removing three or four frames. If the swarm is to remain in the straw hive it should be gently placed upon the ground as soon as the bees are shaken into it and left for a few minutes, being raised up an inch or two on one side to enable the stragglers to enter and all to cluster and suspend themselves from the roof, when it should be placed upon the stand it is permanently to occupy. It is good policy always to get the swarm to its stand as soon as possible after hiving. If left till the evening before this is done many bees are lost, as shortly after a swarm has clustered in its new hive many of the bees fly off in search of stores, and make several journies before sunset, and thus become familiarised with the position of their new home. Next day they take wing without noticing that the position of the hive has been altered over night, and, returning from their foraging in the fields to the place occupied by their hive the day before, many bees are lost, and the strength of the swarm much reduced. Hives and all necessary appliances should be in readiness in swarming time, that no time may be lost after the bees have clustered, or they may again take wing and be lost. Fugitive swarms rise to a great height and travel at a rate which makes pursuit next to useless.

Boxworth. S. S. G.

12740.—**Destroying ants.**—Will William Aspinall, who replied to query No. 12740, on "Getting rid of ants," kindly tell me whether the brown sugar is fatal to the ants, or whether it is only used to attract them out of their nests?—A. D.

COOL CONSERVATORY IN THE GARDEN OF PLANTS AT PARIS, WITH FINE FOLIAGED PLANTS AND PALMS.

A COOL CONSERVATORY.

Our friends who have many greenhouses might do a great deal to make them more stately in aspect and beautiful in foliage. It is very easy to do something much better than the usual red pot and stage business, if we clear out the stages, and grow plants of fine foliage that will bear the temperature. The illustration shows a large winter greenhouse in which the vegetation is mainly such as will do perfectly well in a greenhouse in winter, though the effect is as tropical as if it were in the tropics. The house here represented is one in the Garden of Plants, Paris, devoted to plants that endure ordinary greenhouse temperature, and it contains a few specimens of a type that most people require for use in large, cool houses. First to arrest attention by its grace is a Bamboo, one of the hardy sorts (Bambusa viridi-glaucescens) that come from cool regions in India and China. In a cool house, planted in a bed or border, and with not less than 12 feet of head-room, these are indeed beautiful plants. Then there is a plant of the slender hardy Bamboo (B. gracilis), and there are no plants more worthy the attention of those who have to plant and arrange conservatories than these Bamboos. Another family, the Chamædoreas, also possess extraordinary merit for the same purpose; and other plants suited for such structures are Cocos australis, Jubæa spectabilis, Rhapis Sirotsik, Livistona australis, and several kinds of Chamærops and Phœnix.

ILLUSTRATION COMPETITION.

Selected Illustrations.

We now have the pleasure of announcing the result of our first Illustration Competition, which has, on the whole, been satisfactory and interesting. The chosen photographs will be engraved and published in Gardening—the earliest will, we hope, be ready in a few weeks—and prizes have been sent to the undermentioned:—

Mr. W. T. Bashford, of Argyle House, Portobello, for the most interesting series of photographs of garden flowers that we have seen; very beautiful in colour and composition. Some of the photographs illustrate different stages of the plants' growth; they are perfectly clear and most graceful.

Mr. J. Bayst, The Hollies, Gascoyne Road, S. Hackney, an extremely well-grown plant of Hydrangea.

Mr. H. Benstead, Rockstow, Maidstone, photograph of "Dipping well in Garden," most graceful, and quite free from the too common stiffness of gardens.

Mr. Alex. Borthwick, 13, Wendover Crescent, Mount Florida, Glasgow, for a beautiful house and garden, gradually merging into wood and hill and mountain, in the Kyles of Bute; he also sent photo of a pretty bed of fine-leaved plants and flowers in the open air, and what was near being a very pretty border of Pansies and similar flowers, probably spoilt by the photographer having to include in the picture a group of figures.

Mr. C. H. Evans, Redditch, spray of Clematis, nearly life-size, prettily composed, and beautiful in colour. A photograph as beautiful as a Greek statue.

The Rev. H. E. Fox, Durham, for interesting photographs of wild gardening and a well-arranged group of hardy flowers in a vase.

Mr. F. Mason Good, Winchfield, Hants, a very remarkable Scotch Fir, and good photos in sub-tropical garden at Heckfield.

Mr. Edward S. Howse, Lyncombe Hall, Bath, a beautiful old terrace garden, and other views.

Mrs. S. Marshall, Westwood Hall, Leeds, extremely interesting photographs of alpine flowers, taken in the Engadine.

Mr. W. E. Matthiessen, 40, Devonshire Road, Forest Hill, S.E., house beautifully covered with plants.

Mr. Alfred Taylor, Starston Place, near Harleston, Norfolk, a good specimen of Nordmann's Fir as a lawn tree.

Originally we did not think our prize-list would run so far, but the photographs sent are so good that we willingly extend it to the eleven above-named. We desire also to commend the illustrations forwarded by the following:—

Mr. James Arthur, The Gardens, Hatton Castle, Aberdeenshire, excellent photographs of rather common-place subjects, such as the White Azalea; and a group of plants for room decoration, too stiff and vertical.

Mr. W. Davis, Mitre Villa, Perry Barr.

Mr. L. Edwards, Haydon Hall, Eastcote, Middlesex, rockwork fernery.

Mr. S. Griffin, Lucerne Villa, Wilton Road, Salisbury, groups of well-grown Orchids.

Rev. T. Hervey, Colmer Rectory, Alton, Hants, a pretty photograph of a shady walk with ferns, but not quite distinct enough for engraving.

Mr. A. Johnson, Leek, some photographs of large gardens, rather too strong in the dark colours.

Mr. W. H. Leese, Sunnyside, Winchester, photo showing steps in a rock garden, with plants, as they should be, in all the angles.

Mr. W. F. Markwick, Buxton Lamas, Norwich, a well-filled greenhouse, with noble Arum Lilies and Ferns, rather too dense, so that the forms are not well shown. Also some interesting seedling Shaddocks.

Miss A. Moony, The Doon, Athlone, a sketch of a pretty object, Clematis and Dutchman's pipe on summer house, but hardly clear enough for engraving.

Mr. Arthur J. Scantlebury, Wilton Lodge, Boxmoor, photograph showing some fine trees, but in a wrong light.

Miss S. K. Tyndall, The Fort, Bristol, sketch from a photograph, of evidently very remarkable American variegated Aloes in flower.

As a rule, the drawings sent were not good. The system of teaching drawing in the schools of the United Kingdom is thoroughly successful in squeezing all life and colour out of the objects drawn. Happily the photos in many cases were very good, and our readers will during the season have opportunities of judging of the merits of the chosen pictures.

Our suggestion as to omitting from photographs all figures of vases, barrows, &c., was for the most part attended to by competitors, but one gentleman, we think, wanted to have a joke with us, as he sent us a photo in which nearly all the things to which we objected were put in the foreground and the family group in the distance! The garden roller was the principal object in the foreground, and in fine light and shade.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

QUESTIONS.

13434.—**Summer treatment of Tea Roses.**—Will someone kindly tell me what should be the summer treatment of Tea Roses in pots in cold frame just coming into bloom?—Y.

13435.—**Cure for mildew.**—Will any reader tell me a cure for mildew on plants? I have used sulphur, but it does not seem to check its progress.—Y.

13436.—**Mildew on Roses.**—Can any reader give me a remedy for mildew, and tell me how to prevent it appearing on Rose trees?—Celer et Audax.

13437.—**Procuring Quassia chips.**—Will any reader of Gardening tell me where I can procure, at wholesale price, the Quassia chips used for syringing plants?—R. R.

13438.—**Soot water for Ferns.**—I use weak soot water for all my greenhouse plants. Will any Fern grower tell me whether it is well to use this also for Ferns?—Polyanthus.

13439.—**Destroying woodlice out-of-doors.**—Can anyone who has dealt with such a pest tell me how to get rid of woodlice in a garden that is infested with them? The rockeries are full of them, and they congregate under every flower-pot or heap of rubbish that is left on the ground. They are also in the greenhouse and Fernery. How is their unwelcome presence to be accounted for, and can I apply anything that would kill them or drive them away?—X. Y. Z.

13440.—**Plants for aquarium.**—I am fitting up a small aquarium—size, 32 by 12 by 14—and want two plants that will grow in the water. Will any reader kindly say what will be the best? I intend keeping gold-fish in it.—T. B. H.

13441.—**Cutting down neglected evergreens.**—Will any lover of evergreens tell me what is the best time of the year to cut down Laurels, Laurustinus Rhododendrons, and other shrubs grown tall and scraggy through neglect?—Subscriber, *Fermoy.*

13442.—**Apparatus for heating greenhouse.**—I have a small greenhouse, span-roof, 10 feet by 7 feet, which I should like to heat with hot water. Can any reader give me any suggestion as to a cheap method of heating it? I object to lamps or gas apparatus, and wish one to burn coke or coal.—L. S.

13443.—**The use of charcoal in potting plants.**—I constantly see charcoal recommended for use in potting plants. Will any reader tell me the object of placing it there, and what is its value? Is it for drainage, to keep the soil sweet, or to supply some element to the plant otherwise wanting?—Polyanthus.

13444.—**Perennial plants for naturalising in orchard.**—Will someone kindly give me a list of perennial plants, which can be raised from seed, suitable for naturalising among Grass in an orchard? Bulbs of different kinds I have already planted with success.—Heyeswood *Cheshire.*

13445.—**Plants for frame during autumn.**—I have in my garden a small frame 6 feet long, 3 feet wide, and sloping from 3 feet to 1 foot 6 inches. Will any reader kindly say what pot plants I could keep flowering during the autumn and winter? The frame is well sheltered, and gets the sun from about eleven o'clock till sunset.—Brighton.

13446.—**Creeper on iron wall.**—Will any readers tell me if I may hope to grow climbers against an iron wall by making use of a trellis or other means? How could it be trained?—A Young Gardener. *** *We should not fear to try a vine in such a position, but probably some readers who have dealt with a similar case will advise you.*—Ed.

13447.—**Snake's-head Fritillary.**—Will any reader kindly inform me what is the proper mode of cultivating the Snake's-head Fritillary (Fritillaria meleagris)?—E. B., *Newton Abbott.* *** *It grows well in any ordinary border. If the bulbs are planted in autumn in good soil no further trouble is needed. The bulbs do not require to be disturbed for years.*—Ed.

13448.—**Insects on Gooseberry trees.**—Will some experienced reader kindly tell me the best method of protecting Gooseberry bushes from green fly and caterpillars? My trees were infested with them last year, and this appears to have much weakened them for this season. They are in an open situation, and every attention is given. My garden is about a mile from the seashore on north-east coast.—T. R., *West Hartleford.*

13449.—**Germinating seed in warm greenhouse.**—Will any of your readers experienced in the raising of Cineraria, Calceolaria, single Primula, and Cyclamen, kindly inform me whether they will come up from seeds in a warm greenhouse? I can give no bottom-heat, having no beds. I should like to know the best way of going to work, what soil to use, and how to treat them when up.—Scipio.

13450.—**Treatment of Geraniums in autumn.**—Will any lover of Geraniums tell "A. B. C." how Geraniums, which have been in bloom in beds all the summer, should be treated in autumn, and what should be done with the old plants when cuttings have been taken before replacing in greenhouse? Should the old plants or the cuttings be bedded out the second year, and are the old plants of any further use?

13451.—**Heating rooms.**—Can any of your readers give me advice in the following case? I want to heat two sitting-rooms and large entrance hall from a boiler that heats a greenhouse. The flow-pipe will rise about 3 feet, and then run horizontally for 40 feet to the first coil, passing 15 feet more to the second coil, and about 15 feet further to the coil in hall. Probably not more than one sitting-room will be wanted at a time, and I have plenty of boiler power. What should be the diameter of the flow and return pipes to do this?—J. H. O.

13452.—**Training vines on single rod system.**—I have looked through the only volume of Gardening I have bound, and do not see any instructions how to train vines on the single rod system. I see in some back numbers two or three articles by Mr. Hobday, but not on the long rod system. As my vines are now breaking, I should be glad if any reader will give me some plain instructions how to grow newly-planted vines? Do the bottom buds require rubbing off? Should I syringe them now? I should also be thankful for any other particulars. W. Russell

13453.—**Wanted, a name.**—When in London two years ago last autumn I noticed what I supposed to be a species of Nasturtium in several gardens in the neighbourhood of Highgate. It was a climber, and the foliage was similar to the ordinary Nasturtium, only the leaves appeared to have a fluffy bloom upon the under side; the flowers were more of the shape of Gloxiniae, and of a bright scarlet. I tried to get some seed from seedsmen, but they did not know what I wanted from my description of it. Can any of your readers tell me the name and where I could obtain seed?—Chelow. *** *It is probably not a Tropæolum at all. Can it be Eccremocarpus scaber?*—Ed.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13454.—**Applying sulphur for mildew** (*F. D.*)—Powder the leaves with flowers of sulphur.

13455.—**Quick-set berries** (*A. Witchell*).—Yes, they will do as well pitted in March as in February.

13456.—**Growing Mushrooms** (*Amateur*).—An article on the subject will very shortly be published in Gardening.

13457.—**Work on Mushroom growing** (*C. Wood*).—"Mushroom Culture," published by Routledge.

13458.—**Destroying ants** (*T. B. and C. H. A.*).—Pour boiling water into the ant holes.

13459.—**Lilies of the Valley for early flowering**.—September is the best time to put your Lilies in pots. Choose the largest roots with the plumpest buds.

13460.—**Hardy shrubs for exposed position** (*T. L. Hunt-ow*).—Try the common green Holly or the evergreen Privet.

13461.—**Procuring Tiger Lily** (*O. O. W.*).—Any bulb merchant, or seedsman, or nurseryman should be able to procure this now rather common bulb for you.

13462.—**Propagating Diplacus cardinalis** (*Shoulder*).—Take short shoots with a heel; strike in a frame under a bell glass, at any season except winter.

13463.—**Propagating red Acacia, or Bottlebrush tree** (*W. G. Wright*).—Try to raise the plants from seed, or increase by layering.

13464.—**Book on vine culture** (*Gang Forward*).—Simpson's "Grape Vine," (Routledge), and, if you want a more expensive one, get Barron's.

13465.—**Blight on Passion Flower** (*J. Cliff*).—We cannot tell you the cause unless you give us particulars of the treatment you have followed. Send another specimen when you write again.

13466.—**Increasing Sparmannia africana** (*Shoulder*).—We have never found any difficulty in striking this from cuttings. Take them at any time of the year except winter.

13467.—**Pinus Pinea seed** (*Ferrum*).—The seed sent is perfectly sound and good. Seeds take a few weeks to germinate, and it is usual to break the shells before sowing.

13468.—**Treatment of Pheasant's-eye Narcissus** (*Hittie*).—Plant the bulbs out, and lift them again about September if you wish to have them to flower in pots in spring.

13469.—**Thinning out overcrowded Lilies of the Valley** (*L. B.*).—After the leaves have died downdo it as soon as you have time to attack the work. We should take the whole lot up, and replant in fresh ground if possible.

13470.—**Transplanting Melons** (*W. V.*).—When Melons are ready to transplant they should be turned carefully and gently out of their pots, planted firmly, kept close and moist, and slightly shaded until they take to the soil.

13471.—**Syringing plants under glass with warm water** (*Hittie*).—Tepid is infinitely better than cold water, and during warm weather a good syringing, say about five or six o'clock in the afternoon, will be beneficial to your Geraniums, Fuchsias, &c.

13472.—**Hardiest greenhouse Rhododendrons** (*South Devon*).—Four of the hardiest are R. Countess of Sefton, R. Dennisoni, R. Gibsoni, and R. sesterianum. Kindly read the rules for correspondents, which state that each question should be sent on a separate slip of paper.

13473.—**Pansies to bloom in three weeks' time** (*J. J., Clapton*).—We fear it would be difficult unless you could get a batch in pots. As you live in London your best chance is to visit the nurseries near London where these flowers are grown.

13474.—**Stone's Apple** (*A. Witchell*).—We have had no experience of this Apple keeping two years. It is a very good Apple, and will keep well up to Christmas of the year it is grown, and possibly, under good conditions, it may keep longer.

13475.—**Peat Moss** (*Joseph Hedling*).—Peat Moss (which you send) is not the same as ordinary peat or Heath soil, which is coffee-coloured, and full of black, wiry fibres. The peat Moss may do to lighten heavy soils, but will not answer the purpose of peat.

13476.—**Hyacinths and Tulips after flowering** (*Subscriber, Fermoy*).—Keep them growing freely in a cold frame or warm corner until all the leaves have died down. Then plant them where you want them to permanently embellish borders or beds.

13477.—**Procuring Alternanthera and Castor oil plants** (*Uncle Jeff*).—Apply to any nurseryman who grows soft-wooded or bedding plants. There are in the country hundreds who have in quantity the plants you mention.

13478.—**Culture of Pansies** (*Pansy Grower*).—In Gardening for November 8th, 1884 (No. 209), you will find a list of the best Pansies grown, and very recently the results of a "Pansy Election" were published. In Nos. 310 and 312 there are numerous references to Pansy culture, and an article in our issue of April 25th will assist you.

13479.—**Procuring Gentiana acaulis** (*James Wood*).—This plant may be easily procured at any Scotch, Welsh, or English nursery where hardy herbaceous or alpine plants are grown. You might try some of the Chester houses in your own district. We cannot forward your letter.

13480.—**Books on Roses** (*Beginner*).—Canon Hole's "Book about Roses" (Blackwood and Sons), and Ellwanger's book (Dodd, Mead, and Co., New York), in which will be found a complete list of all Roses up to the present day. "The Rosarian's Year Book, 1884," is published by Benrose and Son's, Old Bailey.

13481.—**Procuring Lygodiums** (*M. L.*).—Apply to any nurseryman who deals in Ferns, such as Birkenhead, of Sale, Manchester; Williams or Veitch, of London; Backhouse, of York; Appleby, of Dorking; Stansfield, of Todmorden, and others; any good plant nurseryman ought to be able to get them from his correspondents.

13482.—**Book on the rudiments of gardening** (*A Perfect Novice*).—A book such as you describe will never see the light of day. Gardening is too big to get into a handbook; just look at the amount of information to be found in our own pages in the course of a year. Then the actual manipulations, how to pot a plant, or how to dig a little bit of ground—that is much better learnt from anyone who is doing it than from a book—at least, so we think. We shall be very glad to see, when it comes, a book that will take the place of a good gardener, who can show you in five minutes what to do.

13483.—**Skimmia japonica** (*E. B.*).—This plant is commonly grown in all nurseries, where evergreen shrubs and so-called American plants are grown. Any respectable nurseryman should have no difficulty in procuring the plant for you. We cannot recommend anybody because it is in general sale throughout the country.

13484.—**Flowers for north border** (*C. W., Bristol*).—A great number of beautiful flowers would grow in such a border, particularly hardy flowers, such as the Narcissi, Irises, Lilies, Delphiniums, Phlox, Rocket, Stock, and Wallflower, and it would even have certain advantages in keeping such flowers later than they are on sunny warm borders.

13485.—**Manure for pot plants** (*C. Short*).—There are various kinds of artificial manures, some better than others, and their efficiency may be judged by their price, the highest priced being generally the strongest. Guano makes a good manure, but for pot plants an occasional watering with liquid manure, made from sheep or cow manure, is quite sufficient.

13486.—**Making pebble carriage-drive firm**.—If you have no good heavy gravel in your neighbourhood, the best substitute would be marl or chalk. You want some adhesive material to mix with the pebbles, which are the worst things that could possibly be used in making a road if not accompanied by something that will bind them together.

13487.—**Utilising contents of cesspool** (*Ignoramus*).—The contents of a cesspool form an excellent manure mixed with yellow loam, or even common soil, and applied to vegetables. You can use it for Rose trees, but judgment is required in its use for fruit trees, as, if you enrich the soil too much, an unfruitful condition will be induced.

13488.—**Aucuba in towns**.—Yes, the Aucuba is an excellent shrub for towns. In passing through one of the north-western squares in London the other day, we saw two large bushes in perfect health down in a deep area, the old leaves quite fresh and the young buds looking up as fresh as if in the country. Its leathery leaves seem made to withstand the evil influences of town smoke.

13489.—**Climbers on fruit trees** (*E. S. P.*).—We think that for a year or two the growth of a fragile climber would not do any material injury, and, in cases where trees are overfed and overrank, as they often are, might even do a little good. As a principle in orchard culture it would not do, but in a quiet garden it would be very pretty, and, judiciously done, need not be harmful.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*—Ed.

Procuring dormice (*J. H. B.*).—We are sorry to say we have no space for the dormouse, email as he is.——Dahlias flowering (*Thickhead*).—If the tops are strong they may flower, but it is a question that can only be answered with certainty by one who has seen the plants.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

**** In the midst of the flower season it may not be amiss to impress upon those of our readers who want plants accurately named that it is only fair to us to send us complete specimens always with flowers. Single leaves and bits of shoots, unless the plant is of the most remarkable and unusual distinctness in these points, are quite useless for the purposes of nomenclature. It would be as easy to identify a man from a hair of his head.*

Names of plants.—*R. Blake.*—Wistaria sinensis.——*A. D.*—Spiræa confusa; quite a hardy shrub.——*Mrs. Alexander.*—Helleborus fœtidus.——*E. J.*—Veronica speciosa.——*South Devon.*—Ornithogalum nutans; Rehnospora filicoides; Rhododendron, Countess of Haddington.——*Ifield.*—1, Forsythia viridissima; 2, Spiræa prunifolia fl.-pl.——*M. L.*—Ornithogalum umbellatum; the other appears to be Cerasus Padus, the Bird Cherry.——*J. M. B.*—1, Saxifraga crassifolia; 2, Omphalodes verna; 3, Arabis albida; 4, Aubrietia deltoidea.——*J. H. W.*—Orchis maculata; Field Garlic (Allium ursinum); will not grow in a greenhouse; send Acacia when in bloom; the Orange leaf is infested with common scale.——*E. C. B.*—Amelanchier canadensis.——*A. C. M.*—Crown Imperial (Fritillaria imperialis).——*J. Appleton.*—Appear to be the catkins of the Hornbeam.——*Siburus*—1, Lithospermum prostratum; 2, Symphytum officinale.——*Marie.*—Doronicum Clusii; Amelanchier canadensis.——*Cottonit.*—1, Sempervivum ciliatum; 2, Cotyledon pulvverulentum; variegated plant is a variety of Barbarea vulgaris, a weed. The other slip is like that of a thousand different plants.——*R. C.*—Saxifraga crassifolia.——*B. F. Bewley.*—Appears to be a small Osmunda, but specimen is too small to name accurately.——*W. F.*—1, Narcissus biflorus; 2, Primula farinosa; 3, Primula Sieboldi.

Books, &c., received.—*International Inventions' Exhibition Railway Guide and Route Book.* Wm. Clowes and Sons, Limited.——*Ladies' Journal of Decoration.* 317, Strand, W.C.——*The Chrysanthemum for Exhibition and Decorative Purposes.* By Wm. Iggulden. *Journal of Horticulture*, 171, Fleet Street, E.C.——*Birds I have kept in years gone by.* By W. T. Greene, M.A. L. Upcott Gill, 170, Strand.——*Modern Bee-keeping.* Published for British Bee-keepers' Association, by Longmans, Green, and Co., Paternoster Row.——*Crystal Palace Programme of the Season*, 1885.

OUTDOOR PLANTS.

PLANTING OUT CHRYSANTHEMUMS.

If Chrysanthemums have been properly hardened off, the middle of May is a good time to plant them out. Any open sunny spot will do for them, so long as it is far enough away from the roots of trees, which otherwise would get into the soil, and seriously rob it of its moisture. A shallow trench, prepared something after the manner of those for Celery, but with much less manure dug in, answers best to grow them in, as there they may occasionally be flooded with water or sewage without loss, and a thorough soaking insured. In order to prevent evaporation and keep the ground cool about them, a slight mulching should be afforded them, and if this is given they will be much more independent of assistance in the way of watering than they otherwise would be. As, when planted out, Chrysanthemums are intended to be grown into large bushes, one stopping will be sufficient, and this should be carried out the first week in June, when they have got a good hold, after which they break strongly and become well furnished. Except staking to give them support, no further attention will be necessary till they are fit to take up in the autumn, to prepare them for which it is always advisable to run a sharp spade around them a week or so before lifting, and to give them a good watering at the same time. This will induce fresh root action, and prevent the removal being felt so much as it would be if dug up at once. The proper time for lifting and potting is immediately the flower buds can be discerned, and this operation should, if possible, be carried out during a dull, showery time, a condition much in their favour. In digging them up it is necessary to exercise care in order to secure a good large ball, the earth from which may be reduced according to the size of the pots into which it is desired the plant should be put. In doing this, however, it is highly important that as many roots as possible be preserved; and, to give these fresh material to feed on, what additional soil is required for filling up should be of the richest description, and pressed down thoroughly firm, which will form a great stay to the plants. The potting complete, the best place for them till they get fresh hold is the foot of a north wall or other building, where they can be screened from sun and wind for a week or two, and kept well syringed overhead and liberally watered. If this is done they will soon become re-established, when they will bear removal to the greenhouse or conservatory, and expand their flowers without a leaf flagging, just as if nothing had happened. Late-struck cuttings may be treated precisely in the same way; but, as the plants will be so much smaller when fully grown, they will not require nearly so much room when turned out. Eighteen inches or so between the rows, and about the same distance apart, will be ample; and for those planted out in June or July less than that will suffice.

Taking cuttings.—The chief thing in order to secure fine strong cuttings to start with is to take care of the old plants after flowering, and, to do that, one of each kind that it may be desired to grow should have the tops shortened back and be turned out in leaf soil in some cold frame, where they can get plenty of light and air, and be duly protected from frost. So favoured they will send up stout, vigorous suckers, any of which, when about 4 inches long, will do for taking off, and will strike freely under the conditions already named. In growing them in pots, no soil answers better than a well-enriched fibry loam, rather inclined to adhesiveness than otherwise; in this they make firm, short-jointed stems. Owing to the great quantity of water they take and require, worms are a great bother, as the moisture that drains away is sure to attract them to the bottoms of the pots, and if ingress is not prevented they do irreparable mischief. A good way of keeping them out, and of benefiting the plants at the same time, is to scatter a pinch of soot over the crocks, and if the pots are then set on a firm coal-ash bottom, they will be quite safe from their attacks. A sunny open spot, well sheltered from wind, is the best place in which to set them; but to protect the roots from the desiccating influence of the air and solar rays, the pots should be plunged in half-

rotten leaves or litter, the non-conducting properties of which keep them cool, and assist greatly in preserving the health of the plants. The gross-feeding habits of Chrysanthemums are such that, when grown in pots, it is almost impossible to overdo them with liquid manure, provided it is not too rank or strong, or given before they are well rooted, as, after that, if properly diluted, they will take it almost daily. Soot water, mixed with farmyard drainings, suits them admirably, as does soapsuds, or, indeed, any kind of clear sewage, which, when they are showing their buds, should be given without stint. Where very fine blooms are required for show or other purposes, it is necessary to disbud, leaving only the central or main one; but where a fine display is more the object than the individual size of the flowers, nothing is gained by thinning. The only insects that affect Chrysanthemums are greenfly and thrips, the latter of which introduce themselves into the tips of the young shoots during dry summers, and feed on them in such a way, and so unexpectedly, as to cause them to become blind before the mischief is observed. The remedy for both is a syringing with Tobacco water, or some fumigation in the ordinary way.

AS TO VARIETIES, their name is legion, but I would particularly recommend the following as distinct and fine, viz: Julie Lagravère, brilliant crimson chestnut; Empress of India, Mrs. Geo. Rundle, and Mrs. Turner, fine whites; Geo. Glenny, Golden Beverley, and Jardin des Plantes, yellows; Peter the Great and Mrs. Dixon, lemon colour; Triomphe du Nord and Bronze Jardin des Plantes, bronzes; Dr. Sharp and Sparkler, reds. Some of the Japanese kinds are very showy, among the best of which are Cry-Kang, James Salter, Elaine, Red Dragon, and Fair Maid of Guernsey. S. D.

Staking Dahlias.—The best way to stake Dahlias is to place, in an upright direction, four stout, straight stakes to each plant, so that the shoots can be tied out to admit light and air to every part. But many would not care to go to the expense of getting stakes of this description. Crooked ones or straight ones that would not be strong enough, if arranged in the ordinary manner, would be found to fairly answer the purpose if brought together at the top and firmly lashed. If the ground be dry and hard, the operation might be greatly facilitated by lightening it with a fork and pouring water at each spot where a stake is about to be inserted. In parts of the country where wood is expensive and iron cheap, iron rods would be found a very good substitute for wooden stakes. They might be, say, three-eighths of an inch in diameter for the dwarfer varieties, seven-sixteenths for those of medium height, and half-an-inch for the taller kinds. In ordering iron rods it must be borne in mind that their size and weight are not as their diameters, but as their squares. For instance, a rod half an inch in diameter is four times the stoutness of one quarter of an inch of the same form. The rods could be immensely strengthened if, as recommended with respect to the wooden stakes, they were bound together at the top. To this end they should be curved at the top, so that they might come in contact whilst the other end points in a perpendicular direction. If the end of the curved part of each rod were turned at nearly right angles they might be more easily and effectually bound together.—L. C. K.

Isolating Bindweeds.—I rue the day when, tempted by the beauty of a large pink Calystegia, I introduced it to my garden. I would recommend to intending growers of these troublesome plants the device I have seen adopted by a friend. She has planted her Bindweed in a box of earth, which is fastened to the wall by brackets or holdfasts at a safe distance, so as to keep the roots quite isolated. —AIDYL.

Matricaria inodora fl.-pl.—I have discarded this plant from my borders as not being good enough to grow, and most herbaceous plant growers are of the same opinion. It may do as a forced plant, but is an ugly grower, flowers usually more or less green. The best place is an out-of-the-way corner, and not in the border. —J. R. NEVE, *Gloucestershire.*

Hardiness of the shrubby Calceolaria.—This has stood the winter in the open border several times with me. This year the deep snow in January and continual frost in March have been most trying, yet some fifty plants are as green as they were last August, proving they are hardier here than the white Stocks, which are nearly all killed.—A. B. T., *East Anglia.*

PROPAGATION AND CULTURE OF AUBRIETIAS.

A VERY useful class of plants, whether for spring bedding, for the furnishing of rockwork, or for forming permanent patches in the hardy plant border, are Aubrietias. In no case do they look more attractive than when left as permanent clumps in any position, for the masses of bloom produced by them in the spring are perhaps more striking and more enduring than those borne by most other spring plants. Clumps, where left untouched, except a little trimming of seed pods and straggling growth, have stood fresh and robust with me for many years, and that is much more than can be said in reference to many choice plants that are so much more favoured but have not so much merit.

There are three methods of propagating Aubrietias—by seed, cuttings, and division. All are simple, and the marvel is that, as they may be propagated so freely, these plants should be comparatively so scarce.

Seed sown as soon as ripe will yield plants to bloom the first year, and good-sized clumps the second year. As some plants will always seed, there is no reason why seedlings should not be raised every year. Cuttings taken off just as the plants are growing out of bloom, and inserted in shallow pans placed in a cold frame, will strike root, and

Aubrietia in rock garden.

make strong plants for the winter's planting. By dividing old plants, the largest new ones are obtained; but the Aubrietia does not root freely at the ground-line, and often in pulling plants to pieces but small portions of root are found compared with tops. If, however, rootless portions are planted they will, as a rule, make root the following spring. Surface rooting is much encouraged by dressing the plants in the summer with spent pot soil. The more these can be encouraged the better, as then the earth roots may be dispensed with when transplanted.

Where the Aubrietia is largely used to furnish beds in spring, it is well to get in a large batch of cuttings early in the summer, and, when these are struck, to put them in 3-inch pots and encourage the plants to fill them with roots. Such plants will turn out in November, and push up growth much more freely than plants that have had their few roots much disturbed. Well established plants of the Aubrietia are very recuperative; they recover from injuries by frost and snow very quickly.

The old Aubrietia deltoidea, useful as it still may be to cover rockwork, hardly finds a place in gardens where such fine kinds as græca, Eyrei, Campbelli, Hendersoni, and violacea are grown, as these are all robust growers, with large flowers, and are produced in large masses. Græca is the palest, but a capital kind, and very striking mixed with the darker hued kinds. Of these the deepest is violacea, the colour of which is a reddish-purple. It is an excellent feature of this kind that it not only seeds freely but comes true from seed. As among spring flowers, light colours, such as white, yellow, and lilac so largely preponderate, any hardy plant that will give good masses of deep reddish hues is very acceptable.

A. D.

Propagating Carnations. — Anyone desirous of raising Carnations and Picotees from seed to flower next year must lose no time in procuring seed and sowing it. The seed should be sown thinly in well-drained pots in a compost consisting of one part of good sweet loam, one part leaf-mould, and one part sand, well mixed together and passed through a quarter-inch riddle; cover the seed with a quarter of an inch of the compost and water with a fine rose. The best place for them is on a shelf in a greenhouse, or a warm frame as close to the glass as is convenient. Care must be taken not to give them too much water, but the soil must on no account be allowed to get dry. When the plants are large enough to handle they should be pricked off into a cold frame, 2 inches apart, in the same compost as that recommended for sowing the seed in, with the addition of one part of good rotten manure. Keep them close for a few days, and shade from bright sunshine until they get hold of the new soil, and water with care. When they have filled the space allotted to them, they should be planted out-of-doors in a well prepared bed on a south border. Let them have plenty of water in hot, dry weather, and by the end of October they will be strong plants. Then give them a strong mulching of rotten manure, which will protect them from frost during the winter months, and greatly benefit them in spring. The Carnations may also be propagated by cuttings and layers. Many do not, however, approve of raising them from cuttings, because they have an impression that cuttings do not make such strong plants as layers. If properly treated, however, I think that they are quite as good as layers. And there is this advantage, that one can often get cuttings when the plants are in flower, and, therefore, they must be true to name. The best way in which to root the cuttings is to insert them singly in 2½-inch pots, in the same compost as that recommended for sowing in; plunge them in a bed of coal ashes, put hand-lights or an ordinary garden frame over them, and keep them rather close for two or three weeks, by which time most of them will be rooted. After that give them plenty of air on all favourable occasions during the autumn and winter, and protect them from severe frosts. They will be fine plants to plant out in spring. The best time to layer them is from the first week to the third week in August. All that is required is to cut a few leaves from the pipings; cut a slit half-way through the wood in a slanting direction and peg it on the ground, putting a handful of fine soil over it for the roots to run in. When well-rooted, sever them from the old plants and pot them, using good rich soil, and treat them as recommended for the cuttings.—H. P

Gladiolus.—In reference to "C. F. D.'s' interesting article on page 90, it appears to me that some disappointment is likely to be caused by her coupling the advice to leave the corms in the ground all the winter with a mention of varieties of Gladiolus gandavensis. Taking simply the kinds named in the article, four—viz., byzantinus, communis, cardinalis, and floribundus—are early flowering species. Four more—Colvillei, insignis, Queen Victoria, and ramosus—are early flowering hybrids, the remaining one, psittacinus, being a late flowering species. Analysed thus, it will be seen that no hybrids of G. gandavensis are specifically mentioned at all. However sound "C. F. D.'s" advice is (and I do not dispute it for one moment in reference to the early varieties), it would lead to grave loss if it were taken to refer to autumn-blooming hybrids also, inasmuch as it has been repeatedly proved that these will certainly succumb to the damp, if not to the cold of an English winter. I have tried to leave the most vigorous and free-growing of these hybrids, viz.: G. brenchleyensis, out-of-doors, but the result has been failure, and, really, considering the small amount of trouble entailed, it seems hardly

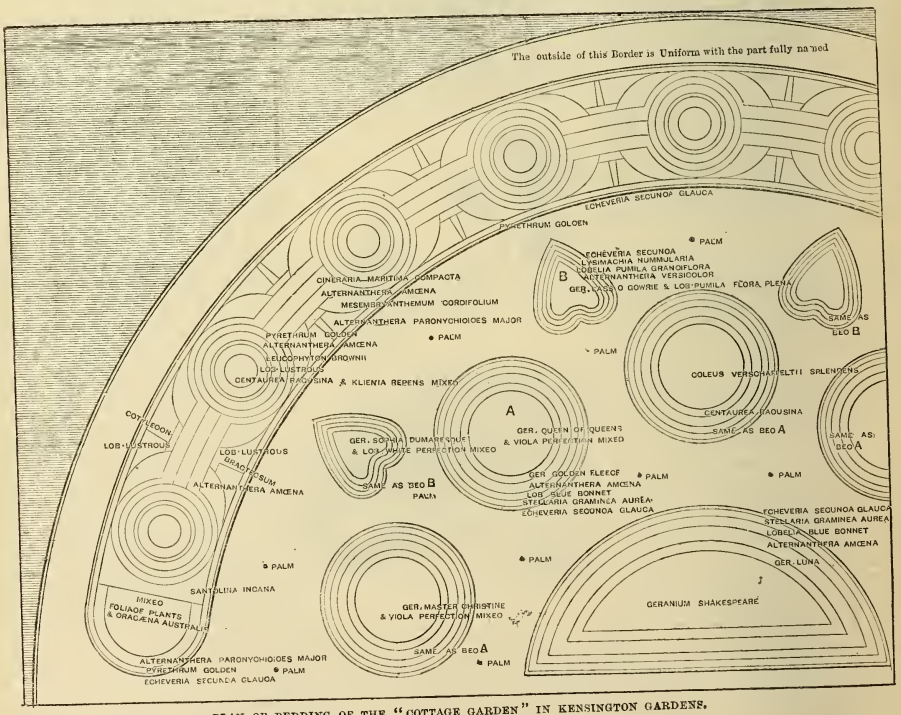
worth while risking any corms, but to be far preferable to follow the usual plan of lifting in November, and storing away until March and then replanting. But, as I said before, these remarks are simply made to prevent similar treatment being accorded to both early and late varieties. The first, requiring to be planted by December, merely want a covering of leaves or other like protection in severe weather, and it is only reasonable to assume that if they will winter safely the first season they are still more likely to do so when they have become established.—T. J. W., *Crouch Hill.*

Pampas Grass.—In the number of Gardening Illustrated for April 6 you observed that perhaps some correspondent could say how Pampas Grass can be bleached. I did not see any answer to this in the last, but from the numerous queries on the same subject in autumn, I incline to believe people are not aware how many kinds of Pampas Grass there are. I have two clumps on my lawn. The one was perfectly upright, stems with very full heads, like Cotton Wool; the other droops like the Oat, and is of a silvery brown colour. The first, if gathered before rain has sullied it, will continue white through the winter, and if in a dirty room can be bleached or dried with ease. The second remains the same colour always. Both attain a height of 10 feet or 11 feet, and bear about 200 canes per clump. I have not tried the rose colour variety, having been told it is more delicate.—A. B. T., *East Anglia.* *** There are two forms of the Pampas Grass—the seed-bearing and the barren or pollen-bearing kind. One has erect spikes, those of the other are looser and drooping. The spike "A. B. T." sends is from a barren plant. —Ed.

Narcissus, "Sir Watkin."—Messrs. James Dickson and Sons, Chester, have just sent us a bunch of this Narcissus. Of all the lovely things that have lately been rediscovered and grown among the Daffodils this has met with the greatest success. It is a very bold and handsome flower, and is well called after a most popular Welshman.

PLAN OF "COTTAGE GARDEN" IN KENSINGTON GARDENS.

Those of our readers who are fond of bedding-out will be interested in seeing the plan of at least one successful example of the system in a past year. The plan, which is that followed some years since in bedding out a flower plot in front of the cottage in Kensington Gardens, shows a strictly geometrical arrangement, but much of the consequent formality is obviated by the judicious employment of isolated specimens and effective little tufts of Palms, Cycads, Dracænas and other plants of elegant habit, which supply beauty of form, and stand out in pleasing relief amid the bright masses of colour. The large semi-circular or panelled bed, seen on the plan, also affords an excellent illustration of the value of dwarf foliage plants for insuring late autumnal effects, as by their use bright colour is secured a month, or even six weeks, after the beauty of Pelargoniums, Calceolarias, Verbenas, and most other flowering plants is over, or at least greatly impaired. The use of crimson or carmine Alternantheras, Golden Feverfews, Mesembryanthemums, golden Chickweed, Echeverias, and silvery Kleinias, Santolina, and Centaureas, affords much more harmonious masses of colouring than can be obtained by the use of ordinary bedding plants, and they are also more permanent.



PLAN OF BEDDING OF THE "COTTAGE GARDEN" IN KENSINGTON GARDENS.

Blue Polyanthus.—Mrs. James forwards a blue Polyanthus which, she says, was sent to her in answer to a question relating thereto in Gardening last year. It is a very interesting and pretty little plant, but its colour is so delicate that the only satisfactory illustration would be a glance at the flower itself. We hope she will get a good stock of it.

Double white Rocket.—"V. V. V.," on page 82, draws attention to that grand old garden favourite, the double white Rocket. There are two kinds of it, and he says the dwarf kind is lost to cultivation. It is not lost; I have both kinds, and will send you a head of bloom of both sorts when they bloom, with particulars as to my method of treatment.—H. W., *Preston.*

REPLIES.

13335.—**Profitable plants for large garden and greenhouse.**—I fear unless you are practically acquainted with market garden work your hopes of making a garden pay its expenses will not be realised. From what I have seen of the Bristol markets there is a strong competition of both home and foreign produce of all kinds, and I know it is sometimes sold much below what it would cost to produce it in this country. Choice cut flowers and Celery are likely to pay as well as anything you can grow in the houses. Brussels Sprouts and Cauliflower to come in for sale from Michaelmas to Christmas will be likely to realise as good prices as anything you can grow.—J. C. C.

13336.—**Raising Wallflowers, Sweet Williams, and Pansies.**—It is not necessary to sow seed every year for Pansies, Wallflowers, Forget-me-nots, and Sweet Williams, as all but Wallflowers can be easily propagated by cuttings and division of the roots. Forget-me-nots and Sweet Williams can be readily divided any time during the summer. Pansies will strike in the open garden any time almost but the months of June and July are the best; select the side shoots from the main stems. Wallflowers are raised from seed sown in the autumn.—Young Nurseryman.

——Following advice kindly given in Gardening about three years ago, I have since annually propagated my Sweet Williams by making cuttings of the young thin shoots which issue from the old stools after flowering. Put in firmly in a shady border, they soon root, and may be transplanted to their blooming quarters in early autumn. Double Wallflowers are usually propagated by cuttings also; but although single may be so treated, they grow so freely from seeds that it is waste of time and trouble. All that is necessary is to scatter a little seed on the ground, rake it in, and thin out the plants, or transplant as they grow

size. Old plants get leggy after the first year and are best thrown away. Forget-me-nots are naturally perennial, but as they will sow seed freely if the ground be undisturbed about them, they may be treated as biennials, transplanting the young plants in autumn. Pansies also are easily raised from seed, but to keep any particular variety it is necessary to take cuttings of the young growth and treat as directed for Sweet Williams. Discard all with hollow stems, as they will fail to root.—T. J. W., *Crouch Hill.*

—— It is the best to raise the Wallflowers from seeds every year, although not absolutely necessary. Pansies and Sweet Williams may be propagated from cuttings or by division. The Forget-me-not is grown in the same manner, but is best propagated by division only.—J. D. E.

13396.—**Orange Gourd.**—This is not a scarce plant and any large seedsman will supply seeds. It does not require the warmth of a greenhouse to ripen its fruit, as it may be successfully grown on a warm south wall. Given a warm wall it is about as easy to grow as a Vegetable Marrow. Strong plants ought to be ready to go out at the end of May. They may be raised in a greenhouse or frame, but to obtain strong plants the seeds ought to be sown early in May. No doubt it may be grown in a pot and the growth trained outside a window if the aspect is south, but they are more productive when their roots are growing in a border of good soil. With the roots in a good border, and the growth carefully nailed to the wall, I have had as many as two dozen fruit from a single plant. They do not ripen until the end of the summer, but the fruit may be cut as fast as any get of a pale orange colour, and if they are laid out in a dry warm room the colour will get deeper. When quite ripe the colour is orange red, and very ornamental they are. In size they are about as large as the ordinary run of good Oranges and as hard as cricket balls. I do not know whether it is an edible variety or not.—J. C. C.

—— This is a well-known ornamental and edible variety, the botanical name of which is Cucurbita pepo aurantia. Sow the seeds as soon as possible now (as it is getting late) in heat, using thoroughly well drained pots and light, rich soil; pot on as required, giving the plants during the summer abundance of water and all the sunshine possible. They may be grown out-of-doors if planted out in June, previously hardening them off —T. J. W., *Crouch Hill.*

13298.—**Double Wallflowers.**—Some years ago I met with a plant of this old-fashioned Wallflower, from which I got some cuttings; from these I have raised numbers of plants. If "W. B. H," would like some, and would pay postage, I shall be happy to send him some cuttings. I have only the brown shade. Address, Miss A. Brown, *Knaresborough.*

13332.—**Four best Carnations.**—The question does not clearly define whether the flake and bizarre Carnations are meant, or self-coloured flowers only. The best bizarres and flakes are scarlet Bizarre, Admiral Curzon, crimson Bizarre, William Skirving, purple flake, James Douglas, rose flake, Sybil. The best four selfs are The Bride (Hodge's), white; Florence (Wallington), buff; Mrs. Dodwell (Dodwell), rose; Daniel Delworth (Hooper), purple.—J. D. E.

13397.—**Chrysanthemums for summer flowering.**—These now form a distinct section. A selection giving a variety of colours may be as under:—Madame C. Desgrange and Jardin des Plantes (white), Chromatella (orange), Precocité and yellow Jardin des Plants (yellow), Fred Pele (red crimson), Madame Pecoul (rosy purple), Illustration (blush, changing to white, a very pretty sort). For pots the most useful is La Petite Marie (white), exceedingly dwarf and bushy.—T. J. W., *Crouch Hill.*

Giant Fennel (Ferula.)—For planting by the side of water and in other moist positions there are few hardy herbaceous perennials equal to the Giant Fennels; certainly none excel them in elegance of foliage and habit of growth. The varieties communis and gigantea are those most generally cultivated, and indeed they are the only kinds worthy of a place in ornamental gardening. They are of the easiest culture; the seeds should be sown in February in heat, and as soon as germination has taken place the young plants should be grown on in an intermediate house and planted out in permanent positions in May. The soil should be a stiff, deep loam, and, if not naturally moist, abundance of water should be given during the summer time The first season the plants will not grow more than 3 feet or 4 feet in height, but in the course of a year or two they will reach 8 feet or even 10 feet. We have a large bed of the variety gigantea and Bocconia cordata, another hardy herbaceous perennial, planted alternately, and the effect is all that can be desired, the tall flower-spikes of the Bocconia being shown off to the best advantage by the giant Fern-like foliage of the Ferula.—T.

FRUIT.

GROWING PLUMS IN POTS.

Where an orchard house or cool house of any kind can be spared to shelter the trees in spring while in bloom they usually bear a fine crop. The best time to select and pot the trees is autumn, as soon as the leaves fall, and they should be potted firmly in good loam, slightly enriched with a few crushed bones, or a little old manure. The bones are very beneficial for stone fruits, because they are so lasting and do not clog up the soil, and the lime they are ultimately resolved into is especially suitable for fruit trees of this class. None but healthy, well-rooted trees should be chosen; the roots should be shortened a little where long, and all that are wounded in lifting should be carefully trimmed with a sharp knife. In most cases, 10-inch pots will be large enough to begin with, and when the potting is finished they should have a good watering with a rosed pot to settle the soil; they should be plunged at the same time up to the rim in coal ashes, and have 2 inches of ashes under the bottom of the pots to keep out worms. Four inches or 5 inches of litter, leaves, or Cocoa fibre should be placed over the top, covering not only the pots but the spaces between, to keep out frost and to preserve an even state of moisture round the roots. Whatever pruning is necessary to improve the shape of the trees should be done when they are placed under cover, just when the buds are beginning to move early in March. Trees so treated will begin to make roots almost immediately after potting, and by the time they are taken to the house they will be fairly in possession of the new soil, and probably some of them will bear fruit the same summer. The pots may be placed almost close to each other until the young fruit are set and the trees are breaking into growth, and at that time a part may be moved to a sheltered corner in the open air, the pots plunged to maintain a regular state of temperature and moisture. The young growths should be pinched when they have made about six leaves, just taking out the points of the shoots. All the shoots need not be pinched at the same time, but as each shoot requires it, and whatever check is given should be diffused instead of concentrated. All the trees may be plunged in the open air if required, but early Plums are so desirable for dessert, that space, if possible, should be found under cover for a few trees to ripen their crop; afterwards the trees may be exposed to ripen their wood. Abundance of ventilation should be given at all times when the weather is calm and mild, but cold draughts should be guarded against. Plum blossoms are fragile and tender. A dry, buoyant atmosphere should, as far as possible, be maintained when the trees are in blossom; but after the fruit is set the syringe or engine should be used freely to keep down insects and maintain a healthy growing atmosphere. Open the ventilators a little in the morning, gradually increase the openings for the admission of fresh air as the day advances, and on mild, warm days give all the fresh air possible. Close the ventilators at four o'clock to take advantage of the sun's warmth; give a little air, more or less, according to the state of the weather, in the evening, and leave it on all night; but as no glass structures are air-tight, very small openings will suffice in a general way during the night to prevent stagnation. At no time must the trees be permitted to suffer from want of water, and as soon as the fruit is set and swelling nicely, weak liquid manure may be given three times a week; top dressings of short manure will in some cases be beneficial and desirable. If necessary, the clusters of fruit should be thinned to ensure size and flavour. Overcropping invariably leads to debility and insect attacks. If the syringe does not suffice to keep down insects (and, if properly used, in most cases it will), Tobacco fumigation must be resorted to on a still, calm evening—wet evenings are best. Shut the house up closely, damp the paths and floors slightly, but keep the foliage and young fruit quite dry. It is better to fumigate moderately two evenings in succession than to give an overdose, as young, soft growth may receive injury. Use the syringe freely the next morning after fumigating. Whenever the trees require larger pots, shift them in the autumn, but after they are transplanted into 14-inch or 15 inch pots they may be continued in the same for years in a healthy, fertile condition by the aid of rich top-dressing and liquid manure. The pots should be carefully drained as the trees require a good deal of water, and any surplus beyond what the soil can hold in suspension should have a ready means of escape. A collection of Plums may be a source of both pleasure and profit for many years without renewal; indeed, I have always found Plums submit more readily to pot culture than other fruit, with the exception, perhaps, of Figs and Grapes.

The pruning is best done when the trees are taken into the house, and at that time a general dressing up should take place, removing (in trees not requiring repotting) all the surface soil that can be got out of the pots without inflicting injury upon the roots, and filling up the space with rich, turfy loam and manure, ramming it firmly down. The compost should be in a nice, dry, mellow, condition when used, neither wet nor yet dust-dry. In what is termed the winter pruning, the spurs that have been created by summer pinching should be shortened nearly to the point where fruit-buds are being produced, leaving a wood-bud to lead, but there is not so much necessity to observe this rule with Plums as with some kinds of Peaches, as a Plum branch rarely fails to produce a leader. The manipulation of the growth of Plums in pots is very simple, and may be summed up thus: Disbud where the young shoots are too numerous very early, when they can easily be rubbed off with the finger and thumb. Pinch the points out of the young growths when they have made six leaves, and go over the tree, say, twice a week for that purpose. A few minutes will suffice each time. Pinch all lateral growths to one leaf, shorten back the spurt so formed when the trees are brought into the house, keep an eye to the shape of the tree, and, at the same time, fill it full of bearing wood, so that the crop may be distributed equally over its surface. With Plums this is not difficult, as they will break out of the old wood anywhere. In pruning make the cuts short and smooth, and, to accomplish this well, the knife, or whatever instrument is used, must be sharp. I am in favour of the knife for such work, for, although the secateur, or French pruning shears, are excellent instruments for merely cutting through a branch, there are often excrescences on the bark—remains, possibly, of the summer pruning—that should be smoothly trimmed, and this can only be done properly with a knife. All dead spurs or snags that require removal should be cut close to the stem in order to facilitate the healing of the wound, and its ultimate covering over with a new bark. E.

FRUIT CRACKING.

Few things are more perplexing than the cracking of fruit, as even when most of the conditions of cultivation are under control it is not always possible to prevent it. I could never thoroughly master the cracking of the Madresfield Court Grape, but by reducing the supply of moisture to the roots I was able to lessen the evil. At present, however, I am more concerned about Peaches and Nectarines than Grapes, for these crack more or less, and what is to me very singular is that the stones of Peaches crack, but not the skin. In the case of Nectarines it is the skin that cracks, not the stone. Why should this be so? One thing is plain, and that is that although these two fruits are so closely allied, they differ constitutionally, or the same conditions would affect them in the same way. With me the only Peaches which crack are Royal Native, Grosse Mignonne, and Salway; but the means adopted to prevent it (comparative dryness at the roots) are not so efficacious as they are in the case of Nectarines. Amongst the latter Sir C. Napier cracks more than any other sort, and the evil can only be prevented by keeping the roots pretty dry. Half measures, in fact, are of no use in our case. After the fruit has finished stoning we only give the roots just sufficient water to keep the leaves from flagging; even syringing is dispensed with, and attentions such as these must be seen to in good time, for if the skin has but slightly cracked nothing will prevent its extending. There are other sorts of Nectarines which also crack more or less, and the only satisfactory way to prevent it is paying

particular care to the watering. The quantity of water needed by trees to enable them to finish off their fruit, if well supplied up to the time the second swelling commences, is very small, but under comparatively dry treatment the fruits are not so large as those from trees liberally supplied with moisture. The small fruit has, however, often been the best flavoured. I advise all who are liable to have cracked Nectarines to give plenty of water up to the time when the stoning period commences, and then to lessen the quantity considerably; in bad cases syringing of the trees even should be discontinued. In the case of Rivers' Pine-apple Nectarine we are troubled with a good many deformed fruit, the cause of which is not easily traced. It seems clear, however, that the skin is very susceptible of injury, either through pressing against a branch or nail, or a slight bruise from the hammer. In short, wherever the skin is broken, from whatever cause, there will rise large deformed lumps, sometimes as large as a Hazel Nut, which appear to me to be analogous to gumming, and which the moisture from the syringe seems to aggravate, for if the syringing is discontinued the swelling of these nodes stops. The condition of the soil in which the roots are growing, whether wet or dry, has no effect on the affected parts. J. C.

Bud disease on Black Currants.—In Gardening, of 15th November last, I mentioned some facts connected with the bud disease on Black Currant bushes, that seem in some degree to confirm the opinion of "W. E. H.," that it is formed by an insect. The fact that the disease travelled from one end of a row of nine bushes on a wall till it reached the fifth, taking one bush each year, shows apparently that the second bush was infected by the first, and the third by the second, and so on. The bush at the other end showed diseased buds about three years ago, but none have yet appeared on the remaining three. I submitted a few of the diseased buds to a friend some time ago, and he detected, and described on the spot, an insect quite like that mentioned by "W. E. H.," but at the same time I gave him some buds from the bushes that showed no disease, and as he found the insect there also I gave up the idea that it was the cause of the disease. The first means of cure suggested by "W. E. H." was tried by us about twenty years ago. One bush was cut down to near the ground, and it grew again very luxuriantly, but every branch and twig was diseased, and it had to be dug out. Partial cutting and pruning was tried, but with the same result. If the disease can be cured at all I think it will be necessary to adopt some suggestion such as that offered by Miss Ormerod. —P. R.

Watering fruit trees.—Many only water their wall trees and choice standards when the fruit is swelling in summer, but if there is one time more than another when such trees are benefited by artificial waterings of liquid manure it is now, in order to induce the young fruit to swell and stone and to cause the shoots to grow luxuriantly—all advantages of the highest order in producing and maturing perfect crops.—Cambrian.

Peach, Golden Eagle.—This, one of the very best of late Peaches, ripens its fruit in October, and it is one that sets freely both in and out-of-doors. It produces very large fruit, measuring from 9 inches to 10 inches round, and even in some cases more. The colour is a bright lemon, and the flavour is rich and piquant. This variety, although it has been in commerce for several years, has been but little sought after until the last year or two.—C.

Blight on Grape vines.—I am much obliged to "J. M." and "J. C. C." for replying to my query 13304. I am inclined to believe "J. M." is right, for until the building was erected two years ago, I had no trouble whatever with the vines, and had a plentiful supply of fruit. As "J. M." recommends me not to use fire heat, I give a few more particulars of the house and vines, and the treatment I give them, and should like to know if the vines will do well without fire-heat. The glass is in squares, 18 inches wide. The whole of the house is glazed right down to within 4 inches of the ground, sashes open at bottom and top full length of the house for ventilation; the border is 3 feet deep, of good loam, 1 inch bones and manure, subsoil is chalk; border is on a level with outside ground; a trench is cut in chalk for a 4-inch drain, full length of house, but this drain is connected to sewer from the house that the vinery is built against, and does not receive the surplus water from vinery. I thought the trench and chalk subsoil sufficient drainage itself, so did not drain into this. After pruning I have given a top dressing of cow manure, and before starting the vines are painted, house cleaned, and walls limewashed. I give the border a good watering with soft water, with the chill off it; temperature of house at starting is about 40 degs., gradually increasing to 50 and 55 degs. until the bunches show, with top air on fine days. I syringe once a day, give another good soaking six weeks after starting, mulch about every three weeks with short stable manure, stop laterals second joint from front. The rods are about 2 feet 6 inches apart, wires are 12 inches from glass; soft water, same temperature of house, is always used, but just before blooming time the bunches curl up and the berries that should be, rot off as if they shanked. I sprinkle flower of sulphur on the pipes. I have two long open troughs of water for evaporation on the 4-inch pipes. I have also probed the border on several occasions, and find it about the moisture of clay. Top ventilator is opened about ten o'clock in morning and closed about four o'clock. I find there are worms in the manure; does this make any difference to the vines? The hot-water pipes are within 6 inches of each vine rod. The sun shines on the house from end of March to end of September, and I am afraid unless I have fire heat I shall not be able to ripen the wood off properly, in the absence of sun heat after September. I have left off the fire heat entirely now, both day and night.—C. P.

REPLIES.

13391.—**Seedling vines.**—If you wish to fruit your seedling vines as soon as it is possible to do so, you had better let them fruit in pots. Your treatment so far is right. If they are now in small pots get them shifted at once into pots 13 inches in diameter; have them well drained and use a compost of three parts loam and one part rotten manure. They should be trained up under the glass and about 14 inches from it. When they have grown 5 feet long, pinch off the top, which will help to strengthen and swell up the bottom buds. Whether they will fruit next year or not depends entirely on the strength the rods attain this year. In the autumn the canes at 3 feet from the pot should be quite 1 inch in circumference and thoroughly well ripened. There will then be hopes of their showing a few bunches of fruit, but if there is any doubt about their doing so it will be better to cut them down again as soon as all the leaves have fallen, and in February shake off about half the soil from the roots and repot again with fresh soil in the same pots, and continue the same treatment as the year before. If you are in no hurry to see them bear fruit grow them on in pots this season, and next March plant them in a small prepared border, and grow on in the same way as other vines are grown.—J. C. C.

13123.—**Scale destroying Peach trees.**—The scale does not usually do any material damage to Peach trees, unless they have been neglected year after year. The only way to get rid of it is to wash the wood in winter with warm soft soapy water, after the scale has been removed with a flat piece of wood. It appeared simultaneously on six trees in our large orchard-house some years ago. It was carefully removed as advised above when the trees were at rest. It appeared again during summer, but as soon as it was observed we were at it with the warm soapy water, until every tree was clean; and we have seen no scale during the last two or three years.—J. D. E.

12995 and 13340.—**The Cherry Plum.**—I know the Cherry Plum well by that name, though not by that of Skipton. I quite agree with "Mrs. M." as to its unapproachable excellence for cooking or preserving. It is the only Plum I consider worth preserving, the flavour delicious, and the colour beautiful. I never saw a tree, and don't know where it is grown, but when I lived in Leeds I obtained the fruit without difficulty from the fruit shops. It was the earliest Plum that came into the market, and was only to be had for two or three weeks. It is seven years since I left that neighbourhood, but I will make inquiries and endeavour to procure for "Mrs. M." an address at which she can get the fruit.—L. W.

—— After Mr. Clark's kind offer in your issue of April 24th, "Mrs. M." will scarcely require any other assistance. At the proper season I shall, nevertheless, be glad to send her two or three Plums along with the name of the grower. Young trees, I feel certain, growers have not got. I am inclined to fancy "Cherry Plum" is an expansive name, each district locally applying it to a different variety.—Aleph.

13125.—**Apple trees and insects.**—The caterpillars of the winter moth attack the buds of the Apple trees. The wingless females ascend the stems of the trees in November or December, and deposit their eggs on the trees; they are hatched in the spring. A band of old shading, smeared with Stockholm tar, placed round the stem of the trees, will effectually prevent the females from crawling up.—J. D. E.

POULTRY.

MEAT AND EGGS *VERSUS* FEATHERS.

Sir Henry Thompson's admirable letter in your issue of the 11th inst. throws a flood of light upon what I think may fairly be called our national failure in poultry keeping, seeing that we have to import such vast numbers of eggs and fowls, while many of our own farmers are on the road to ruin.

I was one of those who caught the "hen fever" which raged all over the country about 40 years ago. The second summer of my poultry keeping I found it very difficult to dispose of eggs where I lived, in Derbyshire, at five for 2d., and the highest price I ever got in the winter in those days was 1d. each. Yet from and including the second winter, when I had reduced my stock below a dozen, my hens paid well, though food for them was one-third higher in price than it is now, and eggs only half the money. Some five years ago, having taken a house in the country, these facts came forcibly into my mind, and I again began to take an interest in poultry. Visions of "cent. per cent.," which previous experience suggested, under the vastly improved modern conditions, were speedily dispelled. The fowls I had then were chiefly mongrels. I tried pure breeds. Worse and worse. Beautiful white Cochin hens, double the size and double the weight of such as I kept in youth, and eating twice as much food, laid about one-third of the number of eggs. Andalusians, Minorcas, white and brown Leghorns, Hamburghs, Black Spanish, were a great improvement on the Cochins, but not equal to the birds of forty years ago, either for laying or the table. I turned to Redcaps, which I had found as a boy (under the name of "everlasting layers") the best fowls of any, on the whole. To make sure of the right sort I got eggs out of Derbyshire. The fowls, however, were not a success, did not lay nearly so well as formerly, and their eggs were much smaller. The birds had great ugly combs, especially the cocks, which I could not endure to see, so I gave them up. Game fowls had done well for me in youth, particularly in the winter time; but as I could not bring my mind to the modern bird on stilts, I have not tried any. Black Spanish have done as well with me here as any, laying both summer and winter, except in hard frost, and being remarkably hardy, but those I have are somewhat of the old style and and have only moderate-sized white faces and not extravagant combs.

I may say I have not only been disappointed in prize-bred birds, but in so-called laying strains, which have not proved better layers than some others, and have been deficient in constitution, many of them falling ill and dying off. I do not accuse the advertisers of deception, but the conditions under which hens will lay most eggs are not precisely those which will give the best eggs for hatching and produce the best chickens and hens. A lady friend in Workington, who keeps poultry very successfully, gave me last spring a number of eggs from a Black Hamburgh hen, running with a black Spanish cock from my own yard, which had laid 600 eggs in three years, but most of the birds died off, and those left are inferior to the parents. My youthful experience in selling eggs from the very best layers was somewhat similar, so it does not seem that any one point, either economic or fancy, can be pushed to an extreme without ultimate damage and loss. Probably

moderation all round, in number and in size of both fowls and eggs, will be found most profitable in the end.

The most satisfactory poultry keeping I have observed recently has been in dark Brahmas, Plymouth Rocks, and black Spanish. Nearly two years ago, I gave five of the dark Brahma hens to one of my daughters, who has kept a strict account of the food and eggs. They have unlimited range, because they never get into the garden. They laid 527 eggs in the year, and consumed 408lbs. of food, chiefly barley; this amounts to 105 eggs per hen and two over, and, including the male bird, 68lbs of food each. The eggs thus cost about 7d. per dozen. Four of the hens, now in their fourth year, have laid 35 eggs during the last ten days, although they live in a very exposed place on a hill-side. I think if such of your readers as wish to keep fowls for economic qualities chiefly would try to help one another in this object they need not give up pure breeds, nor, indeed, sacrifice any points of real beauty. There is a sort of style about pure-bred fowls which is utterly wanting in cross-breds and mongrels, and I believe we may, by steadily aiming at it, combine beauty with utility as layers and table birds, and have fowls which, like our Brahmas, will be easily kept out of the gardens by any kind of fence 3 feet high, provided they cannot walk through it.

Keswick. HENRY KIRK.

REPLIES.

12971.—**Poultry dying.**—In his reply to this question "Andalusian" expresses the opinion that the rabbit entrails had nothing to do with the fowls dying. I am not quite sure about this. Two years ago I had about 5 or 6 acres of grass and woodland wired round, in order to keep a few rabbits for shooting. Subsequently I used the enclosure for poultry as well. Soon after I began shooting the rabbits last autumn, the hens began dying, and I suppose I have lost about twenty, all presenting symptoms of lead poisoning, and every gizzard examined after death containing shot. Speaking on the subject to an old gamekeeper about a fortnight ago, he told me that he once lost a lot of birds in consequence of giving them rabbit "cleanings," from which they picked out the shot. Lead palsy primarily affects the extensor muscles of the wrist in the human subject, and is known to painters, plumbers, &c., as "wrist-drop;" in the fowl the legs are usually the first to suffer, soon afterwards the neck becomes affected, and the head droops, the comb being mostly of a dark red or livid hue.—ROBERT KING.

12969.—**Specks in eggs.**—If carbolic acid powder were sprinkled in the poultry house and nests the specks in eggs would soon disappear; they are simply caused by fleas. The powder destroys them, and the hens are not in the least affected by it; and rats also dislike the smell of it.—LEGHORN.

BIRDS.

13490.—**Breeding budgerigars.**—Will "Berwickshire" kindly tell me how the box nest made by Groom can be obtained? Does he make them for sale? What material do the birds require for their nest?—STAFFORDSHIRE.

13491.—**Cardinal bird getting bald.**—"Comrie" has a red cardinal bird (Virginia nightingale), who moulted last autumn, and was in perfect plumage till Christmas, when a bare speck appeared on one cheek, which has gradually spread till he is nearly bald, having lost all his black throat feathers and crest. He is in good health otherwise. He is fed on seed, and on flies, spiders, and any grubs. Can the reason for this loss of feathers and any cure be given to—COMRIE?

13276.—**Food for Greenfinches.**—The Greenfinch, or Green Linnet, is a seed-eating bird, and in a cage, should be fed on canary, "hird Turnip" (German sweet) summer Rape), and occasionally a little Hemp seed. For green food give Lettuce, Chickweed, and Cabbage.—B. J.

How to succeed.—In order to be successful in raising garden crops, occupy no more ground than you can make rich and cultivate thoroughly. A fourth of an acre, well fertilised and kept clean, will give more returns in quantity, and incomparably better in quality, than an entire acre of poor land, neglected and infested with weeds. We have urged for many years the importance of cultivating vegetable gardens with a horse, as it may be done with one-tenth the labour as well as much better than by hand. Make the garden oblong, so that rows of crops may extend the longest way, and the horse may turn about at the ends on 10 feet vacant space.—*Country Gentleman.*

THE VILLA GARDEN.

(Continued from page 101.)

The Onion.

THIS chapter might be divided into two sections—first, the autumn or winter crop, and, secondly, the spring-sown Onion. Taking the first section in the order set down,

THE WINTER ONIONS

Are commonly confined to the Tripoli section; but this is by no means necessary, as the White Spanish, the Globe, and all the best keeping varieties will succeed just as well sown in autumn as the Tripoli. Indeed, wherever the Onion maggot is very troublesome I should strongly recommend autumn sowing to get the plants in advance of the maggots. I have sown this class of Onions from the 1st of August to the 10th of September, and I don't think any hard or fast line should be laid down, as the climate varies so much, and the character of the season should be taken into account; but somewhere about the middle of August will be a good time. Sow on rather firm land. I mean land that has not been recently dug with spade or fork. The surface may be deeply hoed or scuffled over with some suitable tool, and, of course, it should be in good heart, but a top-dressing of soot, salt, and superphosphate may be given with advantage when the stirring of the surface takes place. Sow in drills from 9 inches to 12 inches apart, and keep free from weeds through the autumn and winter.

TRANSPLANTING

May take place any time during February or March, but the earlier the better provided the land is in good condition; in fact, the preparation of the land is very important, for to grow large Onions of mild flavour the land must be rich, and it should at the same time be firm if the bulbs are to ripen perfectly. The best plan is to wheel on a good dressing of manure in December, not later, if possible, and ridge the ground up roughly immediately after. If there has been any injury from maggots or fungi during previous years, give the land a good dressing of salt, soot, and lime in something like the following proportions:—5 bushels of soot, 5 bushels of lime, and 56 lb. of salt, the whole to be thoroughly mixed and blended together, and laid in a heap to amalgamate a month or so before using. This quantity will be sufficient for a bed 4 rods or perches in extent. The quantity can be increased or diminished to suit different-sized plots, and after the ridges are forked down, towards the middle of January, the mixture should be spread over the surface and lightly forked in, and the land left exposed to the benefits of the weather till it is convenient to plant. To obtain very fine Onions the plants should have room. It is true I have seen good Onions grown where scarcely any thinning had been done, and some people might infer from that that thinning was rather a disadvantage than otherwise. But experience over a long series of years will tell us that thinning spring Onions to 3 inches or 4 inches apart on the bed, and allowing such large winter kinds as Giant Rocco 6 inches of space, is a requisite of good culture. If the surface of the land is dry it can scarcely be made too firm either for sowing or planting. The roots must all be covered, but the stem should not be buried too deep in the soil.

SOWING THE SPRING ONIONS.

In the preparation of the ground the same thoroughness is necessary as was recommended for the transplanted winter crop, and the dressing of salt, soot, and lime during the winter preparation should not be omitted, as it has great value in clearing the land from fungus spores and the chrysalis of the Onion fly. It is not wise to lay down any special rules about the time to sow, as it is more important to get the land into the right condition than to sow on any particular day; at the same time, there should be no unnecessary delay after the first week in March, as the season of growth is a short one, and unless they are started as early as can be done with safety the bulbs must be small, as the growth will cease when the hot weather comes in August, if not before. In unfavourable situations the seeds may be sown as late as the end of March with success. The best way is to draw drills from 9 inches to 12 inches apart and half-an-inch deep, to scatter the seeds evenly and not too thickly along the drills, and to cover afterwards with the feet and tread in. In difficult situations and seasons I have covered the seeds with the compost saved from the clearing up of the rubbish heap, including ashes and burnt earth, which form a part of the heap. I always save the best of this material for covering seeds. It is passed through a sieve, to take out stones and the remains of sticks, &c., and is excellent for covering Onions, Carrots, Parsnips, and Turnips in a difficult time.

THINNING THE CROP.

This should be done as soon as the plants are large enough, and they can be drawn out easily without loosening those intended to remain for the crop. It is not so well to have the plants too thick on the ground, yet there should be a power of selection to make the most of the land, as if we take any given number of seeds a certain proportion of them, under equal conditions, will grow larger than the remainder, and if we can keep those which are inherently great, we shall obtain the best possible crop that circumstances permit of. The distances between the bulbs need not be uniform. The practised eye will form an opinion promptly as to the capabilities of each plant from the leaves, and it would be wasteful to leave a plant 6 inches of space which could only profitably occupy 3 inches. The thinning will be best done in showery weather, as any loosening of the plants will then be less hurtful to them.

THE SUMMER MANAGEMENT

Will consist chiefly in keeping down weeds, and to do this well they should be attended to when the weeds are small. Hoeing will do the greater part of the work in the early life of the plants; but later on, when the tops are meeting, weeding will be better than too much hoeing, as the hoe, if used roughly, may injure the plants. Nitrate of soda, 5 or 6 pounds to the rod, is a good top-dressing for the Onion during its season of growth, and it may be given in showery weather any time. It will assist the plants in escaping from the maggot, should it attack them.

HARVESTING.

When the usual indication of a cessation of growth (a drooping stem) appears, all stems which are not falling over naturally should be bent down to facilitate the ripening of the bulbs. And when growth has finished the bulbs should be pulled up and laid out in the sun to complete the ripening, when, in due course, they should be stored. All having stems long enough to tie into bunches should be so treated, and hung up in a cool, airy shed; if kept dry, cold will not injure them—indeed, the late kinds can hardly be kept too cool if well ripened. Those not long enough to tie up may be laid thinly on shelves in a cool place, or some of them, if there are many, may be pitted like Potatoes. If they have a good cover of straw, they will keep well in this way a long time.

DISEASE AND INSECTS.

The chief ailments of the Onion plant are mildew and maggots. The first sometimes after a severe drought attacks the tops and stops the growth, and it also sometimes attacks the roots and works upwards. In either case the best remedy is the dressing of salt, soot, and lime, prepared in the way I have suggested, in winter, and again in spring after the Onions are up. This dressing will also be benefical in the case of the maggot attacking. Its action is chiefly preventive, as nothing can save a plant when the maggot once works its way into the bulb. The larvæ of the Onion fly lie in the ground all the winter, and the dressing recommended will tend to destroy them. Gas lime in small quantities may be useful for the same purpose. About the middle of April all those chrysalises which have escaped come out as perfect flies, and soon begin to lay their eggs on the stems and leaves of the plants, and in this condition many might be found and destroyed if sought for, either picking them off or adopting the readier plan of crushing them between the fingers. All infected Onions should be pulled up and destroyed, to make sure of destroying the maggots which they contain.

VARIETIES. — Magnum Bonum, Cantello's Prize, The Banbury, Danver's Early Yellow, James Keeping, Nuneham Park, Giant Zittau, Giant Rocco, and the Queen.

E. HOBDAY.

HOUSEHOLD.

VEGETABLE COOKERY.—V.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

VEGETABLE food is more necessary for the preservation of health and vigour during the spring time of the year than at any other period; and one kind that is at that season cheap and easily procured (but, alas! too often wasted) is that most estimable dish, Turnip-tops. Not only do these constitute a valuable vegetable food, but they are frequently given and taken as a blood purifier. As the season for this wholesome vegetable is of but short duration, the shoots should be carefully watched during growth, and the tops gathered for use before they flower, or become strong and stringy. The shoots of the white Turnip plants have a slightly bitter flavour, which may be lessened by changing the water two or three times during the process of cooking, or by placing a crust of bread in the pan of boiling water with the Turnip-tops. The shoots of the Swedish Turnips yield a sweet and pleasant flavour when quite young, and are a favourite vegetable with most children.

TURNIP-TOPS PLAINLY BOILED. — Provide some freshly gathered and young shoots, remove any hard stalk and imperfect or discoloured leaves, and as each shoot is thus picked throw it into a large pan of cold spring water containing a little vinegar; this will effectually draw out any insects, slugs, &c., that may be secreted within the folds of the leaves. When well washed rinse again in fresh cold water, drain well, plunge into a large pan containing an abundance of boiling water and salt, and let all boil very fast with the lid off the pan for about 20 minutes. Drain and squeeze away as much as possible of the water, chop very fine, return to the saucepan with a small piece of butter, pepper and salt to taste; stir with a fork until quite hot, pile high in the centre of a hot dish and serve very hot.

TURNIP-TOPS WITH POACHED EGGS.—Prepare and cook some young Turnip-tops as directed in the previous recipe, and when the water is well squeezed away, chop them finely and remove any stringy or fibrous morsels. To one pint of Turnip-tops thus prepared allow one ounce of butter, one tablespoonful of white wine vinegar, pepper and salt to taste, and four new-laid eggs. Melt the butter in a saucepan and add to it the pepper, salt, and chopped Turnip-tops with the vinegar; stir over the fire until the mixture reaches boiling point, turn on to a very hot dish, upon which has been previously placed a slice of hot buttered toast. Lay the poached eggs evenly upon the Turnip-tops, and serve as hot as possible.

To poach the eggs.—Have a shallow pan containing boiling water with salt and a very little vinegar. The acid of the vinegar assists in the rapid coagulation of the white of egg, and so prevents the yolk from straggling into an ugly and irregular shape when plunged into the water. Break each egg separately into a cup or small vessel; and when the water is rapidly boiling, turn the egg quickly into it. This must be cleverly performed so as to keep the yolk well surrounded with the white, or the appearance of the dish will be spoiled. Take care that the water is boiling again before each one of the other eggs is added. About two and a-half or three minutes will be found long enough to poach an egg, and when cooked each one should be lifted from the boiling water with a slice, so that all the water may be drained away before the egg is placed upon the mixture with which it is to be served.

A CASSEROLE OF TURNIP-TOPS.—Secure some very fresh, young, and green Turnip shoots, prepare and cook them until quite tender. Chop them small, and take away any fibrous parts. Allow one pint of the vegetable thus prepared to one-third of a pint of very fine bread crumbs, cayenne pepper and salt to taste, a pinch of nutmeg, the juice of one large lemon, or a tablespoonful of white wine vinegar, 1 oz. of butter, and three eggs. Melt the butter and add it to the chopped Turnip-tops, with the bread crumbs and seasonings; next stir in the yolks of the eggs, put the whites upon a plate, or in a clean, dry basin, and whip them briskly until they form a stiff froth; stir these lightly into the vegetable mixture, with two tablespoonfuls of cream, and pour it into a well-greased casserole mould. Cover with a greased paper, and steam for thirty-five minutes, turn on to a hot dish, and servo with stewed maccaroni in the centre of the casserole.

To stew the maccaroni.—Take a quarter of a pound of the large pipe maccaroni, break it into pieces about 1 inch in length, and plunge into a saucepan of hot stock or broth, and let it cook gently by the side of the fire without a lid on the pan, until the maccaroni is quite soft and well swollen; to insure this being well cooked care must be taken always to keep the maccaroni well covered with stock, otherwise it will become dry and uneatable. When quite cooked drain the maccaroni from the stock and serve as directed.

TO UTILISE ANY REMAINS OF COLD AND COOKED TURNIP-TOPS.—Mix the Turnip-tops with half the quantity of fine bread crumbs, a small piece of butter, a very little vinegar, pepper and salt. Mix all well together, form into small balls or cakes, toss each one lightly in flour, and then fry for about five minutes in some hot fat or dripping; drain on porous paper and serve hot. Potatoes cooked and mashed may be substituted for bread crumbs when more convenient. To modify the bitterness of the Turnip-tops a good plan is to cook Sprouts, or any kind of Cabbage, with the same amount of Turnip shoots, and treat them in the same manner as if all of one kind.

DO PIGS PAY?

GARDENING and pig-keeping go together a good deal more than appears at first sight where vegetables are grown, but in my case there is no further connection than is made by the use of the manure from the sty for my Roses The soil of my garden being of a well-drained, sandy (and consequently hot) nature, and pig manure being notoriously cold and strong, a fine blend is the result. From time to time I have been so much interested by the remarks and statistics of Mr. Vaux on the question of "Do pigs pay?" that I determined to try the experiment for myself. On January 5th I purchased a young pig for £1 4s., and fed him from that time until April 13th, when he was killed. The green weight of the pig, all meat, without leaf, heart, liver, &c., was 9st. 9½lb., at 14lb. to the stone. This meat cost me in cash a fraction over 5½d. per pound, and had I sold it as pork I could have got from 7d. to 10d. per pound for it, and made a profit of 3½s. on a small pig kept only three months; but I prefer to cure it and enjoy a little bacon and ham of my own feeding, for I appeal to your readers whether anything one does one's-self is not particularly sweet. True, it had a present made of all the scraps from the house, which went into a savoury (from piggy's point of view) *pot-pourri*, called a swill-tub; but then I made him return the kindness by presenting me with a good cart-load of manure, so we cry "quits." Thanks to Mr. Vaux, my first essay, which I had reckoned on being a failure is so far satisfactory that I intend to run two young pigs together till nearly Christmas, and if a further success, then two more to March. These must be more profitable than the last, for I handicapped myself in my tentative experiment in several ways. Firstly, I gave a connoisseur 2s. 6d. to select my pig; secondly, it was about eight weeks older than it should have been for its size; thirdly, I got it two months later in the season than I should have done, and fourthly, I debited it with an assumed rent of 3d. per week for the sty, and 4d. per week to a boy's attendance, besides 6d. per week for clean straw. Now I can, I think, select two myself, and as two being company urge each other on to eat and thrive better than one does, the same assumed rent, straw, and attendance will suffice, with a yield of an additional quantity of manure. On the whole, I advise those who have a spare corner to run up a sty and try for themselves on the lines occasionally laid down in your columns. With rational *modus operandi* in feeding, there is little doubt of a reasonable amount of success and profit. Cleanliness, food three times a-day at exact stated times, good in quality rather than copious in quantity, along with the master's eye, so necessary to a thriving pig—these are chief amongst the requirements of success.—R. A. H. G., *Horsforth, near Leeds.*

—— Perhaps the following account of the experience of a small household, in answer to "J. E. V., Crondall," may be interesting to some of the readers of GARDENING. This is the record of the fifth year of our experience. The price of the hams—viz., estimated at 1s. per pound—is less than equally good ones can be purchased for wherever I have been, and the quality is superior. Purchase of pig in April, 1884, £1 10s. 9d.; straw, bran, sharps, Pea-flour, butcher, and curing expenses, garden stuff and house wash, £7 11s. 9d.—£8 12s. 6d. December 29, weight of pig, 17½ score (350 pounds)—290 pounds bacon and pork at 8d., £9 13s. 4d.; 60 pounds ham at 1s., £3; 12 pounds lard at 10d., 10s.; 3 tons of manure, 15s.—£13 18s. 4d.; profit, £5 5s. 10d.—J. N. L., *The Midlands.*

—— Your correspondent, J. Edward Vaux, invites remarks upon his article under above head. I beg to observe he makes no charge for labour. My belief is that the looking after his three pigs would take up on an average one hour a day of his gardener's time. Say it takes an hour a day for only 180 days, it amounts, at 4d. an hour, to £3. As well might "J. E. V." ask if his vegetable garden pays, and leave out of account gardener's wages. The above remark will apply equally to poultry and bee-keeping if you go into the question of profit or loss.—T. O., *Bitton.*

13124.—Law as to removing fruit trees.—I believe tenants cannot legally remove fruit trees from a garden on leaving. It is an injustice to the tenant to be prevented from taking with him a few trees that he has but recently planted. Probably the landlord would grant permission for it to be done. I fancy such things as Roses could be removed legally. Just and honourable men act in a spirit of fairness when they are legally permitted to act otherwise.—J. D. E.

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GARDENING ILLUSTRATED.

Vol. VII. MAY 16, 1885. No. 323.

TREES AND SHRUBS.

A GRACEFUL LAWN TREE (THE LAWSON CYPRESS).

No better proof of the value of the Lawson Cypress is required than the fact that it is annually raised in Britain from home-grown seeds in thousands, and is to be met with almost everywhere—here as a single specimen of almost unrivalled grace and beauty, there in groups, or adding variety to the shrubbery, and often forming ornamental hedges. Its proper place is as an evergreen decorative plant, and as such it has, at least among Cypresses, few if any equals. Being perfectly hardy and not too particular as to soil, it luxuriates almost everywhere, but prefers a heavy damp soil to a light or dry sandy one. In the latter it is sometimes subject to premature sickness of the leaves, and, ultimately, defoliation. It should be sheltered from cutting winds. As a cheap and effective hedge plant it has few equals. Its shade of green is more cheerful than that of most plants devoted to such a purpose, and its gracefully recurved, feather-like branchlets form a pleasing relief to the rigid shoots of the Holly and even the Yew. There are several green and variegated varieties in cultivation, and among the best are :—*Green:* C. L. erecta viridis, argentea, gracilissima, and nana. *Self-coloured and variegated:* C. L. lutea, pyramidalis alba spica, alba variegata, and aurea variegata.

R. W.

A graceful lawn tree (Cupressus Lawsoniana).

Aucuba Berries.—Aucubas, well covered with fruit, are very handsome shrubs, and well repay the trouble of fertilising, which is really very slight, and the plants are much more certain to bear berries when the pollen is applied by hand than if it is left to insects and the wind. The pollen from the male flowers may easily be collected by brushing it on to a sheet of paper with a camel's-hair brush, and can be kept if the female flowers are not open until they are. If they are then touched with a brush covered with the pollen, so that a few grains are left on each flower (which is very quickly done), a good crop of berries will be the result.—G. S. S.

Apples in shrubberies.—Those wishing, as many must wish, to plant beautiful flowering Apple trees in their shrubberies and on their lawns should not forget the Golden Spire. It flowers and bears every year, but it is for the foliage that it is particularly valuable. It is quite distinct in growth, and, indeed, peculiar, having a willowy appearance.—L. A. K.

13458.—**Destroying ants.**—Since we have taken to pouring paraffin in the runs of ants, or anywhere where they congregate, we have had no difficulty in driving them away; of course we do not let the paraffin touch the leaves or the roots of plants.—J. C. C.

13400.—**Liquid manure.**—The droppings from fowls is almost, if not quite, as strong as guano; it would not be safe to use more than 2 ounces to the gallon of water. Use it as soon as it is collected. Perhaps the best way to treat it is to mix up a peck of it in a butt of water, stir it well up, and let it stand for twelve hours to settle. It may be diluted to any extent with clear water before using it.—J. D. E.

ROSES.

Rose, Isabella Sprunt.—At page 115 in Gardening a correspondent gives a very interesting account of a plant of this Rose which he has in a pot. I say it is interesting because it clearly shows how much pleasure amateurs may get out of Tea Roses grown in pots with only the most common-place management. The variety above-named, and Letty Coles, Madame Falcot, President, David Pradel, and Marie Van Houtte, may be made to flower more or less three times a year; all that they want is a greenhouse to shelter them during the winter, and in the summer to have a warm sheltered corner out-of-doors. As a matter of course they will want careful watering, and they would be all the better if they had regular supplies of liquid manure, and the most convenient liquid manure for amateurs to use is guano; if this is used through the spring and summer months at the rate of half an ounce of guano to one gallon of water once a week, the plants will be kept in good health; and when they get into pots 8 inches in diameter, they will not require fresh potting more than once in two years. None of these Roses require much pruning; as they go out of flower the shoots may be shortened back a few inches, and where they are getting crowded the weakest and oldest branches may be cut; but severe pruning will diminish the number of flowers.—J. C. C.

Miniature Roses, though not very striking or brilliant, are in their way agreeable companions in the Rose garden or grown in pots under glass. The white variety, named Paraquette, is a fairly vigorous grower, and flowers freely, the blossoms being full, and remarkable for the delicate tone that pervades them. The variety Polyantha is not quite so strong a grower, but its blossoms are produced as freely. They are of a light pink colour, very full, and exceedingly pretty in the bud state. Polyantha Mignonette does not differ materially from the last named. Little Pet is very correctly named, being quite a miniature Rose bush. Add to the above the little crimson-flowered variety, and the list of these pigmy Roses is exhausted. No collection should be without the one bearing crimson flowers, as it is as distinct as any with which I am acquainted. I should say these miniature Roses would make capital edging plants for beds in which are planted the larger-growing sorts.—J.C.

REPLIES.

13235.—**Roses for pit.**—Six Teas for pots: Gloire de Dijon, Homère, Isabella Sprunt, Catherine Mermet, Niphetos, Madame Falcot. Two Hybrid Perpetuals: Etienne Levet and John Hopper. Plenty of other H.P.'s equally good might be selected. Moss: Blanche Moreau (Perpetual Moss). There is a small Moss Rose called Little Gem, valuable for pot culture (though not perpetual). Roses may be obtained now in pots from all the Rose nurseries, but I would rather buy strong plants from the open ground in autumn (November). Pot them at once in good-sized pots, and tie down the shoots to the edge of the pots, only pruning off the soft ends, and plunge the pots in leaves. Keep cool all the winter and most of the eyes will break, and large plants may be obtained in one year.—E. Hobday.

13434.—**Summer treatment of Tea Roses in pots.**—Let your plants remain in the frame until all the flowers fade, but give them plenty of air and shade from very bright sunshine, or the flowers will be quickly over. As soon as all the blossoms are gone take the plants from the frame and plunge the pots to their rims in a warm, sheltered corner. Give them water at the roots as often as they require it, and if the plants are otherwise healthy they will be bristling with flower-buds again in August or September.—J. C. C.

13287.—**Artificial manure for Roses.**—There is no necessity for purchasing old rotten manure for any garden. Amateurs should understand that the proper system of gardening is to screen off part of the garden by climbers or shrubbery, and there have the indispensable frames, hot-beds, potting-shed, composts, and manure heaps. Fresh dung from the stable and cowshed should be purchased every year early in spring, and used for a hot-bed, after which it can be laid up in a heap until autumn, when it will suit most plants. For Roses manure should be purchased in autumn and dug in in spring. There can be no possible difficulty about purchasing manure in or near towns, and it is simply absurd for any amateur to say he cannot procure it. In the country it is sometimes

difficult to get, and there may occasionally be some excuse for the use of artificial manures. Next to stable dung, the manure from patent earth closets and house slops are the most useful, and after that the emptyings of cesspools. Artificial manures mostly act as stimulants and enable the plants to assimilate whatever food is within their reach. They are useful for vegetable crops and pot plants, and for border plants, as stimulants; but the general opinion among gardeners is in favour of stable and cowshed manure in the ratio of almost all to nothing for general use in the flower garden. genuine Peruvian guano is a very useful stimulant for Roses to throw strength and substance into the blooms, but, as a food, only useful as a help to plentiful dressings of stable manure and house slops.—J. D.

13394.—Treatment of Marechal Niel Rose.—Unless your Rose tree has filled the space allotted to it, it ought not to be pruned now, but allowed to grow its own way. A healthy vigorous plant will generally give some flowers towards the close of the summer, but nothing will he gained in that direction by pruning now, as yours is a young plant. In the case of older plants that have become thick with growth, it is sometimes advisable to thin out a few old and exhausted branches to give room for younger wood. In a general way this Rose should only be pruned once a year, and the time should be November.—J. C. C.

13239.—Stunted Rose trees.—From the want of information, it is very difficult to say why the Roses have failed. Light, sandy soil is not the best for Roses. In soil of that kind they require a great deal of water. Perhaps they have not had enough; and in fine weather they should have side as well as top air. If the Roses are planted in good soil, well drained, and freely watered when necessary, they must succeed, if they are kept free from green fly and mildew.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, May 18th to 23rd.

Sowing British Queen, Ne Plus Ultra, and Omega Peas. Potting on large Tomatoes for fruiting in pots. Planting out a three-light frame with Telegraph Cucumbers, and one with Green-fleshed Melons. Mulching late Strawberries with chaff cut from stable litter. Clearing off Broccoli stumps, manuring the ground, and getting it dug up for another crop. Sowing Canadian Wonder French Beans, and Early Snowball and Strap-leaf Turnips. Planting out Celery. Potting on double Petunias and Tricolor Pelargoniums. Pricking off Celery and Broccoli plants. Planting out Leeks in deep drills. Looking over Seakale beds and thinning out the crowns. Tying up Brown Cos Lettuces to blanch. Weeding walks, and hoeing amongst all growing crops. Potting on Pelargoniums of sorts for autumn and winter blooming. Pricking off Stocks, Asters and double German Wallflowers. Looking over the Asparagus beds regularly, and keeping them closely cut down. Nailing and tying in the young shoots on Rose walls, and washing them where required with Quassia-chip water to kill green fly. Earthing up Potatoes that require it, and renovating the linings round manure frames. Sowing Early Horn Carrots for drawing young. Planting out Early Dwarf Ulm Savoys. Looking over the Peach trees and disbudding where required, picking off curled leaves, and keeping them well syringed to keep down insects. Sowing Mignonette in pots. Planting out Pelargoniums and other bedding plants; also Autumn Giant and Self protecting Cauliflower plants in deep drills. Thinning out Beet, Onions, Carrots, and Parsnips, and running the Dutch hoe between the drills.

Glasshouses.

Epacrises that after blooming had their shoots cut well back, and have now made some growth, should be moved into pots a size larger, but it is well to bear in mind that none of the varieties can bear so much root-room as many things; they are very impatient of the soil getting too wet, which is more likely to happen in the case of large than in that of small pots; a 2-inch shift is quite enough for any that are already in from 6-inch to 10 inch pots. Epacrises will do with peat somewhat close in texture; but it must have a liberal addition of sand in it, for if at all of a spongy character, so as to have a tendency to hold water, the roots are sure to perish. Pot hard, and do not give water sooner after potting than is absolutely necessary, and it is well to see that the roots are sufficiently moistened before potting. The liability which these plants have to die suddenly when they appear in the best of health, and there is no apparent cause, is in most cases attributable to too much water at the roots; before water is given they should be allowed to get drier than Heaths. If the young soft shoots droop slightly previous to its being applied it rarely follows that much harm is done. A slight sprinkling with the syringe on the afternoons of bright days will be an advantage.

Azaleas are most accommodating plants, for with sufficient stock and a suitable selection of kinds that have a natural disposition to bloom early, with others to follow and some that will bear being kept back, there is no difficulty in keeping up a succession from the latter end of the year until the middle of summer; but to do this it is necessary to vary the season of growth, encouraging the plants that bloomed earliest to make and complete their growth correspondingly early. Where considerable quantities of these flowers are wanted for cutting there is much gained by keeping them warm, as so managed the season's shoots attain double the length they otherwise would do, and can be used so much longer when cut, an advantage which those who have floral decorations to arrange cannot fail to appreciate. An intermediate temperature, with a moist, moderately confined atmosphere, secured by not giving too much air, and this only for some six or eight hours in the day, is what they like. They ought to be freely syringed daily to keep down thrips and red spider. When those that flowered first have set their buds and got the current season's shoots well matured, they should be removed to a house or pit, where they can be given a plentiful supply of air, so as to be quite cool. Those that have recently bloomed should at once have the seed vessels picked off, and be treated in the same way. R. T.

Lapagerias.—These fine greenhouse climbing plants are to some extent exceptional in their requirements. If grown in houses where more warmth is used than is necessary to keep out frost, they are excited to earlier growth, and under such circumstances I have found the young shoots and leaves very impatient of exposure to the full force of the sun, which not unusually has the effect of stopping the shoots from attaining their full growth, and of causing the leaves to be deformed. Any aspect seems to suit these plants better than the south, but they do not flower freely in too dark a position. Now, while the young growth is in its tenderest condition, a thin shade of some kind should be applied, and the soil should he kept well moistened, especially if the plants are grown in pots or tubs and the roots fully occupy the soil; but where small or medium-sized examples have been recently turned out in beds of considerable extent, the earth must not be made too wet, otherwise it will get into a soddened condition, under which the plants do not thrive. Syringe every afternoon for thrips. B.

Cyclamens.—Young stocks of these raised from seed sown last summer will now require especial attention. If they are to he well bloomed in fifteen or sixteen months after the seed is sown, no time must be lost. The best results are obtained by keeping them growing without rest in an intermediate temperature. When the sun has got much power, they must not he fully exposed to it, or they will not grow kindly, the leaves never attaining their full size, and being much more susceptible than they otherwise would be to attacks from red spider. See that the soil is kept pretty moist; any that were sown late and are not yet removed from the pots or pans in which they were pricked out should at once he put into small pots. Plants that have done flowering should he got together and placed in a pit or house where they can be properly attended to with water; the system of drying them off is altogether opposed to their well-being. Means ought to be taken to keep them free from insects, so as to preserve the old leaves in healthy condition. By this means when the time comes for their pushing up a fresh crop of foliage they will be much more vigorous, and bloom again better.

Large-flowered and fancy Pelargoniums.—It is well to see that plants of these coming into flower are free from aphides; if not, they should be fumigated twice within six or eight days, for if fumigation has to be resorted to when the flowers are expanded, it will cause the blooms to drop in quantity. These, as well as Calceolarias now in flower, should be shaded from the sun, or their flowers will fall quickly. If a few cuttings of Pelargoniums are at the present time put in to strike, they will be good plants by the autumn, and will make large, bushy specimens before the time of flowering next spring. Such cuttings can generally be obtained from the plants that are about to flower without waiting until the usual time of cutting down after they have done blooming.

Bouvardias.—The young plants struck from cuttings in the winter, whether to he grown through the summer in pots or planted out in frames, should be attended to in the way of stopping the shoots to prevent their getting long and straggling; the close-habited B. Vreelandi grows bushy naturally. Do not let any small stock of these suffer through confinement of the roots in little pots, as if this happens they get into a stunted state. Where there is a large conservatory to furnish, some of the old plants that have been cut back may with advantage he grown on to a considerable size, as if given plenty of root space, say 12-inch or 13-inch pots, and the points of the shoots pinched in once or twice between this and the end of June, they will make large bushes that will bear a profusion of bloom through the latter part of the summer.

Fuchsias.—Those not wanted to come in until late should not he exposed to the sun more than is necessary to keep their growth stout, otherwise it is difficult to get them to grow much, so inclined are they to bloom after this time. Pinching the points once more of the shoots of the latter portion of the stock helps to retard the flowering, but the plants so treated must have pots large enough to give them an increase of root room, or they will not bloom strongly. Let the whole stock be frequently well syringed. This is necessary to keep down both aphides and red spider. T.

Flower Garden.

Bedding out.—With the exception of the most tender, such as Coleus and Alternantheras, all kinds of summer bedding plants may now be planted, and in arranging them the less elaborate the designs, and the quieter the colouring, the greater and more lasting will be the enjoyment of the garden. Another thing to avoid in the arrangements is excessive formality or flatness; this is easily prevented by using at regular intervals over the beds such kinds of standard plants as will best harmonise with the other plants in the beds, such as, for instance, standard variegated Abutilons in a bed of scarlet Pelargoniums, or the Fish-bone Thistle as a centre to a small circle of Lobelias, or standard Fuchsias in beds of dwarf-foliaged plants. These examples will suggest others, the only point to he born in mind in selecting these standards being that they contrast in both colour and habit with the plants forming the groundwork of the bed. Yuccas, Australian Dracænas, Grevilleas, tree Sempervivums, and Acacia lophantha are all suitable for this purpose. Taking into account the shortness of our summer season and the consequent transitory character of flower gardening when tender plants are used, every effort should be made to do without this section, or at all events to use them as sparingly as possihle. Unfortunately, the rich chocolate colour which we get in Coleus, and the bright purple and orange in Alternantheras, are not to be had in hardy plants; hence, if we must have these colours, and they are all but indispensable, we have no choice in the matter. Used in moderate proportion to other kinds of hedding plants succulents form an interesting feature in summer flower gardens; under no circumstances, however, should they he mixed with Pelargoniums, Petunias, &c., but only with nearly allied plants, such as Mesembryanthemums, Kleinias, Sedums, and Echeverias.

General work.—Weeding, and filling up vacancies, and tying up plants in mixed herbaceous horders, thinning out and planting out annuals and biennials, such as Stocks, Asters, Phloxes, Wallflowers, Pentstemons, Antirrhinums, and Aquilegias, and the planting out of spring bedding plants and those that have been forced for cut flowers, are operations all of which must now receive attention. Indoors the principal work is giving abundant space to sub-tropicals, and moving out to sheltered spots all those that can safely he risked out, giving Alternantheras and Coleus full exposure to the atmosphere whenever the weather is favourable. W. W.

Fruit.

Late and mid-season vines. — All the best winter and early spring kinds may have a temperature of 70 degs. to 75 degs. by night until after the fruit is set, when 65 degs. to

68 degs. by night, and 80 degs. to 85 degs. by day, with a flush of sunheat after closing, will keep them well in advance of the season, and allow time for cooler night treatment, by the admission of more air when the Grapes begin to colour. If Hamburghs are not likely to be in flower when shy setters require artificial fertilisation, a good supply of pollen may now be shaken into a box, which must be kept in a dry, warm place until it is wanted for use. Endeavour to keep the work well in hand in mid-season houses in which the vines are now making rapid progress. Remove all surplus bunches from free setting kinds, discontinue stopping during the time they are in flower, and take advantage of early morning and dull days for thinning out the berries as soon as those which are properly set show signs of taking the lead. When all the bunches are thinned, give the inside borders a thorough watering with tepid liquid, mulch well with good manure, and encourage robust growth by giving plenty of air through the early part of the day, and by closing with sunheat and moisture every afternoon.

Early vines.—Early Grapes now ripe, or approaching that stage, may have less fire-heat than they have hitherto received, but they must have sufficient to keep up a circulation of dry, warm air, and to prevent the temperature from falling much below 60 degs. at night. Gradually reduce moisture, particularly towards night, but damp the walls and floors on fine mornings, and syringe the foliage copiously as the crop is cleared for the twofold purpose of cleansing it from dust and insects, and of inducing a fresh break of laterals.

Vegetables.

Early Celery is now being planted. Early Potatoes should be carefully hoed and earthed up at once. Fill up all vacancies in Seakale beds. What we use for this purpose are the roots of those taken up for forcing; cut them into 6-inch lengths and plant them in good soil, and every piece will become a plant. Be careful to rub all the eyes away but two. These root cuttings make fine strong plants during the summer. The first fine day go through Onions, Carrots, Parsnips, &c. Asparagus beds will be greatly benefited by a small sowing of salt on the surface. I never saw salt injure Asparagus after the tops appear. It, however, kills all seedling weeds, and keeps the beds clean for the summer. Sow Scarlet Runners now in shallow drills 6 feet apart, and cover with burnt refuse. Early Broccoli may be planted between each row when ready. Dwarf Beans (Osborn's and Canadian Wonder) may also be sown at once. T. R.

Work in the town garden.

Outdoor garden.—Until bedding-out commences, there is really not much to be done beyond the ordinary routine of keeping Grass and gravel neat, and attending to the advancing beds or patches of annuals.

Vegetable garden.—In the vegetable department keep all advancing crops clean from weeds, and the surface constantly loosened by the frequent use of the hoe. Peas must be staked before they get too tall, and in very dry weather they should have an occasional thorough soaking. To this end it is always better to sow in shallow trenches, which may be readily flooded when required. Plant out Lettuce from the seed beds, and keep them well watered. The dwarf or French Beans will be found about the most profitable crop for town gardens. These should be sown at once in rich and well worked soil.

In the Greenhouse keep all neat and clean. Neglect at this stage will be very baneful; the main point is to see that plenty of water is used, particularly during the prevalence of east winds and hot sun. If the watering is cut at all short, red spider, thrips, and other pests are sure to appear, and, once they gain a footing, it will be a difficult matter to dislodge them during the whole of the summer.

All kinds of bedding plants should now be hardening off in cold frames, leaving the greenhouse free for an assortment of foliaged and flowering plants of the choicer sorts. Where the roof of the house is covered with a vine, Fuchsias, Ferns, Begonias and other shade-loving plants will be found more suitable than Pelargoniums, Coleuses, and such plants as require a fuller exposure to sunshine. Gloxinias are extremely beautiful objects when well grown, which is not so difficult a matter as some represent it to be; these also succeed admirably under the shade of, and with the same treatment as, vines.

Seedling Gloxinias must now (if the work has not already been done) be pricked off carefully from the seed-pots or pans, and as soon as they commence to get crowded in their new quarters should be potted singly into 4-inch pots, in which size they will bloom nicely the first season. We find them always do much better when pricked off into large flat boxes from the seed-pans, and potted off when about 3 inches, or even somewhat less, across the leaves. Good fibrous peat, with a little loam, leaf-mould, and sand, is much the best material for these lovely plants. Fuchsias must be kept growing rapidly in a warm, moist atmosphere, and repotted as often as required, to make really nice plants. Balsams need much the same treatment, but with more light and air.

Azaleas and Camellias may now be repotted if required. Good sandy peat should be used with a little loam if the plants are large. For the next three months these will succeed admirably in a vinery. Shade and the treatment of a vinery will induce them to make a strong, healthy growth, and ensure a profusion of fine flowers next spring.

Preparation should now be made for filling window-boxes, balconies, &c., with flowering plants. It is still rather early, except in very favoured localities, to set the plants out, but in order that no time may be lost it is well to have everything in readiness. B. C. R.

OUTDOOR PLANTS.

DAHLIAS FOR TOWN GARDEN.

The enduring qualities of these handsome flowers under adverse atmospheric influences, the minimum of care necessary to the full development of their perfect form, the wide range of their exquisite colours, and immunity from the sometimes fatal ravages of insect pests—common to the fragile queen of flowers, the Rose—should render them well worth a space in every flower garden. Peasant gardeners would seem to appreciate their beauty, around whose picturesque homes in well-arranged groups their brilliant, massive blooms form a prominent feature of the simple good taste often displayed. As town flowers they possess high merits, blooming perfectly in impure air, and are, moreover, not subject to the deteriorating colour-changing freaks of the favourite Chrysanthemum—coming true year after year, their only requirement being suitable soil and root-nourishment, &c., which will be referred to later. Tastefully-arranged groups in large beds of the double varieties, enclosed by an edging of the yellow Pyrethrum, relieved by a judicious combination of the dwarf blue Lobelia, will form a thing of beauty that might satisfy even the most fastidious lover of floral arrangement; and this is within the reach, in a cultural sense, of all town gardeners who will have it. As exhibition flowers they afford a wealth of colour, ranging from the brightest vermilion scarlet, among the reds, to delicate tones of pink, rose, crimson, maroon, and damask, to almost black, together with several showy bi-colour flowers, and the white-tipped varieties. As to selections, amateurs who have never grown the Dahlia need not for particular colours be in search of any of the recent kinds, as those mentioned are to be found amongst so-called older sorts, which also include many pure white flowers, all of which may now be had at a cheap rate. For general effect many amateurs prefer the tall doubles, and I have found these to produce the greatest number of flowers; but, for small gardens, those which grow from 2 feet to 3 feet high, classed as dwarf, as compared with the tall kinds, will be found suitable, with, perhaps, a few of the first-named for the centres of beds. The Pompone and Cactus varieties are also very useful kinds, but quite distinct from those named; and the now fashionable singles, which are useful as cut flowers, have much to recommend them, but are, to my mind, less showy than the double kinds, which have a highly ornamental appearance in large vases, tastefully interspersed with a few leaf-sprays.

Early support, in the shape of stout stakes, should be supplied to the plants, which will require little further attention beyond mulching with old manure, protection from slugs while young, leaf pruning, and disbudding. The leaves in some cases may not be too numerous and can be left alone, but as the Dahlia blooms freely till cut down by frosts it will be necessary in most cases to remove a larger percentage of the buds, which would otherwise weaken the remaining flowers. A 60 size pot should be placed, inverted, on the top of the stake. This is a sure trap for earwigs which might otherwise find their way into the flowers. The most suitable soil is a deep rich loam; but heavy clay will suit the plants moderately well, though the flowers will be less numerous than if planted in the former. If protected from frost the tubers may be left in the ground during winter, but not, perhaps, without risk of their rotting. The best way is to lift and store them in sand in a dry place; and the following season, with slight bottom-heat, a fresh stock may be raised in pots in a hotbed. When the shoots are about 2 inches long they should be removed from the tubes, with a "heel" or piece of the tuber attached. They should again be placed in slight heat, using light soil, and when rooted potted off into "sixties," in which they can be hardened off. They need protection from probable spring frosts, for which purpose an inverted flower pot placed over them at night will be sufficient. Mid-May is a suitable time for planting in the beds. They should have plenty of room—the tall kinds especially. These should be placed 30 inches apart and will be all the better for it. Two feet for the smaller kinds will not be too much.

Unlike most plants that can be safely sent through the post, I have generally found cuttings, especially unrooted ones, flag very much in transit, and require more care in striking than some amateurs are able to afford them. Strong plants out of sixty-sized pots make a vigorous start and will soon become established, until which time they should be shaded, if the weather be warm, from the wind and sun; and in hot weather a plentiful supply of water at the roots, and occasionally overhead, should be given, which, together with the simple treatment referred to, will suffice to ensure a perfect bloom display of these old garden favourites, when the beauty of most flowers is far upon the wane.

Stamford Hill. A. E. A.

Smilax tamnoides.—I was very glad to see a sketch of the blossom of Smilax tamnoides in your paper of the 6th September, 1884, because, though I know the plant very well, I had never happened to find it in flower. It is exceedingly common along the shore of the Mediterranean, as common as the Blackberry with us, and the growth is very pretty. So are the berries, but, as the plant is diœcious, these are, of course, not always to be met with. It is probably the same as that called in Italy Smilax aspera, and also Straccia-brache, or tear-clothes, from the little thorns which abound on branches and leaves. It produces a Sarsaparilla which goes by the name Sarsaparilla Italica, of the same nature, but not considered so good, as that which comes from the root of South American species. I enclose some little sketches of the berries to show their pretty colouring, and perhaps you would not mind the trouble of forwarding to your correspondent "Trailer" a few seeds which were gathered last year; I hope they may grow.—M. A. P. *** We have to thank "M. A. P." for two graceful little sketches of this plant, which we have noticed growing in a few English gardens. The sketches show the bright berries of this graceful, fiercely-armed plant, both in their red colour and in the smaller green stage. If the correspondent referred to will send us his address we will forward the packet to him; we shall be glad of a few seeds for ourselves.—Ed.

Freesia in the open air.—I send Freesia grown in the open air. I mean to try it again, but perhaps it will be a failure, as we have not had enough frost to take the leaves off the common Lemon plant (Aloysia); wonderful even here. *** *A very good specimen for outdoor culture.* —Ed.

Hyacinths out-of-doors.—I forward a white Hyacinth grown in the open in my garden. It has been some years in the ground. It bloomed the first season in the greenhouse, and after that was placed in the open. I never lift my Hyacinths.—A. J. Persse, *Bagnalstown.* *** *An extremely fine spike for a Hyacinth grown in the open air. Not having others to compare with we are not able to name it.*—Ed.

CARNATIONS.

As many subscribers frequently make enquiries about these flowers, a few words on the subject of their cultivation may not come amiss. The Carnation is the cultivated Dianthus Caryophyllus, and, although it is supposed to have arrived in this country from Italy in its cultivated state, it is still found wild in some parts of England. Gerarde, in 1597, mentions it as coming from Poland. It is propagated by cuttings, pipings, layers, and seeds. The seeds should be sown in May in pots, and when the plants are 2 inches high plant out in beds of rich soil. For layers the best season to propagate is July. Select the shoots to be layered, and put a little silver sand for their reception. Trim off all the leaves except five or six at the top, then make an incision half through the shoot, with an upward cut, beginning below a joint, and passing through for an inch; put the layer into the sand, with the slit open, cover with rich earth, and in two days, when the wound is healed, watering will be beneficial. Cuttings should be made by taking off the shoots which cannot be layered, cutting them right through a joint, and placing in beds prepared with sand. Piping consists in drawing out the young shoots from the joints and inserting them in a light sandy soil. Carnations to be exhibited need a little preparation, which is decidedly an art, and to some a mystery never to be unravelled for want of patience. Carnations have a tendency to split the calyx down one side, the other side often not opening at all. To avoid this it is necessary to tie the calyx round the middle when the bud is nearly full grown, and when it begins to open to pull back the five outer leaves of the calyx to the point where it is tied; this enables the petals to develop themselves. After this the Carnation has to be "dressed." This is done by bringing all the petals into their proper places, passing the threads of the broadest petals outside those of the smaller, and guiding the others to the centre, according to their size. The mode of operation is to take hold of the broadest part of the petal with a pair of smooth tweezers of bone, and by a gentle twist to bring the base into the position it is to assume. The soil that suits them best is loam, mixed with well-decomposed manure and sand. It is surprising that Carnations are not more generally grown. Most are perfectly hardy, and in a warm greenhouse many will bloom continuously. I append a list of a few of the best varieties:—Woodley's Scarlet, Mary Morris (pink), Admiration (white, purple edge), Juliana (white, scarlet edge), Souvenir de la Malmaison (cream), Mrs. Hornby (white), and Wilson (white, with pink stripes). If grown in the border care should be taken to tie up the blooms so that they do not get splashed with rain.

Leatherhead. C. F. Davis.

Crown Imperial. — Having noticed in Gardening Illustrated questions asked on the growth and culture of Crown Imperials, I send you a sketch of a root growing in a wild garden in East Yorkshire, among Ivy, Quicks, &c., in a clay soil which has not been manured or disturbed for at least twelve years. The stalks grow quite 3 feet high, and never fail to flower, producing blooms such as the specimen I send you. — Amy Chaplin, *Yorkshire.* *** *The flower sent us is of the variety lutea maxima—considered to be the finest yellow—and a very good specimen.*—Ed.

Gladiolus.—I trust the advice given by me (p. 90), as to the culture of Gladiolus, will not cause disappointment to anyone. Readers will recollect that I did not say that Gladiolus gandavensis will do all over England. I simply stated my experience here, and I repeat that all kinds of Gladiolus, late and early flowering, have been left in the ground for the last three years, and each succeeding year the bloom has been finer than the last. Certainly the winters have been mild, but they have also been damp, and the bulbs have not rotted in consequence of being covered with silver sand and leaves. Of course, climate and situation have everything to do with growing flowers, and what is hardy in one place is most delicate in another.—C. F. Davis, *Leatherhead.*

THE SPRING-FLOWERING ADONIS.

Adonises belong to the Ranunculus or Buttercup family, and are chiefly natives of cornfields in Southern Europe and Western Asia. They are dwarf in stature, with finely divided leaves, and red, straw-coloured, or yellow flowers. Most of the fifteen or sixteen species are annuals, and not very striking in appearance. By far the most showy and the finest of the species is Adonis vernalis (now in flower) of which we give an illustration. It is a compact growing perennial plant, forming dense tufts 8 inches to 15 inches high, of finely-divided, thread-like leaves, which are disposed in whorls along the stems. As its name implies, it flowers in spring, when the tufts become covered with numerous large brilliant yellow Anemone-like flowers, 2 or 3 inches in diameter, a single flower being produced at the end of each stem. It forms an excellent subject for borders, rockwork, or the margins of shrubberies, and will grow in almost any soil, but comes to greatest perfection in a rich calcareous or sandy loam. Its compact habit and free-flowering qualities make it an eligible subject for pot culture, and it is sufficiently showy to take a prominent place among some of the most popular window plants native of Southern Europe and America. Of A. vernalis there are several varieties, the chief of these is A. v. sibirica, which differs from the type only in having larger flowers. A. pyrenaica is another fine perennial species from the Eastern Pyrennees; it flowers in April and May, and may be grown in the same way as the last-named species. A. autumnalis (known as the Autumn Pheasant's-eye) is an annual. Individually plants of this are not very effective, as they are rather straggling in growth, but when grown in masses in borders and flower beds with other autumn-flowering annuals, they afford a very pleasing contrast—indeed, this is the only way in which they can be employed to advantage. It is a British species. Some of the other species are A. flava (yellow), A. microcarpa (citron yellow or flame coloured), A. flammea (flame coloured), and A. æstivalis, a cornfield weed in the south of France, with small vermilion-coloured flowers. M.

Ox-eye (Adonis vernalis).

The best annuals.—It is surprising how little the general body of gardeners know about annuals. A good selection seems to be the exception, and even those who give lists of the best for general culture seem extremely ignorant as to which are really the best varieties. In nearly every list of annuals given in the gardening papers the best varieties are ignored, and several are recommended which are only worth growing in a very large collection. Sweet Alyssum is no better than a weed, and the usual run of Candytufts are very poor things, even when well grown, Vilmorin's Rocket Candytuft being the only one deserving a place in a first-class collection. Leptosiphon roseus, Whitlavia gloxinioides, Omphalodes linifolia, Bartonia aurea, and Hibiscus africanus are all good annuals which one rarely sees mentioned. Virginian Stock is very far from being a first-class annual, and should never be included in the best thirty. It is a pity to keep such things in cultivation when there are so many good things which can be easily grown in any decent soil. The best annuals are Godetia Whitneyi and its varieties, Clarkia pulchella, and its varieties, Lupins in variety, Larkspurs in variety, Annual Chrysanthemums, or Crown Daisies, Viscarias, Tropæolums, Convolvulus (dwarf and climbing), Leptosiphons, Nemophilas, Silene pendula, Omphalodes linifolia, Bartonia aurea, Rocket Candytuft, Coreopsis and Whitlavia grandiflora and gloxinioides, Cornflowers and Crimson Flax. Godetia the Bride and other Godetias, Clarkia elegans and varieties, Malopes and Lavateras, Collinsias and Gilias, Saponaria calabrica and a few others may be included in large collections. Poppies should be treated as biennials.—J. D.

Alstrœmeria.—This is one of the best of hardy plants, both for the hardy flower border and for growing in pots for the greenhouse, &c. It produces its large Lily-like flowers in the greatest profusion, and is much sought after, being now grown largely for Covent Garden market, where its large, handsome flowers find a ready sale. Being a large, showy flower, it is much used in a cut state for house decoration. Many people think this plant is of recent introduction and of difficult culture, but is is one of the many plants that require but little attention. The first thing necessary is to select a warm border, the soil of which should be well manured and deeply dug, and the plants purchased should be in pots, and at once turned out of the pots and planted in the border. Great care should be taken to carefully spread out the roots, and should the soil be at all stiff use some coarse sand—some from the roadside would do. Give the plants a good watering; keep them free from weeds, and let them remain, and they will in time make a grand display. One of the greatest mistakes is to be always shifting this class of plants. If you want them to do well leave them alone for a few years, and they will give you a good return in their beautiful flowers in quantity. Plants that are required to bloom in pots should be grown in pots and plunged in coal ashes; or some may be grown in a reserve border. Planted in some rich soil, lifted, and carefully potted, they will make nice plants. Another good plan is to grow on in pots, and after they have done flowering plant out in the reserve border; let them remain a year so that they may have time to make nice growth, but for permanent plants in the hardy border they are grand, and every lover of our hardy flowers should grow all the sorts. The flowers are of nearly every shade of colour. The best varieties are A. chilensis (colour—white, lilac, and rose), B. Pelegrina alba (very dwarf, pure white), A. Pelegrina (large striped, very fine), A. peruviana (one of the best for pots, flowers deep crimson and many other shades of colour), A. pulchella (one of the most charming flowers, white striped with red), A. tricolor (white, cream, and yellow).—W. C. Leach, *Stamford.*

Culture of Arum Lilies.—In my garden there is a fountain about 7 feet in diameter and 3½ feet deep, and a constant supply of water. By way of experiment I put two wheel-barrows of earth in the centre with some large stones; in that I planted two small Arum Lilies. They did well at once, and in about a year I had to take up one as they completely covered the fountain, and the other has constantly to be cut back. I have seen from forty to fifty flowers on it at the same time, and I never saw better. —J. T. C., *Cornwall.*

Bulbs after flowering.—A very harmful habit that many people indulge in on the pretence of tidiness, is that of cutting down the leaves of bulbs when the bloom is over. The leaves of bulbous plants should be kept fresh as long as possible, and only cut off when they have withered naturally. It is the leaves that build up the bulb for the following year. Cut them off, and there will be few or no flowers next season.—J. D.

Plants for walls.—Several interesting letters under this heading have recently appeared in GARDENING. I can add one or two more plants to those named. At the present time (middle of April) I have Myosotis dissitiflora in full bloom, covering at least a foot square, and blooming with a vigour and profusion such as I have never seen under glass. It was put as a seedling, last autumn, in a crevice of the wall. Plants of the same on the level are parched and scorched. It is about 2 feet from the ground, and the wall has full sun all day, and yet it never has drooped—in fact, it is a sight lovers of flowers would go miles to see. I am also trying a Silene Schafta, which, of course, is not yet in bloom, but the plants are in good health. Another plant is Cheiranthus alpinus; this is just going to bloom. I am anxious to try Erinus alpinus, but find it difficult to establish. I have now put seed in, which, I hope, may result in plants. I think I ought to give a word of warning to those who think of planting the Yellow Fumitory (Corydalis). Owing to the nature of its roots it will completely destroy a wall in time. It has ruined a greenhouse wall here, and also a high fruit wall. It is most difficult to eradicate, and seeds itself in the greatest profusion. Its proper place is any rockwork where scarcely anything else will grow.—J. R. NEVE, *Gloucestershire.*

Allium triquetrum.—When well established this is very effective. We planted it three years ago at the foot of a sunny wall along with Gladiolus Colvillei albus (The Bride), and as now seen in flower the Allium is indeed most effective among the clusters of grassy leaves. Its ally, A. neapolitanum, is even more graceful, but does not flower so freely with us as does this species, and the yellow-flowered A. Moly. This last is in all ways a distinct and effective decorative plant, increasing in strength and beauty year after year. A. paradoxum bears aloft its pearly bulbils instead of blossoms, and in general habit closely resembles A. triquetrum.—B.

Sedum Telephium.—A plant of Sedum Telephium in my garden last summer was one even semi-globular sheet of faint rose bloom, 2 feet 6 inches in diameter, and this mass of flowers was further beautified by the constant visitation of bees and butterflies I counted sixty bees and eight butterflies on the plant at one time. The brilliant flashing wings of the latter, and the incessant motions of the little honey-makers delighted my children. Let those who have bees, bairns, or both, grow this plant, and place it in the full sunshine.—HARRIET H., *West Cheshire.*

Flowers for town gardens.—In lists of flowers already given for town culture I do not see Auriculas mentioned. Common ones grow freely in town air, needing, however, I believe, both sunlight and drainage. They may flourish in a window-box where they refuse to grow in the garden. Sweet Scabious I remember to have been one of the few flowers that could be cultivated in a certain unfavourably situated Liverpool garden.—AIDYL.

Peculiar Tulips.—I have this season, in my employer's garden, several Tulips with three flowers on one stem, and a great number with two; this, I believe, is a very rare occurrence, as I have never seen the like before, neither has anyone about here that I have asked.—T. GOOCHER, *Barming.* *** *We should like to see examples of this unusual character in Tulips.*—ED.

REPLIES.

13303.—**Culture of Pansies.**—Pansies are extremely easy to cultivate, but beginners should grow seedlings and not purchase named varieties until they have mastered the necessary details of culture. To grow them thoroughly well, a light, rich, well-drained soil is required; light fresh loam, rotted turf, sand, and leaf-mould make a good soil, the most important thing being the rotted turf and the leaf-mould, as Pansies like rich feeding and yet dislike manure. Any manure used should be stable or cowshed manure rotted to powder. "Straggling shoots" and flowers getting smaller, look like liquid manure, too hot a situation, and waterings during warm weather. Show Pansies in a hot border or even in shade in a hot season get smaller and smaller, until by the dog days the blooms are no bigger than those of the wild Viola tricolor; only the first blooms early in spring come a good size, unless the season is a cool one. Those who wish for a good show of Pansies in the southern counties, should grow only the Belgian or fancy kinds, and preferably from foreign seed. There are four good kinds procurable:—Carters' Exhibition Prize, Jaquier's, Louis Odier's (five spotted), and Trimardeau—these make fine border plants, and are satisfactory in every way, except that they do not conform to the arbitrary rules of exhibitors. Pansies should not be copiously watered in hot weather, but should just have the ground moistened late in the evening after it has well cooled down. The best time to plant out is just when the summer heat cools down and before the autumn rains set in; the plants then get nice bushes before winter and bloom well in spring. Spring-planted Pansies are useless for the season in the south, as they rush into flower before they have time to get properly rooted. When the summer gets too hot for them, and they make strong straggling shoots and small blooms, a good treatment is to cover the ground about them with an inch of fresh sand and leaf-mould; peg down the straggling shoots and tuck in the sand and leaf-mould amongst the shoots which are springing from the centre of the plant. Many of these will root of themselves, and when all have well grown the old shoots may be cut away, and the plants will flower well in autumn.—J. D.

13284.—**Pansies and Violas.**—Pansies naturally bloom in spring and early summer. A few blooms will show as early as Arabis. Violas flower in summer; Pansies should be planted in September. There is no certainty about the period spring flowers will bloom, and no attempt should be made to plant a lot of spring flowering plants closely, with the idea of having them all in bloom together, after the manner of bedding plants. The only good way with spring flowers is to plant them in masses and clumps, so arranged that they can be hidden by later-flowering things. A continuous display can then be kept up throughout the season. All spring-flowering herbaceous plants require planting a month before bedding plants are over, so that they cannot be used to succeed them. Attempts are made to use them in that way, but the result is in almost every case failure, as little scraps of plants put out in October are scarcely ever sufficiently established to flower well. Plants got into their blooming places by the middle of September, or, better still, one year established, bloom early and well, and give a long succession of bloom, making April, May, and June what they ought to be—the months of flowers *par excellence.* No more foolish notion can get into the head of a gardener than that of having beds and borders solid sheets and masses of bloom at any period of the year; but the worst way to attain a near approach to masses of bloom is that of digging things up, or cutting them down as soon as the bloom is over, and planting other things in the place of them. There are one or two gardens here where bedding is still practised, and it is quite amusing to notice the little miserable scraps of red and white Daisies, Myosotis, Arabis, &c., like hobnails set in the brown earth, each with a poor flower or two, while the same plants established in cottage gardens close by are showing great solid clumps of bloom.—J. D.

13441.—**Cutting down neglected evergreens.**—Early in March is the proper time to cut back evergreens such as those you mention, especially those that are old, as then they have time to furnish young growth from below the cut before winter. The longer the time the growth has to get hardened the better able it is to stand a severe frost. If you reside in a mild district and the position is fairly well sheltered you may cut them back now.—J. C. C.

13285.—**Annuals for garden facing east.**—Sow at once Candytufts (several colours), German Stocks, Clarkia elegans, Chrysanthemums (Burridgeanum), Godetias (several colours), Tom Thumb Nasturtiums (in variety), Poppies in mixture; Mignonette, Mimulus (various). All the family will be at home on such a site. Sow in August for spring blooming: Virginian Stocks, Forget-me-nots, Pansies, and Violets, Saponaria calabrica, Silene compacta, Limnanthes Douglasii.—E. HOBDAY.

13396.—**Orange Gourd.**—If "A Reader, Sunderland," will send me his address I shall have pleasure in sending a few seeds of the Orange Gourd. I have raised some plants already this season from some of the saved seed, but fear a plant or two would not travel so well. I should have no hesitation in adopting greenhouse culture, but cannot speak from experience. I grew my own plants out-of-doors in this locality, but of course we have a different climate from that of Sunderland. I have had Geraniums, both zonal and sweet-scented, Diplacus, Coronillas, Calceolarias, &c., planted out for years without any protection or lifting.—J. MCKAY, "*Caithness,*" *St. Ronan's Road, Southsea.*

13336.—**Raising Wallflowers, Sweet Williams, and Pansies.**—It is necessary to raise Wallflowers annually only in damp soils and localities. In light and chalky soils the Wallflower is a hardy perennial and almost a shrub. I have seen plants of double German Wallflowers seven years old. Sweet Williams are best treated as biennials, but any specially good variety can be raised by pipings, like Pinks. Forget-me-nots can be raised either from seed or cuttings, and Pansies can be treated in the same way. Jobbing gardeners know little about hardy plants. The revival in favour of these has been hard on those men who make a living by attending to and furnishing small suburban gardens. A stock of bedding plants required only small accommodation and a routine kind of skill. Hardy plants require more garden ground in the nursery, and a very much greater variety of treatments in propagation and cultivation. Owners of gardens should do their own gardening with the exception of the heavy labour; and where that is not practicable should superintend the management of their plants.—J. D.

13227.—**Culture of China Asters for exhibition.**—The seed, which should be from a good source, should be sown thinly in pans in the last week of March, or first week in April, and placed in a gentle hothed. The young plants should be picked off in boxes of rich loamy soil, 2 inches apart, and he brought on in a close frame till growth is in full swing, and then air should be freely given till full exposure takes place about the middle of May. The preparation of the beds should commence in winter by wheeling on a good dressing of manure suitable to the nature of the soil, cow or pig manure being most suitable for hot porous soils, and stable-manure for heavier soils. The soil of the beds should he deep and rich, and the best means available should be adopted to secure that end. The planting should take place about the middle of May, when the surface of the beds are in a nice friable condition. I would rather plant when the surface is dry than wet. In the former case one or two good waterings set the plants properly in the ground, but planting in wet weather often makes the surface of the soil hard and steely. If I plant in damp weather I always use light boards to work and walk on. Plant about 9 inches apart, and press the soil about the roots, lifting the plants out of the boxes carefully with a trowel, so as not to break the roots more than can be helped. The after treatment consists in keeping the plants in healthy growth by mulching and watering, giving liquid manure occasionally, as they seem to require it. Some experience and judgment is required to select and set up the flowers, and of course proper boxes or trays will be required to exhibit them as others do, as good flowers, if not well set up, will appear under a disadvantage. Varieties: Asters are usually exhibited in three classes, viz, Victoria, Pæony flowered, and the Quilled, and it is important that each class should be distinct and true, and the schedule should he strictly followed as to numbers, &c. Freshness and clearness of colour in the blooms usually carry great weight. In bright weather shading the flowers judiciously is a great help when the time is drawing nigh.—E. HOBDAY.

13413.—**Failure with hardy flowers.**—There are only a few things that can possibly account for plants uniformly dying off in the spring after they are planted. A cold, harsh, badly cultivated soil containing no nourishment, too late planting, improper planting, and planting little scraps of plants just rooted. A soil which has grown plants for a great number of years and has been stinted of manure and periodical renewals should be trenched, plentifully manured, and freshened up by the addition of some good turfy loam. A stagnant, badly-drained soil should be drained and thrown

up in ridges during winter to dry and sweeten it. The proper time to plant hardy flowers is early in autumn; not in the first or second week of October, but as soon as the summer heat begins to decline and before the autumn rains set in. The first week of September is a good average time in the south, but a fortnight earlier may not be too early in the north. With the small plants usually sent out from nurseries April is the best time; of course they will not do much the first season. Plants are often greatly checked by improper planting. The best way to plant is to dig out a hole wide enough to contain the roots spread out all round in a horizontal direction. If the plant has a central straight tap root, that should go straight down to its full length; but if there are only a number of fibrous roots the hole should be deep enough to allow of these to slant downwards while the neck or collar of the plant is just under the level of the bed. Make the soil in the hole into a loose cone, set the plant on the top of that, and spread out the roots evenly all round; then fill in the earth lightly until the hole is full, press the earth firm all round, and finish with a good watering. Plants planted in that way freshen up directly and begin to grow, while plants with all their roots crumpled up in a bunch or let down a vertical hole are a long time in starting. Hardy plants should be looked over in mild weather in winter, as slugs, snails, and grubs lurk about the crowns and eat the young shoots as they spring.—J. D.

13447. — **Snake's-head Fritillary (Fritillaria meleagris).** — These are great favourites of mine, both for their quaint appearance and easy culture. Almost any position seems to suit them if the soil be sandy and well drained, but in partial shade the flowers last longer in perfection. I find it best to divide the clumps about every three years early in autumn, replanting at once, and sorting the bulbs according to size. The so-called white variety I am, so far, disappointed with, as it has a very greenish tinge about it at its best. A pretty miniature variety that should be largely grown is F. armena. The flowers are clear yellow, without any markings, and in general appearance suggest a yellow Snowdrop not fully expanded. They last a good time on the plants, nearly a fortnight, and they are as easily grown as the first-named sort. It seems a pity these pretty plants should be labelled with such an uninviting name as "Snake's-head," more especially as the real translation should be "Guinea Fowl" or "Guinea Hen." The old name of "Chequered Daffodil" was pretty and expressive, but I suppose it is too much to hope for its revival now, although it is just as applicable to them as "Lent Lilies" to Narcissi. But either would be an improvement on the present nickname.—T. J. W., *Crouch Hill.*

13453.—**Wanted, a name.**—I am inclined to think "Chelow" saw a Tropæolum at Highgate, as I have noticed this to be a rather favourite plant about there. It is, I think, T. Lobbianum, but upon that point probably "Chelow" could satisfy himself if he saw a plant in bloom in some greenhouse. Under glass it is often grown for winter blooming. The blossoms are not so much expanded as the common T. major, which probably caused the comparison with the shape of Gloxinia. If it is not T. Lobbianum, it may be T. speciosum, which somewhat resembles it. The first is half-hardy and should be planted out at the end of May, but the second is quite hardy, and does best in a cool, shady position in sandy or gravelly soil.—T. J. W., *Crouch Hill.*

—— It is probably Tropæolum Schultzi that you saw in London.—C. F. Davis, *Leatherhead.*

RAMONDIA PYRENAICA AT HOME.

This is in all situations a very distinct and effective plant. Although not so striking as some of the bright-coloured Primulas and Gentians, it is well worth growing on account of its distinct habit and abundance of bloom. It forms an evergreen rosette of blistered wrinkled hairy leaves, which clasp the ground, forming from the same base a number of crowns clustered together. These, in course of time, force the centre ones from their original position, thus forming a large raised cushion. The flowers are borne on stems varying from 4 inches to 6 inches in height, each bearing from two to six flowers. I have seen single rosettes with over twenty flowers fully expanded, besides buds, and when in that state the effect is most satisfactory. Unsuitable situations being often selected for it, it is rarely seen in good cultivation. In the Pyrennees, where it is very abundant, it is found growing in almost every conceivable position on the Moss-clad stone just above the water mark of the mountain stream, on perpendicular cliffs, among Grass on damp spots, and even on the bare rocks, fully exposed to the sun, but in this last position it forms puny specimens. The most luxuriant plants of it are found on the ledges of perpendicular rocks, where the roots can creep into the narrow fissures and secure abundance of moisture, which is essential to full development. It is generally found on rocks having an eastern or western aspect. It grows in every kind of soil, but, under cultivation, peat, mingled with plenty of rough sand, or old pots broken up fine, suits it best. In this compost it grows freely either planted out on the rockery in a shady, moist spot between stones, or in pots under a north wall, plunged in sand. I am sure it would succeed on a half-decayed wall that was naturally damp, and it could be planted together with the beautiful Saxifraga longifolia, which is one of the most beautiful plants belonging to the Pyrennean flora. A. P.

The Rosette Mullein (Ramondia pyrenaica) at home.

13335.—**Profitable plants for large garden and greenhouse.**—The latter part of my answer to this question last week should read thus:—"Choice cut flowers are likely to pay as well as anything you can grow in the houses; and Celery, Brussels Sprouts, and Cauliflowers, to come in for sale from Michaelmas to Christmas, will be likely to realise as good prices as anything you can grow."—J. C. C.

13278.—**Fixing wires for creepers.**—When the wall has been cemented nails cannot easily be driven into it. If nails with eyes were driven into the wall before it was cemented wires could be strained through them. Now that the work has been done it will be necessary to have upright irons with holes drilled through them at intervals of 10 inches. The irons may be 4 yards apart, and a stronger one must be fixed at each end of the wall or corner of the house. Where windows are in the way uprights must be fixed to each frame. The best way is to consult an intelligent blacksmith about work of this kind.—J. D. E.

13388.—**Killing aphides.**—The plants should be dipped into or syringed with Tobacco water—which is made by soaking a pound of coarse shag in six gallons of hot water—and well syringed again about twelve or fourteen hours after, clean tepid water being used for the purpose; it should not be employed for plants having woolly or hairy foliage. Or, boil one pound Quassia-chips in four gallons of soft water for about ten minutes, and, after straining off the chips, add one pound soft soap. Apply in the same way as Tobacco water, and wash the plants with the syringe (using clean water) after ten minutes or a quarter of an hour. Soft soap in the proportion of 8 lb. to 12 gallons of rain water, and a gallon of Tobacco water added after the other is cold, is a good and cheap remedy out-of-doors, and requires the same mode of application as Tobacco water. Where bleach is not used with soapsuds, they make a good insect killer for hard foliaged plants, but should be washed off with clean water in about twelve hours. No mixture containing chloride of lime should be used, or the plants will be defoliated. For outdoor work nothing surpasses clean cold water, applied often and forcibly with a syringe. The best mode of clearing aphis off beans, currants, &c., is to remove the tops of the infested shoots and wash the plants well with soapy water or a solution of Gishurst's compound. In some cases a good dusting with soot and wood ashes, while the plants are wet, will keep them in check. A good plan also is to encourage the golden-eyes or lace-wingfly, and also ladybirds, as the larvæ of each of these wage incessant war against aphides, especially the green varieties, and thin them out considerably. Plentiful applications of clean water, forcibly applied, will also keep insects of all kinds greatly in check. A garden syringe or engine, with a cap on the pipe full of very minute holes, will wash away caterpillars and aphides very quickly. You must bring the pipe close to the plant and pump hard, so as to have considerable force on, and the plant, however badly infested, will soon be cleared, without receiving any injury. Every time that you use the syringe or garden engine you must immediately rake the earth under the trees, and kill the insects you have dislodged, or many will recover and climb up the stems of the plants. (From "Garden Pests and their Eradication," and "Enquire Within.")—Celer et Audax.

—— The simplest, and, I think, best mixture to kill these troublesome pests on wall trees, is made by dissolving 6 ounces of soft soap in 4 gallons of water, add to this ½ pint of Tobacco water. Apply it with considerable force to the under sides of the leaves, when the water is so warm that the hand can just be borne in it. The aphides shelter themselves in the curled-up leaves, and it is very difficult indeed to reach them with the mixture. The best cultivators try to destroy these insect pests before they cause the leaves to curl.—J. D. E.

13401.—**Destroying earwigs.**—Earwigs, disliking moisture, are more common on hot

dry soils than on damp ones, and plants that are often syringed are more free from earwigs than those which are not. There is no destroying agent that gives really good results, and, therefore, the cultivator must resort to traps, which are many. For all practical purposes the following are sufficient. In all cases the insects should be thrown into a bucket of boiling water when caught. Bean, or other stalks, cut into lengths from 6in. to 9in., and placed in the plants, or crumpled newspapers used in the same manner, will catch a large number. They should be opened and shaken out every other morning. Flower pots partly filled with Moss, and regularly examined, also make good traps. Towards the end of the season, if pots partly filled with Moss or hay be set in dry places, under thatch, in Apple stores, &c., vast numbers will be caught. They may be caught also by driving stakes into the ground, and placing on each an inverted flower pot. The earwigs will climb up and take refuge under it, when they may be taken out and killed. Clean bowls of tobacco pipes, placed in like manner on smaller sticks, are very good traps; or very deep holes may be made in the ground with a crowbar, into which they will fall, and may be destroyed by boiling water. (From "Garden Pests and their Eradication.")—Celer et Audax.

13337.—**Stocks and Asters.**—Stocks should be planted out where they are to flower as soon as they have made four pairs of leaves, and should be placed in well-prepared and richly-manured soil. Asters require to be grown straight on in as even a temperature as possible; to prick them out in a rich compost over a half-spent hotbed is the best possible treatment.—J. D.

13291.—**Ivy on new walls.**—A mixture of cement, sand, lime, and coal ashes thinned into a wash with water, and applied with a brush, will help the Ivy to get roothold. The proportion may be varied to receive the right tint of colour. But there are very few walls to which Ivy will not cling, if a little help be given at first with a few shreds and nails.—E. Hobday.

13446.—**Creeper on iron wall.**—I have found tanned netting very useful for climbers. It does not get hot and scorch them, as iron wire netting is apt to do, and is easily stretched a few inches from the face of the wall. Training is then simply a matter of twining the shoots through the meshes or tying them where required.—T. J. W., *Crouch Hill.*

13236.—**Early flowers in the London markets.**—Primroses, Violets, and Narcissus blooms are all saleable in the London markets; whether it would pay to grow them in Cornwall could only be ascertained by experience. If they could be sent in when they were not plentiful near London they would pay well. Write to some wholesale salesman. Mr. George Monro, Mr. Buck, or Mr. Dickson would give information.—J. D. E.

13302.—**White Iris not flowering.**—They will flower again if the ground is well trenched up 18 inches deep where they are planted, and some decayed manure worked in at the lowest depth. A little fresh loam and leaf-mould should be placed round the roots. Merely replanting the tubers on another part of a "rather neglected border" does not give sufficient vigour.—J. D. E.

Town "gardens."—"A. E. A.," in the opening sentences of his letter of the 18th ult. (p. 81), most accurately describes my experience of the last few weeks. I have just tenanted a new house and garden, and with it my experience as a gardener commences. So you will understand that I am an amateur indeed. In commencing operations I found that beneath the 2 inches or 3 inches of soil that had been spread by the builder's men in "making the garden" there was a further depth of about 12 inches of broken bricks, stones, furnace slag, old boots, broken bottles, joiners' chips and shavings, and other materials that were by the builders considered necessary to make a solid road over which to cast the materials for the erection of the houses. This road-way occupied about two-thirds of the garden plot (which is about 60 feet long), and almost resisted the efforts of pickaxe and shovel to make any impression upon it. Having at length cleared away some of the rubbish and spread the soil to the best advantage, the next consideration was—what flowers and plants, &c., will this soil suit best? I ought to say that the ground had been used last as pasture-land, but was of a clayey nature. The position of the garden, I suppose, would be considered favourable, being sheltered from the north and east winds, and open to the sun all day. At this juncture I saw "A. E. A.'s" letter, which I thought most opportune, and for which I feel personally obliged, and during the last few days, acting under his advice, I have planted many of the plants and vegetables suggested, and have ordered some others.—H. S. R. K., *Hull.*

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

QUESTIONS.

13492.—**Eradicating Dandelions from green.**—Would any reader kindly tell me how to eradicate Dandelions from a green?—Daisy, *Dundee.*

13493.—**Culture of Seakale.**—I should feel obliged if any reader would give me directions how to treat Seakale after it has borne.—Mrs. O'G.

13494.—**Sowing Pansy and Viola seeds.**—Will anyone kindly tell me if this is a good time to sow Pansy and Viola seed? If not, when?—W. Y. H.

13495.—**Obtaining silkworms' eggs.**—Will any reader kindly tell me where to obtain silkworms' eggs?—H. S., *Highbury, Hitchin.*

13496.—**Worms in flower-pots.**—Will any correspondent kindly inform me what is the best way of killing worms in flower-pots (and more especially small white ones) without repotting the plants?—A. W.

13497.—**Camellias from seed and cuttings.**—I should be obliged if any reader would give me information as to the raising of Camellias from seed and striking them from cuttings.—C. J., *Southsea.*

13498.—**Oil stove for heating small greenhouse.**—Will "A. B." kindly inform me where oil stoves, such as he describes in his article (May 2nd), can be procured?—J. S.

13499.—**Plants for hot, dry border.**—Will any reader suggest some plants for a south border, 12 feet long, 4 feet wide, which is drained of all goodness by a Virginian Creeper, and is very hot and dry? It can be well manured.—Touchstone, *Gravesend.*

13500.—**Fernery.**—"F. E. A. B." has built an exotic fernery, with clinkers (burnt bricks), and wishes to know what sort of cement or varnish she should use for glazing them and giving them the appearance of being wet. Will any reader inform her?

13501.—**Alpine Strawberries.**—I should be much obliged if anyone will tell me where plants of alpine St awberries, such as are sold in the French markets, can be bought, and whether they will thrive in a light, dry soil?—F. B., *Beckenham.*

13502.—**Oxalis hirta.**—"E. F. L." has bulbs of Oxalis hirta in pots in the greenhouse; some plants are now losing the leaves, but have shown no sign of flowers. The bulbs increase rapidly. Would any reader tell her how to treat them?

13503.—**Soot-water as a fertiliser.**—I see soot-water continually recommended in your pages as a fertiliser. Will some reader tell me in what proportions it should be used in safety to the plants, and whether it can be used for those in pots?—Devoniensis.

13504.—**Propagating Rhododendrons.**—Will anyone who has increased Rhododendrons tell me whether this Evergreen can be propagated by cuttings, or must have roots for planting? When is the best time for propagation?—Arvonia.

13505.—**Orange fungus on Hollyhocks.**—Will any reader tell me whether there is any cure for or preventive of Orange fungus on Hollyhocks? I am about to plant out some seedling plants, and for some years all my Hollyhocks have failed from this disease. What soil and aspect suits them best?—E. S. T., *Ardrahan.*

13506.—**An amateur's propagator.**—"J. R. D.'s" communication respecting an amateur's propagator has called forth several queries. Will he kindly inform several readers of Gardening what propagator he purchased, and whether he finds any difficulty in keeping the air moist?

13507.—**Water plants for conservatory.**—I have a nice bell-shaped glass, which stands on the staging in the conservatory quite securely. Will any of your readers tell me what water plant or plants I can put in for growing, and how to proceed with it?—Amateur, *Edinburgh.*

13508.—**Sweet Sultan.**—Will someone kindly give me information as to the treatment of Sweet Sultan plants, and tell me if they are free bloomers, and what their foliage resembles? If planted out in flower beds the third week in May, when would they begin flowering and leave off?—Suffolk.

13509.—**Growing straight Cucumbers.**—I shall be glad if "J. Muir," or any reader, would tell me how to induce my Cucumbers to grow straight? I have Rollisson's Telegraph for exhibition. Also, how could I keep the fruit fresh, if ready say a week or a fortnight before show time?—Urpeth.

13510.—**Heating greenhouse from kitchen-boiler.**—I am putting up a lean-to greenhouse, 15 feet by 11 feet. Can any of your readers enlighten me as to heating it with hot-water pipes from the kitchen boiler, which is near at hand, and mention whether much water would be required?—Clericus.

13511.—**Grapes turning sour.**—Can any readers tell me how to prevent my Grapes turning red and sour and falling off? I have three vines in a vinery, which bear a very good crop, and about half turn red, sour, and fall off when the others get ripe in the autumn. I do not have a fire in the house.—Bepton.

13512.—**Old Seakale bed.**—Miss W., Enniskillen, wishes to know what ought to be done with an old Seakale bed, where the roots have risen far above the ground and have been heaped up with cinders and coal ashes from time to time; and if pieces are cut off to make new roots what could be done with the old ones and the old bed?

13513.—**Plants for virgin soil.**—I have taken a patch of land for gardening purposes. I may say it is virgin soil, and I have got the sod turned over, but am told I can do nothing further this summer. Will any reader kindly tell me whether anything can be produced, and, if so, what is best, either flowers or vegetables?—Inquirer.

13514.—**Plants for garden.**—Down the middle of my garden there is a Grass walk about 6 feet wide, on each side of which is a 7-feet border, which I wish to have as a ribbon border in rows of flowers. The length is over 150 feet. I should like as much show of colour as possible, and plants that will bloom as long as possible. The garden is in Renfrewshire. Can any of your readers suggest the best way of furnishing the above?—R. K. P.

13515.—**Making Azaleas flower.**—How can I make Azaleas flower? I repotted mine last year, and put them out in July. The leaves grew well and the plants look healthy, but there are no flowers. What amount of heat should they have while making growth? Should they be repotted again? They are now in 6-inch pots. Should the flower buds be visible before the plants are put out-of-doors, and will any artificial manure be advisable?—L. D.

13516.—**Mildew on Roses in greenhouses.**—I was about to ask how best to grapple with this trouble, when I saw the reply to No. 13417, viz:—"Dust the plants with flowers of sulphur, and pay attention to the ventilation." All this I have done, and still I am just now suffering from mildew to a serious extent. Notwithstanding that reply I am, therefore, impelled to send you my query in the hopes of finding in your pages some other prescription for the complaint in question. Will some reader help me?—R. S.

13517.—**Plants for Cucumber house.**—I have a greenhouse 18 feet by 8 feet, and am growing Cucumbers. It is heated by flues under soil, and in the day time the thermometer is from 70 degs. to 90 degs. I thought of shading by splashing the glass with whiting and milk. Will any reader tell me whether there is any kind of plants that will stand this heat in summer? I thought of having an Orange tree, if that will suit, and should also like a nice climbing plant, as my greenhouse is a lean-to against the end of the house.—D. J., *Staffordshire.*

13518.—**Growing Onions.**—There is scarcely anyone in this neighbourhood successful in raising Onions, as in almost every instance the young plants are attacked with some kind of grub which speedily destroys the whole bed. I have tried several times and failed, as also with Carrots. Will anyone please inform me of any cure for this, as the Onion is a very dear article here, Spanish only being procurable? Any information will oblige.—Arvonia, *Penmaenmawr.* *** *Read the article on the "Onion" in last week's number.*—Ed.

13519.—**Pansies.**—Will not Pansies be better if some of the buds are picked off and not allowed to flower? And am I not right in telling my gardener that if he leaves all the flowers of Mignonette, Sweet Peas, &c., for seed, the plants will cease blooming much sooner than if a due proportion were gathered?—L. P., *Hants.* *** *Certainly. It is best to save only a moderate quantity from each plant; you will then be able to secure finer seed. Inducing a plant to become fruitful tends to weaken its condition for flowering; and, therefore, it is the general practice, in order to prolong the flowering season, to pick off the seed-pods as soon as they set.*—Ed.

13520.—**Pears not setting.**—I have a few large Pear trees in my orchard house. They are about eighteen years old and in 18-inch pots. They look strong and healthy, and bloom well every year, but they never set, with the exception of one or two fruits on a tree. My house is a lean-to, facing the south. I have had every other front light taken off for better ventilation, and, the winter being a mild one, they were not put on again until the buds began to open. I top-dress them in October and I feed them well in summer. They are too large to be potted annually. I give them every attention. Can any of your readers tell me the reason why they do not set their fruit?—J. P., *Yorks.*

UNANSWERED QUERY.

13122.—**Rough porous jars for Ferns.**—Can anyone tell me where I can get the rough porous jars like the Egyptian "goolahs" used in Austalia and the Mediterranean for growing Ferns, clay being plastered outside the jar, which is kept ever full of water and the Ferns then planted? I had one brought me from abroad, and have seen the advertisement of others, but cannot now find it.—E. C.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13521.—**Cabbages running to seed** (*C. L. Hankin*).—See reply to query 13398 in this week's number.

13522.—**Culture of Lapageria alba** (*J. C.*).—Lapageria alba is as hardy as L. rosea, and requires the same treatment.

13523.—**Leaving Tulips in the ground** (*E. S. T.*).—Your Tulips will be better for being left in the ground all the year round.

13524.—**Hardiness of Plumbago Larpentæ** (*Mrs. L., North Berwick*).—It is not a perfectly hardy plant, and we doubt if it will succeed in the open air so far north, but you may try it at the foot of a warm south wall in light soil.

13525.—**Cinerarias** (*J. K. King*).—The Cinerarias you send are of a very good strain, the flowers of good form and substance, and the colours bright and varied.

13526.—**Temperature for propagating Dahlias** (*J. C. Cr.*).—Maintain a heat of about 60 degs., and give air during the day when the seedlings are above ground.

13527.—**Cutting down Solanums** (*W. B. W., Tenby*).—Yes, prune them closely, and plant out in good soil. Lift in autumn when in berry, for the conservatory.

13528.—**Growing Tea Roses in pots** (*W. F.*).—"J. C. C's." note in this week's issue (p. 128) will probably tell you what you want to know; if you require further information send us your query again.

13529.—**Lawn marker** (*Arvonia*).—There are now various machines for marking out lawn tennis grounds, and we advise you to apply to some of the firms who make lawn tennis apparatus.

13530.—**Lobelias 24 inches high** (*J. Chapman*).—We should like to see specimens of your Lobelias sent in a box with damp Moss. The specimens you send are smashed beyond recognition.

13531.—**Lily of the Valley damping off** (*H. Brown*).—The spike you send looks as if it were produced from an "eye" that had become too dry before planting. We cannot account for it otherwise.

13532.—**Increasing Lilium giganteum** (*Mrs. L.*).—The bulbs, before they attempt to flower, usually send out several bulblets. These should be separated early and grown on in order to succeed the parent bulb in flowering.

13533. — **Treatment of Golden Feather** (*Hiberian*).—This is best raised from seed annually. It is too late to sow now; it ought to have been sown in February in heat, and the seedlings would have been ready to plant out now.

13534.—**Growing Lapageria rosea** (*J. C*)—Yes, you did quite right in putting the plant in a small pot. As soon as the roots fill it you should shift the plant carefully into a larger one, allowing say an inch of new soil all round the ball.

13535.—**The Cherry Plum** (*F. J. M*)—Questions relating to the Cherry Plum have very recently been asked in GARDENING, and some answers were published only last week. Refer to queries 12995 and 13340, and replies that have been made.

13536.—**Treatment of Rhododendrons** (*Mellco*).—If the plants are what are called leggy, you had better cut every branch hard back. The stems will then throw out fresh shoots during the present summer if looked after as regards water.

13537.—**Spiræas after flowering** (*M. P.*).—Plant them out in a good open border, and treat them liberally with occasional doses of liquid manure through the summer. In autumn they will be fine plants, ready for potting again for winter flowering.

13538.—**Pianthus neglectus not blooming** (*Silverian*).—We can assign no reason for the plant not flowering. It generally flowers when strong every year during early summer. If the plant is thoroughly healthy we think you need only have patience.

13539.—**Ground Elder in garden** (*A Novice*).—You have a troublesome enemy to deal with. There is no remedy but complete eradication of every particle of root that you can get hold of. It will probably take you some seasons to clear the ground thoroughly.

13540. — **Spiræa palmata not flowering** (*W. B. W., Tenby*).—This plant is not a difficult one to cultivate, provided the soil is suitable. It thrives best in a moist soil, in which there is a little peat, as its roots are fibrous. In your locality it ought to thrive to perfection in a sheltered spot.

13541.—**Palm leaves becoming brown** (*Perseverance*).—There is some error in treatment, and it is probable, from what you say, that the cause is excess of water. Palms do not want to be continually dodged with water, although when in active growth they require abundance at the roots.

13542.—**Tulips and Crocuses after flowering** (*H. E. Chandler*).—It will never do to lift the bulbs until the foliage is quite decayed, and cutting the leaves will impair the strength of the bulbs. You may leave Tulips and Crocuses in the ground all the year round if the soil is light, and they will be the better for it.

13543.—**Transplanting evergreens** (*Medico and R. L.*).—It is late for transplanting evergreens, but if the weather should be showery and cloudy you may transplant them now. The chief thing to guard against in transplanting at this season is dryness of the soil and atmosphere. All the hardy evergreens will succeed in Durham.

13544.—**Leaf of Eucharis amazonica turning brown** (*Eclipse*).—If the leaf is decayed it is of no use leaving it on the plant, and the bulb will not bleed if it is cut off even when green. You make a mistake in giving the plants guano or any other manure whatever. Stimulants are only required when a plant is in vigorous growth. Nothing induces disease more in this and other plants than over stimulation by concentrated manures.

13545.—**Bravoa geminiflora, Eucomis punctata, and Crocosmia aurea** (*Mrs. L., North Berwick*).—If the plants have remained in the ground all the winter, and have not yet appeared, we doubt whether you will see them again, for all three are susceptible to injury from cold, wet winters. It is always advisable, in localities so far north as yours, to lift these and bulbs of similar hardiness every autumn, and replant in spring.

13546.—**Repairing garden hose** (*W. S. Theed*).—The instructions you refer to are probably those given by "EXON" in GARDENING, June 16th, 1883. They are as follows:—Take 2 ounces or more of naphtha, into which drop as much shellac as it will absorb till of the consistence of thick gum. Cut some bandages of canvas, American cloth, or thin leather, spread the composition on one side of them, then bind them tightly round the hose, and fasten firmly with twine. Let it remain twenty-four hours, and then take off the twine. The hose must be dry before the plasters are applied. Keep the cement in a glass-stoppered bottle. It is good for many household jobs, and will not dissolve in anything except its own spirit.

13547.—**Treatment of forced Strawberries nearly ripe** (*D. Foster*).—You must ventilate the house, so as to prevent the atmosphere becoming stagnant, as that is, above all things, most conducive to mildew.

13548.—**Primroses and Polyanthuses** (*J. S. W.*).—Primroses are distinguished from Polyanthuses in having no main stem developed; the flowers appear to spring from the same point as the leaves, whereas in Polyanthus, Oxlip, and Cowslip, the flowers are always grown in umbelled fashion, terminating an erect stem. Polyanthuses are probably only garden forms of the Oxlip, and are generally coloured and often laced at the edges. The difference between the Oxlip and the Cowslip is mainly one of size, the former being twice as large as the latter. The botanical names are Primula vulgaris (Primrose), Primula elatior (Oxlip), Primula veris (Cowslip).

13549.—**Garden pests** (*W. H. Horlury*).—Your plants are attacked by snake millipedes or false wireworms (Julus Londinensis). These creatures are very difficult to get rid of; no satisfactory way has yet been suggested for destroying them. Sprinkling nitrate of soda round the plants, and then watering them, or spreading soot round them, has been recommended. Small bundles of damp (not wet) Moss buried in the ground where these myriapedes abound, would probably prove good traps Small pieces of tiles or slates laid flat on the ground would attract them, as they are fond of hiding under such things. —G. S. S.

TO CORRESPONDENTS.

Notice. — *Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*

AMATEUR'S PROPAGATOR (*G. F. C., and others*).—You will see a query relating to the matter in this week's issue. We do not forward letters to correspondents.——DESTROYING WOODLICE (*Devoniensis*).—A similar question was asked last week, and is answered in this number.——SAMPLE OF SOIL (*W. Hibby*).—The sample you send is not peat, as usually understood, but would be defined as peat Moss, or peat bog. It is formed by an accumulation of decayed vegetable matter.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*F. H.*—1, Ornithogalum nutans; 2, Saxifraga granulata fl.-pl.; 3, Santolina incana; 4, Saxifraga (Megasea) crassifolia.——*H. L. Greville.*—Aspidium caryotideum.——*F. E. D.*—Species of Adianthum too small to name.——*B. Addy.* — Berberis Darwini (yellow); Andromeda calyculata (white). — *J. W. Scales.*—Aubrietia deltoidea (dark variety).——*Chilena.*—Pepper tree is Schinus Molle; cannot name the other.——*F. J. Ringwood.*—Celsia Arcturus.——*W. T. B.*—Leucojum æstivum.——*C. E.*—1, Not Arenaria, but a species of Honkenia; 2, Apparently Yucca recurva; 3, Dog Violet (Viola canina); 4, Adiantum æthiopicum.——*W. B. W.*—Aubrietia Campbelli. —— *South Devon.* — Apparently Aoacia mucronata.——*Devoniensis.*—Iris fimbriata, a Chinese plant.——*M. Tackett.*—Berberis Darwini. — *J. A. Turner.*—Campanula muralis.——*C. W. S.*—Snowy medlar; Amelanchier canadensis.——*G. Jaques.*—Alonsoa incisa.——*R. S. M.*—Canadian Blood Root (Sanguinaria canadensis).——*F. A. Barraud.*—White form of Orchis morio.——*G. P.*—1, Diplacus glutinosus; 2, Libonia floribunda; 3, Eccremocarpus scaber.——*Marie.*—Ledum palustre.——*P. Pole.*—Virginian Cowslip (Mertensia virginica).——*H. B. P. B.*—1, Sempervivum tectorum; 2, Silene pendula; 3, Sedum arboreum variegatum; 4, Specimen insufficient for naming.——*J. H. A.*—Helleborus viridis; Valeriana Phu; Mertensia virginica; specimen of other insufficient.——*G. W.*—1, Narcissus biflorus; 2, Gentiana acaulis; 3, Abutilon vexillarium; 4, Polemonium reptans; please send a fresh specimen in damp Moss or box.

Catalogues received.—*Garden Furniture.* Deane and Co., 46, King William Street, London Bridge.——*New and Choice Plants.* Edmund Philip Dixon, 57, Queen Street, Hull.——*Garden Manual for 1885.* J. K. King, Royal Seedsman, Coggeshall, Essex.

13437.—**Procuring Quassia-chips.**—Try Skilbeck Bros., Upper Thames Street, London.—E. B.

13442.—**Apparatus for heating greenhouse.**—If "L. S.," or any reader desirous of similar information, will send me his name and address I will tell him where I bought my boiler, for which I paid £8, only, and it is simply perfection. It will burn coke or cinders and keep alight 16 hours without attention, and all the heat from the fire is thrown into the greenhouse. I shall be pleased to show the apparatus to anyone who chooses to call at my house. —A. TIBBLE, 7, *South-Western Road, East Twickenham.*

Editor's table.—We are indebted to Mr. W. M. Crowe, of Upton, Essex, for some beautiful Ivy-leaved Geraniums, fragrant Carnations, and many beautiful Pelargoniums. Our readers with greenhouses should turn their attention more to growing Carnations in pots, as they come in so nicely long before the outdoor ones appear, and, indeed, may be had all the winter under good culture. Mr. Crowe also sent some new zonal Geraniums, but the condition in which they arrived made it impossible to judge of the merits of the flowers. The colours seemed bright enough.

HOUSE & WINDOW GARDENING.

ROOM PLANTS.

MANY people, both in town and country, keep plants in their rooms, and not a few grow them there from one year's end to the other. Of course plants do not thrive so well in dwelling rooms as in the greenhouse, and a very common impression exists that gas is particularly obnoxious to them — that is, gaslight, for the gas itself does not reach the plants. My conviction is that the gas is often wrongly blamed for the damage. That the heat and drying effects of the gas flame does affect plants is probable, but, except in degree, it does no more harm than the light from a lamp, a candle, or a coal fire. From what I have seen I am prepared confidently to assert that both cut flowers and growing plants may be kept in gas-lighted rooms for a long period if other conditions are right, although of course some species succeed much better than others. My sitting room is well lighted by gas, and there is also a fire constantly burning every day during the winter and when the weather is cold. Yet in this room, even on the mantelpiece above the fireplace, I have kept nearly all kinds of flowers in water for a remarkably long time, and also had plants in pots on brackets quite near the gas for as long a period; among these plants may be mentioned Maiden-hair Ferns, for they stood the room atmosphere almost better than anything else, except Chinese Primroses. These and many other evidences have convinced me that far more blame is put upon gas than it deserves, and that no one need be afraid of attempting the culture of plants in rooms lighted by it, provided they will attend to the wants of the plants in other ways. In a small cottage I know of two Acacias that have been growing on the window-sill for about five years, and only about 2 yards from a gas burner. They are put out in front of the window in summer for about two months, but during all the rest of the year they are in the room and do well.

What really destroys room plants is mismanagement and want of light and air. No plant, not even the Killarney Fern, will thrive long unless it has light and air; in rooms far from the window no plant can be expected to exist, let alone grow, for any length of time. Let anyone try the experiment of growing their room plants near the window, watering and potting them with some care, and they will find that they will both grow and flower. One thing is, however, undoubtedly against them in well-lighted apartments, and that is the light itself, which keeps up a certain amount of excitability in the leaves and flowers, which is exhausting. Wherever possible, it would be advisable with window plants to shut them out of the room when the shutters or blinds are closed, keeping them outside of these whenever danger from frost is not apprehended. A good deal, of course, depends on the size of room, no matter how it is warmed or lighted; but the larger and loftier it is the better, as the worst effects of the fire or lamp are only felt a few feet or yards distant. Rooms heated by means of hot-water coils and pipes are the worst, as, no matter where the plants may be placed, the pipes being as a rule equally distributed throughout, the dry air from them soon injures them, and their foliage shrivels and dies. In fact, the dry air of dwelling rooms is their worst fault, so far as plant life is concerned, and cultivators know well that, but for the light and heat and moisture they are able to command in such structures, glasshouses would be no better than dwelling rooms. Another point is that the higher the stand is for plants in a room the worse for the plants, as the nearer to the ceiling the hotter and drier and more vitiated the air is; for in dwelling rooms it is rarely any adequate outlet is provided for the foul air to escape. Room plants should therefore be set as near the floor-line as possible, and when they are tall they look much better set low than high, and are better seen. They also receive the rays of the sun better through the window.

During night the room fires should be allowed to burn quite out, so that the room may be cooled before morning, and if it can be ventilated at the same time all the better. As a rule, the first thing done in the morning is to open the doors or windows wide, no matter how

ould or windy it may be, and the plants are injured by cold or draughts; the ill effects of this they soon show, and it is at once put down to the gas, which had really nothing to do with it. J. S.

Plants for gas-lighted rooms.—Perhaps some of your readers will be glad to know of a few plants that will live for several months, and flourish in a gas-lighted room. First and foremost among these is the Parsley Fern. I think many are under the impression that this is a very delicate Fern; but I know for a fact that it has stood for some time in London in the neighbourhood of Regent's Park, in a room which is always lighted with gas; and it has flourished and thrown up numberless new fronds. Another good Fern is the Stag's-horn. It seems to grow anywhere and anyhow. I have had one for three months planted in a china bowl without any drainage, standing in by no means the lightest part of the room, and it as green and fresh as it was on the day when I first brought it in. The common India-rubber Plant is one of the most long-suffering of indoor plants, and I think will exist in one atmosphere as many years as most other plants do days. There are various kinds of Palms which will stand gas for a considerable time. If all the above are carefully and kindly treated by having their leaves occasionally sponged, and put out of window, and well syringed, they will well repay any trouble that is spent on them. —C. F. Davis, *Leatherhead.*

13439.—**Destroying woodlice out-of-doors.**—If you take to using paraffin cautiously you will be able to reduce the numbers considerably. Where it is possible pour it on the ground (where there are no roots of plants to be injured); it will certainly drive them away, and kill all that come in contact with it.—J. C. C.

INDOOR PLANTS.

CROTON HOOKERI.

Among Crotons may be found some of the most beautiful of plants, remarkable alike for their stately habit and for the highly diversified and brilliant variegation of their leaves; some of these are long and narrow, as in the case of C. Johannis and longifolium; others are irregular in shape, as in C. irregulare, interruptum, and multicolor; others, again, are beautifully undulated or waved on the edges, like C. undulatum; horned, as in the case of C. cornutum, the midrib of which terminates in an upright horn-like process, half an inch or so from the extreme end of the leaf; and others are spiral-leaved, like C. spiralis, a beautiful variety. Another section of this genus has compact, oval foliage, such as C. pictum, variegatum, and aucubæfolium. The colour and marking of the leaves are also as variable as their shape; in C. multicolor there is, as its name implies, a combination, almost, indeed, a confusion of hues, consisting of green, yellow, red, and crimson; C. aucubæfolium is spotted with yellow, like the Aucuba; C. pictum has a crimson ground colour, richly spotted with yellow and black; C. undulatum is deep metallic green, spotted with yellow and vivid crimson, and C. Veitchii has a broad band of yellow along the centre.

Croton Hookeri.

C. Hookeri, of which we give an illustration, is one of the finest of the genus. It is a compact yet free grower, and a native of the South Sea Islands. The midrib, young stems, and leaf-stalks are of a bright golden colour, a broad band of which traverses the centre of the leaves, irregularly projecting on both sides of the midrib. The upper surface ground colour of the foliage is a beautiful dark shining green, and the underside considerably paler. Like others of the genus, it requires a stove temperature. A compost of three parts good, substantial loam and one of peat, with a little sharp silver sand, suits it admirably. During its period of growth it requires a strong heat and abundance of root and atmospheric moisture. In winter a temperature between 55 degs. and 65 degs., with the usual daily rise with sun-heat, will suit it perfectly. Water in moderate quantities must also be applied, for, like all other coriaceous evergreen-leaved plants, it will not suffer drought with impunity. A position near the glass is necessary, in order to enhance its brilliant leaf markings. The young wood and foliage are usually pale in colour, but they assume the true tints characteristic of the species after the wood has thoroughly ripened, and before the growth of the young wood of the succeeding spring appears.

When well nursed, plants of this species grow vigorously, and, as soon as the desired dimensions are attained, they should be kept pot bound, so as to dwarf their future growth. They require abundance of water when root-bound, and the advantage of having so loamy a soil in preference to a peaty one consists in its being productive of firmer wood, more likely to stand uninjured the adverse circumstances to which plants are subject when used for window or parlour gardening. Some cultivators grow them for two and sometimes three years without shifting them, but this treatment soon induces an impaired constitution. It is a good plan to have an old plant from which a few cuttings can be taken annually in spring or in August; insert them in small pots of peaty sand, surfaced with pure sand, and cover them over with a bell-glass. The pots should be plunged in bottom-heat, and closely shaded for a time. When well rooted shift them into better soil and sixty-sized pots, and still give a brisk root temperature, and keep them growing as vigorously and healthily as circumstances will permit. In this way a succession of fine young plants, suitable for any purpose, is always at command, which, when they have become too large, can be thrown away. The finer kinds may also be grafted on the strong growing sorts. Side and cleft grafting are most suitable, and it can be performed either in spring or autumn, the pots bring plunged and shaded like those containing cuttings. Wm. F.

WINTER FLOWERING PLANTS (BULBOUS).—XVI.

In all the range of subjects suitable for flowering in winter under glass, nothing produces such a gorgeous show with so little trouble as the different varieties of what are commonly known as "Dutch bulbs," provided a little care and skill is exercised in getting them potted, &c., at the right time and in the right way. True, very few of them will bloom at Christmas, but from the beginning of February onwards a bright and continuous display may be made with very little trouble, and at a comparatively small expense. Of the whole race, however, Hyacinths, Tulips, Narcissus, &c., nothing approaches in value for a thoroughly useful winter flower the

Early white Roman Hyacinth.

This invaluable little gem may be had in bloom, with the simplest appliances, from November till April. It is most easily grown, requires only a moderate warmth, and when it opens is one of the purest, sweetest flowers in the whole floral budget. For ordinary cut flower decoration, for funeral wreaths, for bouquets, sprays, it is always graceful and acceptable. Its value is becoming more and more recognised every year, and when one importer alone disposes of over a million bulbs annually, some idea of the estimation in which it is held may be formed. The most important point in the successful cultivation of this most useful flower is to get the bulbs potted in good time. For flowering in October and November the bulbs should be potted or planted in boxes, at the end of July or early in August; later batches for blooming in December, January, and February, should be put in late in August or early in September. By potting some three or

four months before flowers are required, a mass of healthy roots is secured, which convey a large amount of nourishment to the bulbs, with the consequence of the blooms being plentiful, large, and fine. Late potted bulbs may flower well, but they have neither the size nor substance of those that have been absorbing nourishment through the roots for a month or six weeks. The best soil is a good loam, mixed with a fifth each of rotten manure and sand. After potting place the pots on a hard, level surface, through which worms cannot penetrate, and cover the pots to the depth of 6 or 8 inches with Cocoa-nut fibre, ashes, or tan, throwing a waterproof cover over all in wet weather. The best way is to plant the bulbs thickly in boxes, containing about 3 inches in depth of soil, with good drainage. Pots may be employed, placing four or five bulbs in each, if of the usual 5-inch or 48 size. Perhaps the flowers come finer in pots, but the drawback is that, if required as pot plants, the chances are that only very few will be all expanded at once, while by growing in boxes, those that are equally advanced may be lifted and potted together, and, if kept moist and shaded from the sun, will make nice even potfuls. If the bulbs are of fair size and well ripened, two, three, and sometimes four bloom spikes may be produced from one bulb. When found to be well rooted and commencing to grow in the plunging bed out-of-doors the plants should be brought inside and subjected to a gentle heat. Some recommend bottom-heat, but in our opinion this is injurious and unnatural. A place in a solid ash-bed in a warm house is best, and, if a temperature of 60 degs. to 70 degs. can be maintained, flowers will be produced in the depth of winter in about four or five weeks, or later on in three or four weeks from the time of housing. When just opening, the pots or boxes should, if possible, be removed to a cooler place, as the blooms will have more substance, and last longer. A nice moist atmosphere while the bloom spikes are being produced is a *sine quâ non*, and another important point is never to allow the roots to become dry while active, but at all times to provide a plentiful supply of moisture. From October until the end of January the blooms of this Hyacinth sell readily in Covent Garden Market, and frequently fetch good prices, but after that time the French and Dutch blooms begin to come in, and, being sold for less than they can be produced in England, affect the demand greatly. If potted or planted early, it is astonishing how little heat is required to open the blooms, even in the dullest weather, and how rapidly they come forward long before the larger flowered Hyacinths have done more than just made a start. The next most useful bulb is the

Early Paper-white Narcissus.

This needs much the same treatment as the Hyacinth, and is nearly, though not quite, as valuable and accommodating. The roots should be planted in boxes, or four or five in a 48-inch pot, in good time, and a very gentle warmth will bring them into bloom about Christmas, if they are thoroughly well-rooted. As soon as the plants have fairly started into growth they should be brought as near as possible to the glass, as these Narcissi soon become badly drawn if far removed from the light. When the blooms are expanding, if in boxes, as many as are likely to be required may be lifted and potted, four or five together, in 48's pots, choosing those of equal height and condition. If larger pots are used more bulbs in proportion should be employed. If the flowers are required only for cutting, however, they can be taken direct from the boxes, and a few dozens, or hundreds, of well-flowered plants at Christmas, Easter, or any season when the blooms are in demand come in exceedingly useful. Market growers often make a good profit on a nice batch of these Narcissi and Roman Hyacinths for cut flowers if they can get them just in perfection at either of the festivals named; and I have seen upwards of a hundred boxes of the Hyacinth alone in full beauty for cutting a day or two before Easter Day. Of course, it is almost needless to say that both these bulbs should, after planting, be placed out-of-doors and well-covered with 4 or 6 inches of Cocoa-nut fibre or ashes, and prevented from getting too wet until thoroughly well rooted and just starting into growth. B. C. R.

Pentas carnea.—Free-flowering, quick-growing plants like this well deserve cultivation. P. carnea strikes freely in the usual way in warmth if kept moist, close, and shaded. If cuttings are put in in the latter part of May they will make good flowering plants by the end of summer. Old examples well cut back then, will, if given moderate pot room, push up a quantity of shoots that will flower in a short time, as every shoot produces bloom. It succeeds in any kind of tolerably good soil that is not too heavy.—C.

REPLIES.

13449.—**Germinating seed in warm greenhouse.**—Yes; all the seeds named will come up in a warm greenhouse. Cinerarias should be sown at once in pots filled with peat and silver sand. Transplant into 3-inch pots when they will stand handling. Stand them out-of-doors until September, and they will begin to flower in October. Grow them in soil composed of rich loam, leaf-mould, and rotted manure mixed with silver sand. Calceolarias should be treated in the same way. Primulas should be sown in March, April, May, June, and July in pots filled to the top with leaf-mould. Have the surface rather rough and sprinkle the seed, not covering it with soil. Tie a piece of paper over the top of the pot, and when the soil becomes dry water the paper only—the seed will then germinate. After this remove the paper and place in a shady place near the glass, and pot off when big enough to handle. Never by any chance use peat-mould, as the loss of the seed is a certain consequence. Cyclamens should be sown in rich soil, composed of loam and leaf-mould, rotted dung, and silver sand. Be careful to have good drainage by placing at the bottom of the pot an oyster-shell or hollow potsherd, and over that some pieces of charcoal. Pot off when big enough to handle. —C. F. Davis, *Leatherhead*.

13408.—**Azalea mollis not flowering.**—The reason these plants did not flower well this spring is that they were not well looked after when they had flowered last year. The buds must be formed in the summer and autumn previously; and the better and stronger growth they make at that time the more freely will they flower the following spring. The plants after they had flowered should either have been re-potted into larger pots or planted out in peaty soil; and in any case they must not suffer for want of water at the roots. It is best not to prune them. The plants may be grown in the greenhouse until the month of June comes in, when they will do best out-of-doors.—J. D. E.

13240.—**Heating greenhouse.**—It is always best to have plenty of pipe, as not only is the heat more genial, but in the long run it is more economical. Eighty or ninety feet of 4-inch pipe will be enough for the cool half, and an extra row in the warm section will make the difference in temperature required. It would be convenient to have a valve to stop the circulation in the cool section when the warmth is not needed there.—E. Hobday.

13226.—**Heating pit from conservatory border.**—If the pit is on the same level as the conservatory, or at least not lower, and the boiler is able to do the extra work, there will be no difficulty at all. Only as the pit is for Cucumbers, and more regular heat will be required than for the conservatory, it will be better, if it can be done, to have a flow and return direct from the boiler, or at any rate it should be attached to the flow as near the boiler as possible; and a valve should be placed at that point to cut it off from the conservatory when heat is not required there. If winter Cucumbers are required there should be two rows of pipes for bottom-heat laid in rubble, or in a chamber covered with planks on which a layer of manure is placed to receive the hills of soil. Two rows of 4-inch pipe all round the pit will be enough top heat; and in very cold weather it is very easy to throw on a covering of mats if necessary. It saves firing, and the warmth inside is more genial.—E. Hobday.

13300.—**Chrysanthemums turning yellow.**—After they had made good healthy growth in January and February it is very remarkable that the growths should become yellow and ultimately die in March. The only suggestion I can think of is that some underground worm or maggot may have eaten the roots. If they had never started to grow at all, stagnant water in unsuitable soil might be the fault. The only useful advise now is to prepare fresh ground, and replant with another set of plants.—J. D. E.

13237.—**Geranium leaves turning scarlet.**—They have been badly managed. The leaves turn a reddish or scarlet colour because the shoots or the entire plant is dead or dying. The plants ought not to be cut down and potted at the same time; nor is it desirable to syringe them in cold weather. The potting soil ought to be light.—J. D. E.

13230.—**Raising Fuchsias from seeds.**—There is no special treatment necessary. Merely separate the seeds from the pulp in which they are enclosed with the point of a knife. Lay them out on a paper to dry, and sow them afterwards in pots or pans. The seeds vegetate best in a gentle bottom-heat. When the plants have made some progress they may be potted off singly in thumb pots.—J. D. E.

13282.—**Propagating Camellias.**—They must be grafted in the spring on stocks of the single red variety. It is done on the system of whip grafting. Tie the graft to the scion moderately firm, cover the union with grafting wax, and place the plants in heat—moderate heat is best.—J. D. E.

THE KITCHEN GARDEN.

PRACTICAL PAPERS ON FRUIT AND VEGETABLE CULTURE.

The Broccoli.

This is just the time to sow Broccoli seed for a full supply from October to the following June. The varieties I recommend are—Autumn Giant, Veitch's Self-protecting, good old Snow's, Spring White, Leamington, and for the present Cattle's Eclipse. These will come into use in the order in which they are mentioned. They can all be had at any good nurseryman's at an average price of about 9d. per packet, and each packet will contain as much seed as will serve most of our amateur friends two years, so that the cost will be a moderate one.

Both gardeners and amateurs sow Broccoli seed a great deal too early. If sown much earlier than the time mentioned, the plants get leggy. I always manage to have them short and stubby. The site recommended is that which has been employed with early Potatoes, so that as the Potatoes are used, begin to plant the Broccoli. Without any digging, the operation of planting is simplicity itself. Make a hole with the crowbar, put in the plant up to the lower leaves, and fill the hole with water—that is all that is required.

Raising the seed.—A very small plot of land is ample, but numbers of amateurs are unfortunate in raising seed because they do not bury it sufficiently deep. The proper plan is to draw shallow drills about 1½ inches deep. If the weather is dry, damp the drills with water before sowing. Sow the seeds thinly but evenly, then cover up each drill with your feet, finishing off with a slight rake to make all look neat and in order.

General remarks.—Little cultivation after planting will be needed, merely hoeing between the rows and keeping all clear from weeds. If large Broccoli are looked for they can be had by taking a few of the lower leaves off, and then giving them a good mulching whenever indication of growth is noted in the spring. Stiff and sturdy plants with their foliage touching the ground are what should be aimed at. Large succulent plants merely invite the frost to take hold of them. With respect to the three early Broccoli noted, they should be looked over occasionally, and all that are showing the flower should be cut off close to the land, and put into any convenient outhouse, where they will keep for a number of days fresh and good.

Stamford. R. Gilbert.

REPLIES.

13301.—**The Cabbage tribe on loamy soil.**—It is not often the Cabbage refuses to grow, but "Brassica's" land is evidently not suited for raising the plants on, though it should be easy enough to alter its character so far as the seed beds are concerned by adding ashes, sand, &c. If it could be conveniently done I should recommend some of the clay to be turned to mix with the remainder. This would be the cheapest way of improving it. A good liming will be beneficial.—E. Hobday.

13398.—**Cabbages running to seed.**—This cannot be prevented. If the plants have started into flower, the best way is to pull them up and throw them on the rubbish heap. A good strain of red Cabbage does not usually run to seed. Perhaps they were sown too early last

year. Some persons sow their Cabbage seeds for spring-planting about the end of July; in that case they sometimes run to seed, whereas if sown after the 12th of August they will not do so. It is also undesirable to sow the seeds on rich ground.—J. D. E.

13393.—**Tomatoes in frames.**—I succeeded well last year in this way:—I removed the middle from an old hot-bed, leaving about 2 inches. The frame then rested on the sides, which gave additional height—no doubt sides of earth would do as well. On the 2 inches of bed left I placed a layer of earth, and drove into the corners four stout bits of wood of such a height as to allow of 3 inches or 4 inches between them and the lights when on. To these I fixed a rough trellis of wood and wire, planted the Tomatoes at intervals, and, as they grew, trained them out on the upper side of the trellis. I watered freely, and only gave ventilation at first, but when the weather grew very hot I left the lights off by day, always replacing them at night. They require constant thinning of leaves and young shoots.—F., *Queenstown.*

13283.—**Destroying slugs on Cabbages.**—Dust the leaves of the plants with soot, and also the ground around them. The effect will be greater if this is done just before dark at night, when the pests are about to begin their depredations.—J. D. E.

FRUIT.

TRAINING VINES ON THE SINGLE ROD SYSTEM.

(Answer to Question 13452.)

The long-rod system in vine training consists in training a selected shoot from the bottom to the top of the house annually, fruiting it the next year and then cutting it out. Nothing can be simpler. Start with young vines, and do all you can to encourage growth till they reach the top of the house, and then, while that rod is bearing fruit, train another shoot from the bottom to take its place the following year. There will thus be one set of rods bearing fruit and another set preparing for fruiting. You should not rub off all the bottom buds; thin them out to a foot or so apart, and pinch out the leaders when the shoots have made five or six leaves. Young vines, or, indeed, any other vines, cannot have too much foliage if the leaves are not overcrowded, but one good leaf is better for carrying on the work of the plant than several of weak flimsy texture. Vines in good condition will go on for years making a new set of rods annually, the old set being cut out when the fruit is gathered, and the new rods left to bear the following year. This system may be carried on with vines planted from 3½ feet to 4 feet apart, with the young rods trained up in the centre of the spaces between the fruiting ones, or the same principle may be worked out with the one-vine system, or the vines may fill any given amount of space. Young wood throws the largest bunches, and the rod system, if the vines are well fed and the roots kept within reach and well-cared for, is a productive, though, some think, an exhausting one.

Some good cultivators never use the syringe at all after the buds break, and if the house is well ventilated, especially early in the morning, and if the borders and floors are well damped at closing time, the syringe may be dispensed with. There is always a danger that the water may be hard or impure. Syringing, unless great care is used in this respect, may do more harm than good. Red spider, which furnish the common excuse for syringing, can be kept out better by keeping the atmosphere buoyant and sweet by ventilation, than by any other means.

The management of the lateral growth should, in the hands of inexperienced cultivators, be worked on some clearly-defined principle. The young shoots which break away from the sides of the main rod, and which will have one or more bunches of Grapes, should be pinched two leaves beyond the bunch selected to remain, and, as a rule, only one bunch should be left. Nearly all fertile vines will show many more bunches of Grapes than should be allowed to remain, and, in the selection of the bunches they should be left as near the main rod as convenient. All lateral growths that break away from the bearing shoots should be pinched close back to one leaf, and, as a general rule, the pinching should be done before much growth has been made. This pinching should be continued till the fruit begins to colour, and then some cultivators allow a little more freedom to infuse new vigour by the encouragement of root action, though late root action is not in all cases an unmixed good.

The ventilation is perhaps the most influential of all operations in its effect upon the health of the plant and quality of the fruit. And it should be so carried out as to thoroughly change the vitiated air for that which is pure and wholesome, without causing cold currents or draughts. If there is mildew or red spider in the house at any time, depend upon it the ventilation is at fault. No house is altogether air-tight, but beyond this in calm mild weather no vinery should be altogether shut up except for two or three hours after closing time in the afternoon, which, at this season of the year, will be at four o'clock. On a cold, windy, or frosty night the disturbance outside will influence the inside atmosphere, and the ventilator need not be opened; but at other times a little chink of air during the night, to be increased when the sun strikes the house in the morning, will be beneficial; and houses so managed will have strong, substantial foliage, which red spider will not interfere with. It is the soft flimsy leaves which red spider like to settle upon.

E. Hobday.

REPLIES.

13390.—**Apples on the Paradise as bushes or pyramids.**—The pyramid form we prefer both for Apples and Pears. I planted nearly a hundred trees in our new garden, and every one of them was a pyramid. I planted as many twenty years ago in another garden, and my experience with them is yearly being confirmed in their favour. We do all our pruning in the late summer or autumn months, in order that the fruit may be exposed to the sun. Pyramid trained trees if not well managed soon become a thicket of wood. The centre growths require frequent thinning out.—J. D. E.

13412.—**Vines not flowering.**—Your question is not very clear, but it would appear that you have been forcing your vines all the past winter, as you say they broke beautifully last autumn. If that be so, it is not a matter for surprise that they do not produce any bunches, especially if the vines are twenty years old, and you subjected them to the same treatment the winter previous. As you say the vines are healthy, all you can do with them this season is to thin out the lateral growth towards the end of the summer, so as to get the wood well ripened. Early in December they must be pruned, and during the winter no more fire heat must be given than will suffice to keep out frost, but if a little warmth is required for other subjects on no account should the thermometer register more than 48 degs. by fire heat, and that only during the day, letting it run down to 40 degs. at night. Under this treatment the vines will break naturally next spring, and if the roots are right they will probably bear plenty of bunches. Of this you may be sure, if this treatment does not make them fruitful the roots are at fault; but your treatment has been so far from right that I expect they only want judicious management to restore them to fertility.—J. C. C.

—— The reason of the vines not flowering is not that they are not healthy enough, but that they have not been encouraged to make sufficiently strong wood the previous year. Thin the wood out well and train up young growths wherever it is possible to do so. Black Hamburgh vines will always bear well if they make strong young canes, or good lateral growths. The wood must not be crowded. The main stems should be from 2 feet 6 inches to 3 feet apart, and the lateral growths ought to average 18 inches apart.—J. D. E.

13403.—**Plum tree not bearing well.**—The Greengage is not a suitable Plum for a standard tree, and I have never known it to bear with any degree of regularity when grown in that form. If your tree makes a good growth, and produces plenty of blossoms which expand at the proper time, you may safely conclude that spring frost or cold wind destroys the blossoms. Other causes of failure would arise through the birds pecking out the buds, and by green fly attacking the leaves when they first unfold, which causes them to curl up and prematurely fall off, and the young fruit also. If you are sure your tree does not suffer from either of these causes, the Editor is no doubt right when he says your tree is probably starved by the grass growing over its roots. In that case remove the green turf to a depth of 1 inch over a space 8 feet in diameter, then take off about 3 inches of the surface soil and lay on the roots a layer of rotten manure 4 inches thick, putting a portion of the soil back on the manure but not the turf.—J. C. C.

13391.—**Seedling vines.**—These will bear fruit the third or fourth year—the third year with liberal growth. The small seedlings ought to be cut down to within two or three eyes of their base. The following season they will make either one or two strong growths, but they do not usually produce a fruiting cane. The next season cut them down to 4 or 5 feet from the surface of the ground, and after another season's growth they will have formed strong bearing wood. The conditions are, of course, that they have received good cultivation from the first.—J. D. E.

13406.—**Roof opening in span-roof orchard-house.**—Where there is sufficient ventilation from the sides, this form of house, when used as an orchard-house, does not require roof ventilators. The practical instructions you refer to in No. 211, by "B. C. R.," refer to greenhouses—that is to say, houses in which flowering plants are grown—and do not in any sense lessen the value of the instruction of "P. G." If you want an orchard-house, you could not possibly have a more reliable teacher than "P. G."—J. C. C.

13304.—**Blight on Grape vines.**—In answer to "C. P.'s" further enquiries on the the subject (p. 126), I think his description of his vine border and of his treatment of the vines fully confirms what I said in replying to his first query. There is apparently too much moisture altogether, and unfortunately scarcely any means of getting rid of it. I am afraid, in the first place, that, shaded as his house now is, it is no longer fit for a vinery; the want of sunlight during half the year is fatal to it. I should advise, therefore, if another and better site cannot be found for the house, that it should be used as a fernery, or for growing other plants delighting in moisture and shade. This, "C. P." may say, is small comfort, but I think it is the best thing to be done under the circumstances. After having said this, it is, perhaps, rather ungracious to criticise "C. P.'s" mode of treatment, which, however, it must be allowed, is generally conformable to what is considered orthodox in the cultivation of the Grape vine under glass in this country. But his border is evidently too deep and adhesive, and has been very much over-manured. Its clayey state shows also that it has been kept too wet by far. These two defects would fully account for the failure described; but, even were they rectified, the want of sunlight still remains, and sunlight is indispensable, not only to the ripening of the fruit, when produced, but to that of the wood for next year's crop. No artificial heat will ever supply the want of direct sunshine, and that heat alone is useless to induce fruit bearing, I will quote a notation I made from a letter by Messrs. W. and A. Gilbey, to the *Times* newspaper, dated 12th October, 1883:—"Alluding to the effect of sun and light upon the Grape, M. Duchartre, in a recent report to the National Agricultural Society of France, mentions the fact that in Burgundy, two consecutive years having been, the one bright and the other almost constantly cloudy, the Grapes of the first year—that, is the Grapes produced from the wood of that year—ripened and gave an excellent wine, while that of the second year was of an inferior quality. It is true, at the same time, that heat alone will not ripen the Grape. Thus M. Renon, Director of the Meteorological Observatory, at St. Maur, states that, in the court of the palace of the Governor of Algiers, an enormous trellis work of vines exists, the plants being cultivated solely for the thick shade they afford. On account of this shade, however, the grapes never ripen, and this notwithstanding they are submitted to all the heat of an African summer."—J. M.

POULTRY.

Minorcas. — We have always recommended this as a most useful kind, especially in confined runs and in towns, where its plumage does not get to look so dirty and shabby as that of many kinds through the smoke and dirt. We are glad to see this variety making headway among poultry fanciers, but even now it is not so well known as its many good qualities deserve. It is almost exclusively confined to Devon and Cornwall, and in all poultry shows in that part of the country the numerous pens of Minorcas form an important item. It is a good layer of large white eggs, not a large eater, easily confined in small runs, and a non-setter. These are undoubtedly qualities which should make the Minorca a favourite with those fanciers who are unfortunately only able to keep a few fowls in a small run in order to obtain a few fresh eggs. They will flourish in the heart of a large town. Anyone desiring to purchase a few good stock birds of this kind must observe the following points:—Cock, a large active bird of good shape, with spotless white ear-lobe and red face, long well-rounded wattles, comb firm, evenly serrated, and perfectly upright; dark, leaden-coloured legs, not too long and stilty, and tail carried rather upright, full, with long, flowing sickles—in fact, the Minorca strongly resembles the Spanish, except in the face and legs. The former is red instead of white, and the latter are shorter and stouter. The whole plumage must be black, with plenty of green lustre. Most of these points apply to the hen, except the comb, which is coarser and larger than in the Spanish hen, and should fall over on one side of the face. Let her be square in build, with short legs and full tail.—ANDALUSIAN.

13550.—**Hens losing their feathers** (*Katherine*).—If you are certain that you have not one or more feather-eating hens among your flock, there is little doubt that the bareness is due to the attentions of the cock bird, and is only to be avoided by introducing more hens into the run. However, as you state your run is small, perhaps it would be better to procure a fresh male bird. Change of food will do no good whatever. Are you sure your house is clean and free from vermin? Some birds pluck out their own feathers, owing to irritation of the skin. If you can discover them doing so, anoint the bare parts with petroleum ointment. If fowls are not provided with a good dust bath, minute animalculæ often infest them, which eat and bore through the quills until they fail and drop out.—ANDALUSIAN.

13551.—**Fowls becoming crop-bound** (*Amateur*).—Careless feeding, such as leaving for several hours without food, and then throwing fowls a plentiful supply of hard grain, is the principal cause of crop-binding. The grain becomes so swelled by the moist secretions in the crop that the outlet into the stomach becomes closed from the over-pressure. A little warm water, in which a small quantity of carbonate of soda has been dissolved, should be poured down the throat of the affected bird, and the crop afterwards gently kneaded with the hand for ten minutes or so. This treatment will generally give relief. A little castor oil should then be administered, and the bird fed very sparingly for three or four days. Your feeding is good, except that you are giving too much Indian corn and meal. Dispense also with the bran mixed with the barley-meal for the morning feed. You cannot judge from the yellow colour of the droppings that your birds are suffering from liver disease. Leave well alone. —ANDALUSIAN.

13552.—**Preventing eggs from hatching** (*W. W.*).—We presume yours are eggs from a valuable pen of birds, and, although you are desirous of selling them for domestic use, you do not wish your customers to obtain chickens at so cheap a rate. The only plan we know of is to pierce a very small hole with a pin through the shell. It is very seldom, indeed, that this fails to prevent the egg from hatching.—ANDALUSIAN.

13222.—**Forming village flower shows.**—If "H. G. P." will inform me where to address it I shall have pleasure in sending him this year's report and schedule of a Cottage Garden Society, in the County of Wicklow, which has existed for eight years, and been very successful. I shall also be happy to give him any further advice.—C. L., 23, *Clyde Road, Dublin.*

BEES.

13553.—**Keeping bees at Brighton.**—(*M. H. Adams.*)—There is no reason why a hive of bees, kept for amusement, should not succeed very well in Brighton. Bees fly long distances in search of provision in bright weather—certainly two miles, if not more. Artificial feeding during unfavourable weather would help them on greatly and insure success. The pleasure of keeping the bees would be much enhanced if an observatory hive were used in which the colony of bees in its strictly normal condition is presented for general observation. —S. S. G., *Boxworth*

13554.—**Management of small colony** (*Burton Phillipson*).—A colony of bees occupying so small a space in a hive as described by you must be very weak in numbers, but may by careful feeding be made strong in course of time, providing it possesses a queen. Feeding must be continued, to help the bees in building out more comb, as well as to encourage brood raising. Transferring to a bar-frame hive is not to be recommended, especially as the combs are so incomplete. Should the colony become strong enough to throw off a swarm, the better way would be to put the swarm into a bar-frame hive, and twenty-one days after (by which time all brood left in the hive at the time of swarming will have arrived at maturity) drive the bees from the old skep, and put them into another bar-frame hive. Information upon driving will be given in these pages a few weeks hence. Comb foundation is so quickly worked out by the bees, that transferring combs from skeps to frame hives is now very little practised. —S. S. G., *Boxworth.*

13555.—**Ants in hive.**—(*N. O. D., Cheshire*).—There is a difference of opinion as to whether ants are injurious to bees or not. They are said to cluster about hives for the sake of warmth; but they are fond of sweets, and the probability is that their object in entering a hive is to rob the bees of their honey. Endeavour should be made to trace the path leading from the ants' nest to the hive, and liberally use paraffin round the hive and on the pathway of the ants. This will effectually put a stop to their visits. Another preventive measure is to dissolve pitch in linseed oil, and with it draw a line round each leg of the bar-frame hive. Yet another is to put a stout screw in the end of each leg of the hive, letting it project about an inch, and stand each screw in a flower-pot saucer containing a little oil.—S. S. G., *Boxworth.*

BIRDS.

13556.—**Thrushes not singing.**—Will any reader tell me why my two cock thrushes do not sing? One was hatched in April, the other in June last.—G. WILSON.

13277.—**Food for thrushes.**—The young are easily reared on bread and milk. When wild the thrush feeds chiefly on insects, but it also has recourse to fruit and berries when its favourite food begins to fail. In the house it will eat and thrive on almost anything, even bran and water, with an occasional mealworm or black beetle.—From "Birds I Have Kept."

Birds I Have Kept in Years Gone By. By W. T. GREENE, M.A. (L. Upcott Gill, 170, Strand.)—This is a very pleasantly-written and chatty work on bird-keeping. About seventy different members of the feathered tribe are dealt with, and directions as to treatment are given in nearly every case. The work is well illustrated, and the only fault to be found with it is that reference is made unnecessarily difficult by the absence of an index or alphabetical arrangement.

A picturesque water-butt.—In Article III. on "Gardens of Light and Shade," page 80, the writer describes the difficulty of dealing with and rendering picturesque small garden spaces encumbered with the inevitable water-butt, &c. That useful adjunct of a small garden may, however, be made as handsome as, and far more interesting than, the stiff Agave in the stately vase of gardens of a more fortunate space. By planting a vine near, and training the shoots horizontally round the cask at distances of about a foot, just leaving the cask *en evidence*, between the leaves, an impression is conveyed of a natural association of Grapes and wine casks, and that by-and-by the juice of the graceful objects that adorn it will be contained in the article they thus render picturesque.—A SAUNDERSFOOT WATER-BUTT.

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NICOTIANA AFFINIS, sweet-scented, Bouvardia-like white flower, strong plants for early bloom, 2 for 1s. 6d.; 4 for 2s. 6d., free.—CASBON & SON, Peterboro'.

LOBELIA CARDINALIS, Queen Victoria, dark red leaves, scarlet, Gladioli-like flowers, 3, 2s.; 6, 3s. 9d. free.—CASBON & SON, Millfield, Peterboro'.

VEGETABLE MARROW PLANTS, long white, and Morres Cream, 6 for 1s. 6d., 12 for 2s. 6d.; Custard Marrow plants, 3 for 1s. 3d., 6 for 2s. 3d. Cucumber plants, long Ridge, 6 for 1s. 6d., 12 for 2s. 6d., all free.—CASBON & SON, Millfield, Peterboro'.

COBÆA SCANDENS, purple climber, Passiflora cœrulea, hardy Passion Flower, two of each for 2s. 6d., free. Canary Creeper, 6 for 1s. 6d., 12 for 2s. 6d., free.—CASBON & SON, Millfield, Peterboro'

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PEARSON'S New Geraniums, 1884, 9d. each, 8s. doz. New Fuchsias, 2s. doz., or 6 of each, 4s.—JOHN HARRISON, Belper, Derbyshire.

GARDENING ILLUSTRATED.

Vol. VII. MAY 23, 1885. No. 324.

INDOOR PLANTS.

LYCASTE SKINNERI.

One of the best cool winter-flowering Orchids is Lycaste Skinneri, which, if well looked after, will flower abundantly at that season when the more gorgeous Cattleyas are resting. Though not so lovely or so rich in colouring as other popular Orchids, it has its own special advantages. The flower has great substance, it is thick and fleshy, and lasts for a long time. It will bear a great deal of knocking about, without sustaining much injury, and may, with a little care, be grown in an ordinary sitting-room —at any rate, if not actually grown in the room it may with impunity be introduced into it when it is in flower. After it has once been well and properly potted it is one of the easiest things to grow, and the secret of good culture is simply to keep it always moist and always cool. Being the coolest of cool Orchids, it requires no more artificial heat than would be given a Cineraria. It likes the warmth of a warm greenhouse in spring and early winter when it is making its first growth, but that is all. Imported specimens should be potted in the usual way in lumps of fibry peat, Sphagnum, and charcoal, the chopped Moss being put carefully on the top, so that it may take root and grow rapidly. Care should be exercised as to giving much moisture until the new growth appears, when watering may be gradually increased, chiefly from the syringe, with now and then a careful clip. When the large leaves begin to unfold, it is astonishing how much water it will take and enjoy, especially if it is growing in the light, just shaded from the direct rays of the sun. One of the best ways to grow this and many other Orchids is to suspend it under clear glass in a south aspect with a sheet of white tissue paper to shade it slightly from the sunshine. Lycaste Skinneri likes guano water, and when it is making its growth a judicious supply will make an immense difference in the size and vigour of the leaves and pseudo-bulbs. A few bits of old perfectly dry cow-manure, inserted here and there among the Moss and charcoal at the top of the pot, will prove to be a great source of strength, for the young roots will run into them and derive much benefit thereby. The moisture may be decreased when the growth is finished, but the plant must never be altogether dried; it should be kept, if possible, in a cool, moist atmosphere, and always damp. When the flowers appear care should be taken that they do not get splashed with spray from the syringe, or by drip, else they will soon become spotted and utterly spoilt. The dryer the atmosphere when the flowers are out the longer will they last, but the health of the plant itself must always be considered. The Sphagnum may be allowed to grow up among the pseudo-bulbs when the plant gets established.

L. Skinneri is one of the cheaper Orchids; the far more beautiful variety, L. S. alba, is, however, so scarce that it is too dear for ordinary gardeners.

J. L. S.

Dielytra spectabilis.—This plant has gained great favour with us of late years, and is well deserving of it, with its pale green foliage, and its large rosy blossoms, shaped like a heart, which give rise to its popular name of "The Bleeding Heart." In some parts of England—namely, Surrey, Sussex, and Hampshire—it will stand out-of-doors all the year round; in colder counties it needs a little protection from severe frost. It is well adapted for a window and greenhouse plant, as when forced it flowers very early. It should be planted in a pot of 8 inches in diameter, if used as a greenhouse plant, in soil composed of peat and loam mixed with a little sand; it wants plenty of water when in flower, and if not neglected will continue in bloom for two months. After blooming it should be planted out in the border, like Hyacinths. It will not force well two consecutive years, so it is well to have two batches of it to force alternately. When planted out-of-doors it will flourish in the shade; at the same time it must not be allowed to get too moist, as that causes the foliage to rot. It is propagated by cuttings, which strike easily in sand, covered with a bell-glass.—C. F. Davis, *Leatherhead.*

Lycaste Skinneri.

Hyacinthus candicans. — Considering the time that has elapsed since the introduction of this splendid bulbous plant it is strange that it is so seldom to be found in the collection of an amateur. I am at a loss to account for this, as it is a gem for autumn bloom, either in the garden or conservatory; three bulbs in a 9-inch pot (in a rich sandy compost, with plenty of drainage) look very well, the blooms coming a purer and, if anything, more waxy white. Grown with scarlet Gladiolus it forms a splendid contrast. For cutting, either for house decoration or wreath making, it is excellent. Bulbs planted in the border ought to be lifted in November, and stowed away until the following spring. Some say it is scented, others fail to perceive a perfume; I agree with the former.—V. V. V.

AN AMATEUR'S GREENHOUSE.

I suppose that everybody who has a garden is fired with the ambition to have a greenhouse of some sort attached to it, and from the inquiries that are often made upon the subject in all the gardening papers, I am inclined to think that some information on the subject may not be unacceptable, as I believe that from personal experience I am qualified to give such information. Answers to these queries are often given by persons who, able gardeners as they are, give their replies more from what they think things ought to be than from what they know them to be. A man who has had to do with large places, extensive ranges of houses, a staff of gardeners at his beck and call, is about as qualified to give information on this subject as a certain duke, who is supposed to be the richest peer in England, is to give advice on the subject of "thrift," for the encouraging of which a society, of which he is president, has been started; for with the difficulties that surround anyone whom this laudable ambition stirs up he has no sympathy. But one who has for nigh twenty years been practising which is the best method of carrying it out must, unless he is a noodle, have gained each year more and more experience; although he may not be theoretically a gardener, and would be hopelessly at sea on endeavouring to manage a large place, yet within his own lines he is a much more trustworthy guide. In making these remarks, I do not by any means desire to let it be supposed that I have found out some secret that no one else has, or that my greenhouse is better than any other amateur's, but I have made them simply to show that I am not giving advice or instruction without practical knowledge of the subject.

I am not quite like Goldsmith's parson, "passing rich on forty pounds a year," still, I am one who has to look to ways and means, and, while following out a hobby which has given me much real enjoyment, to do so with an eye to economy in its various details, and, whether in the construction of the house itself, or its management, to study ways and means; it was so in the construction of the house which has been in its present position seventeen years. It is a span roof, standing out in the garden, 21 feet by 12 feet, and about 10 feet high in the centre; the brick walls are 3 feet 6 inches in height, and the whole of the woodwork, with the exception of the three sashes on each side, about 2 feet wide, and a ventilator on the top and over the door, is a fixture; it was put up by a jobbing carpenter, and, the woodwork being substantial, it has stood very well. The door, which is at the west-end (the house runs east and west), is partly wood, the upper half being glazed, and the same sized squares, 12 inches wide, are used throughout top and sides, so that wherever a pane is broken there is always glass at hand of a proper size. The width of the house is divided into three equal parts, the foot-stage, which is about 1 foot from the ground, and two side stages, about 4 feet from the ground, bringing the plants to the level of the eye. These stages are all made of battens about 3 inches wide, 1 inch thick, and spaces are left between each batten of 2 inches, so that water freely flows away in watering; the floor of the house is covered with sand so as easily to absorb the moisture. I have said that the foot-stage is

1 foot from the ground; it is made so in order that the pots of early flowering bulbs, Lachenalias, Freesias, Tropæolums, &c., may be laid on their sides, out of reach of mice, frost, and "forgetfulness;" for when they are put away in an out-house they are too apt to escape notice during the winter months. I have also a shelf that goes down two-thirds of the house over the central foot-stage, supported by the iron ties which clamp the house together, and on this during winter, are stowed away, in a place they like much, the few show Pelargoniums that I can grow; they are then, of course, in small pots. There are also two small shelves at each side of the door, which are used for the same purpose. Attached to this, hut on a lower level, is a lean-to about 12 feet in length, which is used as a sort of plant lumber room, hut has heen found very useful, for here I can place Camellias and Azaleas when they have finished hlooming; here also I can put boxes of Aster, Stock, and Zinnia seeds—can hring down any plants that have done flowering, and then, in November, when all other things are stowed away in their winter quarters, I can fill it with Chrysanthemums, and make an effective display; but that I do not at other times rely on it for growing plants may be inferred from the fact that I grow a vine on the roof, and a plant of Maréchal Niel at the hack; the latter gives its hlossoms before the vine makes much growth, and the vine has finished its work hefore I put the Chrysanthemums in the house. But the question will be prohably asked—How do I manage to

Heat the house I have thus described? Of course, if money were of no consequence, a small boiler and hot-water pipes would be what I should desire; but, as it is, I had to hit upon something more economical, and easily managed. I had in early life a good deal of experience of brick flues, and I at first thought of using them exclusively, hut, recollecting how often I had been bothered with smoke coming out of the joints, I wished for some other plan. A clever "Jack-of-all-trades" suggested drain-pipes, six inches wide, and these I used. The furnace now is fixed into the wall at the east-end of the house, and for ahont six feet there is a brick flue, for I felt that the pipes could not stand the heat so near to the furnace. This, it will he seen from this description, is inside the house, although it is approached from the outside, and the fuel is put on there, so as not to create any dust in the house itself. After this six feet of hrick flue, the pipes were laid on, continued to the end of the house, hrought under the foot-stage near the door, and then carried hack again to the west-end of the house, and brought into the lower house, and thence into the chimney. It will thus he seen that there was a good deal of heated surface, and in truth I have found it sufficient even during the severe winters we have had to keep out all frost. This is my sole object. I have no idea of forcing anything, but to let them grow on until the usual time of flowering. I had one difficulty to contend with in this plan of warming—viz., that of cleaning out the flues. The front had to he cemented together, and as I had not heen ahle to give much of a rise to the pipes, this happened to be necessary two or three times during the winter; hut the undoing of the cement, and fixing again, made a good deal of dust, and caused much trouble. I talked the matter over with my "Jack-of-all-trades," and, heing a man of considerahle resources, he at once hit upon a plan which entirely did away with the annoyance. I have said that the 6 feet nearest the fire were of hrick, and with tiles on the top; there was no difficulty about this part. The great difficulty was where the pipes turned. His plan was to build at each of these turns a square piece of brickwork with one tile on the top, which could he easily removed, the flue hrush inserted and the next opening reached. By this means the whole flue is cleaned out in the space of a couple of hours, and the tiles again placed on it. I always give them a good cleaning out before the winter commences, and they require the operation to he repeated ahout twice during the winter. I may as well add that my expenses for fuel are not very large, especially in such a winter as the past. I have put a fire in every night; sometimes more for fear of a sudden change in the weather than for any absolute necessity. Very little coal is used to light the fire, and afterwards it has been kept up almost entirely with oinders; in fact, all this winter I have not used more than ten bushels of coke. When the winter is severe, and stronger fires have to he kept up, more coke is used.

Such, then, is my greenhouse. I shall hope in my next to give an account of my stock in trade, and how I utilise it for keeping up a succession of flowers throughout the year.

DELTA.

Oleanders.—The individual blooms of these easily-grown plants much resemble those of perpetual flowering Carnations, and are little inferior to them for cutting, a purpose for which they are in every way adapted. Their erect habit of growth is somewhat against them, but, where large, well-furnished specimens exist, with suitable treatment they can be turned to good account. Large examples of this description should ahout the end of June he placed out-of-doors in a sunny position, where their further growth will be somewhat checked. If treated in this way, and supplied with water enough to enahle their bloom buds to set, shoots taken off with ahout half a dozen joints will strike readily, and make nice flowering stock in 5-inch or 6-inch pots. Young plants propagated from small shoots and grown on in little pots should also then be fully exposed to the sun in the open air. Unless Oleanders are so managed there is no way of insuring satisfactory hloom, as they keep on growing and do not get their growth properly ripened. They will thrive in any kind of soil, hut moderately strong loam seems to encourage a disposition to flower.—R. S.

REPLIES.

13449.—**Germinating seed in warm greenhouse.**—All the seeds named in this question will germinate in a warm greenhouse. The same kind of soil will do for the whole of them to vegetate in; a compost of two parts loam to one of leaf-mould, with a little sand, is as good as anything else. The seeds of the Calceolaria are so very small, that for them the soil must be made very fine, and also smooth on the surface. When the seeds are sown, a little fine sand sprinkled over them will he sufficient. The other seeds may he covered a little deeper. It is a rule with gardeners when sowing seeds in pots to cover them over with fine soil to the depth of the diameter of the seeds.—J. D. E.

13443.—**The use of charcoal in potting plants.**—"Polyanthus" asks what is the object of using charcoal in potting plants; whether it is for drainage, to keep the soil sweet, or to supply some element to the plant otherwise wanting? The answer is that it is good for all those purposes. Quotations might be made at great length from professional hooks to show this, but it will suffice to make one only, and that is taken from "Manuals for the Many. No. 11.—Manures." At page 6, charcoal is stated to he "a most efficient manure to all cultivated plants, especially to those under glass. . . . We think no cultivated plant would be unhenefited hy having charcoal applied to the soil in which it is rooted. It should he broken into small pieces ahout the size of a nut, and for potted plants may he mixed in the proportion of one part charcoal to twenty parts earth. . . . The reason of charcoal heing so useful a manure is very apparent. MM. Sennebier, Saussure, and others have demonstrated that plants are rendered much more luxuriant and productive by having carbonic acid applied to their roots than other plants to whose roots no such application was made. Now, charcoal, kept moist, as when huried in the soil, slowly combines with oxygen, and emits carhonic acid; in fact, it slowly dissolves. For drainage in flower-pots none better can be employed than 2 inches in depth of pieces of charcoal ahout the size of a filbert."—J. M., *South Hants.*

13450.—**Treatment of Geraniums in autumn.**—The hest way is to take cuttings in August, and trust to the plants obtained from these to plant out the following season. The old plants are sometimes preserved during the winter. In that case they must be taken up before the frost comes. All the soil must he shaken from the roots. The greatest portion of the old leaves must be removed; but do not cut them hack. Use rather small pots and light soil in which to pot them. After doing so place them in a warm, airy house until they have drawn root.—J. D. E.

13438.—**Soot water for Ferns.**—I water all my Ferns with water very much impregnated with soot, and they thrive well; but I have no very delicate specimens excepting a Stag's-horn, which I, having no idea it required special treatment, potted and watered in the ordinary way, and kept in a sitting-room window, exposed to the full glare of the sun. The result up to the present time is that the fronds have increased in length, in some three months, about 1½ inches. They are beautifully formed, and have a mealy coat. No fresh ones have come, and one is turning yellow.—MARK.

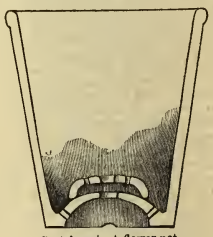
—— The Ferns would not receive any benefit from the application of soot water, and its injudicious use might be injurious to them I do not care to use soot water for any kind of plants; it sometimes kills the points of the active rootlets.—J. D. E.

—— I myself use soot water mixed with rain water, or soft water, about the colour of good beer, once a week, and find it a grand thing. I hope others will take a hint from this.—UNCLE JOE.

13517.—**Plants for Cucumber house.**—Allamanda Hendersoni, Clerodendron Balfouri, and Stephanotis floribunda will do well as climbers in your Cucumber house. The following plants will also flourish well: Poinsettias, Gloxinias, Gardenias, Eucharis, and Crotons.—C. F. DAVIS, *Leatherhead.*

13435, 13436, and 13516.—**Cure for mildew.**—If dry flowers of sulphur dusted on the leaves do not destroy the mildew, mix some with hot soft-soapy water, and if the Roses are in pots lay them on their sides, and well syringe the leaves with the mixture. We use scarcely any other mixture to destroy insect pests, than a soft soapy solution.—J. D. E.

Crute's patent flower-pot.—The inventor of this flower-pot claims, among other things, that it provides for perfect drainage, and for ventilation of the centre of the pot, lessens evaporation, and prevents the entry of insects; that it is not liahle to clog when plunged, and that it facilitates repotting, inasmuch as the plant remains erect when shifted, and is therefore not so likely to receive damage.



Crute's patent flower-pot.

In repotting, the plant is not turned upside down, hut the pot is placed over an upright stick which passes through the hole at the bottom, when a gentle pressure is sufficient to upraise the plant with the earth intact, the empty pot sliding down the stick. Personally, we think complications in matters of this kind are generally not improvements. In the case of quick growing stuff we have seen many people who did not crock at all, hut simply threw a bit of turf in the bottom of the pot. In gardening and many other arts the great effort should he to simplify matters. Our gardens are often too full of contrivances for doing simple things. We say so much, having seen with regret many outhouses and parts of the garden crammed with *débris* of things hought and never found effective. As regards the ventilation of the pot we have one word to say. There is no proof whatever that plants want the soil so thoroughly ventilated as is sometimes supposed. Soil standing in a pot, usually of a porous material, is exposed to an amount of aëration greater than the soil gets in nature, because the air is playing upon it all round. Plants often root deeply into rocks and send their roots down 10 feet into deep soils, and we think, therefore, the point of ventilation ought not to he made much of. However, it is only fair to Mr. Crute to say that he is a very good cultivator of plants, and should know what is wanted by many an amateur, and in the case of choice plants the contrivance for repotting would, no doubt, be useful. The drawing and engraving are our own after the article submitted by Mr. Crute.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, May 25th to 30th.

Potting Pelargoniums and Petunias for the autumn decoration of the conservatory. Sowing Green Curled Endive betwe n rows of Peas. Planting Vegetable Marrows and Ridge Cucumbers, affording them the protection of hand-lights or mats by night, and slightly shading them from the sun by day. Thinning spring-sown Onions, afterwards hoeing the ground between the rows; sowing Giant White Cos, Ivery's Nonsuch, All the Year Round, and Tom Thumb Lettuces. Planting out Celery. Mulching Raspberries with half-rotted manure. Giving Plum trees on walls a good washing with Quassia-chip water to keep off green fly. Sowing American Red-top Turnips. Planting out Tomatoes in warm situations; also Early Cabbage, Lettuce, and Cauliflower plants. Putting in Fuchsia cuttings to furnish a batch of young flowering plants in autumn. Pricking out Celery plants in very rich soil, and keeping them well supplied with water. Sowing Autumn Self-protecting Broccoli to come in for winter use.

Potting Chrysanthemums intended for standards into 8-inch pots. Sowing another crop of Scarlet Runners, Veitch's Perfection, and Ne Plus Ultra Peas; also Parsley in well-watered drills. Cutting out dead Laurels and removing overhanging boughs of trees and shrubs in pleasure grounds. Plunging outdoor pot Roses in a sunny situation. Nailing in leading growths of Peaches, Nectarines, and Apricot trees. Sowing Green-curled and Broad-leaved Endive. Looking over British Queen and President Strawberries in the open ground, and picking off all the late and weak blossoms, so as to make sure of some fine fruit, and getting them netted. Sowing Mignonette in 6-inch pots for indoor decoration; also sowing Red Globe Turnip and Coleworts. Training creepers on house sides and on verandah. Dibbling in and watering Spinach seed where blanks have been caused in the rows. Top-dressing Lilium auratum. Sowing Canadian Wonder French Beans and Radishes.

Hoeing amongst all growing crops. Dusting Turnips early in the morning with lime and soot to keep off the green fly. Hoeing among Strawberry plants and afterwards mulching them with short Grass. Placing Primulas in cold frames, and shading them from the direct rays of the sun. Nailing the leading shoots of wall fruit trees. Putting in cuttings of double Wallflowers and Alyssum. Planting Snow's Winter White and Walcheren Broccoli. Shifting Balsams and Cockscombs into flowering pots.

Glasshouses.

Daturas.—Old plants of Datura cultivated in pots and wintered out of the reach of frost will now have broken into growth. If they are in want of more root-room they must be shifted at once into larger pots or tubs, giving them good, rich loam. Where there is a large conservatory to keep furnished, several of these showy plants may with advantage be grown so as to give a succession of bloom—this can easily be obtained by starting them at intervals. Those that commenced growth and were potted earlier will now have got hold of the new soil, and should have plenty of air and light to prevent the shoots from becoming drawn, a condition in which they do not flower freely.

Mignonette.—In large greenhouses and conservatories large examples of this plant are often preferable to small ones, and in order to have them of the required size, and with the requisite amount of healthy foliage, they will require proportionate pot room. I have, however, not found it well to give too large shifts, and it is better to move them frequently. Mignonette likes fairly rich soil, and the plants should be stopped as they require it; a good place in a light house or pit, and plenty of air to insure stout leaves that will maintain a healthy condition, are indispensable. Plants with indifferent foliage are unsightly, however full of flower they may be. A little more seed may be sown now, and if well attended to the produce will yet attain a useful size. T. B.

Flower Garden.

Roses, climbers, and annuals.—A strict look-out should be kept for fly and mildew, in order that remedial measures may be taken. To destroy fly there is nothing better than clear water, applied with force through a syringe or garden engine; for mildew use soapsuds, and while the plants are still wet dust them over with sulphur. Should leaf-rolling maggots be troublesome, the only sure cure is to pick them off and burn the leaves in which they are ensconced. Keep all that have been recently planted thickly mulched, and in dry weather water freely. Brier stocks should be kept clear of all shoots, except those that are to be budded, and root suckers should be destroyed as soon as perceived. The foregoing remarks are equally applicable to Roses on walls and verandahs, with this addition, that where there are projecting eaves that prevent rain reaching or washing the plants, more frequent watering will be necessary. Clematises and other climbers now need weekly attention as to direction of growth and training; sticks or strings should be placed to such annual climbers as Canary Creepers, Nasturtiums, Convolvuluses, Scarlet Runners, and Sweet Peas before there is any danger of the growth getting matted together. Seeds of all these may still be sown, and also of the quickest growing dwarf annuals, such as Virginian Stocks, Candytufts, Clarkias, Limnanthes, and Nemophilas, and finish planting out Asters, Stocks, Phlox Drummondi, Zinnias, Indian Pinks, French and African Marigolds, Everlastings, and ornamental Grasses.

General Work.—Just now bedding out is the principal operation—work that while it lasts too often monopolises one's entire labour; they need not be so, however, if a beginning be made, say early in May, and the hardy kinds be planted first, finishing up the tender sorts early in June. In this way time may intermittently be spared for hoeing and weeding shrubberies, picking off dead flowers and seed vessels from Rhododendrons and Azaleas, tying up perennials, clipping verges, weeding walks, mowing, and any other jobs necessary to neatness. W. W.

Fruit.

Orchard houses.—When the fruit begins to soften for ripening, syringing may be discontinued and the supply of water to the roots considerably reduced, but at no time must the watering be discontinued, as a flagging state of the trees will soon destroy the sprightly flavour, if it does not lead to the premature ripening and dropping of the fruit. As safeguards, trees which have rooted into beds or borders should not be disturbed, as feeders of this kind always send up a steady supply; and the pots after being well watered should be heavily mulched to keep in moisture. When the time arrives for gathering, remove every fruit before it is ripe enough to fall from the tree, place in shallow boxes well bedded with soft, dry Moss, and convey to a dry, airy room for use when in condition.

In the late or general house fruit of all kinds is now swelling away freely, and good syringing twice a-day will be indispensable. Always use soft water if it can be obtained, and see that every part of the tree is well bathed, otherwise aphis and spider will soon attack the Peaches, Plums, and Cherries. Pay daily attention to pinching and thinning where strong, upright growths are robbing the lower parts of the trees. Give an abundance of water to the roots, and add stimulants where feeding is considered necessary. As the fruit gets more advanced and the stoning process begins to draw upon the trees, frequent additions of the richest material to the mulching, and constant feeding with warm diluted liquid, may be indulged in without fear of forcing a gross habit, as is sometimes the case when this treatment follows immediately after the flowering period. Thin out the fruit of Peaches, Nectarines, Pears, and Cherries where too thickly set, always bearing in mind that light crops of fine fruit give the greatest amount of satisfaction to producer and consumer, and pay best when sent into the market. If Strawberries still occupy the shelves, an effort should be made to keep them quite clear of the trees, and in a position favourable to copious feeding and good syringing without fear of injury to the permanent occupants of the house.

Hardy fruit.—The disbudding of Peaches and Apricots should by this time have been brought to a close, and laying in and the stopping of gross shoots will require attention. If the broad copings have not been removed, frequent syringing will be necessary and highly beneficial to the fruit and foliage, and copious waterings on well-drained borders will be found a powerful aid in keeping the trees clean and healthy. Pears on south and west walls, and also the most forward pyramids, will now be sufficiently advanced in growth to require attention to stopping and thinning. We find that continuous pinching of the strongest shoots invigorates the weak ones, and leads to the formation of blossom-bearing spurs, whereas the July pruning produces a violent check at a time when the half-swelled fruit is in the greatest need of encouragement. The early thinning of the fruit on Pear trees should not be entered upon rashly, as many promising fruits fall off after the inexperienced have set them down as safe; but heavily cropped trees may be relieved by the removal of all badly formed and inferior fruits, which cannot grow into value if allowed to remain. W. C.

Vegetables.

Celery.—Early-sown Celery should now be put out; if the trenches have been prepared beforehand run the hoe over the surface to destroy any weeds that may be vegetating. Give the plants a good soaking with water before moving them; remove them with as many roots as possible, and as much soil as will adhere to them.

Ridge Cucumbers and Vegetable Marrows may be planted out at any time, if they can be afforded the protection of hand-lights; and, by way of starting them quickly into growth, a slight bottom-heat is desirable, and easily created by the use of lawn mowings and stable litter; about 2 feet in depth will be ample, and as the material cools down the roots of the plants will soon establish themselves in it. Seedling plants of Thyme, Basil, Sweet Marjoram, and Sage, should be pricked out under shelter, and may be permanently transplanted in the open ground about the end of the month. Sow Lettuces and Radishes once a fortnight; the former should now be sown where the plants are to grow, as transplanting in dry weather entails much labour in watering, and even if this be afforded the plants receive a severe check. Asparagus being now in full bearing, Seakale may be dispensed with; any yet covered should therefore now be exposed, and gaps in the plantation be made good by dibbling in sets made from pieces of roots 3 inches or 4 inches long. Salt is a valuable fertiliser for this esculent, and should be scattered over the surface after the ground has been dug.

Leeks and Onions.—To obtain the peculiar mild flavour which Leeks possess when large and freely grown, the plants must not be allowed to become stunted by being too close in the seed bed; to prevent this, thin them out so as to leave them 6 inches apart. Spring-sown Onions should be thinned before they get too large. Take advantage of the soil being moist after rain to do this. Large kinds, such as Rocca, or Nuneham Park, require double the room necessary for small varieties like Danvers or James's Long Keeping. If it be desired to grow well-developed bulbs of the large-growing kinds, these should be thinned so as to leave them 8 inches or 9 inches apart in the row; the smaller-growing, later-keeping sorts will not require more than half that room. Where some are required for pickling, a portion of the smallest-growing kinds need not (unless they have come up very thickly) be thinned at all.

Work in the town garden.

Outdoor garden.—Towards the end of May, a great improvement in the appearance of everything, particularly out-of-doors, is apparent in the town garden. In the smoky atmosphere of a large town, almost all outdoor plants have anything but a flourishing appearance through the winter and early spring months, as a rule; but about the middle of May a great change takes place, and with good cultivation quite a rural effect may be produced from that time until the end of October. Herbaceous plants set out about a month ago will now have taken hold of the soil, and be growing rapidly. Keep such as require support properly staked as they grow, and see that they do not want for water in dry seasons. German and Ten-week Stocks that were raised under glass should now be at once planted out, the soil having previously been prepared and liberally enriched. Such planting is much better done during showery or dull weather, as Stocks in particular are very liable to wilt badly if transplanted on a bright day. If the sun shines strongly within two or three days, shade of some kind must be given, or the plants will suffer. Asters, unless sown very early, will hardly be sufficiently advanced to be placed in their flowering quarters, but when fit the same precautions should be taken.

Indian and Chinese Pinks, Phlox Drummondi, Sunflowers, and several other annuals that are often raised under cover, must also be put out as soon as sufficiently strong; at present all such, as well as nearly all the most tender tropical bedding-out subjects, should be gradually hardened off in cold frames. It is still too early to plant out Geraniums, Lobelias, &c.; Dahlias are now quite safe in cold frames if a mat is thrown over on a cool night; do not let these get very much cramped in small pots,

but shift into 4½-inch or even 6-inch pots, if necessary, before planting.

Indoor.—In the greenhouse there should be plenty of Zonal Pelargoniums, Petunias (both single and double), Cinerarias, Calceolarias, with a few early show Pelargoniums and Fuchsias. Some of the best Fuchsias for early flowering are Mrs. Marshall, Lustre, Sedan, Elizabeth Marshall, and Pink Perfection. Old plants of these shaken out in February, repotted in rich loam and leaf-mould, and kept moist and growing in a genial temperature of 60 degs. to 75 degs., with a little shade, will be in full flower by the present time. In warm houses Gloxinias are advancing rapidly; keep the seedlings pricked off as fast as they touch each other, and prepare for potting off the most forward singly when large enough. Old plants started early will now be coming into flower; keep them moist and shaded, and assist with a little weak manure water as the blooms rise. Vines need constant attention as to stopping the shoots and laterals. Maintain a moist atmosphere in the house until the bloom expands, when it must be allowed to become drier for a time. Rhynchospermum jasminoides, a very desirable greenhouse climber, with white sweet-scented flowers, is in full beauty just now.

Chrysanthemums that have been potted off should now be plunged in ashes in a sunny position out-of-doors, where they will grow much faster and stronger than if coddled under glass. Keep them shifted on into larger pots, using good rich soil, as often as they require it; any required to make really fine plants should now be in at least 6-inch or 7-inch pots. If fine flowers are desired and height is no objection, one stopping at 6 inches or 8 inches high will be sufficient.

Window boxes must now be in readiness for their occupants, though the end of the month will be quite time enough to fill them. We much prefer filling the boxes with Cocoa-nut fibre and plunging the plants in this to the planting-out system. One great advantage is, that if a plant goes wrong, or out of flower, it can be replaced in a moment; another, that the boxes last five times as long by the former plan. The most desirable plants for window boxes are Zonal Pelargoniums of sorts, Fuchsias, upright growing ones for the back row, those of drooping habit for the front; Calceolarias (shrubby), Petunias, both double and single; tuberous Begonias, Begonia Weltoniensis, &c.; Lobelias and Coleus, Stocks, Balsams, and others are very showy for a time, but not so lasting as the others. A few plants of Maurandya, Lophospermum, Thunbergia, or the beautiful Plumbago capensis, set at each end of the box, and trained up each side of the window on strings or wires, give an exquisite finish to the whole. B. C. R.

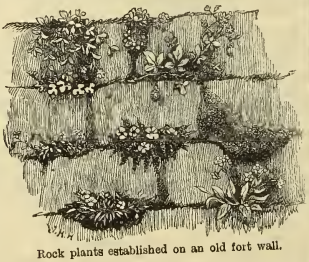
13506.—**An amateur's propagator.**—The propagator I purchased was advertised in Gardening, and was sent me by Messrs. Fletcher and Phillipson, of Dublin. Several gardeners have looked at it, it being the first in this neighbourhood, and it has met with general approval. I sprinkle the cuttings every night very lightly with luke-warm water. Do not keep too much heat, but keep it very regular. This is necessary to success.—J. R. D., *Belper*.

13065.—**Gillingham's heat radiator.**—Replying to "Banff Amateur," I would say that the climate and the amount of frost must have a great deal to do with the success or otherwise of the heat radiator. Mine is 6 feet long, and I find it kept out any frost we had last winter. My minimum thermometer never registered lower than 36 degs. Fah. when the ground outside was frozen hard and ice was an inch thick. But then Dublin is far milder than Banff, and damp is a worse enemy to gardeners than frost. My lamp does get personal superintendence and the best oil, but I explained the cause of the smoke and its remedy to "Roger." The reason I put clean water in the troughs was to get rid of the horrid smell, essence of paraffin, which accumulated in the water. When that became saturated it gave out its noxious fumes through the greenhouse. The radiator requires to be kept perfectly clean and trimmed every time it is to be lit. "S. B." is right in following the maker's instructions; but the defect "D. A." had to remedy was certainly not due to what he imagines was the cause. His house, 5 by 12, should be well heated by the radiator, as it is not very long.—D. A.

OUTDOOR PLANTS.

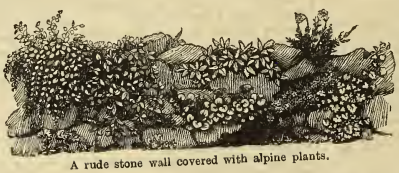
ROCK AND ALPINE FLOWERS ON WALLS.

The illustrations here given may serve to show the pretty effects to be obtained by the cultivation of suitable plants upon old walls, rocks, and ruins. The choice is not limited, for there are at least 400 different species that would find in such places that dwarf, ripe, sturdy growth, stony firmness of root medium and dryness in winter that go to form the very conditions that make plants from latitudes a little further south than our own and from alpine regions at home in our climate. There are many alpine plants now with difficulty cultivated in frames, which may be grown in such positions by the most inexperienced. The best way to establish plants on walls is by seed. A few seeds



Rock plants established on an old fort wall.

of the Cheddar Pink, sown in a mossy or earthy chink, or even covered with a dust of fine soil, would soon take root and grow into neat little specimens, that will live for years in that dwarf and perfectly healthy state so agreeable to the eye, and at Oxford it grows on walls much better than we have ever seen it on rockwork or on the level ground. Where seeds are not to be had young plants should be selected, and as they will have been used to growing in fertile ground, or in good soil in pots, and have all their little feeding roots gathered up near the surface, they must be placed in a chink with a little moist soil, which will enable them to exist until they have struck root into the interstices of the wall. Among the plants suitable for such purposes may be mentioned, the pretty little Erinus alpinus, the silvery Saxifrages, such as Saxifraga longifolia and



A rude stone wall covered with alpine plants.

S. lingulata, Sedums, Campanulas, and Linarias; while in very moist places natives of wet rocks, and trailing plants, like the Linnæa, might be interspersed among the other alpines. The chief care in the management of such walls would be to prevent weeds or coarse plants from taking root and over-running the choice gems. If they get a footing these intruders can be easily prevented from making further progress by cutting off their shoots as they appear.

Gardening at Colwyn Bay.—I never see any mention in Gardening Illustrated of Colwyn Bay. I would suggest that perhaps some of your correspondents would supply you with notices of what thrives best in special localities widely distributed. This is a locality most favourable, especially for winter gardening. We have fine beds of Calceolaria in bud now (end of April) that have stood the winter without the slightest protection, and some Geraniums are quite 9 feet high; the Myrtle thrives, and the Arbutus grows to the height of 15 to 20 feet, full of berries, whilst some of the Bay trees at the Pwllycrochon Hotel must be 30 feet high. Almost everything thrives here to a surprising degree.—James Wood.

TWO OLD FAVOURITES.

The Single Wallflower is a favourite with us all. Who would not have a bunch of the fragrant bloom when a garden full may be had for the outlay of only one penny? For five months of the year they can be in blossom; they will see out the old year and welcome in the new. Through a foot of snow the blood-red flowers will glow, and when spring warmth bids us make ready for summer display, the fragrant Wallflower will still be there larger and more velvet-like than before. Some may like to follow an amateur's simple plan and grow these old-fashioned flowers in the same way. A small package of seed is purchased (or saved by those who have the old plants) and half is sown about February in shallow boxes in light soil, placed in a frame, on a greenhouse shelf, or in a sunny window out of draughts, and left until the little plants can be conveniently handled. About April prick these out either into a sheltered bed, if in the country, or into larger boxes, if near a town. Leave them so until some dull day, late in the summer, when they can be planted out in threes or in fives with a few in the crevices of a wall. Attend to them until they are established, and by the following spring they will be in blossom. Sow the other half of the package about September, and treat them in the same way as the last; but when frost appears keep them in shelter of a frame or greenhouse until the worst of the winter is over. During April plant them out in a bed and these will commence to flower before Christmas, and will keep in blossom until April or May. Do not throw away the older stock of plants. Cut them back almost entirely, and add some fresh soil to their roots, they will branch out and make large bushy plants for the following year, better than before in fact, but when the second period of blooming is over they may be thrown away as they are not of much use for a third year. I never make cuttings, but grow them from seeds year by year, and at present I could easily fill a large basket with the flowers, and never miss them. Any garden soil suits them and they grow as freely in town as in country air.

Sweet Pea.—Next to Single Wallflower comes the Sweet Pea, and if not quite so easily grown still there are no difficulties to be overcome in order to have it in profusion. In order to have it in succession it is necessary to make two principal sowings, one in autumn and the other in spring. In a country garden, clumps may be sown in the open ground about September, and, when well protected by stakes, will come through the winter well, but in a town garden it is different. My plan is simple and economical as regards the seeds. About October or November take as many 4-inch pots as you want clumps and fill them with light soil, well-drained. Sow the seeds rather thickly in these, and when the young plants show the second pair of leaves, pinch out the top-shoot, and keep the pots well up to the glass either in a frame or on a greenhouse shelf. When they have broken at the lower joint repot into larger pots without breaking the ball, and leave them so until April, when they may be placed in patches or in tubs in the position in which they are to flower. The care bestowed will be amply repaid, and the quantity of seed saved will be surprising. I have a good-sized clump of "The Princess Beatrice" Sweet Pea, more than a foot high, and branching freely, which grew from six seeds.

As soon as the ground gets warm the second crop should be sown. About the first week in April dig and level the bed. Then with a hoe, or narrow spade, draw away the earth on either side to form a drill. Into this drill put some fine sandy soil, and be sure to have it level, so that the seeds may not all roll into the centre, and be one over the other in a heap. Scatter the seeds evenly, and cover lightly with

fine soil to the depth of an inch or so, but leave the earth on either side to form a ridge for earthing-up the young plants at a future time. To keep off slugs dust over with soot, or soatter some "brush bristles" over the drill, and as the plants increase in height place some support to them. Wire-netting, very wide but large mesh, answers well; two rows secured by stakes at either end, and an occasional tying with bast, will keep the most rampant growth in order. Remember to keep the withered flowers picked off, and the blossoming period will be prolonged. In dry weather a mulching of manure and a good drenching with water does a great deal of good, as the Sweet Pea likes a rich soil. A very pretty display can be made by planting clumps of the six or seven different colours now sold separately in penny packets. The pure white is very delicate-looking and the Invincible Scarlet a good contrast. It is by no means too late to sow them now as there is but little growth before April sets in. DUBLIN AMATEUR.

THE "INEVITABLE" & "NECESSARY" DIGGING AND MANURING.

PROFESSIONAL gardeners seem to regard the periodical digging, hoeing, and forking of flower borders as indispensable operations, without which plants cannot be expected to thrive. I should like to ask those who recommend that flower borders should be forked over, manured, and generally tidied up in spring what they consider to be the advantages of these operations? It seems to me that much of the unsatisfactory state of beds and borders of hardy plants in many gardens is wholly owing to these operations and nothing else. I passed a few days ago a number of small gardens, one of which had just been tidied up. All the plants in it were flagging, and hanging their heads like newly-planted things on a hot day; in others, which had previously undergone the same operation, the spring flowers were blooming poorly, and their leaves were curled and withered at the edges. Only in those gardens which were still in their winter weediness and disorder were healthy plants and good flowers visible. In all gardens the same effects will be found to result from the same operations. Any moving of the surface of the soil in mixed borders of plants should take place at the end of summer, just before the autumn rains set in. After that period it can do nothing but harm. Spring flowers root freely in the cool, moist, autumn weather, and many of them root near the surface. Any disturbance of their roots then has a bad effect on the spring bloom. In spring, as soon as leaf growth becomes active, new roots rapidly push out, and any digging, forking, or hoeing will tear and disturb those roots, and cause the plant to form a second crop of roots, checking its growth. A general digging or forking over of borders at any period is a wholly senseless, unnecessary, and pernicious operation. When plants have exhausted the soil and begin to bloom poorly they should either be moved to fresh stations or have an entire renewal of the soil at their old stations; but if the border is properly planted neither spade, fork, nor hoe can be used amongst the plants without harm. The only necessary and useful operations—except hand picking of weeds—which should take place among flowering plants short of removal, division, and replanting in fresh soil, should consist of top-dressings of fresh soils and manures. Roses are an exception and are benefited by frequent hoeing of the ground amongst them; but the great majority of herbaceous plants root near the surface, and temporary injury is sure to result from root disturbance. J. D.

Verbenas for exhibition.—In growing Verbenas for exhibition the soil, while neither too stiff nor too free, should rather incline to the latter condition. The ground should be deeply dug, and a liberal supply of well-decayed manure from the farm-yard added. I would strongly recommend seedling plants in preference to those from cuttings, the former being far stronger and more robust, and, consequently, better fitted to throw up large heads of bloom. Plant out about the end of May, allowing a space of 1 foot between each plant. During dry weather water abundantly. As the shoots grow (they should not exceed 5 or 6 to each plant) peg them down firmly, so that they may not be blown about by the wind. When the blooms are expanding, they should be shaded from the hot sun, in order to preserve the richness of colour. Frequent doses of liquid manure will increase the size of the blooms. If the above rules are carried out, the grower will be amply repaid by an abundance of bloom, both large and fine.—R. MANN, *Shadwell.*

WHAT NOT TO GROW.

A FEW weeks ago there appeared in GARDENING an article which I hoped would prove to be the first of a series calculated to be of great use to amateurs like myself whose only school is the stern one of experience. The object of this article was to inform us what not to grow. Our kind friends who send us catalogues point out a great many "desirable acquisitions," but some of them we find on experience to be unworthy of the definition. Can you spare me room to relate a melancholy example? Five years ago, being smitten with the love of alpine plants, I devoted a border in my garden specially to them. I took out the soil 2 feet in depth, put a good bottom of bricks and stones, and then, heaping good compost to a height of 18 inches above the natural level, surmounted it with the most ornamental stones I could procure. In this border I planted a collection of alpines, in the selection of which I was almost entirely guided by Mr. Robinson's work on the subject. For the first year or two all went well, my border got the nickname of Little Switzerland, and was a source of much pleasure and admiration. But, unfortunately, among the species introduced were two—Ajuga genevensis and Anemone sylvestris, one of which happened to be at one end of the border and the other at the opposite. It has, however, long been evident that the two ends will not satisfy them; in spite of all I can do they gradually push out one neighbour after another, and the attempt to stop them generally ends in destroying the plant I wished to preserve. I must, in justice to the Ajuga, say that it does in return bring an abundant and beautiful bloom every year, while the Anemone has only afforded one since it was planted. My only alternative is either to destroy the whole border and fill up with new mould, or else to let the encroachment go on till, like the Russians and English in Asia, they meet in the middle, and I can console myself by watching the struggle for supremacy. P.

*** There is no doubt that there is difficulty in all rockeries and bog gardens from this cause—bog gardens being many times worse than the alpine garden. There should be no real danger to a patient observer in the rock garden, provided a simpler, broader way is adopted than is the rule, and that running weedy kinds are avoided. We know of rock gardens in fair condition for many years; but many people put a lot of weedy hedge plants in their rock gardens, and, of course, the whole scheme soon comes to an end. In that case, there is nothing left but to dig it all up. As regards the Anemone, in some soils it does not flower at all, in others it flowers profusely every year. We remember it flowering profusely on bad London clay in the Regent's Park, whereas in some good genial soils it fails to do so. In a properly arranged rock garden, which should have one good stone where there are generally twenty ugly ones, it is very easy to repress subjects if they are attacked in summer, but some people let weeds and ramblers go on until the winter, when they think they can deal with the roots—the very season when they can see little or nothing of the plants, and have no guide to where the roots are. The true method is to cut away in the middle of summer, when at all times we can see a good thing, and then there need be little danger from the wild ramblers. The most fearful of all ramblers are the Sedges when they get into a bog garden—that, indeed, is almost a hopeless business.—ED.

Rhododendron Dennisoni in the open border.—I send you a specimen of Rhododendron Dennisoni; I have had it many years in the open border, and it does well, only if we have more than about 5 degs. of frost after Christmas the flower buds drop off.—SOUTH DEVON.

Vallota purpurea at home.—A line in "Byfleet's" paper on the culture of Vallota purpurea (p. 97), in which he pictures them growing in their native land, brings to my mind the scene of my first meeting with them in their wild state. I was at the time on a shooting trip in a South African forest and found myself, after a rough scramble down a wooded river-kloof, as steep as the side of a house and about six hundred feet deep, at the water's edge—the river, for the most part not more than knee-deep. Here slumbered a dark and silent pool; on the further bank the forest again ascended to the sky-line, leaving as a foreground a small patch of Grass about a foot above the water-level, where, backed by a few wild Bananas and a Tree Fern, was growing a large cluster of Vallotas in full bloom, their vivid colour reflected in the brown water. Utterly ignorant and careless as I then was regarding floral matters, the beauty of the flowers convinced me that they must be rare, and were probably unknown in England, which illusion was, some months later, rudely dispelled. The idea so impressed me that I subsequently set off down the river on my first botanical excursion, and in the three miles between my start and the sea-shore I collected as many bulbs as I could carry. During this ramble, and at other times, I noticed a few facts concerning the Vallota, which I give for what they are worth, as they may interest some. Out of the several hundred plants that I saw not more than three had any portion of the bulb out of the ground, the generality being at the depth of 3 or 4 inches beneath the soil, some so deep that the 9 inch blade of my hunting-knife failed to reach them. They were mostly growing in very sandy soil, and near the water, which, when the river was high from rains, as it often is for days together, must have been from 6 to 10 feet deep over them. Some were growing on a shallow sand-spit island near the river's mouth, and below the point to which the salt water reached at high tide. The climate of the district I am speaking of is, on the whole, damp all the year round, there being no regular wet and dry season, and though more rain falls, as a rule, during one portion of the year, the river is liable to be flooded at any time. Snow sometimes lies on the range of mountains (3,000 feet) five miles off, and there is often a slight frost in the mornings; in fact, there was quite a hoar frost a week after my first seeing the Vallota in bloom. I have seen the bulbs blooming in forests on dry flats, and some little way up mountains, but I have never seen them in such profusion as in the river-bed referred to. In some parts of Cape Colony the Vallota is called the Berg Lily, quite a misnomer, I should say. It is a matter of lasting regret to me that when I was in a region of beautiful flowers and foliage, the knowledge of them was a closed book to me, or, rather, a book the pages of which I did not care to peruse.—WRAITH.

REPLIES.

13514.—**Plants for garden.**—A Grass walk, 6 feet wide, bounded by two straight beds, 150 feet long, filled with plants in rows, would be about as tame and tasteless a feature as could possibly be introduced into a garden. Straight avenues are things to be avoided wherever possible, unless they can be made large enough to be stately. I am laying out some beds on exactly the same lines in my own garden, but my Grass avenue is 20 feet wide, bordered by three beds on each side, each over 80 feet long, and even that is not much above half the size on which such an arrangement is really suitable, and is only adopted because I wish to show what hardy flowers are capable of in formal arrangements. "R. K. P.'s" garden is evidently not small enough to render such an arrangement suitable on the plea of circumscribed space. In a London back garden, 150 feet long by 20 feet wide, any attempt at a winding walk looks ridiculous; but in the kind of gardens usually laid out in Scotland straight avenues should be avoided if any decorative effect is desired. Why not divide the length into three by introducing two square or circular beds in the centre line of the walk, with Grass passing round them and meeting again in the central line? That would break up the monotony of the arrangement. The proper way to treat the long, straight beds is to use, as the most conspicuous plants, things which

produce steeples of flowers crowning umbrella-shaped leaves. Do not plant these alone by any means, but let them be the most prominent objects, and keep everything else subordinate. If the soil is light some groups of Hollyhocks would be very telling. Then there are Delphinium elatum—a tall, pale blue kind especially—Verbascums, Foxgloves of the improved varieties, and Campanula pyramidalis. Plant groups of these towards the back of the borders with wide intervals between. Some good bush Roses should be planted if the soil is suitable. General Jacqueminot, Prince Camille de Rohan, Elizabeth Vigneron, Gloire de Dijon, Alfred Colomb, and a few other hardy kinds would be suitable. Other suitable tall plants would be Perennial Phloxes, Rockets, Pyrethrum roseum, Gladiolus brenchleyensis, and white and Tiger Lilies. Of medium height, dwarf Antirrhinums, Campanulas, early-flowering Chrysanthemums, Clove Carnations, and Sweet Williams would suit. The edging next the path might be rock plants on a surfacing of stones, Arabis albida and variegata, Aubrietias and Thrifts in variety, spring Phloxes, Corydalis, Alyssum saxatile compactum, and Sedums and Sempervivums would furnish that with evergreen foliage. Behind these, double Daisies, Pansies, Pinks, Primroses, Auriculas, and Polyanthus would make a good show in spring. Columbines, Tulips, and Narcissus, Ranunculus, and Anemones might be planted in quantity amongst the taller plants. I have not been much in Scotland for the past twenty-five years, and cannot remember whether Dahlias do well. If so, they might be used extensively. Annuals can be used to fill up gaps and help the autumn bloom.—J. D.

13453.—**Wanted, a name.**—The plant seen by your correspondent "Chelow" was most probably Tropæolum Lobbianum Fireball, the most popular Tropæolum about London. The under side of the leaves is greyish, but not conspicuously woolly. The flowers, seen exactly in front, have some resemblance to the same view of a Gloxinia bloom. The Lobbianum section of Tropæolums are half-hardy annuals, and can be raised in a greenhouse as easily as the common Nasturtium is out-of-doors. They should be planted out as soon as all danger of frost is past. The growth is more slender than that of the common Nasturtium. Seed ought to be procurable from all respectable seedsmen; but I must warn "Chelow" that I have twice had seed of these Tropæolums, from firms that ought to be above suspicion, which has turned out to be only the common Nasturtium of the cottage garden. In one case all the packets produced the same variety, so that there was nothing in the name but the writing on the seed-packets. "T. J. W." is in error about Tropæolum speciosum. That bears no resemblance to the familiar annual kinds, but is an exact fac-simile of the Canary Creeper (Tropæolum canariense), but with scarlet flowers, dark green leaves, and a more rampant growth. —J. D.

— Tropæolum Lobbianum has delicate, Nasturtium-like foliage and bright, wax-like flowers, in shape something like a Gloxinia. It is a climber, and can be purchased at any nurseryman's.—Mark.

— The name that "Chelow" wants is Tropæolum speciosum.—S.

13289.—**Summering Arum Lily.**—I have three Arum Lilies, which I have grown from very small bulblets. This is the third year, and they are all coming into flower without forcing. I simply plunged pot and all in the shelter of a shady wall for the whole summer, and about October, when bringing them in to their winter residence, repotted them in fresh, sweet soil. They should not be over-potted, or they will all go to leaf and have no flowers. Mine are in 6-inch pots, and are extremely healthy. They are in full sunshine, and like plenty of water. I top-dressed the surface of the pots with well-rotted manure when the flower-buds made their appearance. When in good health they have a drop of water at the tip of each leaf. My method is simple, and anyone can manage these easily-grown plants with success. Never leave more than one plant in a pot, but pot off into store pots in the spring.—Dublin Amateur.

13303.—**Culture of Pansies.**—"Omnia Vincit Labor" complains that he has failed to cultivate the Pansy successfully. Let him try the following plan:—Select a piece of ground, give it a good coating of cow-dung, dig it pretty deeply in, and at the same time plant it with Potatoes. When the Potatoes are cleared off in autumn give the ground a good fork over, and plant the Pansies, if they are at hand, and wait the result. In very frosty weather a single 6-inch inverted flower-pot put over each plant will be a great advantage; the hole at the top should be left open. Care must be taken not to keep these pots too long over the plants.—John Downie.

13441.—**Cutting down neglected evergreens.**—The best time to do this is in the early spring before they start into growth. If cut down in the autumn they may be injured in a severe winter.—J. D. P.

A THAMES-SIDE GARDEN.

It is not to the large country-seats of great families that one must look for good design in gardens, and the engraving we give of Greenlands, Henley-on-Thames, will show the truth of this statement. Ever since we have known the place it has been a model of good taste and good keeping, and since coming into the possession of Mr. W. H. Smith it has been much improved, and the gardens have in various departments been extended. As will be seen, there are no terrace gardens, no walls for stucco or terra-cotta vases; one passes easily from the house to a pleasant lawn, which slopes gently till it touches the river. The well-planted grounds around are studded with numerous fine trees, among which are beautiful groups of Cedars, and one huge and very picturesque Walnut. It may be noticed that the common fashion of a garden in front of the house is here avoided altogether; but at some little distance there are various flower gardens which, while not exactly under the windows, are within very easy reach. This plan keeps the lawn in front of the house fresh, unbroken, and quiet; and it is not, as lawns too often are, patched with brown earth and not always happy masses of flowers. There are two excellent kitchen gardens, and many plant and fruit-houses, all in the best order and well cultivated; and in the kitchen garden is a beautiful hedge of various kinds of Clematis trained on wire-fencing. B.

A THAMES-SIDE GARDEN (GREENLANDS, HENLEY-ON-THAMES).

13492.—**Eradicating Dandelions from green.**—To eradicate Dandelions thoroughly from a green you must go systematically to war against them. Do as I do. Arm yourself with a long knife or dagger, and cut them out one after the other. When the work is done every day an hour before breakfast you will feel all the better for it. When at Stuttgart, in the Royal Gardens, I saw one morning about thirty school girls in a row, all armed with old knives. When I inquired what they were about they set at once to work in one long row, and began to dig and to cut. From them I learned a lesson.—C. L.

— Cut the tops off and put a little salt on the wound; if this does not eradicate them repeat the dose as often as they appear.—C. F. Davis, *Leatherhead*.

13499.—**Plants for hot dry border.**—Antirrhinums and Wallflowers would be the best tall plants; Tropæolums, the best climbers; and Corydalis lutea and Sedums and Sempervivums the best dwarf perennials. Portulacas, double and single, are very showy and continuous half-hardy annuals for a hot, dry place.—J. D.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR OF GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

QUESTIONS.

13557.—**Making Tobacco paper.**—Will one of your readers kindly give me a recipe for making Tobacco paper?—A. D.

13558.—**Mildew on vines.**—Will any vine-growing reader tell me a cure for mildew on vines? I have tried sulphur on the pipes, but it does not seem to do any good. —ALEX. ROSS.

13559.—**Best Chrysanthemums and Dahlias.**—Will some readers give the names of the best twelve Chrysanthemums and the best twelve Dahlias (double) for exhibition?—H. EDWARDS.

13560.—**Culture of Tomatoes in the open air.**—Will any reader instruct me how to grow and ripen Tomatoes in the open air in the suburbs of London, soil clayey?—S. T.

13561.—**Propagating Azaleas by cuttings.**—Is the present the best time to take Azalea cuttings?—M. L. H., *Kent.*

13562.—**Best Fig for cool house.**—Will someone tell me the best Fig to grow in a house where no artificial heat is used, excepting just enough in winter to keep the frost out?—NORFOLK.

13563.—**Birds and Peas.**—What are the best means to be used for preventing small birds, such as sparrows and others, from eating the tendrils and young shoots of kitchen-garden Peas?—J. S. W.

13564.—**Making firm footpath.**—Will some reader tell me how I can make more firm a footpath and back-yard, made of stone and engine ash? I do notwish to go to the expense of asphalt.—J. F.

13565.—**Azaleas after flowering.**—I have several Azaleas which have finished flowering. Will someone kindly inform me how they should be treated so as to ensure their flowering next spring? This is their first year of bloom.—S. J.

13566.—**Procuring and growing double white Rocket.**—"H. W. Preston," or any other reader, will much oblige if he will state where the dwarf double Rocket can be procured, and also if he will give some hints as to its culture.—GEO. N., *Macnamara*, AND A. H.

13567.—**Getting rid of weeds.**—Will any reader tell me what is the most effective and economical method of getting rid of Docks and Nettles?—J. S. W. ⁂ *Hoe the ground in which they occur every second Monday during the growing season*, i.e., *from the time the buds show until they cease to grow.*—ED.

13568.—**Using sulphur to kill green fly.**—I am an amateur, and have a greenhouse, and on Saturday I burnt some rock sulphur in the house to kill green fly; instead of doing this it has killed all the leaves on every plant in the place. Will some reader please tell me how to avoid such a catastrophe in future?—SULPHUR.

13569.—**Lilies of the Valley.**—I wish to know how I can best prepare an open border for Lilies of the Valley. Will any reader who grows the flowers tell me what soil and situation suits them best? I want to grow them strong and fine, and to make them attain their highest perfection.—C. W., *Bristol.*

13570.—**Tropæolum tricolorum not blooming.**—Can any reader tell me why my Tropæolum tricolorum does not bloom? It is in a frame out-side window, grows very free and quick, but the blooms all wither away when about half-grown. Ferns, Musk, and Fuchsias do well in the same frame.—S. H.

13571.—**Golden Yellow Wallflower.**—Will any reader kindly tell me what is the best Golden Yellow Wallflower? The Tom Thumb has such small blooms. I have seen one with a large flower, bright golden, and not very tall, and should like to get seeds if I knew the name and where to get it. Do they come true from seed?—L. H.

13572.—**Culture of Tuberoses.**—I should feel obliged if any reader well acquainted with the culture of Tuberoses would tell me how to grow them without more heat than an ordinary vinery has. Are 48 pots large enough for each one, or should they be given larger pots? Mine have thrown up a few leaves, but no flower buds.—M. L. H., *Kent.*

13573.—**Greenhouse Rhododendrons.**—Would some experienced reader kindly give me information as to the culture of greenhouse Rhododendrons, and particularly as to their treatment when out of flower? Should they be put out for the summer?—ZINNA. ⁂ *You do not mention the kind, but probably those you have would be much better if placed out-of-doors in summer.*—ED.

13574.—**Slimy Moss on fish-pond.**—I have in my garden a small fish-pond, which of late has been nearly covered with a slimy Moss, the same as seen in stagnant water. Will any of my fellow-readers kindly advise me what to do to get rid of the same? I may add that it has only recently been cleaned out, and there is a small continuous stream into it.—F. N. H.

13575.—**Gloxinias and shade.**—Would any good Gloxinia grower kindly inform me whether 2 feet from the glass is too far away for a good sturdy growth, and whether shade is not absolutely essential to good blooms? I read recently that now Gloxinias should have all the light obtainable.—SHOWLER, *Stroud Green.*

13576.—**Killing grubs on Strawberries.**—Will any reader tell me how to kill grubs that infest a bed of Strawberries which I planted this spring; they have been eating them for the last fortnight? I find from one to about half-a-dozen round the roots of some of the plants, and they eat the leaves off close to the ground.—TYRNO.

13577.—**Camellia cuttings.**—Will any reader kindly give me information about Camellia growing? I have some old varieties I wish to preserve. Will they succeed really well from cuttings, or should I strike cuttings from an ordinary variety, and graft on them? When should the cuttings be taken, and how should they be made?—GREY FRIARS AND M. L. H.

13578.—**Insects in hot frame.**—I have a hot frame prepared for Cucumbers. It was previously thoroughly lime-washed, and sprinkled with salt and soot. Myriads of small whitish insects have, however, appeared. I am anxious to know what can have brought them; whether they are likely to be injurious to the plants; and what is the best method of destroying them?—V. H.

13579.—**Layering Chrysanthemums.**—I believe there is a way of layering Chrysanthemums so as to get nice, short little plants in 48's with one or two good blooms, which, placed among the larger plants, are very effective. Would some lover of Chrysanthemums give me plain directions when and how to do this, and when I may separate the layer from the parent plant?—URBS.

13580.—**Cucumbers dying.**—I should be glad if some practical grower of Cucumbers could tell me the cause of Cucumbers dying after the flowers go off. They are in a Cucumber house, and in a healthy condition. I keep them moist at the roots and syringe twice a-day, morning and night, with just the chill taken off the water. The temperature is between 70 degrees and 80 degrees.—W. J. D.

13581.—**Cutting Marsh Marigolds.**—Will any reader tell me why, when Marsh Marigolds are picked and put in water, they droop and die almost directly? Is there any particular way of picking them?—OLIVE WOODS. ⁂ *The only way is to tie the plants in wet Moss immediately after they are cut, or to put them into water without the slightest delay. No plants are more susceptible to dryness than these water-plant flowers when cut.*—ED.

13582.—**The sparrow curse.**—I notice that many persons are troubled with sparrows, and there seems no efficient remedy. They increase so here that I much want to poison some. My garden is a perfect network of black string, but still my things are destroyed. Will any reader oblige by telling me what poison I can use and how to use it? —L. H., *Hammersmith.* ⁂ *We shall be glad indeed if any of our readers could supply a means of mitigating this pest. Sparrows are as abundant in the sweetest and quietest parts of the country as in Piccadilly.*—ED.

13583.—**Winter-flowering plants for towns.**—We have heard a great deal in GARDENING lately about winter-flowering plants, but in the case of nearly all it has been stated that pure air is necessary. Could anyone tell us how to get bloom in greenhouses heated to 40 degs. or 45 degs. in winter in the impure air of London—that is, within a radius of about four miles? My only success has been with double Roman and Paper White Narcissus, which I have had in bloom in January. I have also had an Arum Lily blossom on Christmas Day once or twice, but sometimes the buds do not expand, owing to the cold. —URBS.

13584.—**Difference in yield of fruit trees.**—I occupy a house and garden, one of a range of similar houses, upon a wide road-way in the suburbs of Dublin. The aspect is due south; the gardens extend back for 50 yards to 60 yards due north, and are sheltered by a high range of offices. The gardens are divided by walls ranging from 5 feet to 7 feet high. About twenty of those walls have fruit trees well trained for them. They consist of Plums, Pears, and Apples. I have known them for many years; they have invariably blossomed well, but have never produced more than one, two, or three fruit. In the same gardens I reckon twenty-eight standard trees—Pears, Apples, and Cherries. Those standard trees bear a very fair return of fruit every year, although they have not been pruned, manured, or watered for the last fifty years. Can any fruit-growing reader explain this inconsistency? Is it that we give the wall trees too much care? I have eight well-trained, correctly-pruned, and very healthy wall trees in my garden. If I allowed those trees to "grow as they like" without pruning, would they, like their neighbours the standards, bear fruit? They consist of Pears and Plums in varieties.—FARMER. ⁂ *This is a very interesting question, which we feel sure some of our readers will answer. The difficulties of the question would be increased if the kinds on the wall are different from the standard kinds, which is very likely. There can be no doubt that wall trees are frequently too severely pruned, and their energies unnaturally repressed, especially on low walls.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13585.—**Preventing Rhubarb from seeding** (*A Beginner*).—Cut off the stems below the flowers.

13586.—**Hog's Fennel** (*Enquirer*).—In Miller's "English Names of Plants" Hog's Fennel is said to be Peucedanum officinale.

13587.—**Liquid manure** (*Showler*).—Cow manure can be used in a fresh state to form liquid manure. It should be well diluted.

13588.—**Disposing of bones** (*Good Order*).—A method of dissolving bones for fertilising purposes was described in GARDENING, April 4th last, page 58. If you do not find it answer repeat your question.

13589.—**Nicotiana affinis** (*F. Amherst*).—N. affinis is a perennial, but is easily raised as an annual, and hence may often be described as such; just as the Castor-oil plant is treated as an annual here, it being in tropical countries a low tree.

13590.—**Soil for Tropæolum speciosum** (*S. Herst*).—This Tropæolum enjoys a deep, moist, and rather rich soil, and flourishes best in cool, moist places.

13591.—**Geranium flowers not opening** (*H. S. Tucker*).—We cannot account for the flowers not opening. We think there must be some error in the treatment.

13592.—**Growing and increasing Deutzia** (*Mrs. E. Field*).—This is a common shrub, cheap in every nursery, and it is scarcely worth your while to increase it. Plant it in the open air, as it is perfectly hardy.

13593.—**Increasing Nicotiana affinis.**—This plant is easily raised from seed, which is offered by many houses. [Questions relating to different plants must be sent on separate pieces of paper.]

13594.—**White Silene pendula compacta** (*Rev. C. C.*).—A white variety, under the name of S. pendula compacta alba, is quoted in several catalogues of well-known houses, and it is not dearer than the type.

13595.—**Specimens of Polyanthus** (*P. Lowe*).—The flowers were very much crushed in transit. They are not quite as good as they ought to be, or you have not sent us your best specimens.

13596.—**Hardy Water Lilies** (*Uncle Jeff*).—Among Water Lilies nothing is better than the common English one, Nymphæa alba, and the common English yellow one, Nuphar lutea.

13597.—**Shading for conservatory** (*Bournemouth*).—Try a fine lime wash, with a slight mixture of oil; material for the purpose can also be procured from nurserymen.

13598.—**Increasing Camellias** (*T. D.*).—Camellias are now grown so cheaply and abundantly by various nurserymen that it is a waste of time and energy to try to increase them yourself.

13599.—**Mr. Balnes' book on "Greenhouse, Stove, and Fine-foliaged Plants"** (*M. A. R.*).—We cannot tell you the price yet; the book will be ready in a few weeks' time.

13600.—**Sweet-scented climber for greenhouse** (*Showler*).—Mandevilla suaveolens, Rhynchospermum jasminoides, Heliotropa, Jasminum gracillimum, and Stauntonia latifolia are all suitable. We fear there is no yellow sweet-scented Jasmine for the purpose.

13601.—**Gloire Rose drooping** (*Gloire Rose*).—You have neglected the plant in some way, and we don't think anybody could tell you the reason who did not examine the plant, and know what treatment you have been giving it.

13602.—**Hyacinths after flowering** (*P. V.*).—They ought not to be disturbed until the roots have decayed, then plant them out where you want them to remain. If the portions you refer to are decayed cutting them off will do no harm.

13603.—**What is the "crown" of a Dahlia?** (*Gloire Rose*).—By the term "crown" of a Dahlia we mean the collar, or part where the tubers join together, and whence spring the young buds of the current year's growth.

13604.—**What is an amateur?** (*S. T. V.*).—In the ordinary sense of the term an amateur is one who does not keep a skilled gardener. An individual who employed a man one or two days a week only would be called an amateur.

13605.—**Plants for border of pond** (*Uncle Jeff*).—We shall very soon publish an article on aquatic plants, in which you will find all the information you want. However, you must not expect water plants to do much good if you have many water-fowl.

13606.—**Wireworms in garden** (*Romola*).—You must make use of traps. Place slices of Carrots or Potatoes on the ends of pointed sticks, bury them 3 inches in the ground, examine them daily, and destroy the worms attached to them. The sticks serve to show where to find the baits.

13607.—**Cherry tree not fruiting** (*J. S. W., Norfolk*).—We think you should not yet despair of a fruit crop; there is no perceptible difference in the swelling of the germen for a few weeks, but should you get no fruit this year you must conclude that you have a bad setting variety.

13608.—**Winterling Scarlet Lobelia** (*T. E. F.*).—In light soils and mild districts we have known this plant to live out during the winter. Where it will not do so, the best way is to take up the roots in autumn, and keep them in boxes under a greenhouse stage or bench; put them out in late spring.

13609.—**Growing Seakale** (*Bohn*).—The culture of Seakale is of the simplest kind. It has often been described in our pages, and we will ask Mr. Gilbert, who is second to no kitchen gardener, to give you the information you require at an early date. He will also deal with the culture of Spinach.

13610.—**Procuring variegated Elæagnus** (*C. R. L.*).—These fine shrubs should be easily procurable from any nursery where there is a collection of evergreen or Japanese shrubs; any good nurseryman would procure them for you if he has not got them himself. Consult the catalogues of the leading shrub growers.

13611.—**Transferring Roses from bottles to pots** (*Amateur, Bristol*).—Before the roots have got too long you should move them into little pots in the most careful and gentle way, and grow them in a nice cool frame until they have got on a bit. Then, in summer, expose them altogether until they make sturdy little plants.

13612.—**Propagating scarlet Ixia** (*Flora*).—The bulbs of Ixias are, as a rule, imported. They increase slowly in this country, and it is hardly worth while propagating them. Should you, however, wish to do so the best way would be to separate the little bulblets that form at the base of the bulb, and grow them on to a flowering stage.

13613.—**Plants for London shop front.**—For a box of the size you mention, in a hot and dusty situation, we can think of nothing better than Nasturtiums and Pelargoniums. Sturdy young plants should be put in as soon as possible. Ivy-leaved Geraniums also do well. The distance apart must be determined by the size of the plants. Start with fresh soil, and water thoroughly during the summer months.

13614.—**Frame culture of Tomatoes** (*Ignoramus*).—Some grow the Tomatoes on the flat, others to single sticks; in the latter case the plants may be put in a foot apart. We should advise you to train the stems against the back of the frame, and in front to let the plants lie on the ground. Do not use soil that is too rich, and observe the way good Tomato growers, when they have their fruit set, prevent too many young shoots or fruits being formed, so that the best fruits may be ripened in good time. You will find general instructions as to the culture of Tomatoes in Mr. Hobday's article, April 11th, of present year, page 76.

13615.—**Summer-flowering plants for north bank** (*St. Denys*).—You seem to have managed your north slope extremely well. Lilies of the Valley would, of course, do as well there as most other things. A few simple beds of hardy flowers would be suitable in such a position, but the ground is so well occupied already that we are not quite sure that you will gain much—it all depends upon the space you have, not devoted to the pretty plants you mention. A few groups of bold, fine, summer- and early autumn-flowering plants could hardly be otherwise than beautiful. The Cowslips you refer to were red because you got seed from a red strain.

13616.—**Blighted Peaches** (*Mrs. Maxwell*).—On examining the blighted spots on your Peaches I found that the hairs in those spots exude a secretion, which forms on them in small lumps. At first I thought these were of fungoid origin, but they are so very irregular in size and shape that I conclude they are not. The cause of this unusual growth I do not know. Are the trees otherwise healthy?—G. S. S.

13617.—**Insect on Pear trees** (*A Constant Subscriber*).—Your Pear trees are attacked by a gall mite (Phytoptus Pyri). Pick off the affected leaves and burn them. The mite, or its eggs, probably pass the winter in the buds or crevices in the bark. Thoroughly dressing the shoots with soft soap and some insecticide which would not injure the buds in winter would probably be useful. Be careful in selecting grafts from these trees, only to take wood which is free from this pest.—G. S. S.

13618.—**Insects in gardens** (*E. A. A.*).—The little creatures infesting your garden are a species of snake millipede, or false wireworm (Julus pulchellus). Snake millipedes are very destructive creatures, and appear to be unusually common this year. They are very difficult to get rid of, as no satisfactory means has yet been found for destroying them; no insecticide is of much use when the enemy is under the ground; sprinkling nitrate of soda round the plants and then watering them, or sprinkling soot round them, has been suggested. They may be trapped by burying small bundles of damp Moss, into which they will creep. Giving the ground a good clean fallow, frequently stirring the surface, so that the birds may get at them, would be as good a thing as any to try; then dress well with gas-lime.——(*Roseleigh*).—The creatures you forwarded are a species of centipede or scolopendra (Geophilus longicornis). All the centipedes are animal feeders, and I do not think you need fear their injuring your plants; their jaws, indeed, are not fitted for vegetable food, being furnished like those of a spider with poison fangs. According to most authorities they never attack plants, but live on slugs, grubs, &c.; but Curtis, in his work on farm insects, mentions that they feed partly on succulent roots. As they seem to be in very unusual numbers with you, you should carefully watch your plants, and if they flag examine their roots, and see if the centipedes are still among them, and if they have caused any injury. I am so convinced of their beneficial effect in gardens that I turned your specimens loose in mine.—(*W. N. Hobkirk*).—The insect which you forwarded is the larva or grub of a fly, but of what species I cannot say. As it probably feeds on vegetable matter, it would be more or less injurious in gardens.——(*White Fly*).—The fly infesting your greenhouse is a species of snowy fly (Aleurodes, probably A. Chelidonii). This insect is not really a fly, but is nearly allied to the aphides or green flies. I am surprised that Tobacco smoke has not proved fatal to them. Have you tried it more than once? Try three fumigations with an interval of three days between each. Smoke will not kill the eggs, so that fumigation for many insects should be repeated. Syringe your plants with soft soap, Gishurst compound, or Tobacco water.—G. S. S

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, we excuse they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*

POLYANTHUSES (*R. Holden*).—The correspondent you refer to does not offer to sell flowers, and your request is not one that we can insert.——DOUBLE WHITE ROCKET (*A. Houghton*).—We cannot supply you with the address of the correspondent, but you will find a query, which may elicit the information you require, in this number.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*E. A. K.*—Cholsya ternata; Anemone fulgens pavonina. You probably allude to Vesicaria utriculariodes. —— *B. C.*, *Sunbury.*—Spiræa (Exochorda) grandiflora (large); small is S. confusa; both increased by cuttings.——*G. S. A.*—1, Leucojum pulchellum; 2, Myosotis sylvatica; 3, Ornithogalum umbellatum. ——*E. A. K.*—Rosemary (Rosamarinus officinalis); Coronilla emeroides (yellow).——*Vindex.*—Double Spiræa prunifolia.——*A. Lowe.*—Crown Daisy.—*Faldonet.*—1, Spiræa Thunbergi; 2, Lithospermum prostratum; 3, Calycanthus floridus; 4, Spiræa prunifolia fl.-p

ROSES.

13434.—**Summer treatment of Tea Roses.**—The best way to treat during the summer Tea Roses that are now in cold frames is to leave them where they are. The lights may be removed night and day in settled fine weather, but should be drawn over the plants to protect them from heavy rains, or to shelter them from high winds. They would be benefited by gentle showers. They are also constantly attacked by green fly and the mildew fungus. Instructions have frequently been given how to destroy both.—J. D. E.

13516.—**Mildew on Roses in greenhouses.**—Mildew on Roses grown under glass is invariably the result of mismanagement. In the open air mildew comes when the plants have been exposed to many sudden changes of temperature, as during early summer, north-east winds, and cold nights with hot sunshine in the daytime. Damp the plants well with a syringe, and dust the affected leaves while wet, syringing the sulphur off after twenty-four hours. At the same time feed the plants well and regularly. Fresh cow-dung dissolved in water to the colour of pale ale is a good manure. Roses are not greenhouse plants. All possible air should be given, but it is bad practice to open a greenhouse suddenly, and allow a rush of cold air to lower the temperature 20 degs. or 30 degs. in a few seconds. All the difficulties amateurs experience in greenhouse cultivation are the result of mismanagement and over-ambition—the most fertile sources of failure being improper potting soil, attention by fits and starts, and trying to grow a number of things requiring varied treatment in the same house. An additional source of failure, in many cases, is a badly-constructed greenhouse. Roses when grown under glass should be planted out in properly-made beds, and the house should be made to suit their requirements. It is only in that way that ordinary amateurs, who take up gardening as a pastime for leisure hours, can really succeed with them. Pot Roses are difficult to grow, and are only suitable for experienced masters of greenhouse cultivation. The introduction of fire-heat among Roses is far more likely to lead to utter failure than success in the hands of an amateur. There are so many beautiful things that require cultivation under glass in our climate that it is a pity to try to grow anything there that can be grown in the open air. The dwarfer and more delicate Tea Roses are the better for greenhouse protection, but no fire-heat should be used, the protection from excessive wet, and cold and biting winds, which a covering of glass affords being quite sufficient. The best form of glasshouse for Roses is an A shaped span roof of a sharp pitch, with the glass carried to the ground.—J. D.

—— If "R. S." will smother his roses with soot in the dew of the morning and let it remain for four or five days, and then wash it off, I think he will find, as I did, the result marvellous. The leaves turn to a dark green, and the buds open freely. Soot is also a capital manure.—G. GYTON SMITH, *Surrey.*

A rare Morel.—I found the accompanying fungus in the Fern garden this morning. I have seen nothing like it before. Will you have the goodness to tell me its name, and the probable explanation of its growth?—G. V. HEATHCOTE, *West Deeping Rectory.* *** The name of the fungus is Morchella semilibera; it belongs to the edible class and is a rarity. It is a Morel, but quite different from, and much rarer than, the common Morel, M. esculenta. If you see any more of it, send an example, carefully packed, to the Department of Botany, British Museum, South Kensington, London.—W. G. S.

Catalogues received.—*Choice Fuchsias, with directions as to cultivation.* W. E. Boyce, 87, Yerbury Road, Upper Holloway, N.——*Bedding Plants.* Young, Oakenhead, and Co., 86, Patrick Street, Cork.——*New Roses, Dahlias, Bedding Plants, &c.* Little and Ballantyne, Carlisle.——*New, Beautiful, and Rare Plants.* Wm. Bull, 536, King's Road, Chelsea.

Flowers received.—Mr. W. B. Hartland, of Cork, sends us a specimen of the native black Wallflower. It is very handsome—indeed, the finest dark Wallflower that we know. He also sends two blooms of Calendula sinula from Italy, a brilliant pot Marigold, far finer in colour than the common sort, and really a desirable flower for this season.

THE KITCHEN GARDEN.

CUCUMBERS FROM CUTTINGS.

WHEN once a few Cucumber plants have been raised and become large the best way of increasing one's stock of plants is to propagate them from cuttings. Cuttings are very easily rooted, and they begin to bear immediately. They will produce fruit fit for cutting in half the time plants from seed will. We have cut good fruit from plants raised from cuttings when three weeks old. The best parts to make cuttings of are the ends of the young fruiting shoots. As it is often necessary to stop these, the pieces taken off may be made into cuttings in the ordinary way. They may then be either inserted in the mounds of soil in which the old plants are growing or potted singly in small-sized pots. In stopping our Cucumbers we often put the pieces taken off round the margin of the mounds, and can always find young plants when any are wanted. Rooting them in pots is also a very good plan; it is astonishing how quickly they strike root into any light sandy mixture, and from pots they are easily transferred to the fruiting beds. The cuttings being made of shoots bearing small fruits, these very often remain fresh and good, and swell up immediately they are planted out. It is in this way plants from cuttings bear fruit so soon and freely, as they do not make long stems like seedlings before emitting side shoots on which the fruit is borne, and the main stems of the cutting plants fruit too, some being produced only an inch or two from the soil. As a rule, seeds of new and valuable Cucumbers are sent out in very small quantities, half-a-dozen seeds for half-a-crown being no unusual price, and when half of these are bad or fail to germinate, the cultivator may be put to some little inconvenience owing to the smallness of his stock; so long, however, as I bad one plant of any kind, I would not trouble about seed failures or more seed, as I could raise plants by the dozen, if necessary, from cuttings. In the case of almost every kind of Cucumber where numbers of plants are grown, one or more will come better than the rest. The only way, therefore, of securing more of the same sorts is to resort to cuttings. In raising plants for late autumn and winter fruiting, the cutting plan is by far the best. Cuttings can be taken from the most fruitful of the summer plants, and plants thus raised will be very short-jointed and fertile, while seedling plants might be rambling over the trellis, producing big, soft leaves and pithy, long-jointed wood. J. MUIR.

Runner Beans in succession.—Many only make one sowing of these, and that is about this time. The plants come into bearing about the end of July, and continue to yield pods until about the middle of September, when no more are formed. This is generally regarded as anything but satisfactory, because fresh tender pods are just as much valued in October as in July, and to secure plenty of them then should be the aim of every cultivator. This may be accomplished by sowing a good row or two about the middle of June, when the plants will not begin to bear until September, and then, being fresh and vigorous, they will yield abundantly until frost destroys them.—J. M.

Ellam's Cabbage.—This is a good spring Cabbage and remarkably handsome, producing close medium-sized heads, with but few outside leaves. When cooked it is very tender. Planted at the same time as two other sorts which I have grown as the earliest for several years, this one was fit to cut some time before them, and not one plant of this variety bolted, while a number of the others did, causing blanks in the rows. This one may be planted closer than most varieties, owing to its leaves growing upright and compact.—WM. C.

Twin-flowered Tulips.—Stems of Tulips bearing more than one flower (see p. 133) are not unusual.—J. C. C.

—— The Tulip mentioned by T. Goacher in last number (p. 133) is named "Weenix." It nearly always throws three flowers on each spike; often four or five flowers. Each bulb makes a nosegay of itself.—ROBERT SYDENHAM, Jeweller, *Birmingham.*

13437.—**Procuring Quassia-chips.**—"R. R." should apply to wholesale druggists, such as Barron, Harvey, and Co., 6, Giltspur Street; Allen and Hanbury, Plough Court, 37, Lombard Street; A. S. Hill and Son, 101 and 103, Southwark Street, S. E.; and any other of the wholesale houses.—W. D. P.

TREES AND SHRUBS.

THE SHRUBBY MALLOW.

Notwithstanding that this hardy and handsome shrub was introduced from Syria in the first quarter of the sixteenth century, and that it produces its blossoms late in autumn when few other shrubs are in flower, it is by no means frequently met with in this country. It is a deciduous shrub, of rather upright growth, attaining a height of from 5 feet to 9 feet; the character of the leaves and flowers is well shown in the accompanying illustration. In the type the flowers are of a reddish-purple, but it is such a variable species as regards colour that there are at least half-a-dozen really distinct varieties of it in cultivation. The best of these are—purpureus, rich purple; variegatus, purple, mottled with a lighter hue; ruber, red; albus, white; totus albus, pure white, without the inner zone of red at the base of the corolla; Céleste, a beautiful variety, with intensely rich blue flowers. The two last are comparatively new varieties. Then there are the double-white and double-purple kinds, as well as one with variegated foliage, which is effective in a shrubbery during summer. All the varieties are perfectly hardy in our climate, and will thrive in almost any position, or in any soil that is not too wet; but it flourishes best in an open position, not too bleak, and in deep, rich, sandy soil. As isolated specimens on a lawn, they have a fine effect, if placed so as to appear to be a component part of the surroundings; planted in groups, so that the colours harmonise, they are equally striking; but the best way in which they can be employed is, perhaps, planted so that they may be embowered by evergreen foliage, which not only sets off the flowers to advantage, but modifies the bare appearance of the leafless twigs in winter. Readers often ask where plants referred to in Gardening can be purchased; they can be obtained at any tree and shrub nursery. W. G.

Shrubby Mallow (Hibiscus syriacus).

The Burning Bush.—My idea about this plant is that it exudes a quantity of inflammable oleo-resin from innumerable pores, and that this substance under favourable conditions accumulates to such an extent that the slightest shock or shake makes it fall in a fine shower, when, should there be fire present, it flashes into a sputtering blaze, much the same as Lycopodium does when sprinkled on a flame. I have a fine plant of it, with nearly forty stems for blossom, and shall put it to the test when suitable.—W. B.

FRUIT.

TRAINING VINES ON THE SINGLE-ROD SYSTEM.

(Answer to Question 13452.)

I answer this question the more readily because, after an experience of more than forty years in Grape-vine growing (principally on walls in the open air), I believe this mode of culture to be the best. When vines have grown sufficiently to be able to bear fruit, such fruit is produced on laterals, proceeding from shoots of the preceding year's growth, the latter being trained at length. At the general autumnal pruning a sufficient number of these shoots to bear the following year's crop is selected for retention, after having been pruned down to their sound and well-ripened wood, while a like number, plus one or two to provide against accidents, are cut down to two buds each to produce the successional wood in the following year, which, in its turn, becomes fruit-bearing the year after. The rule to be observed in the training during the growing season of these two different kinds of shoots is that the long ones are to be kept so far apart from each other that their laterals, on which the branches grow, are not crowded together, and that the successional wood, coming from the spurs, has as much space as can be allowed, in order that by exposure to the sun and air buds may be fully ripened. At next pruning time, those rods which carried the fruit bearers are cut down to two eyes, while the others, which have been grown to take their place, are adjusted as to number and length, according to the fruit-bearing powers of the vine, and so retained for next season's crop. This alternate system is to be continued year by year.

As, however, Mr. Russell speaks of his vines as being still young, I may mention that, from what I have gathered from reading (and it would seem also to agree with that which would occur in nature) the best way of treating young plants from eyes or cuttings is to allow them to grow unchecked by pruning or otherwise until they have attained to the fruiting size, which, for out-of-door vines, Mr. Hoare, in his treatise "On the Cultivation of the Vine on Open Walls," fixes at 3 inches circumference at the surface of the ground. After this they should be pruned according to the scale laid down by Mr. Hoare, which is thus simply stated:—Multiply the girth of the stem as above by 20, and deduct 50 from the product. The remainder will represent the number of buds, estimated to produce bunches at an average of half a pound each, which the vine will be able thoroughly to ripen without loss of vital power. When, therefore, at the autumnal pruning time the girth or circumference reaches 2½ inches or thereabout, the plant should be stumped to a few buds in order to get new and fruit-bearing wood close "at home." The following season's growth will produce this, and when the next pruning time comes round, the girth of the stem having probably increased to 3 inches, or more, the new wood (of which the vine ought now almost exclusively to consist) can be pruned for fruiting, and spurred in for successional wood in the way above pointed out.

In this part of the country there are a good many Grape vines trained on walls and on roofs, but, with very few exceptions indeed, the cultivator's attention seems to be devoted to the preservation of the old wood, which in most cases is rather carefully trained. But old wood is useless for fruit-bearing purposes, the young wood, or that grown the preceding year, being exclusively available for the following season's crop. True, the old wood is required to generate the new, but the least possible quantity of it should be retained on that account.

As to syringing and rubbing off the lower buds, both operations depend on circumstances, and are not subject to rule. I may mention, in conclusion, for the encouragement of Mr. Russell and of those who would give the long-rod system of training a fair trial, that this season, on almost every one of my vines so treated, both out-of-doors and under glass (but without fire-heat), scarcely a bud has broken showing less than two blossoms, many bear three and four, and some even five, all of good size and promise. Of course their number will have to be greatly reduced before the time comes for thinning the berries.

South Hants. J. M.

Choice winter Pears are early in the year highly esteemed, but, as in the case of many other things, we depend on Continental countries for our chief supplies for and during the London season, and pay 8s. or 9s. a dozen for fruit that ought to be grown in our gardens. It will be said by many that the fine climate of France enables that country to produce good fruit; but, although the sunny south is much in the Frenchmen's favour, they have evils to contend with in the way of insects, and drought, &c., besides late spring frosts. What, then, is the chief points to ensure the successful crop of Pears? Nothing more or less than giving them a warm wall, and when in flower protecting them from spring frosts and cold cutting winds. These are two things to which a French grower pays particular attention. If, instead of covering many of our garden walls with common sorts of Plums which would do as pyramids on the border, we planted the choicer kinds of Pears, it would be a step in the right direction, for although many kinds of Pears do well planted as pyramids, the choice kinds need a wall to grow well. Especially would I advise the protection of Pears when in flower, many sorts coming into flower when we have bright sun, with cold winds and frost. Last year this was the case even after many

Pears had set their fruit and were beginning to swell; but these, where not protected, were all killed. That Pears pay for all the extra, or, I should say, proper, attention bestowed on them, is proved by the splendid, large, highly-coloured fruit that a tree will produce if grown only in a small pot, but protected when in flower by being placed in an orchard-house. If gardeners would bestow the same care in the growing of Pears as they do to Peaches, Apricots, &c., many an employer would in the scarce season be able to enjoy a dish of Pears equal to those grown in France.—W. C. Leach, *Stamford.*

Thinning Raspberry shoots.—Raspberries are not particular as to the character of the land in which they grow; they will thrive in peaty soil, in light, or in heavy loam, provided it is well supplied with manure, to which this fruit is so partial that the plants soon get weak if the ground in which they are grown is allowed to get poor. Where the treatment is such as to suit them, and the land is of fair quality, the plants will keep on in a vigorous bearing state for an indefinite time. I have had to deal with Raspberries that had occupied the ground for over thirty years without the plants being renewed, and that, through indifferent treatment, had got weak, the annual growth not attaining more than from 4 feet to 5 feet in length; but by a liberal use of manure—confining the season's growth to the number of shoots required to bear fruit and no more—and keeping the ground regularly hoed so as to be quite free from weeds, they soon got as strong as it is possible for plants half a-dozen years established to be, and kept on in this condition, yielding three or four times the weight of fruit they did when weak. They were gone over each spring twice, and all superfluous roots cleared off. The ground was never dug, but in the winter was forked over about 3 inches deep; a good dressing of manure was laid on in April each year, and some soot or guano in the height of the growing season. The manure, applied in this way on the top, acts as a mulching, giving the weeds little chance. I look on this as the best way of manuring Raspberries; the strength gets washed down to the roots, and they are protected from drought, which latter is of no slight importance. When lying, as the roots do, near the top they become slightly stagnant in dry seasons, unless there is something on the surface to keep the soil from getting too dry.—T. B.

Sun for early Peaches.—I do not think it is sufficiently realised how much the size, colour, and flavour of Peaches are affected by direct exposure to the rays of the sun. When the fruit is swelling it is not more indebted to the foliage which surrounds it for the elaboration of its juices than it is to itself. While the fruit is green and growing it is as susceptible to the influence of light and air as the most tender foliage, adding new tissue and elaborating the sap in the same way; hence it should at no time be shaded. The practice of exposing the fruit to the light when it is finished is right enough when it has not been seen to earlier, but I have always noticed that the best fruit in every way is always that which has been exposed to sunshine from the beginning. That crimson cheek—sometimes only a faint blush in the paler varieties—is not put on in a day or a week, but requires time, and corresponds to the purple bloom on the Grape berry, which also indicates high quality.—J. S.

REPLIES.

13304.—**Blight on Grape vines.**—I am pleased to see many replies to this question, as I have been a sufferer from this for ten years past, sometimes losing half my crop, at others more. I have read many books on the vine, and consulted one or two practical men, but have not quite got rid of it yet, but I hope to, through the aid of Gardening. My house is a span roof, 16 feet long, 11 feet wide, 12 feet high, facing east and west, getting the sun most of the day. My border was not made expressly for the vine; it is a dark light soil on a gravelly subsoil. I commence with fire-heat (hot-water pipes) about the 1st of March, and some years have syringed the vines once a day, and some years not at all, merely wetting the border and path, and it did not make much difference. This winter I have been very particular not to let the inside border get at all dry, but watered it well about once a fortnight, and my vines look much stronger, and the bunches have set much better and larger than in previous years. Although many bunches are blighted this year, I look forward to a much better crop.—J. J. C.

—— Even with the further information given by "C. P." (May 9, page 126), I see no reason to materially alter my opinion. Certainly I do not think that the position of the house has anything to do with it, for on an average of seasons we get so little sun that a vinery may have a north aspect for all the benefit the vines are likely to derive in our climate from the sun before the end of March; and, as the house in question is glazed down to the ground, it must be lighter than half of the early vineries about the country, and therefore better able to dispense with sun heat. I still think we must look for the cause of failure elsewhere. With judicious ventilation the syringing would not do the mischief unless the air was maintained at saturation point. The sulphur strewn on the hot-water pipes would be more likely to do it if they got over-heated, but, speaking from many years' experience, I can say I never saw such a case of failure when the roots of the vines have been right.—J. C. C.

13348.—**Insects on Gooseberry trees.**—The best way is to prevent their appearance. The caterpillars go down from the bushes and bury themselves to a depth of from 2 inches to 4 inches, in the form of a small brown cocoon, and lie dormant all through the winter. Remove this soil from under the bushes and bury it a foot under the ground, at a distance from the bushes; the soil taken away must be replaced with some that is free from the cocoons of the saw fly caterpillars. When the insects have been allowed to escape from their cocoons, and have deposited their eggs on the leaves, the caterpillars must be picked off by hand, and shaken down into sheets placed under the bushes.—J. D. E.

—— I was driven almost mad with the same sort of pest, but at last, about four years ago, I tried soft or grey soap. I put about two good handfuls in a large can of water, and let it stand over night, gave it a good stirring, and then syringed my bushes with it. I cleaned every pest from my bushes in less than two days. It will not hurt the fruit in the least, and "T. R." will soon have the pleasure of seeing his trees clean and healthy.—Uncle Joe.

—— Dissolve one ounce of alum in one gallon of boiling water, sprinkle the bushes well three times in eight or nine days by means of a water-can. I have now used this remedy for nine years, and find it better than Fox-glove leaves, owing to its simplicity and not being poisonous.—Winifred S., *Orniskirk.*

HOUSEHOLD.

VEGETABLE COOKERY.—VI.

(By Annie M. Griggs, Edinburgh School of Cookery).

Rhubarb. — There are various kinds of Rhubarb, each differing in flavour, and although this is treated and used as a fruit, it is hardly necessary to say that it is really only the stalk of a leaf which belongs to the Buckwheat order, and it has only been classed with edible productions of the garden during the past ninety years. The nourishing properties of Rhubarb are very small, the principle nutriment being sugar. The agreeable taste and odour of Rhubarb are not perceptible until the stalks are cooked. The juice of these stalks, fermented and properly treated, yields a most delicious wine. Rhubarb will take the flavour of other fruits very readily, thereby enabling the cook to vary the tarts, &c., sent to the table; for instance, a little Lemon peel for addition one day, a few blanched and chopped almonds another, a spoonful of Strawberry jam for a third day, plain Rhubarb the next, and so on. The red stalked Rhubarb is the best for serving alone, and the flavour is better when the plant is fully matured. The method of preparation is as follows:—Wash and dry each stalk separately, and, if necessary, peel it, but do not perform this last operation unless the Rhubarb be stringy, as by so doing you take away the pretty pink colour, which the growers take so much trouble to produce.

Stewed Rhubarb.—Wash and dry the Rhubarb, cut slanting into pieces about an inch and a half long, and put these into a porcelain lined saucepan, with some moist sugar to sweeten. Put the lid on the pan and stew gently by the side of the fire until the Rhubarb is cooked, but not broken. When the Rhubarb is fresh and young, there will be sufficient juice without any water, but when well matured a tablespoonful of cold water added will draw out the juice and improve the syrup. This should be served with boiled rice, or with custard pudding, or, if served cold, the addition of sweet milk will be found agreeable.

Boiled Rhubarb pudding.—Take five or six stalks of Rhubarb, four ounces of moist sugar, three quarters of a pound of flour, five ounces of beef suet, and a pinch of salt. Thoroughly grease a rimmed basin with a small piece of suet. Mix the flour and salt, remove all skin and fibre from the suet and chop it with a sharp knife very small, mix well among the flour in a basin, and pour in enough cold water to make a dough; turn it on to a slightly floured board, and, with a rolling-pin, roll it to about half an inch in thickness; line the prepared basin with this, and trim the edges neatly a little above the rim, roll out the trimmings for the lid of the pudding. Prepare the Rhubarb and cut it into small pieces, and put with the sugar into the paste-lined basin, wet round the edges of the paste, cover with the lid, and seal tightly, so as to prevent the escape of any juice; dip a pudding-cloth into boiling water, wring it, and flour that portion which is to come in contact with the pudding, tie a string under the rim of the basin, take the four corners of the cloth and tie them together to form a handle, plunge the pudding into boiling water, and take care that it is well covered and the water kept boiling for two hours and a-half. Lift out the pudding, remove the cloth, and let the basin stand a few seconds before reversing it upon a hot dish. Take away the basin, and serve the pudding hot with a jug of cream or milk.

Baked Rhubarb pudding.—Take four slices of bread, five stalks of Rhubarb, four tablespoonfuls of moist sugar, about half a pint of milk, and one ounce of butter. Remove the crust from the slices of bread (about half an inch thick), sweeten the milk with a little sugar, and pour it over them. Butter a pie dish, and lay in two slices of the soaked bread, next prepare and cut the Rhubarb, and put it with the sugar on top of the bread, cover entirely with the remaining two slices of bread, break a few pieces of butter over the top, and put in the oven for twenty minutes or half an hour, according to the size. As soon as the Rhubarb is soft the pudding is cooked. This may be served either hot or cold, accompanied with milk or cream. Apples and Rhubarb may be used together and make an excellent pudding.

Rhubarb tart.—Take some Rhubarb stalks and wipe them clean and dry, and cut slanting into pieces of about an inch long. Put them into a pie dish, and when it is half full add enough sugar to sweeten, and any flavouring that may be desired; fill the dish with Rhubarb high in the centre, but do not add any more sugar. If the Rhubarb be well matured, pour on a tablespoonful of cold water, but if quite young none will be required. Wet round the edges of the dish, and, having rolled some short crust to half an inch in thickness, cut some strips the width of the rim of the dish and put round it, taking care to keep the cut edge of the pastry outside, and wet each end so as to make the parts adhere; then wet the pastry on the rim, and put a cover of pastry all over, seal tightly down with your thumb, and make four small holes with a skewer at each end and side. Trim the edges and ornament the rim with a fork or stamp as may be preferred. Brush over the top of the pastry with the white of an egg beaten with a little pounded sugar, and bake in a moderately hot oven for about an hour. Sprinkle some sugar over immediately upon taking it from the oven. If the tart is not to be eaten hot let it remain in a warm atmosphere until partially cold.

To make the short crust for the tart.—Allow one pound of flour to six ounces of butter, two ounces of pounded sugar, the yolk of an egg, juice of half a lemon, or one tablespoonful of Orangeflower water. When the flour is perfectly dry and free from lumps, put it into a basin with the butter, and rub dexterously with your thumb and fingers until these two ingredients resemble bread crumbs; do not touch the butter independently of the flour, or

the heat of your hand will partially melt it, and so spoil the pastry. Beat the sugar and egg together and pour them into a hollow formed in the centre of the flour, and then add enough water to mix all to rather a soft paste; turn it on to a slightly flowered board; handle this paste lightly and as little as possible, and roll it out to the thickness required. This pastry is generally preferred to any other for covering fruit tarts, and is the most easily digested, owing to the butter and flour being so thoroughly mixed before any moisture is added, so that, when it is exposed to the heat of the oven, the starch cells of the flour burst and are absorbed by the melted butter.

A Rhubarb shape.—Take some stalks of Rhubarb, cleanse and dry them thoroughly, cut into small pieces until you have one quart thus prepared; put these into a porcelain-lined saucepan, with half a pound of brown sugar (or more, if the Rhubarb is very acid) cook these by the side of the fire for half an hour, or until the Rhubarb is sufficiently soft to be passed through a sieve, so as to keep back all stringy morsels. Dissolve three-quarters of an ounce of gelatine in as little water as possible, and add to the Rhubarb with a few drops of cochineal to make the whole mixture of a pale pink colour. Pour this into a mould which has been previously wetted with cold water; set it aside in a cool place or on ice until it is quite firm, then dip the mould into tepid water, and turn the shape on to a crystal dish, put some whipped cream around it, or serve with custard or milk.

Rhubarb wine and Rhubarb jam are best made later on in the season, when the Rhubarb is matured, and the flavour more thoroughly developed. Recipes for these will be published in due course.

THE VILLA GARDEN.

(Continued from page 127.)

The Mushroom in Buildings.

Any building that has a fairly equable temperature will grow Mushrooms to perfection. I was at Battle Abbey a few weeks ago and saw there excellent crops of Mushrooms growing in the underground caverns or cellars belonging to the old abbey, which formed the wine cellars of the monks. The warmth arising from the fermenting dung kept up the requisite temperature in a building surronnded by thick walls or covered in with earth. Excellent Seakale was also produced in the same places under the like conditions. An underground cellar is an excellent adjunct to the garden for Mushrooms and other things which need not be further alluded to here. The Mushroom house, properly speaking, in the best gardens is usually a well-constructed building, at the back of the range of forcing-houses. It should be built in such a manner as to be uninfluenced by external changes of temperature. The roof inside must be either ceiled or boarded, and, though there should be the means of letting in light and air the necessity for it will not often arise. The usual arrangement of the interior is to have a path 2½ feet or 3 feet wide down the centre, with beds 3 feet to 3½ feet wide on each side. If the building have a lean-to roof there will be room for three beds at the back and two at the front, and large quantities of Mushrooms may be had in succession all the year round except, it may be, for a month or two in the hot weather when the open-air beds will be more satisfactory. The receptacles for the beds may be constructed of timber, or arches of brickwork may support slate foundations; the latter mode of construction is very substantial and lasting and good strong work is the cheapest in the long run.

Mushroom beds may be made up at any time, but the most successful beds are generally made in autumn, September and October being the best months; and many cultivators make up a number of beds then, and spawn them when ready, but do not apply the soil till some time after. I have had beds left without soil till they had become one mass of spawn two or three months after spawning, and such beds always produce large crops of very thick, fat Mushrooms. Usually a Mushroom bed will begin to bear in about a month or six weeks after soiling; but it must be confessed that they are rather erratic in their movements, and will not always begin to bear so soon. The materials for the beds should be as fresh as they can be obtained, and should not have undergone any violent fermentation. The manure must be dried, but without being exposed to violent heat. As the manure is collected, spread it out to dry in an open shed, and turn it every four days. It may heat mildly, but strong heat will injure it. Some beds are made up with horse manure alone, and when this is plentiful nothing else need be used. But the manure should be obtained from stables where the horses are well fed upon dry food—that from entire horses being considered the best. Mushroom beds have been known to fail through using manure from the stable where the horses were taking physic, or having a large allowance of soft food, such as Carrots, &c. All the littery material should be taken out, but I have often used the latter to form the foundations of the beds, damping it if dry, and laying from 6 inches to 8 inches of droppings on the top for the spawn to work in. Very often when droppings have not come to hand fast enough, I have used a proportion of loam with the manure in making up the beds, varying the quantities a little according to the freshness of the manure, but usually one barrowful of loam to three of manure will do very well mixed and blended together. If this proportion be observed the manure may be used nearly fresh or with very little drying. The same kind of materials mixed and blended in the same way will do, no matter where the beds are made, whether in the open air or in the Mushroom house.

Having obtained a sufficiency of the right kind of material for a bed, in the right condition, that is, thoroughly intermixed, a layer 4 inches thick should be placed on the floor of the bed, and be trampled or beaten with a wooden mallet. Another layer of the same thickness is added, and the same beating process carried out, and so on till the bed is made of sufficient thickness, or say about a foot or fifteen inches in depth, which will be enough at all seasons for beds in heated houses. Where there is no means of applying artificial heat, such as pipes or flues, the bed may be increased a little in thickness, in order to cause a little more warmth, but firmness is very essential, as the bed may get too hot at first and then become cool afterwards, though coverings of litter may be used in unheated buildings to keep the beds at a regular temperature.

Good Spawn

Is very important. No matter how much care and pains may be taken in selecting and preparing the other materials, if the spawn is old or bad all the labour will be in vain. But the question may be asked—"How shall we know good spawn from bad?" If a brick of spawn be broken through, its appearance and smell will tell if it is capable of producing Mushrooms. But spawn originally good may be rendered useless by bad keeping. If kept in a damp place the spawn may run itself out and become exhausted and perish. Spawn, when it arrives from the dealer, should be placed in a dry, warm place, and be kept there till required for use. It will then keep in good condition a long time.

Temperature.

It requires rather more warmth to start the spawn into work than will be required afterwards. If the heat of the bed rises to 90 degs. or a little more when first made, as soon as the highest point has been reached and the heat begins to decline the bed may be spawned. It is better to spawn at a temperature of 90 degs., if the heat is gradually declining, than to wait longer, as we lose time by waiting. When in full bearing the temperature of the bed must not be allowed to fall much below 60 degs. If at any time beds in the open air or in unheated buildings become too cold, add to the coverings, and in cold weather I have found it advisable to employ linings of manure to keep the beds at a comfortable warmth. The bricks of spawn should be broken up into pieces as large as hen's eggs, and inserted just within the warm manure, 9 inches apart, and be pressed or beaten down firmly. As soon as the spawn begins to work freely the bed may be soiled—2 inches of loam made firm by beating with the back of the spade, damping the surface, and passing the back of the spade over it at the last to give a smooth finish to it. If the house is heated with pipes there should be troughs on the top to secure a moist atmosphere, or the same condition may be obtained by syringing the walls and path twice a-day.

Covering the Beds and Watering.

A thin covering of hay or straw tends to keep the temperature of the bed steady and preserve the moisture, and the Mushrooms seem to like it; but the coverings must be changed sometimes, for if they get damp the spawn may run out of the bed into the covering, and exhaust itself uselessly. Open-air beds of course must have covers, but heavy rains should not penetrate so as to saturate the hay or litter next the bed. Beyond surface sprinkling occasionally no water will be required till the beds have been in bearing some time. After the first crop has been gathered and exhaustion seems to have set in, liquid manure may be applied with advantage. Guano, at the rate of half an ounce to a gallon of water, may be given at any time the beds require water. A pinch of salt may be added to each pot-full of water with advantage. The water should always be given warm—say at 85 degs.

Gathering the Crops.

The age at which Mushrooms are gathered must depend upon the purpose for which they are used. For grills, of course, the Mushroom must be nearly fully grown. They may be said to be at their best when nearly, but not quite, fully expanded, just before the fringe or beard, which attaches the outside edge of the Mushroom to the stalk, separates from the latter. The gills inside are then a bright pink, and the Mushrooms are more delicate in flavour than if left to get old. In gathering draw the Mushroom out of the bed with a quick twist, and after each cutting fill up the holes with some fresh loam. Mushrooms have been grown in many places, some of which, at first sight, might appear unlikely to secure success; but if we possess the requisite materials for making the beds, and if the right temperature can be secured, Mushrooms may be grown anywhere. I have grown them in champagne cases, filling the case two-thirds full of manure, and spawning and adding soil when the right temperature had been reached. The lid of the box may be closed, and the box carried into the house or into the stables, or placed under the greenhouse stage, and a succession can easily be kept up if we possess half-a-dozen boxes, filling one every fortnight or so. Mushrooms can be grown just as well

In the Open Air,

Provided the requisite covering can be had, as in a building. The Mushroom requires certain conditions as to warmth and moisture, and provided these are present it does not matter a straw where the beds are situated. There is, of course, more trouble with beds in the open air, but otherwise the means required are the same for one set of beds as for the other. The beds should be larger in order to secure a more regular temperature, as the heat is more steady in the large bulk than in the small one. The open-air beds should be built up in the form of a ridge, about 3 feet wide and as much in depth or thickness, the sides tapering up to a point, the spawn being inserted on both sides of the ridge. It is a good plan to make the beds against a wall in an aspect not much influenced by the sunshine, north being the best, especially for summer. In this case the ridge will only have one side to spawn, but the back of the bed will be higher than the frame, thus giving a long face. Mushroom beds are sometimes made by digging out the soil and filling in with stable manure, and, as soon as the temperature is right, inserting the spawn. I like the beds above ground best, as they are more under control. Mushroom beds are often made up in pits or frames, and I have seen excellent crops grown in an old-fashioned vinery in the pit that ran along the centre of the house, making up a piece at a time to form a succession. Where only two or three beds are made up in the year it is best to buy the spawn, but where a constant succession is kept going the spawn would cost a good bit of money at 5s. per bushel; and then it is better to spawn one bed from the other, which is easily done if the spawn is not too much exhausted.

Insects, Diseases, &c.

When damp and cold, the young Mushrooms sometimes damp off; and the same thing may happen when the temperature is too high and

the house kept too dry, and under the last-named conditions they run up spindling, with long stalks, and are generally weak and poor. From 55 degs. to 60 degs. is the best temperature, and this should be kept regular and steady. Woodlice are the most destructive insect pests to the Mushroom crop. The best way of dealing with them is to pour boiling water round the edges of the beds between the manure and the wall, as in such positions they hide during the time they are not feeding. A toad or two in the house may be useful, if the numbers of insects in the house are not too great. Traps, consisting of empty flower-pots, 5 inches or 6 inches in diameter, with a wisp of dry hay loosely thrust inside, to form a shelter for them, may be used. The insects hide inside the pots, and they should be destroyed daily by throwing them into a pot of hot water. Snails are very often destructive to the beds in the open air, and must be sought for diligently every time the beds are uncovered. Greased Cabbage leaves placed near will tempt the slugs and snails, when they may be caught and destroyed. Bran or grains will do as well or better.

The Parsnip.

The cultivated Parsnip, like the Carrot, has been evolved from a native stock, which may be found in abundance in some places. It will grow in any soil, but the best and clearest roots are obtained from deep soil of medium texture, rich from previous manuring. Where fresh manure is used the roots often canker round the crown, and the flavour is not so good as when sown on land rich enough without fresh manure. Parsnips may follow Celery or Cauliflowers, or any other crop for which the land has been much enriched. Soot and salt may always be applied, as their tendency is not only to enrich the land, but to cleanse it from insect and fungoid pests. The roots of the Parsnips descend deep into the earth when they get a chance. I have lifted roots whose tap-roots could be traced 4 feet deep, hence the value of deep culture early in autumn, the land to be thrown up roughly to sweeten and pulverise it. Towards the end of January the surface should be turned up with a steel fork, the dressing of soot, &c., may be applied then, and forked in. About the end of February or the beginning of March is a good time to

Sow the Seeds,

Which should be new or nearly so, though two year old seeds will grow very well. Sow in drills, which should be 18 inches apart and about half an inch deep. The seeds should be scattered thinly and evenly; select a calm day, and cover with fine soil. Sow only when the surface is dry and run the feet along the drills when the seeds are covered, to make all firm and snug.

Thinning the Crop.

As soon as the little plants appear above ground, run the Dutch hoe between the rows to loosen the soil, and kill the annual weeds which generally make their appearance at this season; frequent stirring also pushes on growth, as there is something about a freshly stirred surface that all plants seem to enjoy. When finally singled out the plants should stand from 6 inches to 9 inches apart. After thinning is finished an occasional hoeing is all that is needed till the crop is fit to lift. Parsnips are fit for use when large enough, but many think they are better flavoured after frost sets in. The roots should be lifted fresh from the ground as required, as, if taken from the moist earth, they soon shrivel; but they should all be lifted before growth is much developed in March. A considerable bulk per acre can be grown; therefore Parsnips are a profitable crop to grow for stock feeding. They are excellent for milch cows, and all kinds of stock eat them readily.

Varieties.—Elcome's Improved Guernsey, the Hollow Crowned, and the Student comprise the chief varieties. The last-named is an excellent variety for garden culture.

Saving Seeds.

Select some of the handsomest roots early in February, and plant them in rows 2 feet apart. Thin out the umbels of flowers where the plants are very strong. Some people cut out the centre. This prevents overcrowding. When approaching ripeness cut the stems, and hang them up in a dry room or shed to complete the harvesting, when the seeds may be thrashed out. Carrots may be served in the same way. E. Hobday.

DO PIGS PAY?

Having been an amateur farmer on a small scale for many years, I can reply to that question as far as my own experience goes, by saying, "Certainly, under humane management." I am a very zealous member of the Society for the Prevention of Cruelty to Animals, and it is my pride and pleasure to prove that farming may be conducted on strictly humane principles, and with a larger profit. We start with the text, "Better is a dinner of herbs where love is, than a stalled ox," &c. We try to let our creatures live as nature intended them as far as possible, and she deals largely with the "herb" part of the text. "Love" is plentiful here 'twixt man and beast, and there is as little "stalling" as may be. Our pigs have the run of an acre of ground, fenced in (for it is the orchard); a warm sty gives on to this orchard, and the pigs live there always, eating the grass, and retiring to their house to sleep. The wash of a small household is, together with the garden refuse, now keeping a sow and three small pigs. If very severe winter weather were here, a couple of handfuls of Pollard would be given to each. Twice a year, when the little ones are coming, the old sow walks off herself to a house in the yard prepared for her accouchment, and there she has blues at 11s. 6d. a sack till the little ones are weaned. This open air freedom causes us to have large trips, never less than twelve, often fifteen. These little ones are sold at a month old from 14s. to £1 each, according to the market. We keep three or four little ones, as the case may be. Then they go upon wash, and so run till they are tall; then we take them to another sty, give one sack of blues and one of Barley meal to follow, and we get about five score of good, wholesome meat, which is salted for the house. It is rare, indeed, that our pigs have straw; in very bad leaf harvests we are reduced to straw in the spring, but this year our leaves lasted all our cattle till the first week in April. In the autumn the dry leaves are gathered and carted to a large barn. So much importance do we attach to this harvest that all else is put aside on dry, fine days for leafing. Both cows and pigs use this bed ordained by nature, and no ill effects have ever caused us to give up the plan. Straw hereabouts costs £2 10s. and £3 a ton, a heavy item, so that we never use it save in the stable. Subjoined I give the result of humane farming:—28th January, 1885:—In hand, one sow, value £5; nine little pigs were born. The ten ate three sacks blues, £1 11s. 6d.; two bushels ditto, 6s. 8d.; total of food, £1 18s. 2d. 19th March sold six pigs, £3 14s.; deduct food, £1 18s. 2d.; credit, £1 15s. 10d. and three pigs in hand, which, with their mother, were then kept on house stuff. This sow was bought young in 1881. She had regularly two trips a-year, of which some were fatted, one reared as a sow (this one had two trips, and was then sold last year, leaving only the original mother). The profits arising from the original sow and her offspring were, deducting food, in 1882, credit, £6 14s. 1d.; 1883, two sows, £9 7s. 9d.; 1884 (sold one sow), £13 14s. 7d.; total credit, £29 14s. 7d. In December, 1884, a pig was bought for £1 2s.; it lived on wash, and then had one sack Barley meal, 13s. 6d.; price of killing, 2s. It weighed 5 score odd, valued at 11s. a-score, £2 15s.; deduct the expenses, and it will be seen that there is a total profit of 17s. 6d.—R. S. P. C. A.

—— Your correspondent, "J. N. L., The Midlands," has quite a unique way of calculating profit on pig keeping (see his note in the issue of May 9th), and I think I can can show, if he did not actually lose money by the one he mentions, he certainly made none. Cost of pig—feeding, &c., £9 2s. 6d. (not £8 12s. 6d. as stated); market value of pig 17½ score (at 9s.), £7 17s. 6d.; 3 tons of manure (at 5s.), 15s.; lard as stated (price too high), 10s.—£9 2s. 6d. By "market value" I mean "J. N. L." could have had a 17 to 18 score pig delivered (dead) at his house at the price I name, if not for less. I know a great many were sold for much less before last Christmas, some, not nearly as heavy as "J. N. L's.," as low as 7s. 6d. per score, pigs that had been fed on the best of food. I have had some bit of practical experience in pig keeping in a small way, and am certain that although "pigs do pay," the profit is nothing like that mentioned by "J. N. L."—An "Essex Calf."

—— The correspondence hitherto published in Gardening under this heading appears to have been devoted solely to the question of fattening pigs. I should now like to say a few words on raising them, as, so far as my experience goes, when the necessary conveniences exist, this is the more profitable mode of amateur pig farming. The following statement is from actual results: The accounts commence in the first week of June, 1883, when a sow in young was valued at £6 10s. On the 19th of the same month she brought a litter of eleven pigs, the whole of which she brought up; since that she has brought up three other litters, making a total of 39 pigs. These pigs, sold out at ten weeks old, averaged £1 each. The last lot has just been sold out at this figure. Out of this gross sum of £39, the actual cost of food and small grass run is £14 15s., to which must be added £2, as the sow has lessened this much in value during the time. The margin between £16 15s., the gross cost, and £39, the gross return, is a sufficient proof to me that, with proper management, the raising of pigs may be more profitable than fattening.—Veritas.

POULTRY.

13619.—**Caponising young fowls** (*G. B.*).—Try Messrs. Thomas Christy and Co., 155, Fenchurch Street, E.C.

13327.—**Best fowls for laying.**—I am surprised to see how highly "Andalusian" recommends Hamburgh fowls (p. 102). I kept them for some time but found they did not lay from October to March. Their eggs will not sell for full price with us on account of their small size, and the fowls are very bad eating. I find white Dorkings a good variety. They commence laying in January, and continue till moulting begins. They lay a large number of beautiful eggs, sit but seldom, make excellent mothers, and are capital eating. One of my hens laid over 120 eggs before offering to sit.—Grey Friars.

BIRDS.

13620.—**Canary hen laying.**—I have bought a hen canary to mate with a cock linnet, and should be obliged if any reader will tell me how long she will be before laying and how I should treat them.—P. M.

13491.—**Cardinal bird getting bald.**—"Dollie's" Virginia nightingale has been exactly in the condition that "Comrie" describes; in fact, the head and neck became quite bare, and the bird looked a wretched creature for quite nine months, though in perfect health. "Dollie" kept him in the kitchen, as being the warmest room in the house, gave him hemp seed each day, with canary, millet, and rape, and his bath-water just warm. He is now in splendid feather. A little raw meat scraped very fine is a good thing now and then. The cage should be covered at night.

13348.—**Destroying cockroaches.**—You should, if you live in London near a dealer's where such things are sold, buy a hedgehog, and let him run loose in your kitchen at night, and in a short time your friends, the cockroaches, will disappear, as he will revel in them to his heart's delight. If you reside in the country almost any ratcatcher will be able to supply you with one of these useful animals for the job. When he has cleared the kitchen, put him in the greenhouse, and he will soon clear it of them as well.—Braintree, *Essex*.

—— My pantry was swarming with black beetles. I tried several means to get rid of them, but they seemed to increase. I purchased at a hardware house a beetle trap having glass on the top, into which the beetles went, but could not get out. I every day put a little fine flour in it. I have caught some thousands of them, all sizes. I kept all food, bread crumbs, &c., out of their way, and for nearly a year they have all disappeared.—Mrs. Magnier.

—— The peel of cucumber will kill cockroaches, and a hedgehog is their greatest enemy.—J. M. L.

GARDENING ILLUSTRATED.

Vol. VII. MAY 30, 1885. No. 325.

INDOOR PLANTS.

PAULLINIA THALICTRIFOLIA.

This beautiful plant cannot fail to become a favourite. In general appearance it is not unlike a minutely cut-leaved Adiantum, and, indeed, so much does it resemble a Fern that it might easily be mistaken for one. It is in reality a hard-wooded plant belonging to the Order Sapindaceæ. The leaves are of a rich shade of green, and, as the specific name implies, they closely resemble in shape those of some species of dwarf Thalictrum. The young branches are clothed with a velvety down of a greenish-chocolate colour, and the woody stems are also tinged with brown. The true habit of the plant is semi-scandent, a character which it always assumes in its native country, where, as the plants become aged, they lose their compactness of growth and become coarse and straggling. The graceful appearance which they have when in a young state is admirably represented in the accompanying illustration. If only required for decorative purposes there should be no inclination to make the plants produce flowers, which are inconspicuous, and the main object should be to have plenty of healthy foliage. To secure this the plant should be grown in stove temperature, and if one part of the stove is more adapted to its growth than another, it is the dampest part. Care should be taken to keep them where abundant atmospheric moisture can be supplied, and for this purpose they are in some cases plunged amongst Sphagnum, and in others the pots are set on shelves that are overlaid with an inch or two of the same material, which is constantly kept moist by being sprinkled with the syringe. This plant may be grown to train on a small trellis or to affix to short rafters, but the best mode is to grow it so as to form little well-foliaged specimens. A compost consisting of two parts good substantial peat and one of loam, together with some silver sand, suits it admirably. F.

PAULLINIA THALICTRIFOLIA.

HYDRANGEAS INDOOR AND OUTDOOR.

Few shrubs are equal to Hydrangea paniculata grandiflora for the length of time over which its blossoms may, indoor and outdoor cultivation being taken into consideration, be had in perfection. For flowering in pots thus early in the season the plants should be young, clean grown, and well ripened, potted up early in the preceding autumn, and plunged out-of-doors. During winter, should the weather be severe, a slight shelter must be given them, and then as spring advances they may be brought on gradually in a little heat. As the pots get full of roots a copious supply of water should be given, varied occasionally by some slight stimulant, as this Hydrangea, like the common kind, is when in full growth a liberal feeder, and a check at that time will show itself in the colour of the foliage as well as in the size of the blooms. When kept indoors for early flowering a liberal use of the syringe, especially on the undersides of the leaves, must be accorded them, otherwise the foliage is liable to be attacked by red spider, which if unchecked will completely mar the beauty of the plants. The atmosphere of the house, too, must be kept in circulation, as the young leaves are sometimes attacked by mildew, which, when once it has effected a lodgment on them, will spread rapidly if unchecked. A liberal amount of air, whenever possible, and dustings with sulphur should be resorted to in the event of mildew making its appearance. Under glass the flowers are of a creamy white colour without that rosy tinge which they assume when out-of-doors, especially after having been expanded some time.

Useful though this Hydrangea is as a flowering plant under pot culture, its merits as a hardy shrub are undoubtedly greater, for apart from its beauty the blossoms are borne at a time when they are especially valuable. This Hydrangea is seen to the greatest advantage when grown in beds or clumps rather than when dotted indiscriminately here and there, as collectively the mass of flower furnished by a group has a bold and imposing appearance. It succeeds best with good liberal treatment, and so situated that the soil is moist rather than dry throughout the summer. The pruning may be limited to the cutting out of a few weak wiry shoots where they have become crowded, or the plants may be cut back rather severely—that is, the young shoots may be shortened to within three or four eyes from the base. By both methods a good display of flowers may reasonably be expected, but the pruned plants, as a rule, bear larger and more massive heads of blossom than those that are not pruned. A dressing of decayed manure every year will be of great service, especially if the plants are in a bed or mass. The typical H. paniculata is comparatively a little known plant, but, though not so effective as its variety, it is nevertheless a desirable shrub. It is stronger in growth than grandiflora, the outline of the plant is less rigid and the foliage is of a deeper green. The heads of bloom are much less massive than those of grandiflora, owing to the sterile flowers being but few in number.

Cuttings of both these Hydrangeas strike without difficulty at any time during the growing season. We place a few large stock plants potted up for the purpose in gentle heat early in the season, when they soon start into growth, and when the young shoots are large enough they are taken off and put in as cuttings under the same conditions as Fuchsias and similar subjects. When rooted they are potted off, and under this treatment make good growth the first season. The young soft shoots on the plants now in the open ground will root readily enough if treated in the same way. In their case too much heat must not be given, otherwise the change in temperature will be too great, and perhaps cause many to decay. For outdoor cuttings, a little heat will be of advantage, but if this is not to be obtained they root readily enough in a cold frame, though, as a matter of course, they take a rather longer time to strike. In putting in cuttings of a delicate character, such as these, in a cold frame, care must be taken that the frame is air-tight, otherwise they will quickly flag, and many thus perish. The frame should be in a spot sheltered from the full rays of the sun and shaded if necessary. When in the full sun it is sometimes difficult to keep the frame close and the temperature within low enough not to injure the cuttings. In the event of very hot, dry weather, if the frame is shaded with mats, they may with advantage be well wetted two or three times a day. A.

WINTER FLOWERING PLANTS (BULBOUS).—XVII.

Hyacinths (Large-flowered or Dutch) May be taken next. The culture of these is so simple, and directions are found so abundantly in any good gardening publication or bulb catalogue, that it is scarcely necessary to repeat them. A good loamy soil, enriched with a fair proportion of leaf-mould, or old hot-bed manure, or both, and some coarse sand and crushed charcoal, form the best compost, and, after potting, the plants should be stood on a hard bottom of concrete, slates, or the like, in a sheltered place out-of-doors, and covered with about 6 inches of Cocoa-nut fibre (which is generally considered best); ashes, or even spent tan, will, however, do well. Here they must remain until the pots are well filled with roots and the tops just beginning to move, when they may be brought indoors, into comparatively cool quarters preferably, and gradually exposed to the light. A piece of oil-cloth or some kind of waterproof covering should be kept in readiness to throw over the plunging material, for if the fibre and pots get thoroughly soaked by cold rains the effect upon the bulbs is exceedingly detrimental. When selecting the pots for forcing, only those plants that have made a growth of 1 inch to 1½ inches should be brought in, and for early forcing only single flowered kinds of robust constitution should be employed; doubles and some of the more delicate singles must be allowed to come on naturally. When housed the best place (after the growth made has been gradually inured to light) is a shelf, or a place on a high open lattice or board stage in a light and moderately warm house, as far as possible away from hot-water pipes.

Some growers, and many horticultural writers, recommend bottom-heat for early Hyacinths, but I believe this to be a mistake, and have, indeed, proved it over and over again. Such treatment is altogether against nature; the Hyacinth is a spring flower, and comes naturally into bloom when the sun is beginning just to warm the surface of the ground a little, and while the subsoil is still cold and damp. And in practice it will be found that the finest Hyacinths are grown on a cool damp bottom, while the tops are stimulated by a moderate amount of top-heat. I do not mean to say that Hyacinths grown on shelves or stages over the hot-water pipes do not succeed; in fact, some of the finest early blooms I have ever seen were produced in this way, and if plenty of water is used, and a good heat maintained, the flowers will expand all the earlier, as the plants are warmed all round. But I maintain that bottom-heat, properly so called, in excess of top-heat, is very injurious to the tender fleshy roots of Hyacinths, and that better plants can be produced without it. Liquid manure, of very moderate strength only, may be advantageously administered to plants whose pots are full of roots, while the flower-spikes are developing. Above all, never allow the Hyacinth, once in growth, to want for moisture; anything like dryness is fatal. By careful forcing, many of the best single Hyacinths may be had in bloom soon after Christmas, though, as a rule, the very early ones are not nearly so fine as the later batches. When the pips commence to expand remove the plants to a cooler house, where the blooms will last longer and gain a better colour.

A few of the best single Hyacinths for forcing are—Amy, crimson; alba maxima, pure white; Baron Van Tuyll, dark purple; Amicus, indigo, with white eye; Emilina, rose; Charles Dickens, porcelain blue; Grand Vedette, pure white; Grand Vainqueur, white; Grandeur à Merveille, creamy white; Duc de Malakoff, yellow; Robert Steiger, scarlet; Leonidas, blue; La Candeur, white. And of doubles the best are:—Bloksberg, light blue; Alida, rose; Anna Maria, white, with pink eye; Bouquet Royal, white, yellow centre; Bouquet Orange, yellow; Jenny Lind, white, with purple eye; Lord Raglan, dark blue; Lord Wellington, ditto; Czar Nicholas, pink; Josephine, crimson; Miss Kitty, white-shaded; and Princess Royal, light rose.

As with all bulbous plants, half the battle is to get the roots planted early, so that the pots have time to get well filled with roots before the tops begin to move; then keep them as cool as possible until the growth is getting well advanced, and afterwards maintain an even and moderately-increasing amount of warmth until the blooms are just commencing to expand, when the plants should go into cooler quarters. In potting, do not press the soil at all hard, or leave it too loose; a fair medium between the two is what should be aimed at. Nothing is gained by employing very large pots. As good a Hyacinth as anyone can desire may be grown in an ordinary 48 size, or 5in. pot, and except, perhaps, for extra-sized exhibition bulbs, for which 6-inch or 32-sized pots may be used, this size is quite sufficient, and where the plants are required for decoration, working in amongst other plants in masses, &c., a batch should be grown in large-sized 60 pots (3½-inch) of the kind known in the trade as "exhibitions," which are rather deep pots, without rims. These, if sound, moderate-sized bulbs are employed, carefully attended to, and moderately fed with some good stimulant when the pots are filled with roots, will produce very good spikes, and work in in beds of Moss, or among other plants, capitally. Once fairly in growth, the nearer Hyacinths are kept to the glass the finer and stiffer will be both bloom-spike, stem, and foliage. Hyacinths grown away from the light are invariably long-legged and weak in the stem, needing the support of a stick to keep them up at all; while those that have had the advantage of a shelf in full light will not, as a rule, need any support, the absence of which improves the appearance of the plants.—B. C. R.

Kalosanthes coccinea. — When well-grown this old-fashioned greenhouse plant is most useful for decorative purposes. It is propagated by means of cuttings, which root freely at any time of the year. I make it a rule to propagate them in autumn, taking the cuttings from plants that have had their growths well ripened by being exposed to the weather. I use 6 inch pots, and put as many as seven and eight cuttings in a pot, using soil composed of loam and rotten manure, with a good dash of sand to keep it porous. After being inserted they should be placed in a warm house till rooted, when they should be gradually hardened off, and finally placed on a shelf in the greenhouse, there to remain until they show signs of flowering. Water should be given very sparingly up to this stage, but after they show their flower-heads a more liberal supply may be given them, and an occasional dose of liquid manure. When done flowering place them in a close pit, there to make growth for cuttings for the coming autumn. It will be found that a young shoot will be produced from the base of nearly every leaf; therefore a little disbudding will be necessary, but two of the strongest growths should be left to each plant. Give abundance of air while growth is going on, and when the shoots have attained a length of 4 inches turn the plants out on a bed of ashes where they will be fully exposed to the sun. I make it a rule never to give them more water after they have made their growth than is sufficient to keep the foliage healthy.—J. H.

ALLOWING CUTTINGS TO FLAG.

A widespread, but erroneous, idea prevails that by allowing cuttings of many kinds of plants to flag before they are inserted in the soil rooting activity is hastened, or at all events it is imagined that there will be fewer deaths from decay than if they were inserted as soon as removed from the parent plant. In most cases, however, the reverse holds good; from long-continued experiments I am fully persuaded that by far the better plan, except in a few isolated instances, is to put in cuttings as soon as possible after they are taken off without allowing them to flag, if that can be prevented. Some subjects suffer so much even if exposed for only a short time that it is almost impossible to revive them, while, on the other hand, some remain a considerable time before showing signs of distress. Even in the case of the latter, however, more harm than good is done by needlessly exposing them. Plants generally propagated during spring in heat, such as Fuchsias, Heliotropes, Verbenas, Petunias, Bouvardias, and similar subjects, the cuttings of which consist only of young shoots, delicate in texture, will often root in a few days if put in at once; but should they flag severely before insertion, the chances are that all will be longer in striking, and some will be lost altogether. A very particular plant in this respect is the variegated form of Coprosma Baueriana, by no means one of the easiest of subjects to increase. A ready way by which it may be struck is to put the stock plant in heat and thus cause young shoots to grow quickly, when, if taken off, inserted without delay, and kept close till rooted, no fear need be entertained as to the result; should they once flag, however, very few will ever freshen up again. It has been urged on behalf of the system of drying cuttings that the sap discharged from the cut portion tends to prevent striking, and, therefore, should be allowed to escape; in practice, however, the reverse is the case. The descending sap heals over the cut portion of the stem and commences to form a callus, whence roots are produced in a much quicker time than if the sap is allowed to escape beforehand. My experiments have been carried out on all classes of plants with in nearly every case the same result. A few, however, are more or less benefited by a certain amount of drying before insertion. Pelargoniums, if in any way succulent, are better laid out a little time before insertion, but they must not be allowed to flag too much, especially slender growing kinds. Such as have received a certain amount of ripening before being cut down will not need so much drying as when cut from a vigorous plant in full growth. The various succulent plants, such as Echeverias, Crassulas, Epiphyllums, and the different Cacti resist drought so long that branches separated from the parent plants may remain for weeks or longer without sustaining injury, even though kept without moisture. Cuttings of such plants put in after being separated so long must not then, however, be surfeited with moisture; the soil in which they are potted will, in most cases, furnish sufficient moisture to last a considerable time. Much in all cases depends upon the subsequent treatment of the cuttings; if kept too wet, many will be lost, whether dried beforehand or not, while, on the other hand, by a judicious yet sparing use of the watering-pot, cuttings of a very succulent character may be struck without any preliminary treatment. In the case of most subjects, a thorough watering should be given at first, and after that only when necessary, but with many succulent plants this first watering can well be dispensed with.—T.

Boronia elatior.—This is such a profuse-flowering subject, and so easily managed, as to be deserving of general use wherever a greenhouse or conservatory exists. It will last in flower for over two months, and its graceful habit of growth makes it a pretty object even when not in bloom. As soon as the plants have done flowering they should be slightly cut over, shortening the last season's shoots about one-third their length; if this is done the plants will keep for years without getting straggling or too large for ordinary purposes.

THE BIRD'S NEST MOSS.

(SELAGINELLA LEPIDOPHYLLA)

This singular plant, of which the subjoined illustration represents the inrolled state, belongs to a small but well-marked group of Selaginellas indigenous to Mexico. The peculiarity of inrolling the fronds when dry seasons commence runs through the whole series, but none possesses it in so marked a degree as S. lepidophylla. It grows in dry, exposed situations, and endures for long periods excessive drought, during which time its outer fronds envelop the central growing point. The specimen from which the representation was prepared had, no doubt, lost all vitality, as living plants invariably have a wider orifice left at the top during the dormant state. In their native habitat they retain the same appearance as when alive (except as regards colour) for many years after life is extinct, and possess the same hygrometric property of inrolling during drought, and unfolding on the approach of wet weather. The same result may be obtained by artificial means. The living plants assume their flat star-like appearance as soon as the atmosphere becomes moist, and commence a new growth. The plant is somewhat rare in cultivation, and is frequently confounded with S. pilifera, but they are at once distinguished by the form of their scaly leaves; those of S. lepidophylla being obtuse at the points, while those of S. pilifera end in a long bristle. Moreover, S. lepidophylla is a much stouter plant, and a darker green in colour. M.

Humea elegans.—This fine greenhouse biennial when well grown is one of the best of plants noted for handsome foliage and elegant feathery inflorescence. It is invaluable for the centres of large vases in summer, and also for the sub-tropical garden, either for putting out in beds or for plunging in the pots in the turf, or near the margins of walks in order that its rich fragrance may the more frequently be enjoyed. It should be raised from seeds sown on a hotbed in May, and the seedlings should be pricked off as soon as they can be handled, and potted on before the roots get matted together. They should be grown in the open air, where they should be treated like Chrysanthemums, and be housed about the beginning of October and afforded ordinary greenhouse cultivation. By the new year they will be ready for their final shift into large pots, and about the middle of May they either be placed in position in the open air or be planted out in beds.

The Arum Lily planted out.—This has been aptly named Lent Lily by some, as it blooms during Lent and at Easter. Plants of it in pots produce fairly good blooms and a goodly number of them, but nothing like the results obtained from those planted out in the bed of a greenhouse or conservatory. The large handsome leaves of plants thus treated are most effective at all times, and the blooms, which are very large, are of great substance, and are thrown up in the utmost profusion. A rich soil and abundance of moisture at the root are main points in its culture.—C.

REPLIES.

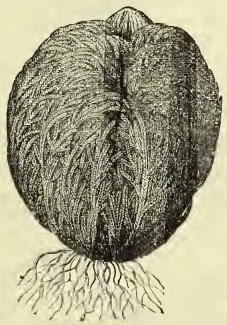
13341.—**Plants for room facing south.**—The plants named in this question would not give much satisfaction if placed at a distance from the window. Hard-wooded plants, such as Azaleas would not succeed for more than one season in a window; they would do fairly well when in flower, but they require a glasshouse in which to make their growth. One of the best of this class of plants for the purpose is Genista fragrans. Fuchsias, Geraniums, Hydrangeas, Harrison's Musk, Callas, Hyacinths, and Paris Daisies succeed well. Cinerarias and Heliotropes do well in a room, if brought up to the flowering stage in a glasshouse.—J. D. E.

13346.—**Treatment of Angelica tree.**—The Angelica tree is Aralia spinosa; but Angelica archangelica is an umbelliferous plant, and a native of Britain. It is easily raised from seeds, and was at one time supposed to be of great medicinal value. Angelonia is a South American plant of the Nat. Ord. Scrophulariaceæ; A. salicariæfolia is the only representative of the species. It has pretty blue flowers, and is a stove herbaceous perennial. It is difficult to say what plant is meant when merely local English names are used for it.—J. D. F.

13507.—**Water plants for conservatory.**—I think you cannot have a more beautiful plant for your bell-glass than Aponogeton distachyon (Cape Pond-weed). Secure a young plant, and put it in a 5-inch pot, with some good loamy soil. The rim of the pot should be from 4 inches to 6 inches under the water. It will not require any attention unless the water gets green, and then you can change it, if it is desired. In a cool conservatory you will find this plant to flower in the most satisfactory manner, if treated as I advise.—J. C. C.

13504.—**Propagating Rhododendrons.**—The best, in fact almost the only, way of getting a stock of the best named varieties of the R. ponticum section, is by grafting on the common ponticum. This operation should be performed in early spring. The common kind may be increased by layers, but the stocks are usually raised from seeds. The new Hybrid Rhododendrons, of which R. javanicum, R. jasminiflorum, and others are the type, strike freely from cuttings inserted in sandy soil; the pots containing the cuttings should be placed in hand glasses in a warm house.—J. D. E.

13515.—**Making Azaleas flower.**—As soon as they have gone out of bloom, they should be placed in a warm house and be freely syringed. The plants will stand 65 degs. or even 70 degs. at night, while making their growth, and, if repotting is required, it ought to



The Bird's Nest Moss (Selaginella lepidophylla).

be done as soon as they have done flowering. When growth has been made, the plants should be removed into a cooler and more airy house. They may be placed out-of-doors for about six weeks in autumn. If a warm house is not available during the growing period, they will make good flowering growths, though more slowly, in a greenhouse, but it is too early to turn them out-of-doors in July.—J. D. E.

13565.—**Azaleas after flowering.**—After flowering all seed-pods should be picked off the Azaleas; they should then be placed in a warm greenhouse, freely syringed, and encouraged to make all the new growth possible; give them a light situation, but shade from strong sunshine. Repot when the new growth is about an inch long, using fibry peat, mixed with a little sand. All tying and training should be done about the same time, as, if left too late, the wood gets stiff, and will not bend to the required shape. The latter end of June turn the plants out-of-doors, plunging the pots to prevent the sun scorching the roots. Keep the plants moderately moist, giving them now and then a dose of soot water. Azaleas are sometimes liable to thrips and scale. When so affected syringe or dip overhead with Tobacco-water.—Cora Brea, *Portsmouth.*

13496.—**Worms in flower-pots.**—They ought not to be allowed to get into the pots. The best way to drive them out, or kill them in the pots, is to water the plants with clear lime-water. They will come to the top and die, or they will not be able to do so, and will die underground.—J. D. E.

13339.—"Flora Conda."—This is evidently a local name for some plant requiring rather warmer treatment than it has received. It ought to be grown in a hothouse, at least in winter.—J. D. E.

ROSES.

TEA ROSES INDOOR AND OUTDOOR.

Apricot-coloured Roses are, in my opinion, the most distinct of any of the Tea section; the best I consider to be Madame Falcot, a fairly vigorous growing variety, and one which makes a nice head as a standard; it is also as hardy as any in its class. W. A. Richardson is less vigorous, but the flowers are more double; it is a delightful Rose in the bud state for buttonholes, and is also an admirable variety for pot culture. Safrano, an old well-known Rose, makes an excellent standard, and a very good climber for a warm wall. In colour, it differs slightly from those just named, the shade being a little lighter in the bud state. It is very pretty, but on the whole the flowers lack refinement. Shirley Hibberd is in every way equal to W. A. Richardson, with the exception of being apt to sport, producing flowers that are sometimes nearly white.

Tea Roses under glass.—After the first week in May I find that unless Tea Roses can be treated very carefully as regards giving them abundance of air and keeping the glass well shaded when the sun is out, the heated air of a glass structure is very injurious to the expanded flowers, causing them to fade quickly. It does not matter what colour the Rose may be, the flowers are always several shades lighter after two or three hot sunny days than they are during dull weather. I think we have no other hardy plant that appreciates the warmth and shelter of a glass structure so much as the Rose up to a certain point. In a temperature that does not exceed 65 degrees it is perfectly happy, but if that point is exceeded by solar heat, and the heat is allowed to strike the flowers through the glass, the colours will fade and the petals reflex. If such treatment, too, is continued for any length of time, the flowers will get considerably smaller. It must be understood that I am writing now of Roses grown in houses not exclusively devoted to them. In a properly constructed house, which can be well ventilated and the glass shaded in bright weather, their condition would be very different. Tea Roses are such excitable subjects that a fluctuating temperature is very hurtful to them, and for this reason I should like to grow them in

Portable houses in beds of well-prepared soil. The house I would construct so that its supports and rafters might be utilised for training the Roses upon. It should have glass down to the ground line, and be so arranged that the lights could be taken down or put up in a few hours. In such a structure Tea Roses might be grown in the greatest perfection and in any quantity. During winter and the spring months they could have the protection of the glass, and about the first week in May, according to locality and circumstances, the whole or any part of the glass lights could be removed, so as to let the plants have full exposure and the benefit of the rainfall. By exercising a little judgment in the removal of the lights from the warmest and most sheltered part of the house first, the growth may be gradually exposed, and the fact that Roses thrive better during summer when fully exposed than with the most painstaking management under glass, is a sufficient argument for the use of portable houses. Those who have a large house may get

Two crops of flowers in one year by growing them in pots and treating them in a special manner. I do not mean ordinary specimens in 8-inch or 9-inch pots, but lusty plants from 4 feet to 5 feet high and growing in 16-inch pots. In pots of this diameter it is not a difficult matter to secure plants from which one may cut and come again. It will of course take some three or four years to grow plants to this size, but when once obtained they may be kept in perfect health with a reasonable amount of care and attention. If the plants are taken out of the pots once in two years in November, and about one-third of the old soil is shaken from their roots, repotting in some good loam and rotten manure, their vigour may be kept up for almost an unlimited period. Such plants should be kept in a light airy house until the beginning of May, by which time the bulk of their early flowers will be over, and they may be taken to a warm, sheltered corner, and the pots plunged to their rims in the ground,

where they can remain until the beginning of September. During summer they must be well supplied with water, and if liquid manure can be substituted for clear water, they will derive considerable benefit from it. When the time has come to take them under glass they will be found to be bristling with flower buds, which will open in the most satisfactory manner in a cool airy house, and will continue to flower for several weeks if liberally fed with some stimulant. Who will be the first to treat Tea Roses in the same kindly manner that Apricot and Peach trees are treated in some gardens, and plant them in a good border against warm walls, letting them have a glass coping on the top and warm curtains in front to shelter them from spring frosts and cold wind? There is a rich treat in store for some one who will adopt this suggestion, for in order to see Tea Roses in their best condition they must be for the most part grown so that they can be a good deal exposed to the influence of sun and air. What is required to bring up the exquisite tints and clearly defined colours that belong to them is a medium temperature accompanied with plenty of light and air. According to my experience, Tea Roses are never more beautiful than when grown in the open. No specimens under glass after May 1 can compare in any way with open-air flowers. Indoor blooms after that date are, as has been already stated, wanting both in colour and substance. I examined the other day some flowers on plants growing on open walls, consisting of such varieties as Marie Van Houtte, Comte de Paris, Shirley Hibberd, and Souvenir d'un Ami, and one could hardly recognise them when placed by the side of those grown under glass. Marie Van Houtte and Comte de Paris are ten times more beautiful than when forced. The body of colour and the delicacy of shading in the outdoor flowers are much deeper, and there is a charming degree of freshness that is altogether wanting in the others. J. C. C.

REPLIES.

13516.—**Mildew on Roses.**—It may afford "R. S." some consolation to know that he is not the only one who is suffering from persistent attacks of mildew on Roses this season, for I also have been much tried with it, and have had one large climbing plant terribly disfigured by it. I have used sulphur dusted on the leaves freely, and although it destroyed all the mildew that came into contact with it, the leaves were disfigured by its action, and the next leaves that unfolded were attacked as badly as the first. Sulphur can only be safely used up to a certain point; beyond that the remedy is as bad as the disease, for it is decidedly objectionable to see the leaves of Roses for weeks together clothed in a coat of sulphur. In our case the cause is not difficult to trace, as, our plants being grown in a cool Peach house, there was no alternative but to open the ventilators both back and front. This introduced into the house a cold current of air over the heads of the plants, which did no harm to the Peach trees, but was very hurtful to the Roses, and no doubt "R. S.'s" plants are suffering from the same cause. But any one who cares to observe the behaviour of mildew cannot fail to notice that it comes and goes in a manner that it is not always easy to explain.—J. C. C.

—— I have tried sulphur and a good many more "remedies" for mildew on Roses and other plants, and have found them of no use. Let "R. S." try soft soap, mixing about 2 ounces to the gallon of water; if the plants are in pots lay them on their sides, and give them a good syringing, so as to wet all the affected parts. He will find that it will clean his plants of mildew. The solution should, if possible, be used warm.—J. S.

—— Try another plan. Mix some flowers of sulphur in soft soapy water, and well syringe all the leaves with it. Keep stirring the water as it is being used, to keep the sulphur floating, as it sinks so rapidly.—J. D. E.

13498.—**Oil stove for heating small greenhouse.**—The stove I described in Gardening of May 2nd I made myself, it being my own idea. The cost, with the exception of the burner, was about 4s. 6d. and a day's work. I have since fixed a gas jet, in lieu of the lamp burner, to burn 1 foot per hour, and I find I get the same heat at about half the cost. Gas here, at Liverpool, costs 2s. 9d. per thousand.—A. B.

OUTDOOR PLANTS.

NEMOPHILAS.

Few hardy annuals are more useful for bedding purposes than the Nemophila. Its habit is dwarf and neat, and a few plants will form an even and compact mass of colour, and whether used in beds, pots, window boxes, or rockwork, it is effective and charming. There are about twenty varieties; the difference between several of them is slight, but a good selection of half-a-dozen or so might be made. N. insignis grandiflora has flowers of a clear, bright blue, and finds a good companion in the pure white of N. i. grandiflora alba. The variety lilacina, in the insignis class, has blooms of a pleasing lilac shade, and puce-purple flowers are produced by purpurea rubra. In the discoidalis section may be mentioned auriculata, rich crimson-brown, with white eye; and vittata,

Nemophila discoidalis vittata.

velvety black, margined with white. A strong-growing section is that of which N. maculata (which has large-veined and spotted flowers) is the type. Some forms of N. atomaria are peculiarly adapted for small beds, being dwarf and compact growing kinds. Seeds of Nemophila should be sown early in August for spring flowering, and April for summer blooming. The best time is August. Sow

Nemophila maculata.

on light soil where the seed can germinate freely, and the plants will not acquire too robust a growth before winter appears. The result will be most satisfactory if the seeds are sown where the plants are to flower. If this cannot be done the work of transplanting should be done early in the winter. A ball of earth should be attached to each plant, and to secure this thin sowing is necessary. A window box 6 inches in width will afford a delightful display of bloom if the back row be of Mignonette and the front of blue Nemophila. T. A.

Peculiar Tulips.—We have to thank several readers of Gardening who have kindly forwarded us specimens of the "Twin-flowered Tulips" referred to in a recent number. According to our correspondents, four flowers sometimes appear on the same stem.

Cutting glass.—The sharp edge of a piece of broken flint will cut glass, and a hot poker drawn across it will crack it. This hint may be useful to those who wish to make the cheap substitutes for hand-glasses mentioned in Gardening March 21st.—W. S.

LAYING OUT GARDENS.

There is no season in which the woods and wilds are more beautiful and enjoyable than in spring. Before a sign of reviving life makes its appearance we can tell that spring is coming by the fresh smell which has superseded in the woods and lanes the odour of decaying leaves. The cool temperature makes a quick walk enjoyable, and enables one to cover a considerable extent of country without fatigue. Especially beautiful is a spring like the present, when a long spell of barren weather is suddenly broken up by warm sunshine and genial showers, bringing the spring flowers out with a rush. Wood Anemones, Primroses, Dog Violets, Cowslips, Daisies, and Coltsfoot are all out together. Marsh Marigolds are decking the damp meadows by hundreds, while snowdrifts of Blackthorn in the hedgerows mingle in effect with wild Cherry in the copses, and Pear and Cherry in the orchards, and the Furze bushes on sandy soils are masses of gold. With all this glory of blossom spread out to spring sunshine wherever it is allowed to grow, why should our gardens present nothing but bare beds? The cottage gardens are bright enough, but one may look into hundreds of villa gardens to see only empty beds. Occasionally a few Hyacinths, a bed of Tulips, a few Snowdrops or Crocuses may be seen, but nothing more, nor will there be any flowers visible until nearly Midsummer. Yet for the whole of these spring months our gardens can be made as gay as, I might almost say more gay than, at any later period of the year. The only difficulty that stands in the way of suburban gardens being bright with gay flowers from March until frost, is the way in which most of them are planned. We cannot have flowers if there is no place set apart for them, and we cannot have a succession of bloom throughout spring, summer, and autumn, unless we have large beds and wide borders set apart wholly for flowering plants.

A wide expanse of well-kept turf surrounded by healthy shrubberies is a beautiful feature in a garden of an acre or more; but in the puny bits of ground attached to most small villas, and even to many large ones, to devote more than half the ground to lawn and shrubbery, in emulation of the style of larger gardens, is in most cases to preclude flowers from being grown. It is useless attempting to grow a variety of hardy plants or to accomplish any kind of floral beauty in small gardens as usually laid out. I have in mind several varieties of garden, none of which will permit of successful floriculture. No. 1, a very common type, is mainly occupied by Grass turf; the flower beds are but 2 feet wide at the foot of walls and fences. These narrow borders are not only the worst positions possible in which to place flowers, but their narrowness precludes succession of bloom and promotes dullness, and any climbers grown to cover the walls will interfere with the plants placed in the borders. No. 2 is also mainly occupied by Grass turf. There are fine large beds and borders, but they are completely occupied by shrubs, mostly evergreens. Only a narrow space of 2 feet is left between shrubs and turf, and there flowers are expected to grow—which they won't, as all the plant food is appropriated by the shrubs. If nine out of every ten of the shrubs in such gardens were dug out flowers would become possible. No. 3 has plenty of space devoted to flower-beds, but none of these are more than 5 feet long by 3 feet wide, consequently any attempt to keep up a succession of bloom is a miserable failure, as when the plants have finished blooming there is not room for later things to hide them. The remedy is to throw the small beds into one or two large ones. Now just to show

How a garden may be laid out to suit flowering plants, suppose a front plot to a small villa, 40 feet square. Why emulate the style of an entrance court 100 feet square by attempting lawn and shrubberies? If the door of the house is in the middle, have a straight walk to it, and have no Grass at all. Have climbers to cover the walls and fences, a shrub or two in the corners, and let the whole remaining space be flowering plants. Two borders 18 feet wide will allow of a good show of flowers, and by using a great proportion of dwarf and evergreen plants the plot will be as open and spacious as if it were laid out as lawn.

The only other preventive to good flowers, and plenty of them, in suburban villa gardens is a bad state of the soil through neglect of proper manure. Out of several hundreds of front plots I noticed the other day in a representative suburb of London I only saw two which were being properly cultivated—the soil in most of the others was not much better than a cinder heap, as far as it was visible on the surface. Even with plentiful manuring the same soil will not grow the same flowers for long periods. In towns where so many horses are kept, manure can always be purchased, and should be applied to flower borders plentifully as required. The borders should also be deeply trenched occasionally, and renovated by the addition of virgin soil from the country, but plentiful dressings of stable manure are the first essential. The mineral constituents of the Grasses and cereals on which horses are fed pass into the manure to some extent unchanged, and, mixed with the rotted straw, help to prevent the soil from becoming exhausted. Road scrapings from granite pavements should form a good manure if properly pulverised by frost. I have not had an opportunity of trying them, but the fact that disintegrated granite and similar volcanic rocks make the best soil suggests its possible usefulness. It is useless attempting permanent planting in front of shrubs and trees; the roots of these may be cut back, it is true, but the result is only to rob the flower beds still further. From the cut ends of the roots a number of fresh fibres spring, which are not strong enough to push across the bed, and which, finding themselves in clover in the soil provided for the flowers, remain and feed there. My last garden was a perfect muddle of shrubs, fruit trees, and hedges, and all attempts to keep the roots of these within bounds resulted as described; the more the roots were cut back the more they grew, forming at last a perfect mat of fibres in a single season. Not only do the roots of shrubs appropriate the nourishment in the soil but they also suck the moisture out of it, making it fit only for wall plants. In large gardens shrubberies are essential, but in gardens only some 200 feet long by 50 or 60 feet wide a dozen shrubs and trees will, if judiciously chosen and placed, have as good an effect as fifty, if the walls and fences are covered with creepers. They will round off and embellish the boundaries and give greenery, and light and shade, and that is all that is required in such a small space—to pile up shrubs behind each other is manifest waste in a small garden. Now for

The flowers. All other arrangements should only be so much background to these. A garden without flowers is an empty setting without jewels, a frame without a picture, a home without occupants. In a small garden there should be at least one large bed devoted to flowers, although there may be several small ones. In small gardens a good effect can only be got by judicious selection and arrangement. There is always the mixed border or kitchen garden border system of growing flowers to fall back upon, in which the plants are merely placed where they will grow if properly cultivated. There is much to be said in favour of this system, or rather want of system: it is good for beginners, because it enables them to master the cultivation first, but it could never be adopted as a final method of decorating a garden. Planting masses of one or two kinds of flowers in separate beds is distinctly inferior to the old bedding-out, as it is merely substituting a short period of bloom for a comparatively long one. What will satisfy the greatest number of people in decorating a garden with hardy flowers, is some system which will give something of the neatness of bedding without the objectionable stiffness and formal geometry. A circular or oval bed, if large, may form a good feature in a large garden, but regular curves like these always look artificial and bad in a small space. The form of the beds should be bounded by flowing curves such as cannot be drawn with compasses—straight outlines have a better effect than compass-drawn forms.

The principal flower bed should always be as large as possible, say twenty feet wide as a general dimension the narrowest way; anything narrower than that prevents a good rich continuous effect of bloom. The best way to arrange the planting of the principal bed in a small garden is to have masses of dwarf evergreen perennials about the outer edges of the bed, and spring flowering bulbs mixed with taller and summer and autumn flowering perennials towards the middle. Many dwarf perennials have evergreen foliage, and others either remain green tufts through the winter or come up very early in spring, so that there need be little bare earth at any period. Narcissi, Oriental Poppies, Crown Imperials, and Anemones, which dislike disturbance, can be planted about the centre, interspersed with Lilies, Phloxes, and Chrysanthemums, for later flowering. A middle zone may contain Columbines, Primulas, Sweet Williams, Pansies, autumn-sown annuals and Tulips, followed by half-hardy annuals and dwarf Lilies; while the edging may consist almost wholly of dwarf cushion-forming and carpeting plants. I planted a bed somewhat on these lines last autumn, which is very gay already, and will be so until late autumn. Anemone fulgens, Daisies, Scillas, Polyanthus, Primroses, and Pansies are in full bloom or over; Anemone coronaria and Crown Imperials are coming into bloom. To follow are Silene pendula, Alpine Auriculas, Megaseas, Iris pumila and Iris olbiensis, florists' and Parrot Tulips, Columbines, Narcissus poeticus (single and double), Gladiolus Colvillei, Pinks, Phloxes, Chrysanthemums, Salvia patens, and Colchicums. Empty spaces will be filled with annuals. To get a good effect all that is necessary is to plant enough of each kind of plant used to form masses. Large plants, such as big foliage plants, Hollyhocks, Dahlias, Lupinus arboreus, Hydrangea paniculata, and Chrysanthemums may be planted singly or in small groups; but smaller plants should be planted in good sheets or groups, and enough of each kind to make a good show. Plant such things as Anemones, Tulips, Narcissi, Pansies, and Primulas by fifties and hundreds. Smaller beds and narrower borders may be filled with plants of bold form, and with annuals. In a hot place plant Antirrhinums with Portulacas and Calandrinias in front. In a cool, shady border plant Pansies and Primulas. In a border facing east plant Pyrethrum roseum and Anemone japonica. Where there is a background of greenery Day Lilies, German Iris, and Chrysanthemums look well, as their leaves fall into the greenery, when the plants are not in bloom. By judicious arrangement and selection, and by avoiding all arrangements which tend to sameness or formality, or which suggest the making of any bed or set of beds to balance any other set of beds, so that they look well planted with the same plants, every corner of a garden can have occupants exactly suited to its position and conditions, and all will look well. It is only when we begin to make the two sides of a garden alike, or introduce artificial arrangements, that difficulty and ugliness crop up. J. D.

Standard Geraniums.—As amateurs are now busy in arranging their flower beds, it may not be inopportune to say a few words in favour of the Zonal Geranium, trained as a standard; and, as the robust-growing kinds will, if planted by the last week in May, soon make sufficient stem growth to ensure an early display of flowers, the simple *modus operandi* to be pursued in forming a standard may not be uninstructive to those who have no experience of that interesting branch of gardening—training plants into a desired shape by the use of the knife. The above observations may suffice to show that for the purpose in view strong-growing plants should be selected. These should have a firm straight stem, terminating with a lead or growing top, which should be encouraged to grow by being planted out in the beds, and trained or tied to a firm stake, all side shoots, and also any that may have appeared, being removed, and cuts healed with silver sand. When sufficiently high the lead or top of the main stem should be removed to induce the necessary bushy growth of side shoots, which should, when about 5 inches long, also be stopped in order that further shoots may form. By careful management the uppermost shoots need not be taken off previous to removing the top of the main stem, but may be utilised in forming the head. The plants should be lifted after flowering and potted; and during winter will, of course, require protection from frost. In clayey soil the quick growth necessary to the formation of the plants would be retarded, and failure possibly ensue. Under such a drawback, as regards soil, a good plan is to make a hole large enough for the free growth of the roots, and fill this up with a suitable light compost of good dark loam, with an addition of one-third of peat, and a little silver sand—say about an eighth. This will render the soil free, and ensure root formation and consequent vigorous plants, and an early bloom display.—A. E. A., *Stamford Hill.*

Plans of suburban gardens.—I quite agree with the views of "Dublin Amateur" (p. 110), and as a dweller in a suburban house would be much more interested in the articles if plans and subjects of fruit gardens and vegetables were also introduced. Of course, where a beautiful garden is desired, varieties of trees and shrubs are essentially requisite for picturesqueness, but families with limited incomes look nowadays for economy in its kitchen vegetables and fruit, by growing them on the plots of ground attached to a house. Practical articles on the planting of Apples, Pears, Plums, bush fruit, Strawberries, &c., suitable for sandy, light, or heavy soils, inland or near sea coast, would be of great interest, I am sure, to many of your readers. Those who, like myself, may reside on the west sea coast, surrounded by bare walls where sand prevails and but little soil, would be glad of such information.—B. P. *** We quite agree with "B. P." Fruit trees have a peculiar merit, for, wholly apart from their fruit, many of them are better worth a place in a garden than some shrubs and trees grown for beauty alone. In the flowering season, at least, there is often more beauty in a fruit garden or orchard than in the so-called flower garden. We have published many articles on the cultivation of different kinds of fruit, as "B. P." will be able to see for himself if he consults the volumes of Gardening, and of course never cease to consider the subject from many points of view. We shall be glad to consider the plan of any pretty garden which our readers kindly send us.—Ed.

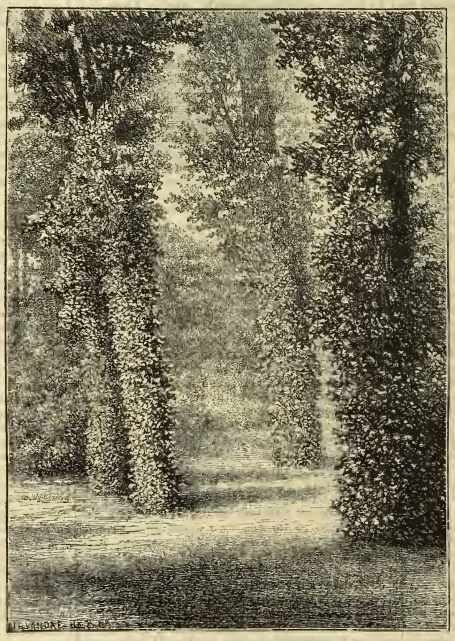
Stocks and Asters.—Two very nice, useful flowers that are very easily grown are Stocks and Asters, and a good bed entirely filled with each of these is generally a great success. Of the former a good strain of the German or Ten-week is best. Unless sowings have been made at the proper time (Stocks in February or March and Asters at the beginning of April), the only alternative is to purchase young plants, which may be had at a very cheap rate from several nurserymen who advertise in Gardening. Both need a well-prepared bed in a fairly open and sunny position. Stocks should, if possible, have a sound loamy soil of moderate richness, and containing a small proportion of old mortar rubbish, to which they are partial; while the soil for Asters can scarcely be made too rich by the addition of decayed turf, and sweet old rottod stable-manure. The young plants should be putout, if possible, during showery weather, or carefully attended to as regards watering, and slight shade from hot sun afforded, if it occurs, for a week or so, until fresh root action commences.

Culture of Pansies.—Pansies can be made to bloom satisfactorily, even in a hot, dry summer. The first thing of importance is to have good soil, composed of leaf-mould, old decayed manure, and sandy soil. Frequently pinch off all flowers and buds, so as to give the plants a rest. Abundance of water should be given every evening if the soil is a dry one. Occasional applications of liquid manure will also be beneficial. I am thoroughly convinced, the soil being suitable, that fine flowers may be had from early spring until late in the autumn, provided the plants receive proper attention. Seed sown now will produce a display in the autumn, but sown in July, August, and September, will bloom early the following spring. —R. Mann, *Shadwell.*

Aucuba-leaved Daisy (Bellis aucubæfolia).—Among hardy garden flowers this is likely to hold a high place, being ornamental at all seasons. The flowers are a bright and pleasing shade of red, and look well on their golden cushion. The foliage is most beautifully variegated—or perhaps veined would be the more correct term—green and golden yellow. When planted thickly they are striking and attractive. As to hardiness they appear quite equal to the old forms. They are propagated by division in spring or autumn.—V. V. V.

IVY ON THE STEMS OF TREES.

Ivy is often, and with justice, regarded as a most dangerous interloper among the branches of trees; but it is so very beautiful to see the trunks of trees covered with the handsome leaves of this best of evergreen climbers that its presence should more frequently be tolerated. There is no way in which more graceful beauty can be added to many lawns, or other grounds than adorning the trunks of trees with the different kinds of Ivy. It is quite easy to keep them within control so that they shall not mount up and choke the tree. To cover the trunks to a height of 12 feet or 15 feet with the glistening foliage of this charming plant is a delightful improvement. Whole collections of Ivy might be grown in this country successfully in this way, and much more satisfactorily than on walls. A little care would be necessary in culture if they are to do no harm and are to look well. The Ivy would form what might be termed a "carpet" on the trunk, and should be encouraged to do so by annual pinching; at the same time it might be reduced at the top, if it is getting too vigorous. Some of the small-leaved kinds look very beautiful on the tree trunks, and so do the large ones by contrast with them; and the trees do not appear to suffer in the least.—R. *** It is only fair to say that the effect of Ivy on trees is a disputed point. Some of the best judges we know say it is not so injurious as is generally supposed, and under some circumstances it is worthy of encouragement for its beauty. One of the best writers on landscape-gardening, Mr. Repton, held this view.—Ed.



Ivy close trained on the stems of trees.

Staking Calceolarias.—In most gardens Calceolarias are seldom staked after they get planted, and the consequence is the beauty of the plants is lost on account of so many of the shoots becoming broken down and the rain splashing them with mud. I advise those who do not stake their plants to do so. Each plant after it is planted should be supported by a neat stake of sufficient strength to uphold all the leading branches. Put the stake in the centre of the plant; then take a piece of bast, fasten it to the stake, then divide it into as many parts as there are leading shoots. Make each one of these parts fast round one or more of the shoots so as to allow the shoot room, and also be careful not to draw the shoots out of a natural position; on the contrary, let the bast hang loose, and by the time the blooms expand the string will be strained from the centre. A good many may think that this involves too much trouble, but I can assure anyone who may be desirous of trying the plan that the little trouble taken at the commencement is amply repaid in the course of the season. The stakes which we use are made out of laths, which when split make light, straight stakes of sufficient strength.—E. W. T.

Golden Moneywort.—This is a yellow-leaved sport, obtained from the common Moneywort, which grows wild in British meadows; hence it may justly be classed as a weed, but it is also an excellent plant for moist and shady places in the rock garden, and for carpeting the ground beneath the taller plants, the appearance of which is improved by an undergrowth of deep golden yellow, a colour which this plant retains throughout the season. We have used it for edgings and groundwork in the open flower garden, but, being a shade-loving plant, it gets rusty in bright, sunny weather, and is, therefore, not to be relied upon for such positions—at least not in the southern counties; northwards it would no doubt prove as useful for this purpose as it does in the south for undergrowth and rockwork. It is readily propagated by division at any season of the year.—S.

Columbines.—It seems to me that these are a difficult class of plants to understand; at least, I find them to be so, and I must admit that I have met with more than the usual amount of disappointment regarding them. In the first place, I was disappointed in not being able to secure Aquilegia cærulea true to name. I had plants from three different sources, and in no case did I receive the right kind; the flowers of all these plants are creamy white, with the slightest tinge of blue on the tips of the petals. At length I, however, received the true variety, and from the seed of this plant I have raised a stock of plants that produce the blue and white petals for which this Rocky Mountain kind is so remarkable. No one can look upon this variety, when in bloom, without being struck with its exquisite colouring. From the same plant I have also raised others that produce flowers equally large, of a soft yellow colour, and with the luxuriance and habit of the parent plant. I see no reason why there should not be a still wider departure from the type, and therefore I mean to go on and see if something more cannot be accomplished. In my case I see no disposition in the oldest plants, which are three years old, to die away, as some say they do; but soil and situation may have something to do with that matter. My stock is standing in a border in the kitchen garden where the soil is rich and deep and well-drained. So far I have failed to flower A. glandulosa; in fact, I can hardly keep the plants alive. Neither A. canadensis nor A. Skinneri are worthy of cultivation, seeing that there are already brighter and more distinct varieties to be had—at least, such is my opinion. I have seedlings in the same line of colour that surpass them. A. aurea, with bright, lemon-coloured flowers, may, I think, be kept for any number of years by carefully dividing the roots. It is a free-growing variety, and very little inferior to A. chrysantha.—J. C.

13401.—**Destroying earwigs.**—Place lengths of dried Beanstalks, open at both ends, among the plants and flowers. The earwigs crawl into these after their night's depredations, and can easily be shaken out in the morning and destroyed.—J. D. E.

REPLIES.

13492.—**Eradicating Dandelions from a green.**—The most effectual way that I have tried is by taking up the turf about 2 inches thick, and putting it aside in rolls, then digging the ground to the depth of the roots, and picking them out and destroying them. I have found them nearly 2 feet deep. When the soil has been quite cleared then level the ground and replace the turf, and, after picking out the parts of the weed in the turf, roll with a heavy roller. Should the weather be dry, watering would be necessary.—A. R., *Cornwall.*

13505.—**Orange fungus on Hollyhocks.**—Unless you can give your Hollyhocks a deep and rich moist soil you will find it difficult to get rid of the fungus when once it appears on the leaves. Gishurst compound dissolved in water at the rate of 2 ozs. to 1 gallon of water, will destroy the pest, if you can sponge the underside of the leaves, or syringe them so as to thoroughly moisten every part of the leaf. The Hollyhock is not very particular as to soil, so that it is rich and deep. As regards position, I find they are as much affected by the fungus in shady places as in the full sun. I, therefore, should select the most sunny position; you are very late in getting out your plants, unless they are very strong ones. Get them planted at once, and give the roots plenty of water in dry weather.—J. C. C.

— This is very troublesome, and has destroyed many collections. Constantly washing the leaves in soapy water, in which sulphur has been dissolved, will sometimes destroy it in the very early stages. The seedlings should not be planted near any affected plants, as the wind carries the spores of the disease a very considerable distance. A light, open position, well exposed to the sun, suits them best.—J. D. E.

13500.—**Fernery.**—The clinkers could have been glazed at a pottery. An experiment might be made with shellac and methylated spirit called Angler's varnish. The surface should be previously well heated with fire-heat—moisture would be fatal and produce "tackiness," as artists term it. Give the above several days to dry and harden; then finish with a thin coat of amber varnish. This experiment may produce the required gloss, but could not be repeated, if necessary, another season when the Ferns are in their position.—A. E. A.

— Don't put any varnish on the surface of the clinkers; the plants might not like it. In a year or two natural Mosses will grow, which will have a better effect than any artificial surface put on.—J. D. E.

13342.—**Plants for shady town garden.**—Most of the stronger-growing hardy Ferns would do well under the shade of the trees. Plant Hyacinths, Wood Anemones, Scillas, and some other flowering plants, to make a display before the Fern fronds push up in May.—J. D. E.

13494.—**Sowing Pansy and Viola seeds.**—If sown now the plants will flower well in the autumn. The best time to sow is July to produce a strong spring bloom. The flowers are more valued in the spring than they are in the autumn.—J. D. E.

13293.—"**A lost Wallflower.**"—I have some plants of the double brown, which, I think, "W. B. H." means, and if he will send me his address I shall be happy to forward some cuttings and flowers.—Emma C. Ross, *Rossmore, Exeter.*

13499.—**Plants for hot, dry border.**—The only plant I know of which will grow on your border is Portulaca, which, if planted 6 inch s or 8 inches apart, will presently cover the bed. Now is the time for sowing it on the open bed. My experience is on a chalky soil.—W. I. N.

Flowers and plants for the London poor.—The hon. secretary of the Kyrle Society has intimated that in view of the resumption of the annual work of distributing flowers and plants among the London poor, information will be gratefully received at the society's offices, 14, Nottingham Place, W., of intended gifts for that purpose. Plants are particularly needed for the gardens opened in various parts of the metropolis, and also others in pots for wards in hospitals, workhouses, and infirmaries.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

QUESTIONS.

13621.—**Gloxinia maculata.**—Will any reader of Gardening kindly give me some hints as to how best to grow this for exhibition?—D. C. B.

13622.—**Pear tree for sunless wall.**—Will any reader tell me the name of a Pear tree that will grow alongside a blank wall where there is little or no sun?—Amateur.

13623.—**Procuring fertilising Moss.**—There is a difficulty in obtaining fertilising Moss so often spoken of in Gardening. Will any reader tell me where I can get it?—E. R.

13624.—**Hardy plants for late autumn flowering.**—Will any reader kindly give a list of plants (hardy) that could be planted during the summer for flowering during October and November?—Tyro, *Leicester.*

13625.—**Plants and flies.**—Will any reader of Gardening tell me the name of a greenhouse plant which is obnoxious to the ordinary fly?—J. E. W. *** *We don't know of any such plant; we should be glad if we did.*—Ed.

13626.—**The Cherry Plum.**—Of the correspondents of Gardening who have referred to the Cherry Plum not one has stated where the trees can be obtained. I should be glad if any reader could supply me with this information.—R. H.

13627.—**Growing Vegetable Marrows for exhibition.**—Will some reader tell me how to grow Vegetable Marrows for exhibition about the end of August?—D. C. B. *** *Send your other questions again in accordance with the rules.*—Ed.

13628.—**Best Black Currant.**—Will any reader please tell me which is the largest, the best, and the most prolific Black Currant that is grown; and, when set with themselves, what is the best distance to keep between each of them?—Amateur.

13629.—**Treatment of Deutzia gracilis.**—Will any reader of Gardening tell me what sized pots these are generally flowered in? Can the plants be reduced in size when too large, do they require much liquid manure, and what is their general treatment?—F.

13630.—**Fertilising Moss.**—Will some one state where this can be obtained, and how it is arranged for plants to grow in it? Will Maiden-hair and other Ferns thrive in it well? Also, will most plants grow in it in a room, and what treatment is required?—G. L.

13631.—**Chou de Burghley.**—Will any reader tell me how to grow the vegetable, Chou de Burghley? When should it be planted out, and where can I obtain some good plants of it?—A. G. G. *** *Mr. R. Gilbert, The Gardens, Stamford, could doubtless supply you.*—Ed.

13632.—**Growing Cucumbers.**—I have a lean-to conservatory that gets sun all day; it is 12 feet long by 6 feet, height 11 feet. Will any Cucumber grower tell me how to cultivate Sutton's Duke of Connaught Cucumber in it, and describe the soil required?—Muggins, *Leytonstone.*

13633.—**Orange trees.**—Having received two small Orange trees from the south of France, I should be glad of any hints as to their treatment. Would they prosper in the atmosphere of a large town, and would a balcony facing south-west do to place them in in the summer?—M. C. S.

13634.—**Grapes not stoning.**—I planted a Black Alicante vine nine years ago, and the berries never stone. The vine is in a vigorous condition. I shall be glad of any information on the subject. I have in the same house Black Hamburgh and Foster's Seedling, and they do well.—E. C., *Low Moor, Yorkshire.*

13635.—**Spring bedding.**—Will any reader tell me what I can use for spring bedding to flower at the same time as Wallflowers and Anemones? I find that Silene is too late, as I have always to pull it up just as it commences to bloom, to make room for the bedding-out things. Any hints and suggestions will much oblige. Whatever I use must be able to bear transplanting.—W. B. W., *Tenby.*

13636.—**Worms at roots of Rose trees.**—Some of my standard Rose trees do not thrive as I should like them to. I keep the loam moist with liquid manure, and find that it causes a quantity of worms to gather around the roots. Will any Rose-grower tell me whether the worms prevent the growth of the trees, and, if so, what are the best means of destroying them?—G. E., *Forest Gate.*

13637.—**Espalier Pear tree.**—I have an Espalier Pear tree, about four years old, which is out-growing the available space where it now stands. I can give it room on a south wall. Will any reader tell me whether I may transplant it next winter, or will it be better to shorten the branches, and leave it where it is?—Mrs. R. *** *Send your other questions on separate pieces of paper, in accordance with the rules.*—Ed.

13638.—**Prepared Moss.**—I am told of a prepared Moss which may be used in the arrangement of cut flowers in shallow glasses, and which does not give the very disagreeable smell so apt to arise from common Moss, when kept in water. Can any of your readers inform me where it may be obtained, and also whether it will keep fresh and green if used to cover the soil in flower-pots in which Ferns, &c., are planted?—R. L. S.

13639.—**Grapes not ripening.**—I have a vinery with Black Hamburgh, Foster's Seedling, and Lady Downe's vines. Hamburghs do well; of Foster's Seedling a great many berries crack and get spotted in the skin; of Lady Downe's, a great many berries get mouldy and a great many others get quite hard and shrivelled up. The foliage of the vines is in splendid condition. Will any practical reader tell me why my Grapes are not successful, and what I should do?—A Constant Reader, *Stewarton.*

13640.—**Climbing plants.**—The walls of my house are old red brick, and were repaired and re-pointed six years ago. I have planted Virginian Creepers, Ivy, Wistaria, and Clematis to climb up the walls. Will any of them need wires to be tied to, or will nails and bits of cloth do? Will any of the plants named climb without any fastening to the walls?—S. M. *** *Ivy and the Japan Creeper, Ampelopsis tricuspidata (which is an ally of the Virginian Creeper), fasten themselves to the wall. The other plants you mention, and wall climbers generally, require some kind of trellis or nailing. One of the best and neatest ways is to strain wires horizontally on the walls, not too close together, say 10 inches or a foot apart, and to these tie vertically ½-inch square deal rods, painted of some quiet colour to suit the building. Yours is a question on which many of our readers must have valuable experience, and, no doubt, they will help you.*—Ed.

13641.—**Treatment of Dendrobium nobile.**—Will Mr. Douglas kindly inform me what period of rest and general treatment should be given this after flowering? I have one just in flower which was covered with mealy bug and scale when I bought it, and I should like to know whether I can, without fear of injuring the plant, remove and pot what appear to me to be shoots with roots, which spring from the sides of old stems; and whether it is absolutely necessary to use living Sphagnum Moss for top.—Showler, *Stroud Green.* *** It is a great error to purchase plants of this kind "covered with mealy bug and scale." The expense of cleaning them comes to more than they are worth to purchase. The plant cannot be safely propagated by removing the young "shoots with roots which spring from the sides of the old stems," unless the old bulbs are removed with them. The best time to repot is when the plant has done flowering; being of vigorous constitution, it thrives well with a good shift. I fill the pots half full of drainage, and over it place a thin layer of Sphagnum Moss. The potting material is half fibrous peat and half Sphagnum, with some charcoal and potsherds mixed with it to keep it open. It may not be absolutely necessary to use live Sphagnum Moss for the surface, but it is much better to do so. It is as easy to obtain suitable Moss as it is to get good peat. If it is intended to divide the plant into two or more pieces turn it out of the pot and part it asunder gently with the fingers. If cut with a knife many important roots may be severed. The resting period is not until the season's growth has been made. J. Douglas.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13642.—**Books on Rose culture** (*Ignoramus*).—You will probably find what you want in Canon Hole's "Book about Roses," or Rivers' "Rose Amateur's Guide."

13643.—**Obtaining Balm of Gilead** (*J. H. C.*).—This plant is tolerably common in gardens, and any large hardy plant nursery should be able to supply you.

13644.—**Tulips for autumn flowering** (*Beginner*).—No; you cannot raise Tulips in the open so as to flower in autumn; that is not their proper flowering season.

13645.—**Yellow patches on lawn** (*A Constant Reader*).—Keep it mown closely, and, if the patches still remain yellow, water with weak soot water or manure water.

13646.—**Polyanthus stems joined together** (*L. C. T., Plymouth*).—Yours is a case of what is called fasciation of the flower-stem. It is not uncommon in Polyanthuses and many other plants.

13647.—**Procuring coil boiler** (*Pick*).—Why not consult the advertisement pages of Gardening, or apply to anyone in the trade? We have no doubt you could easily procure what you require.

13648.—**Green Primula** (*Primula*).—This is not common; we do not remember having seen it before. Though more curious than beautiful, we think it would be worth while trying to increase it.

13649.—**Crimean Snowdrop** (*South Devon*).—Sow the seeds in pots or pans, and next year plant out and make a bed of them as you suggest. We should like to see a few of the seed pods when ripe.

13650.—**Fluid manure** (*Beginner*).—Mixed with other household refuse, and well diluted, it is useful in the kitchen and fruit gardens, and for strong-growing plants such as Chrysanthemums and Fuchsias.

13651.—**Utilising cellars** (*W. J. S.*).—You can grow Mushrooms in the cellars during summer, but in winter, unless it is heated, we doubt whether you could force Rhubarb there. Both Rhubarb, however, and Seakale could be forced if you put a quantity of heated stable manure in the cellar, so as to generate artificial heat. Doubtless some of our readers will tell you how to proceed.

13652.—**Treatment of Chrysanthemums** (*P. Davis*).—If you require your Chrysanthemums for decorative purposes put three plants at once in a 10-inch pot in a well-drained compost of good sound loam, lime rubbish, and manure. You can stop them until the second week in June, and such treatment will tend to make them bushy. If you wish to obtain large flowers put each plant in a 10-inch pot containing the same compost, and do not stop it. Feed liberally with liquid manure.

13653.—**Variegated-leaved Tulip** (*H. Stevens*).—It is not common, and it would be worth while increasing it.

13654.—**Musk Rose** (*Mrs. Boyd*).—There is the common Musk Rose, which can be procured at almost any nursery.

13655.—**Cheap Dahlia stakes** (*A. McK.*).—The information you require was given in the answers to the question to which you refer. See page 77, April 18th.

13656.—**Deutzia gracilis after flowering** (*E. C. F.*).—The best treatment is to plant it out in a good border, and let it have free growth during the summer; repot in the autumn for spring flowering.

13657.—**Mr. Baines' Book on "Greenhouse, Stove, and Fine-foliaged Plants"** (*Ocklynge Road*).—Yes; Mr. Baines' book will give full directions as to soil and general treatment of the plants. It will soon be published.

13658.—**Tulips and Jonquils after flowering** (*E. C. F.*).—You had better leave the bulbs in the pots until the foliage is thoroughly developed and ripened; afterwards allow the soil to become dry, and repot about October in fresh soil.

13659.—**Dahlias from seed** (*J. S.*).—If you treat them liberally some of the Dahlia seeds sown in April in a cold frame will flower this season. Do not give them too much artificial manure or manure water, as that will induce them to run to seed.

13660.—**Strawberry runners** (*Drumbane*).—Pull off the runners throughout the season, unless you want to increase your stock. If you do, you must allow the strongest to root; they may be detached at the end of the summer, and replanted to form a new bed.

13661.—**How to bud Roses** (*Hortus*).—We know no place where you could be taught how to bud Roses. You had better get Baltet's "Art of Grafting," and practise until you make yourself perfect. The time necessary to acquire the art will depend upon yourself.

13662.—**Early Fuchsias in the open air** (*South Devon*).—Yes; the middle of May is early for Fuchsias to flower in the open air, and the fact that yours have bloomed at that time proves what a favourable climate you live in. Will you oblige us by reading the rules to correspondents before you write again?

13663.—**Fertilising Aucubas** (*S. C. S.*).—Yours are the female plants. The male plant may be readily distinguished as it has four stamens covered with yellowish pollen. In order to fertilise the female flowers you need only take a branch from a bush bearing male flowers, and shake it over or hang it on the other plant.

13664.—**Treatment of Pancratium maritimum** (*F. N. G.*)—Plant the bulbs in sandy soil, or even pure sand, at the foot of a warm south wall; or you may grow them in pots in a frame or cool greenhouse. So far north as Lancaster the bulbs would probably require protection during winter with a heap of ashes or other protective material.

13665.—**Cutting Asparagus** (*Anxious One*).—By cutting your plants so early you have, no doubt, weakened and checked them very much; they will probably throw up weak shoots later on. Asparagus should not be cut for at least two years after they are planted. As it is now too late to replant this year, we advise you to await the result from your present beds.

13666.—**Salvia leaves spotted** (*Amateur*).—The leaves have not been attacked by either fungi or insects; they have every appearance of being scalded or injured by drops of water. Such injuries are very common in greenhouses; sometimes after syringing, or when the leaves are covered with moisture during sunny weather, the sun shines on the drops, and each drop of moisture acts as a miniature burning glass. The burnt places thus caused on the leaves are small at first and not black; at length, as the scalded tissues die, the spots (as you say, on the "older leaves") become black, as in your examples. The sun should never be allowed to shine on moist foliage.—W. G. S.

13667.—**Blight on Pear trees** (*Anxious Inquirer*).—In the ordinary sense of the word there is no "blight" on your trees. The leaves appear to have been injured by frost, cold east winds, or burnt by the sun after cold showers. We can see no true blight, and there is no trace of any of the microscopic fungi, which often so badly invade Pear trees. The small insects on the back of the leaves are a species of aphis or green fly. The tree, we suppose, must be in a position favourable for injuries of the class mentioned above, and we regret that we are unable to suggest any effectual remedy. In cases where it is possible it is common to pick off the damaged and insect-infested leaves and burn them. It is probable that no permanent injury will accrue to the fruit, unless the blossoms have been injured by frost, as is sometimes too commonly the case in spring.—W. G. S.

13668.—**Insect pests** (*G. Metcalfe*).—Your vines are attacked by the black vine weevil (Otiorhynchus sulcatus), one of the most destructive pests in vineries and greenhouses, as they attack the young shoots and foliage of many plants, and their grubs feed on the roots of various succulent-rooted plants, such as Primulas, Cyclamens, &c., and do much mischief. The weevils feed at night, and a good way to catch them is to spread a white sheet under the plants in the course of the day, and then after dark to enter the house with a bright light, when many of the weevils will fall from the leaves feigning death; if they do not, a sharp tap or shake to the plant will bring them down. During the day they hide in Moss or any shelter they can find; the hay or straw bands used to close the hole through which vines are admitted from an outside border are very likely places.——(*W. C. Bishop*).—Persevere in your night searches; see my reply to G. Metcalfe.——(*J. Blythe*).—The insect you forwarded is a specimen of one of the skip-jack or click beetles (Athous hæmorrhoidalis). These beetles are the parents of wireworms, and are most undesirable insects in gardens or fields.——(*J. Atherton*).—Your garden is infested with a small weevil belonging to the genus Ceutorhynchus. Try stirring the surface of the soil to the depth of about an inch, and water well with a strong solution of nitrate of soda, or 4 parts of carbolic acid to 100 parts of water. In the winter remove about 2 inches of the soil, which will then probably contain the chrysalides from which the weevils emerge, and replace it with fresh from some uninfested

source.——(*P. G. W.*).—Your bulbs are attacked by one of the bulb-mites (Rhizoglyphus echinopus), a pest which appears to be fast spreading. I immersed portions of the bulbs you forwarded for five minutes in water of a temperature of from 110 degs. to 115 degs. Fahr.; when I took the pieces out every mite was dead and a small worm also. Would your bulbs bear dipping for from five to ten minutes into water of the above temperature? If they would I think you would find this plan a very simple remedy.—G. S. S.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, either on account of their vagueness or want of general interest, or because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*

PLANTS FOR GREENHOUSE (*C. J. Trotter*).—We cannot tell you the number in which the answer to a question inserted so many years ago was published; but we will insert a similar question for you if you send it to us.——OLD-FASHIONED SINGLE ROSE (*Mrs. Boyd*).—We do not know to which Rose you refer; you must give us further particulars.——EXCHANGE COLUMN (*L. C. T., Plymouth*).—No; we are afraid it would not answer its purpose.——SWEET-SCENTED GERANIUMS (*L. Gibbons*).—We cannot insert offers of exchange.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*H. B.*—We do not name varieties of Carnations.——*Grey Friars.*—1, Pelargonium orispum; 2, Pelargonium radulum; 3, Pelargonium crispum major; 4, Pelargonium denticulatum.——*F. H. Fox.*—Appears to be Tacsonia Van Volxemi; but cannot be certain without seeing flowers.——*M. A.*—A variety of Orchis mascula.——*J. Morang.*—1, Send better specimen (not crushed); 2, White Lilac; 3, Spiræa confusa.——*K. E. J.*—Scilla verna (Native Spring Squill).——*Enquirer.*—1, Pteris tremula; 2, Asplenium bulbiferum; 3, Nephrodium molle.——*M. D.*—Cannot possibly name accurately from leaves only; 2, Appears to be Grevillea robusta; 3, Aralia Sieboldi.——*J. S. Reid.*—The double Primrose exhibits an unusual occurrence; try to propagate it. Treat the others as ordinary Primroses and Polyanthuses. The pale flower is Veronica gentianoides.——*Connie.*—1, Cydonia japonica; 2, Euonymus japonicus aureo-maculatus; 3, Cupressus sempervirens; 4, Alonsoa inclsa.——*F. Richardson.*—Double Cineraria; now common in gardens.——*South Devon.*—Stauntonia latifolia.——*L. Paisley.*—1, Cupressus macrocarpa; 2, C. sempervirens.——*Mrs Horndow.*—Ledum palustre.——*M. G. H.*—A species of Mesembryanthemum, so withered that we cannot name the species.——*Mrs. Gray.*—Eriostemon scaber; Coronilla glauca.——*C. M. H.*—Scilla nutans alba; the other is a rose-tinted variety of the same species.——*A. E. Scott.*—Small Apple is Pyrus floribunda; 2, Rhus glabra; 3, Forsythia viridissima; 4, Acer Negundo variegatum.——*A. P. H.*—Prunus Padus.——*Mrs. Pathy.*—Next week.——*C. R.*—Primula Sieboldi.——*R. D.*—Double Anemone nemorosa; not uncommon in a wild state.——*Julius.*—Lithospermum prostratum.——*O. O.*—Celsia orctica.——*J. J. E. C.*—1, Clematis (Atragene) cærulica, var. alba, rather rare; 2, A variety of Weigela (Diervilla) rosea.——*Anglia.*—Next week.——*C. H.*—The plant is Diplacus glutinosus; it is not a climber, but may be trained against a wall.

HOUSE & WINDOW GARDENING.

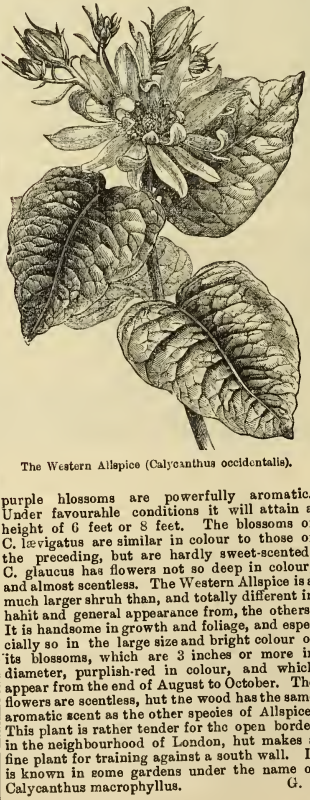
Room plants.—As "J. S." (page 136) speaks from practical experience, there is no doubt what he says about the growth of plants in gas-lighted rooms is true. There is only one product of the ordinary gas flame which is injurious to plants—namely, a trace of, I think, bisulphide of carbon (I am not sure of the name of the gas, further than that it is a combination of sulphuric acid gas and carbon) which is poisonous to plants. Beyond the effects of that, there is no doubt that what "J. S." writes is in accordance with facts. Good ventilation would, no doubt, obviate the evil to a great extent.—J. D.

Are flowering plants in rooms injurious to health?—This question is frequently put, and is answered in directly contradictory terms. The fact is, that such experiments as have been made have been directed rather to the discovery of the amount of carbonic acid given off by plants at night than to the general composition of the air of the rooms in which they were located. As a matter of fact, no sufficient reason has ever been assigned for excluding plants from rooms, though it is well understood that some plants—those which exale certain powerful odours, for instance—should not be kept in bed or other rooms unless the apartments are well ventilated. The question, so far as the production of carbonic acid is concerned, is of little moment, for the quantity of that gas given off during a night by any conceivable number of plants likely to be placed in a room is so small as to be practically harmless. On the contrary, it has been proved that flowering plants are health-producers, owing to the amount of ozone generated by them, and it has been asserted that, however produced, there seems no difference of opinion as to the value of ozone in our atmosphere, for the majority of chemists are agreed that it is the "great purifier," and not one attributes to it any deleterious influence.—G. R.

TREES AND SHRUBS.

THE CALYCANTHUSES.

THE deliciously-scented blossoms of the Carolina Allspice (Calycanthus floridus) and its varieties make them very desirable shrubs, and their size and compact habit recommend them for use even in gardens where only the more select shrubs are grown and room is a first consideration. All the kinds are hardy in this country, and, with the exception of the Western Allspice (which we illustrate), do not seem at all particular as to position or soil. In the North of England and elsewhere they luxuriate even in strong clay, and in the south they appear nearly as much at home in a dry, gravelly soil, though in somewhat sheltered and shady spots. The Carolina Allspice is the kind which has been the longest known in English gardens. It forms a dense, round bush, and its lurid



The Western Allspice (Calycanthus occidentalis).

purple blossoms are powerfully aromatic. Under favourable conditions it will attain a height of 6 feet or 8 feet. The blossoms of C. lævigatus are similar in colour to those of the preceding, but are hardly sweet-scented. C. glaucus has flowers not so deep in colour, and almost scentless. The Western Allspice is a much larger shrub than, and totally different in habit and general appearance from, the others. It is handsome in growth and foliage, and especially so in the large size and bright colour of its blossoms, which are 3 inches or more in diameter, purplish-red in colour, and which appear from the end of August to October. The flowers are scentless, but the wood has the same aromatic scent as the other species of Allspice. This plant is rather tender for the open border in the neighbourhood of London, but makes a fine plant for training against a south wall. It is known in some gardens under the name of Calycanthus macrophyllus. G.

13443.—**The use of charcoal for potting plants.**—We seldom pot any choice plants without using charcoal broken up amongst the potting soil. Its action on the soil is to keep it sweet and open—that is its principal value; but we use it for Polyanthuses in pots, for Ferns, Orchids, Roses, fruit trees—in fact, for almost every plant that we set a high value upon.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, June 1st to 6th.

Putting in cuttings of Anne Boleyn Pinks under handlights. Top-dressing pot Roses with horse manure and loam, mixed together in equal quantities. Cutting Laurels, and edging and ranking flower beds and borders. Sticking Scarlet Runners and Peas, and hoeing between rows of Parsley. Planting Scotch Kale, Cottager's Kale, Brussels Sprouts, Savoys, and Autumn Cabbages; also May-sown Lettuce. Sowing Giant White Cos and All the Year Round Lettuce; also early white Naples Onions for drawing young. Looking over Peach and Nectarine trees, picking off curled leaves, and washing trees with the garden engine. Sowing Broad Beans among Currant bushes. Planting Vegetable Marrows and Tomatoes. Layering Keen's Seedling and Garibaldi Strawberries in 4-inch pots.

Putting in cuttings of Kalosanth s, double Wallflowers, and Salvia splendens. Staking Heliotrop s. Thinning Plums, Peaches, and Nectarines where not already done, and nailing in the longest of the shoots. Sowing Chervil, Radishes, and Mustard and Cress. Thinning out and transplanting Parsley; also Spinach and Turnips. Looking over Apricot trees for snails and grubs. Putting in cuttings of Begonias and other fine-foliaged plants. Thinning Onions and Turnips. Earthing up Cucumbers, Clipping Yew trees, and weeding and hoeing old Asparagus beds. Washing Camellias, in order to free them from black fly. Sowing Turnips and Spinach. Planting out Sweet Basil on a south border. Thinning out late-sown Beet and Salsafy. Beginning the clipping of Box edgings. Putting Camellias and other greenhouse plants out under north walls.

Nailing in leading shoots of Plum and Cherry trees, and washing them well with Quassia water to kill green fly. Earthing up late-planted Potatoes. Tying down the leaders of Cordon Apple trees. Getting out trenches for the late crops of Peas; also trenches for Celery, and getting the manure into them. Shifting latest-struck Chrysanthemums into larger pots. Sowing Neapolitan and Drumhead Cabbage Lettuces; also Paris Green and White Cos. Planting April-sown Cabbages and Cauliflowers; also Ice plants and Gourds. Pricking off seedling Primulas, and placing them in a cool frame. Dusting soot and lime on Onion beds, to keep down the maggot and improve the health of the plants.

Glasshouses.

Plenty of water at the roots, and a moist atmosphere, a moderately high temperature, and shade are at present necessary for the production of well-developed young leaves and wood; pinching shoots in order to induce a stubby growth, and tying in climbing plants, should also be practised. Seedlings and cuttings require potting now and again, an operation to which attention must be paid. Shading must now be used for greenhouses or conservatories, otherwise flowers will quickly shed their petals, and their colours will lose their brightness. All cool houses must be well ventilated, and even at night the sashes may be left a little open.

CAMELLIAS AND AZALEAS that did not flower till late in the spring will now be making active growth; they will be benefited by the application to the roots once a week of a little clear soot-water, say as much soot as can be held in the hand to two gallons of water. Plants that make their growth late require more shading than the earlier ones. The latest flowered Azaleas should now be encouraged to make growth by keeping the house or pit moist, with less air than the generality of greenhouse plants require. All except the small-leaved varieties need little or no shade, save in the very hottest weather, and that for a few hours in the middle of the day. Where a house or pit can at this time of the year be devoted to them and such plants as Camellias that are making their growth, there is little difficulty in giving them the treatment they require; but where they have to be grown in a mixed greenhouse with the usual occupants they should be placed at one end of the house, where the shading can be regulated as necessary and the syringe freely used without wetting those subjects that do not need it, admitting the air that is wanted at the opposite end to where they are arranged.

Large-flowered Pelargoniums, the points of the shoots of which were some time ago pinched out so as to induce them to flower after the earlier bloomers were over, should now have weak manure water given them twice a week. Fuchsias struck from cuttings in the spring and required to bloom late in the summer should again have the points of their shoots pinched out, and any flower-buds that may have formed pricked off; they must not have their roots confined in too small pots, as that would stop their growth and induce them to form flowers sooner than they are required. The earlier plants that are now blooming should have all seed-pods picked off as soon as the flowers have dropped. Give liquid manure every other time they are watered, but it must be in a highly diluted

state, as if given them so strong as many plants will bear it causes the flower-buds to drop off. To keep red spider in check make a free use of the syringe two or three times a-week.

Flower Garden.

Summer bedding.—All kinds of summer-bedding plants may now be planted with safety; of course the most tender should be left till all the hardier kinds are finished, and it should be remembered that it is only by a freer use of hardy plants that we can hope for a lengthened period of beauty. Unless the soil be well firmed round the roots, the plants will be a long time in starting into growth; and a certain way of contributing to expeditious effectiveness is to mulch the beds, as soon as planted, with Cocoa-nut fibre. The labour of applying this is saved by there being less watering needed, and, what is of greater importance in most gardens, neatness is at once assured. The edging should be neatly trimmed, and the plants that require such attention should be tied to supports, and ground work plants pegged down.

Roses.—Those who possess even small collections of outdoor Roses, if they have through the spring taken means to destroy aphides and the Rose maggot, will reap the benefit of the comparatively little labour required by a good display of early flowers. Where Roses have been neglected, unless immediate means are taken to destroy the aphides now existing, and also the broods of those that will come successionally into life, a satisfactory autumn bloom must not be expected.

General work.—In showery weather complete the planting out of Asters, Stocks, Zinnias, Phlox Drummondi, and all other kinds of summer-flowering annuals and biennials. A good way to plant them is in shallow drills; by this means they are not only more easily watered, but the drills, being levelled in as soon as the plants have got well established, form a mulching which is at once a protection from drought and a safeguard from injury through friction by wind. Of course this drill mode of planting is recommended on the supposition that beds of such plants are in request, as obviously the plan could not be adopted when they have to be planted out in clumps among Roses or in mixed flower borders; even then, however, deeper planting than is usual will be found to be advantageous. Clip Box, Ivy, Euonymus, and other shrub edgings; and Grass verges and edgings ought to be cut once a week. In dry weather hoe amongst shrubs, and keep recently planted ones thickly mulched. Weed the rockery and hardy Fernery; Couch Grass and the common Bracken at this season soon overrun the Ferns, as do also the stronger-growing rock plants their less robust neighbours, unless timely curtailment of growth be practised. Seed-stems should be cut off Arabis, Saxifrages, Myosotis, and any others that have done flowering. Lilacs also should have their old flowers cut off and be pruned into shape before they make new growth. Rhododendrons and Azaleas ought likewise to be cleared of their old flowers.

Fruit.

Melons.—Feeding must be discontinued when the fruit in the early house has attained its full size; but watering with pure water to prevent the plants from suffering may go on until the Melons change for ripening, when a dry, warm atmosphere, with a constant circulation of air, will greatly improve the flavour of the fruit. If the pot system of growing throughout the season is adopted, the young plants intended to succeed the first batch must be kept constantly growing until they get established in the fruiting pots, otherwise they will become infested with spider, and most likely lose their stem-leaves long before the fruit is ready to draw upon their valuable assistance. Plants now swelling off fruit must be well fed and syringed every afternoon, and they must be closely divested of all lateral growths as they appear. Support the Melons before they begin by their weight to strain the stems. Pay great attention to the old foliage, which should now be as firm as a board, and carefully sponge for the destruction of insects, as Melons are easily checked and ruined by the use of insecticides. Never neglect plants in pits and frames, as the loss of a single day may lead to the loss of a fine set of fruit. Keep the laterals thin and well up to the light, fertilise every flower when the atmosphere of the frame is dry, and renovate linings back and front alternately.

Vines.—Late Grapes, when ready, should be thinned without delay, as growth goes on so rapidly that they soon get too large to admit of expeditious or neat thinning. Houses in which the Grapes are commencing their second swelling should be shut up very early with an atmosphere well charged with moisture, and if the borders are inside, well soak them with manure water; and as this should be the last application of manure, it may be applied rather stronger than heretofore. Houses containing ripe fruit should be kept as cool as possible compatible with the preservation and health of the foliage. All lateral growth should be persistently stopped, but the leading shoot on each vine should be allowed to ramble.

Hardy fruit.—Apricots are often much infested with a small caterpillar that eats the leaves, and, if allowed to go unchecked, does serious harm, rolling itself up much in the same way as the Rose maggot; it is, however, easily detected. The trees should be gone over as soon as it makes its appearance, and the invader orushed with the finger and thumb. If the fruit has not been sufficiently thinned, at once remove more, and do not allow a greater quantity to remain than the trees can support and mature thoroughly, otherwise the produce will be small and comparatively flavourless. See that no trace of aphides has been left on Peaches and Nectarines, or they will still spread and inflict serious damage. Watch closely for mildew; if it makes its appearance on the leaves or points of the shoots it will quickly attack the fruit. As soon as a trace of it is found the affected parts must be dusted freely with sulphur. If the border in which these are grown is cropped with anything else, such, for instance, as Strawberries or summer vegetables, it should not be forgotten that the latter materially assist in extracting the moisture from the soil, and necessitate the application of more water. Before it is applied in quantity the surface should be stirred with a fork or hoe to a depth of 2 inches to admit of its getting down to the roots. In dry situations, where water has to be given, it is often necessary to repeat this loosening process, as the soil gets baked on the surface and the water runs off. Cherries and Plums are also very subject to caterpillars, and when they appear in numbers they do much harm, not only disfiguring the leaves, but absolutely injuring the trees. There are no means of destroying them, except going over such leaves as are affected and crushing the insects. Cherries are also subject at this time of the year to the attacks of black fly on the young shoots. If they be taken in time, before they have become dispersed over the trees, and while confined to a few of the shoots, they may easily be destroyed by dipping those that are affected in strong Tobacco water.

Vegetables.

Parsnips, Early Carrots, Turnips, Leeks, and Onions are some of the seedlings that now need thinning, after which operation the soil between the rows should be deeply stirred to induce a quicker and more vigorous growth. Peas suffer from over-seeding as much as anything. When the haulms are 2 inches or 3 inches apart they bear pods to the very bottom, which obviously would not be the case if they were clustered together. Earth up and stake such as need support, and sow for succession such kinds as British Queen, Veitch's Perfection, and Champion of England. The principal crop of Runner Beans should now be sown; 6 inches apart in the row will be quite near enough for these, and if the points be pinched out when 2 feet high, that will ensure the production of pods from the very bottom of the haulm. Earth up Potatoes. If high culture be aimed at, strew guano or soot between the rows, stir deeply with a fork, and, after a good rain, earth up. The haulm should be thinned out to single or, at most, double shoots, and then, though the tubers may not be quite so numerous, they will be finer and more on an equality as to size. Top Broad Beans, in order to induce earlier formation of pods, and to prevent an attack of black aphis. No more Broad Beans should be sown unless they are in special request, as at the time when they would be ready there will be abundance of better vegetables. As ground becomes vacant, prepare and re-crop it with Coleworts, Cauliflowers, Early Broccoli, Brussels Sprouts, and Savoys; the two latter will stand the severest winter, and should therefore be planted in quantity. Early Broccoli and Cauliflowers continue in use a limited time only, so these should be planted successionally, and only in such numbers as will meet the demand. Established plantations of Horse-radish, Seakale, and Rhubarb that are throwing up flower stems should have them cut off, and the ground should receive its summer mulching of manure. Weeds may be kept down on Asparagus plots, and at the same time the roots benefited by an occasional light sprinkling of salt. Sow Lettuce where it is to stand, and thin out the plants to 9 inches apart. Tomatoes, ridge Cucumbers, and plants of similar hardinesss may now be planted. During favourable weather keep the hoes going, in order to keep down weeds.

Work in the Town Garden.

Summer, the season of growth and bloom, begins later and ends earlier in town than country, and there are many subjects that do not seem to make a move at all until the long days and bright sunshine of May compel them to commence a more active state of existence. So that in the town garden everything wants attention at once just now, and we must make the best of the short time for display that is allowed us. True, as in the brief summer of northern latitudes, vegetation appears to make up for lost time when it does arouse itself to activity, so it is, at least to some extent, in the town garden, and everything advances in growth during this and the following month with extraordinary rapidity.

Out-of-doors everything should by this time be prepared for putting out bedding and other tender plants. All beds and borders requiring it, should have been properly manured in the autumn or early spring. This is a very important matter, for plants will not grow at all in town gardens if the soil is poor. So many other conditions being unfavourable, a good and liberally-enriched soil is indispensable. If any beds should still need attention in this respect, it should be remembered that rank fresh stable manure will probably do more harm than good. The only thing that may now be used is thoroughly decayed hotbed stuff or good leaf-mould, though in default of these some good chemical fertiliser may be employed.

The following is a list of hardy, or comparatively hardy, subjects which, if not already planted, should be got in without a day's delay, and all of which are found to succeed well in town gardens:—Antirrhinums (Snapdragons), Anemone japonica alba, *Aquilegias (Columbines), Calceolarias, shrubby; Chrysanthemums, early-flowering varieties; Canterbury Bells, *Campanulas (pyramidalis especially), Delphiniums, Foxgloves, Lupines, Geums, *Pinks, Carnations, *Pentstemons, Œnotheras (Evening Primroses), *Pansies, Perennial Asters (Michaelmas Daisies), Hollyhocks, Iris (German Flags). Those marked thus (*) had better not be planted in very confined and smoky localities; but in suburban districts all the above and several other useful subjects may be planted with perfect confidence.

Harden off Geraniums and other bedding plants from the greenhouse by placing them in cool frames or in a pit made of turf or boards, with a light canvas covering to place over them on cold nights. Secure a good stock of Dahlias, both single and double, which, with plenty of manure, and a fair amount of sunshine and light, will flower as well as in the open country, though the plants will probably be rather taller. Provide also, if you have a sunny bed of good soil, a few seedling Verbenas and Petunias of a good strain. Verbenas from cuttings are almost useless in town gardens, even if the stock can be preserved through the winter, but the seedlings grow and flower in a wonderful manner almost anywhere. Petunias also do remarkably well in towns, and a bed of really good singles is well worth a little trouble and expense. Sow Phlox Drummondi in sunny places and in sandy soil, if possible, though it must not be poor. Also Mignonette for succession, Cornflowers (Cyanus minor is much the best); these are grand things, and should be in every garden; also annual Chrysanthemums of sorts, and Linum rubrum grandiflorum. Convolvulus major and

minor. The former seems to do best, and with Nasturtiums and Tropæolum canariense, are the best annual climbers. Sweet Peas never seem to do well between high walls.

Bedding out.—The last week in May is the proper time for planting out nearly all kinds of bedding plants, except Coleus, Iresines, Alternantheras, and other tender subjects, which are more safely kept under cover until early in June. The temperature in towns is nearly always two or three degrees higher than in the country, owing to the amount of protection afforded by buildings, and the greater quantity of fuel consumed for various purposes on the same area, so that there will now be no danger at all in putting out at once Geraniums, Fuchsias, Petunias, Verbenas, and Calceolarias (these last should really have been planted earlier; they always do much better put out a month before other things), as well as Lobelias, Pyrethrums, and other edging plants. So that, supposing everything to be in readiness—*i.e.*, beds properly prepared, and plants fairly hardened, and, of course, the weather being favourable, bedding out may be at once commenced. Bedders that, as a rule, succeed best in town air are—Geraniums, Calceolarias, Fuchsias (a few varieties especially), Verbenas (seedlings), Petunias, Amaranthus melancholicus ruber, Perilla, Lobelias, Cineraria maritima, or acanthifolia, Pyrethrum (Golden Feather), and Echeverias. With these and a few others a very good display may be made. Carpet bedding is rather more difficult of accomplishment, as it is no use attempting Coleus, Iresines, Alternantheras, Nerteras, &c., though the dwarf kinds of Lobelias, Tagetes pumila, Ajuga, and most of the Sedums (Stonecrops), will do fairly well with a little care. Strange to say, many of the larger growing sub-tropical plants succeed admirably if properly grown in the earlier stages, and put out into good, rich, deeply-worked soil; and we have had Cannas, Ricinus, Solanum robustum, Wigandias, and others of similar nature luxuriating freely in the stewing atmosphere of a London garden almost surrounded by buildings 40 feet high. Of course plenty of moisture is necessary, but it cannot be too close or hot for them, and a little smoke and dirt does not seem to affect them much, while the protection from strong winds they receive enables them to preserve their large foliage comparatively uninjured.

Sunflowers will, of course, grow anywhere where they get a little sun and fairly rich ground; Evening Primroses (Œnotheras) flourish wonderfully, while of Marigolds, both the common garden sorts, the French, and African, you may have as many as you please, with very little trouble.

The annual Chrysanthemums, both single and double, and especially such showy kinds as the "Sultan," "Lord Beaconsfield," &c., do remarkably well, and should have a place in every garden.

Indoors.—Plants in the greenhouse must be well attended to as regards watering, and such plants as Zonal and French or Show Pelargoniums, Fuchsias, &c., coming into bloom, should be liberally fed with liquid manure, carefully staked and tied out, and the Pelargoniums especially exposed to the strengthening influence of all the light and air possible. Sow a few Balsams, which will flower well and come in useful in August; and a sowing of Primula sinensis may also be made, though it will be found more profitable to purchase country-grown plants later on if the situation is much confined. Pot on Tuberous Begonias that have started as fast as the roots touch the sides of the pots, especially if large plants are desired. These are very showy and useful, more particulary the single forms; unfortunately, the doubles are very apt to drop their blooms in town air.

Chrysanthemums of the show and Japanese varieties, if put into 48's now, will be ready for a shift into 24's (8-inch pots) in about a month, which will be large enough for spring struck plants to bloom in. Autumn struck cuttings will, of course, be more forward than this, and should be getting established in at least the 6-inch size, for potting on into 9-inch to 12-inch pots shortly. Some recommend placing Chrysanthemums in blooming pots at the end of May, or early in June, but, except in the case of plants for exhibition in the hands of an experienced cultivator, there is no need whatever to give the final shift before the end of June or early in July, and not nearly so much "feeding" is required. Indeed, we have often had abundance of capital flowers from plants shifted about the 1st of August.—B. C. R.

FRUIT.

SETTING MELONS.

Some time ago an amateur Melon grower told me that he never found any difficulty in growing fine leaves on his Melon plants, but was often woefully disappointed by the disproportionately small quantity of fruit produced—very often, he said, not having more than one fruit to a light. This is a common complaint among Melon growers who are not acquainted with the habit of the plant. In growing Melons the next principal point to securing healthy plants and fine foliage is to secure an even balance in the branches, and thereby get the crop of fruits set all at or near the same time. Unlike the Cucumber and other fruits, when once a fruit is set on a Melon plant in advance of the others and begins fairly to swell, that fruit runs away with all the growing power of the others, which will hang for a time without increasing in size, and then turn yellow and drop off. We grow many Melons, and never knew two Melons to swell and ripen on the same plant if any one fruit had two or three days' start of the others, while we have seen one plant of the same variety swell half-a-dozen fruits that had all been fertilised at the same time or thereabout. It is all a question of a little management and training, which I shall try to explain. The Melon flowers freely enough, and if the plant is allowed to attain a good size before it bears there is seldom any difficulty in getting as many fruits on a plant as it can sustain; but the rule with cultivators is to secure fruit as soon as possible, when the flowers are not numerous, and hence few can be got to the right stage together, and although they may be fertilised only one or two will swell. Proceed as follows, however, and the result will be better: If the plant has two limbs—say one growing towards the back of the frame and one towards the front—they will continue to lengthen, but will most likely show male flowers only. They should, therefore, have both their tops pinched off at the same time when from 2 feet to 3 feet long. This will cause them to push from two to four side shoots or laterals on each limb, and, unless the plants are too young and vigorous, these will show female flowers that will expand all about the same time, when they should be fertilised with pollen from the male flowers by means of a camel's-hair pencil. In this way from four to eight fruit may be had on a double-limbed plant, and half as many on a single-limbed one, and the plants need not be more than from 2 to 2½ feet asunder. We have always secured the most regular crops in this way without any trouble; it is simply a question of methodical training. Should the plants not show fruit at the first laterals, these laterals must be stopped just as the main limbs were, both sides at the same time, leaving a joint or two each time till they show fruit, and when the fruit is set these shoots should be pinched beyond it at every two or three joints. Any laterals which show lower down the plant should be simply stopped as they grow, but the fruit should be secured on those nearest the top if possible. A properly-trained Melon should be in shape like a double-headed letter T, that is, with two arms on each side, and each arm should bear one fruit several pounds in weight. Nothing is easier than to train a plant in this shape by judicious pinching. S. W.

Planting Gooseberries.—The Gooseberry is not very particular as to soil or position, but it succeeds best in a deep rich soil. The ground must, previous to planting, be trenched to the depth of 2 feet, a layer of strong dung being placed at the bottom of each trench, and a quantity mixed in with the soil nearer the surface. As soon as the plants are becoming crowded in the propagating rows, they should be lifted and placed in the prepared ground. The planting had better be done in the quincunx form (arranged in fives in squares, one plant being placed at each corner, and the fifth in the middle); and if the distance between the rows be six feet, that of the plants in the row will require to be 5 feet 2¾ inches. These are good medium distances, but in rich soil they may be increased, and in poor ground diminished. There will be a spare piece of ground between each row for some time, and, until this space is filled up, a row of Cabbages, Cauliflowers, or any other vegetable may be planted between each row. The fruit is best flavoured from an open situation, but it must be remembered that a liberal top-dressing of cow-dung, or other manure, should be forked in about the roots every year when pruning is performed. In small gardens it is better to plant a row of Gooseberry bushes round each plot, and other fruit trees can be mixed here and there among them. In a cottage garden a row of bushes may be planted on each side of the small walks. In some places they are grown as pyramids, or trained against walls and trellises; but I have never seen them more successful than as dwarf bushes. Pruning is an important matter in Gooseberry culture. The operation may be performed at any time from November until the end of March, or before the bushes come into leaf. It is desirable to keep the centre of the bush well open, and not to allow the shoots to cross. As a general rule it may be said that one half of the head, including old and young branches (and more especially the former, as the young wood bears the finest fruit) should be taken out. There should be a proper distribution of shoots throughout the bush, and the head should be sufficiently thinned to admit light and air freely. Propagation is by seeds, cuttings, layers, or suckers; but new varieties, of course, can be obtained only from seed.—M.

REPLIES.

13558.—**Mildew on vines.**—In future do not wait for the appearance of mildew before applying a remedy, but as a preventive measure, and one which I have always found effectual, distribute flowers of sulphur, by means of a sulphurating bellows, or otherwise, over the growing leaves and fruit, commencing when the young shoots are about a foot long or less, and repeating the process, say twice subsequently, at an interval of a month or six weeks. This is the method adopted by the vine-growers who supply the Paris market with grapes.—J. M., *South Hants.*

13412.—**Vine not flowering.**—While thanking your correspondents for their replies, I must point out an error in the question. What I meant to say was that "*no* fire-heat was given the winter before," and "the canes broke beautifully last month"—*i.e.*, in March. Only gentle fire-heat to keep out damp and frost was given last winter, and the general treatment was under the eye of an experienced grower. I fear the roots and border alone are in fault.—W. R.

13511.—**Grapes turning sour.**—Yours is a case of shanking—that is to say, the foot-stalks of the berries die before the Grapes are ripe. This is caused either by weak root action through an ungenial soil or by over-cropping. You ought to be able to decide or to get a neighbouring gardener to do so for you, whether you crop them too heavily or not. If it does not arise from that cause, the roots are at fault; and if the vines are not too old lift the roots in the autumn and plant in a border of new soil. A very dry border will sometimes cause Grapes to shank.—J. C. C.

13520.—**Pears not setting.**—The reason is a damp atmosphere. Peaches, Nectarines, and Plums will set if the atmosphere is damp, but Pears will not. Try keeping the atmosphere as dry as possible, and give plenty of ventilation. I was bothered in the same way for years, and at last found out that there was nothing else to blame but over dampness in the air of the house.—J. D. E.

13223.—**Garden donkey plough.**—There are donkeys and donkeys. A careful, well-trained, well-treated donkey might do useful work in a moderate-sized garden where there are no trees or bushes in the way and no box edgings or gravel paths. But it would not do to trust the donkey always. There are times when deeper work than the donkey can do is necessary. If there were a donkey about the place only partly employed at other work there would be some economy in setting him to work in the garden under proper supervision.—E. Hobday.

THE VILLA GARDEN.

(Continued from page 152.)

The Vegetable Marrow.

THE site for these, provided it be an open one and away from the shade of trees, is a matter of little consequence. Sometimes accumulations of rubbish are gathered together in out-of-the-way corners, and a group of Vegetable Marrows is planted on the summit of the mound, and soon spreads all over it, bearing immense numbers of Marrows. But the oommon way of preparing for Vegetable Marrows is to select a piece of ground in an open situation, and mark out the places for the plants 8 feet apart each way. Vegetable Marrows do not need strong manures. They lead to strong growth, but this is not often so prolific as growth of moderate strength. Compost which oontains a good deal of earthy matter, such as turfy loam, is the best for Vegetable Marrows. If manure is used, it should be mixed and blended thoroughly with the soil, which should be thoroughly broken down with the fork or spade, and in this nicely-worked, friable bed either plants or seeds may be set. But usually where there are glass structures the seeds are planted under glass. In

RAISING THE PLANTS

It is not well to sow the seeds too early. I find the first week in April quite early enough. The seeds should be planted in 4-inch pots, filled to within an inch of the top with nice mellow soil; plant two seeds in each pot at opposite sides, and cover half an inch deep with sandy soil. The pots should then be placed in a pit or frame where there is a little warmth, but not sufficient heat to draw the plants up weakly. As soon as they are strong enough they are hardened off, and about the 20th of May planted out. If there are any handlights available for their protection they may be planted a little earlier; but the plants are tender, and they should not be put out too early without some means of protection. Even when we defer planting till the 20th of May, we always have some large flower pots handy to place over the plants should any signs of frost appear, or if the wind should be cold.

IN PLANTING

The soil should be pressed firmly about the base, and the work finished off in a workman-like manner, leaving a basin or hollow round the plants to hold water, if it should be necessary to give some—as it probably will bo till they are fairly established. So far as regards delicacy of flavour young Marrows are the best, and, by cutting all as soon as they are large enough for use, a continuance of nice young Marrows will be produced. When left to get large, bearing soon ceases, as the plants get exhausted.

SAVING SEEDS.

There is no occasion to save seeds every year, as if kept dry the seeds of this family will retain their vitality for many years. If one of the handsomest fruit be left to ripen, seeds enough will be produced to supply a moderate-sized garden for quite a number of years. Vegetable Marrows may be trained over faggot heaps or buildings, and so be made to yield some ornament, but they bear quite as well trailing over the ground. It is a good plan to mulch between the plants with long litter as soon as they get nicely into growth. They derive a good deal of benefit from it, and it keeps the fruit clean.

VARIETIES.—For ordinary use the long white Marrow, cut when quite young, will supply every need. Other varieties are the Custard, Shirley Hibberd's Prolific Early, Muir's Hybrid, and Moore's Cream. Hibberd's Early and Muir's Hybrid are both good.

Rhubarb.

This has become a valuable plant, and scarcely anything pays better for good culture. It likes moisture, and on very poor porous soils, unless well fed, the stalks do not attain a very large size. The ground cannot easily be made too rich; and, as the plants will occupy the same ground several years, it should be well done before the roots are planted. Early in the month of March is

THE BEST TIME TO PLANT,

Just as growth is beginning to move. The intended site should have been manured and trenched or ridged early in winter, and be forked over again in February to get the land into a nice, warm, friable condition. The sets may either be single eyes or pieces of root containing several eyes or buds. The crowns should be divided with a sharp spade, and the pieces planted in rows 4 feet apart each way; but the plants should not stand opposite each other. The Victoria should be planted 5 feet apart each way, as the growth of that variety is large and spreading. Rhubarb, like many of the so-called permanent crops, is frequently left too long on the same ground. To have really fine Rhubarb the plants should not remain longer on the same spot than from six to eight years, and by the removal of the Rhubarb plantation occasionally more space will be available for the rotation of other crops. When left too long on one spot it deteriorates, and not only do the stalks get weaker, but the whole plant loses strength and force, and when that condition is reached it will take more than one year of good culture to restore vigour. Rhubarb pays well for

LIQUID MANURE,

And it may be given any time. A good soaking after pulling has ceased will be a great help in giving strength to the crowns for the next year. Mulching is of great use also; if put on early in the season it will hasten the growth, and as it decays later on it will nourish the roots. No one cares much for Rhubarb puddings or tarts after the Gooseberries come in, but very often there is a demand for Rhubarb then for wine making, and it makes excellent jam when fruit is scarce, so that there is always a temptation to pull away at it as long as any good stalks remain; but this must only be allowed to a limited extent, as it weakens the crowns so much, and, if persisted in, the crop next year will be a poor one. It is impossible to eat one's cake and have it too. I some years ago knew a Rhubarb grower who was making a nice thing out of his Rhubarb plantation, which occupied a warm site, and came in early. But in an unlucky moment he yielded to the temptation offered by a wine maker for his surplus crop, and pulled it very close late in summer, and his crop the following year was a very poor one, through the weakening effect of late pulling. Leaves are necessary to carry on the work of the plant, and a fair proportion of them should be left to die off naturally to feed up the crowns for the next year.

RAISING PLANTS FROM SEEDS.

Very few people do this, except for the purpose of experiment, or to raise new varieties, as in dealing with established plantations every eye will make a plant. The seeds should be gathered when ripe, and when well dried should be placed in a drawer till spring, and then sown thinly in drills 2 feet apart. Transplant at the end of the first year 3 feet apart, and encourage any of the seedlings which give evidence of the possession of superior merit.

VARIETIES.

Linnæus, Prince Albert, and Victoria. The above are three of the best old varieties. A kind called Paragon has been highly spoken of for earliness and productiveness. I grew a variety in Norfolk named the Raspberry. I suppose it was only a local variety, but it was higher coloured and better flavoured than most. The Victoria is the best for exhibition.

FORCING.

Rhubarb forces very easily anywhere, but it should be grown in a pure atmosphere, or the flavour will be spoilt. It may be covered with orates, or tubs, or pots, and be surrounded with leaves and manure well mixed and blended together. After Christmas a very little warmth will start the early sorts, such as Linnæus and Paragon. One of the best ways of forcing Rhubarb, and one commonly practised, is to take up the roots and place them closely together in the Mushroom house or any other building where warmth can be had, and in this respect the Rhubarb is very accommodating, for it flourishes in any temperature up to 65 degs., but 55 degs. is the best for it, as it forces without unduly exhausting. The interstices between the roots should be filled up with light rich soil. After the produce has been gathered the roots may be moved to the open air, and be protected with litter, and after a time of rest the roots may be out up into sets and planted. The same roots cannot be forced the next year, so provision must be made for raising a new lot. In the course of two or three years the roots first forced will be strong enough to force again. Successions of roots should bo taken up monthly at least, beginning towards the end of November, and finishing 1st of March.

E. HOBDAY.

THE KITCHEN GARDEN.

REPLIES.

13509.—**Growing straight Cucumbers.** To induce Cucumbers to grow straight, they must be grown in a warm and moist atmosphere. The fruit mnst not be ready a week or fortnight before show time. They ought to be cut the day before the exhibition, or, better still, on the same morning. To have good specimens, cut every fruit off nine or ten days before it is wanted, except those on which the flowers have just opened; keep up a temperature of 70 degs. at night, and the Cucumbers will be in, in good time, and they will be of good quality, all other conditions being right.—J. D. E.

13493.—**Culture of Seakale.**—If the roots have been lifted from the ground and forced, the right treatment is to take them out of the forcing house as soon as the Kale has been cut, and plant the roots, first rubbing off with the fingers all the buds but one; this bud will make strong growth, and form the crown for next year. If the Kale has been cut without the plants being lifted from the ground, there is no need to do more than remove the blanching material and fork over between the rows. The plants will grow again in the same place.—J. D. E.

13333.—**Yellow Peas and Beans.**—This may arise from various causes—from wet, undrained soil, which rots the young rootlets. Ours failed two years ago, owing to their being sown on ground that had recently been trenched, the subsoil being on the top. Neither Peas nor Beans grew more than a foot high. The cold east winds have been injurious this year. Ashes placed near the plants to keep off slugs would not injure them.—J. D. E.

13334.—**Sticking Sweet Peas.**—The neatest and best way to stick these is by using ordinary Pea sticks. Those of Beech wood are, perhaps, the best. The sticks will not move if they are pushed firmly into the ground. Some of the small sprigs cut from the top of the longer sticks, after they are inserted in the ground, ought to be pushed into the ground for the tendrils to attach themselves to, as a first support before they reach the taller sticks.—J. D. E.

13512.—**Old Seakale beds.**—Have the old stools cut down level with the surrounding ground; there is yet time for them to make new crowns. The old pieces are not of any value, as if you wish to make a new bed next year young plants would be preferable. You will act wisely if you make the old bed do for one more season, and in the meantime prepare to make a new bed.—J. C. C.

HOUSEHOLD.

VEGETABLE COOKERY.—VII.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

ASPARAGUS.—The Asparagus is a choice and delicately-flavoured vegetable, belonging to the Lily tribe, and is frequently called the "Queen of Vegetables." It is considered very wholesome. The young shoots only should be dressed and eaten. This vegetable has of late received much attention, and during the past few years has been highly cultivated, so that now both size and flavour are considerably improved upon the original native European sea-coast plant, the earliest and uncultivated form of Asparagus. The shoots of many other plants are prepared and served in the same manner as Asparagus, and it has been stated as the opinion of some people that the young shoots of the Hop-bind are equal in flavour to the much-esteemed Asparagus. The water in which Asparagus has been cooked should not be thrown away, but put aside for use as "stock" for soups, sauces, gravies, &c.

ASPARAGUS SOUP.—Take one hundred heads of Asparagus, two ounces of butter, the same of lean ham, a bunch of Chives, a small bunch of Parsley, one breakfast roll, one Lettuce, two handfuls of fresh green Spinach, two quarts of broth, or clear white stock, one teaspoonful of sugar, half a teaspoonful of salt, and twelve Peppercorns. Cut the tops from each head of Asparagus about an inch and a-half long, and throw them into fresh cold water; scrape the remaining stalks downwards, and cut all that is tender into small pieces; wash thoroughly, and

put into a saucepan with the butter and ham cut small; well wash the Parsley, Chives, Spinach, and Lettuce, drain and chop them small, and add to the saucepan; put the lid on and shake over the fire for about ten minutes, pour on the broth, and stir until boiling. Scrape away all burnt or highly-coloured crust from the roll, and cut it in thin slices, and put it, with the sugar, salt, and Peppercorns, into the soup pot; let all boil gently for two hours, and then pass through a sieve, keeping back only the hard or fibrous pieces; return to the saucepan and stir continually until the soup boils, then add the tops previously cut from the Asparagus, boil five minutes, and serve with very dry toast cut into dice.

Asparagus with white sauce.—Choose some fresh and young Asparagus shoots, with the heads as nearly as possible all of one size. Scrape them from the head downwards, and lay in cold water until the time for cooking, then tie them in bundles of about fifteen or twenty in each according to the size, taking care to keep the heads all one way; cut them evenly at the stalk end. If you possess a steamer lay the Asparagus in this, cover tightly with a lid, and let the water boil briskly under the vegetable for half an hour, when, if the Asparagus be fresh and young, it will be sufficiently cooked. Steaming this vegetable is much to be preferred to boiling, as when it is not immersed in water the flavour is much better preserved and the green part is not over-cooked before the white is done. If, however, you have not a steamer, then place the Asparagus in a deep saucepan containing sufficient boiling salt and water to come half-way up the Asparagus; cover tightly with a lid and let the water boil very fast for fifteen or twenty minutes. When the Asparagus is quite cooked, lift it on to a sieve to drain, remove the string and lay it with the heads all one way upon a piece of toasted bread, previously dipped into the water in which the Asparagus was cooked, and placed upon a hot dish. Pour a little of the sauce described below over the centre, and serve the remainder in a sauce boat. The large white Asparagus will require very much longer and more gentle cooking than the green Asparagus, or it will be tough, bitter, and uneatable. Fresh cut Asparagus will be cooked in a much shorter time than that which has been kept for a few days.

For the sauce—Take the yolks of two eggs, one gill of cream, half a gill of milk, half a teaspoonful of salt, one dessert-spoonful of Lemon juice; beat the yolks of eggs with the salt and cream, add the milk, and stir these over the fire until they are thick and smooth, but do not allow the mixture to boil; remove from the fire and lightly stir in the Lemon juice, and stir as directed.

Asparagus souffle.—Take twenty-five heads of Asparagus, four eggs, one ounce of butter, one ounce of flour, one gill and a half of milk, pepper and salt to taste, one teaspoonful of Lemon juice. Melt the butter in a saucepan, add the flour, and stir until the two are thoroughly amalgamated; pour on the milk, and stir over the fire until the mixture is thoroughly cooked, and will leave the sides of the saucepan quite clean; remove from the fire, and stir in pepper, salt, and Lemon juice. Scrape and wash the Asparagus, and cut each head as far as it is tender into morsels about half an inch long; throw them into water until you are ready to use them, and during this process the mixture in the saucepan will be sufficiently cool to receive the yolks of the eggs one by one, with a beating of three minutes between each. Put the whites of the eggs upon a clean plate, add to them a small pinch of salt, and beat vigorously with a broad bladed knife until a very stiff froth appears, then drain the Asparagus and add them with the white of egg lightly to the contents of the saucepan. Have ready a buttered mould or tin, and fill it only three-parts full with the mixture, put into a saucepan with enough boiling water to reach half way up the mould and steam for forty minutes. Observe to have the water always boiling while the souffle is cooking, and if it evaporates add more. Turn on to a hot dish and serve with the sauce indicated for the last recipe. This same mixture may be used as a pudding, by placing it in a buttered pie dish, and cooking it in a brisk oven for about half an hour. Serve in the dish in which it is cooked

To dress small Asparagus as a vegetable.—Take fifty small heads of Asparagus, a small bunch of Chives, the yolks of two eggs, one gill of cream or milk, one ounce of butter, half a teaspoonful of sugar, pepper and salt to taste. Scrape and wash the Asparagus, cut into pieces not more than a quarter of an inch long, wash the Chives and cut them about the same length; put these and the Asparagus into a saucepan with enough cold water to cover them, and add a pinch of salt. Place over the fire and let boil for five minutes; drain, melt the butter in a saucepan, add the Asparagus and Chives; toss over the fire for a few minutes; add sugar, pepper, and salt; beat the eggs with the cream, pour over the vegetable, and stir briskly over the fire until the mixture thickens. Then pile high in the centre of a hot dish.

An Asparagus omelette.—Take any cold Asparagus left from the previous day's dinner, cut it into small pieces, and to three tablespoonfuls thus prepared, allow three eggs, one ounce of butter, pepper, salt, and half a teaspoonful of Lemon juice. Break the eggs in a basin, and beat them, yolks and whites together, until they are very frothy; add the pepper, salt, Lemon juice, and Asparagus; Melt the butter in an omelet pan, skim away all the froth, and pour in the egg mixture. Keep the pan continually revolving over the fire until the mixture represents thick cream; then fold one-half of the mixture over the other; tilt the pan so that the part containing the mixture is over the fire, and hold it thus for three minutes; turn on to a very hot dish, and serve at once.

13669.—**Preserving Siberian Crabs.**—Can anyone give me a recipe for preserving Siberian Crabs whole in jelly? They are done in this way in the North of England, and are a delicious conserve.—Mark.

BEES.

SEASONABLE NOTES.

The weather has been most unfavourable for bees during the greater part of May. Although all kinds of fruit trees have shown an unusual amount of bloom, the bees have done but little work upon them, owing to the cold winds and absence of sunshine, and where feeding has not been carried on unceasingly many stocks have perished from want. Swarming will be late this season.

Artificial swarming.—The time at which a swarm will leave a hive is somewhat uncertain. Frequently numbers of bees will hang out in a cluster at the mouth of the hive, waiting till the queen is ready to accompany them to form a new colony, and thus lose much time in the best part of the honey season. When additional room is given by adding bars, or by supering, this clustering can be prevented, and oftentimes the desire for swarming put an end to. If, however, it be wished to increase the number of stocks, artificial swarming is to be recommended, as the issue of natural swarms, with all attendant trouble of watching, following, and securing, is thereby avoided. A stock to be artificially swarmed should be strong in bees and brood in all stages of development. To make an artificial swarm from a stock in a bar-frame hive, first remove the hive to a new stand, and place the new hive in the position the old hive occupied. Having given a few puffs of smoke under the quilt, each bar of comb should be examined, and the one on which the queen is found removed with queen and bees clinging to it, and placed in the new hive, together with frames of brood that can be spared from the old hive. The old stock being placed on a fresh stand causes many of the bees to return to the old position and join the artificial swarm, and thus strengthen the new colony, while enough will remain in the parent hive to carry on the work of rearing the brood. Artificial swarms can be taken from colonies in straw hives by driving. First having alarmed the bees, and caused them to fill themselves with honey, by blowing a little smoke into the entrance, turn up the hive, and place over it an empty skep, bringing the edges together at the point toward which the combs run, and push an iron skewer through the edge of the empty skep into the one below, thus forming a kind of hinge; then with driving irons fix the empty skep uplike an open lid; then, standing back to the strongest light in order to see the bees clearly, commence to rap upon the sides of the stock-hive gently with the open hands, but sufficiently heavy to slightly jar the combs; a loud buzzing will soon be heard, and the bees seen rushing up into the empty skep. Now keep sharp watch to see that the queen goes up in the crowd. She often escapes observation, hiding amongst the bees while going up. Care must be taken to leave sufficient bees in the old hive to carry on the work. Having seen the queen ascend with a sufficient number of attendants, place the hives one on either side and about 3 feet from the old stand, that each may receive an equal number of bees on their return from the fields. Should the queen have failed to go up with the artificial swarm during the process of driving, the bees will soon leave their new hive and join her in the old home.

Supering.—From a fortnight to three weeks after hiving supers may be furnished to swarms. It is important always to feed swarms at first, as the more they are assisted by artificial feeding the sooner they are ready to store surplus honey in supers. Supers must not be placed on hives unless the weather is warm, and honey is coming in abundantly. If put on in unfavourable weather an upward current of cold air is caused, to the injury of the brood. In bar-frame hives broad frames, containing six 1 lb. sections, are placed in the body of the hive next the combs, a sheet of queen excluder zinc intervening. The sections are furnished with comb foundation either in small pieces as starters, or in pieces sufficiently large to three-parts fill them; the latter causes great saving of time and labour. Sectional boxes are also used, placed in crates over the frames. Where there is difficulty in inducing the bees to take to the sectional boxes when placed over the frames, it is a good plan to put the sections in a pile or in a broad frame in the hive next the cluster, where the bees will work in them more readily. After work has been commenced in them they can be replaced in the crate over the frames with the adhering bees, where the work will be continued. As soon as sealed over, full sections should be removed; if left any length of time after being completed the beautiful whiteness of the new comb is spoiled by the heat, and the cappings of the cells are thickened by the bees. The most central section boxes are filled first. In removing them a little smoke is blown among them to clear them of some of the bees, the full ones removed, the unfinished ones closed up to fill the space made by those removed, and the crate filled up with new ones furnished with comb foundation.

Boxworth. S. S. G.

BIRDS.

13670.—**Mice and pigeons.**—Will any reader tell me how to get rid of mice from my pigeon aviary?—W. M. H.

13671.—**Pigeons.**—Having a pair of dragon pigeons about six weeks old, I should be obliged if someone would tell me their treatment. At what age will they begin to breed, and how long ought they to sit on their eggs?—Dragon.

13503.—**Soot-water as a fertiliser.**—It should not be used too freely on pot plants, and is not such a good manurial agent as guano water, or that prepared by steeping cow or stable manure in water, and using the liquid clear and much diluted. Soot-water is thus prepared: Tie up a peck of soot in a cloth bag, throw it into an 18 gallon cask of water, work the bag about well in the water, which should stand until clear, when it may be used, after being diluted with clear water. You had better use it too weak than too strong.—J. D. E.

—— In answer to "Devoniensis," I can say from experience that soot-water is a safe and excellent fertiliser for plants in pots. "Devoniensis" does not say what plants he has, but I use it for all plants that require manure-water at all—for Rose trees, Pelargoniums, Abutilons, and such-like vigorous-growing plants. When the pots are full of roots it seems to be specially beneficial. No hard-and-fast rule can be laid down as to the strength it is safe to use it at. Each one must use his own judgment, according to the class and state of the plant requiring it. I make mine by putting a small bag of soot in about four gallons of hot water, and dilute it when watering the plants.—J. H., *Accrington.*

GARDENING ILLUSTRATED.

VOL. VII. JUNE 6, 1885. No. 326.

TREES AND SHRUBS.

RAPHIOLEPIS JAPONICA.

UNDER the garden name of R. ovata this handsome Japanese shrub is not an uncommon plant in greenhouses. It is, however, perfectly hardy, and it is well that this fact should be known. The plant has had a fair trial out-of-doors, and the annexed illustration represents a spray from a specimen grown in a wood that is not very well sheltered, and where the soil is not of the lightest description. This shrub is of low growth, somewhat bushy in habit, and rather sparsely furnished with oval leaves of a leathery texture. It produces its flowers in early summer, and when a good-sized bush, well covered with clusters of white blossoms, resembling those of some species of Hawthorn, it has a handsome appearance, and, like most other Rosaceous plants, it is powerfully fragrant. Those who possess duplicate plants of it would do well to try it in the open in some sheltered spot, and if the position is high and dry so much the better.

W. G.

Eradication of wireworm.—The question of how to get rid of this pest has appeared in GARDENING many times, but has, I think, drawn forth no satisfactory remedy. Some time ago I lost two-thirds of a large bed of Pansies, which, when first attacked, turned yellow, and eventually drooped and died; the wireworm had eaten away the outer surface of the main stem near the root. The following autumn I trenched the ground, leaving the surface rough. All during the winter I soaked the ground well with household slops, soap-suds, &c. In January I again turned it over after giving a good dressing of lime. In April I gave a coating of soot, lightly forking it in. Either the wireworms were killed or they had migrated to some other part, for the next lot of plants was spared. I always water my Pansies with soap-suds, or I use soft soap; it makes the roots distasteful to the worm.—R. MANN, *Shadwell.*

The rake.—"J. D.," in an article in GARDENING of May 23rd (p. 145), draws attention very justly to the "senseless digging and manuring of the borders." I only wish he had extended his remarks to the rake, and endeavoured to get that instrument abolished from the list of gardening tools. More valuable flowers are injured by the pernicious use of the rake than in any other way. Only this morning I saw some Pæony heads lying on the border, and on inquiry found the gardener had been raking and had raked them off. A little dexterity in using the Dutch hoe will make the beds look quite smooth and neat, and weeds in a border should be picked off by hand. Nothing, I am convinced, does more harm than the rake.—C. F. DAVIS.

13557.—**Making Tobacco paper.**—This is usually made by steeping stout waste brown paper in Tobacco liquor, and drying it afterwards. Old rags are sometimes used, when the material is sold as Tobacco cloth.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, June 8th to 13th.

Planting out Cardoons, also Early Marrow Cabbage plants. Thinning Onions and giving them a top-dressing of soot. Sowing Ne Plus Ultra Peas. Nailing in and tying Roses on walls, and washing them well in the evenings with the garden engine to keep down green-fly. Hoeing off all Raspberry suckers that are not required. Clipping Box edgings. Pruning back superfluous wood on wall fruit trees, and nailing in the leading shoots. Picking the dead flowers off Azaleas and placing the plants in greenhouse to make their growth.

Sowing early Snowball Turnips. Planting out Autumn Self-protecting Broccoli. Thinning out Parsley, Spinach, and Turnips. Sowing Broad Beans, Coleworts, and Spinach between Currant bushes. Planting Asparagus, and Buda Kale. Thinning wall Pears that have set too thickly, so as to leave two in a bunch. Sowing Broad-leaved Batavian and Green Curled Endive. Thinning shoots of Seakale plants. Taking up bulbs. Sowing Scarlet Runner Beans to come in for a late crop. Planting out Brussels Sprouts and Celery. Giving main crops of Carrots a final thinning, and running the Dutch hoe between them. Planting a border of Autumn Giant Cauliflower and Cottager's Kale.

Top-dressing Gardenias with a mixture of peat, loam, horse manure, and silver sand. Layering Strawberry runners. Sowing Wheeler's Imperial and Hartwell Early Marrow Cabbage to come in for September and October. Potting on Balsams, Chrysanthemums, and Heliotropes. Planting out Spiræas and Deutzias. Planting out Lettuce plants. Mulching Peas with rotten manure. Planting Sweet Peas, Gazanias, and Centaureas in flower garden, and April-sown Lettuces on Celery ridges. Thinning and transplanting Parsley; also thinning Leeks.

Syringing outdoor Peach trees with clear water to keep off insects. Planting Strawberries that have been forced on a south border for autumn crop. Stopping and nailing in the Vines on walls. Potting Petunias for conservatory decoration; also Fuchsias, scarlet Pelargoniums, and Heliotropes. Planting out a few pot bosses and some April-sown Cauliflower plants; also Ice Plants. Earthing up Potatoes, Melons, and Cucumbers. Levelling land for winter greens. Going over wall fruit trees, and picking off curled leaves infested with insects.

Raphiolepis japonica.

Glasshouses.

PLANTS FOR WINTER BLOOMING.—The different kinds of Begonia, Plumbago rosea, Salvias, and others of a similar character should, immediately they require repotting, have prompt attention; the dimensions which the plants are required to attain will necessarily determine the size of the pots they are to occupy at the time of flowering. In the case of most things of a quick growing character it is not advisable to move them too often; consequently, as soon as the young stock has fairly filled with roots the 3-inch or 4-inch pots they may now be supposed to be in, they may in most cases be moved to those in which they are intended to remain. Much may be effected by the constant use of manure water from the time the soil gets pretty well occupied by the roots, provided there is no falling off in its application. In this way comparatively large, well-furnished plants can be grown and flowered in small pots, and, if grown under favourable conditions as regards light, they will make stout, bushy growth that will often yield a greater quantity of flowers than larger plants in bigger pots less favourably circumstanced. Attend to stopping the shoots of all those things that require to be so treated in order to insure a bushy condition; sticks and ties should always be looked upon as necessary evils to be used as sparingly as possible.

HARD-WOODED PLANTS, in most cases, will now be either carrying a crop of flowers or making growth vigorously, and will therefore need proportionately more moisture than in the winter, when they are comparatively dormant. With bright sun and drying winds, moisture gets quickly dried up independent of that which is absorbed by the roots, and where the latter lie thickly packed against the inner surface of the pots, they are sure to suffer if there is an absence of moisture, if only for a few hours. Give plants that are growing freely, or that are bringing forward a crop of flowers, enough water to support them. The freest growers require during the active season of growth to keep the most moisture; but all should have sufficient roots moving well; care should be taken never to give any until the whole ball requires to be moistened.

POINSETTIAS AND EUPHORBIAS.—Old plants that were dried off after flowering and started a short time back will now have made shoots large enough for propagating; they should in all cases be taken off with a heel of old wood attached to them; cuttings thus secured will root in a fortnight in a brisk heat, but they must be kept sufficiently close and moist to prevent flagging. If very large heads are required, some of the old stools should be

placed in larger pots—say 10 inches or 11 inches in diameter—and grown on with single stems, keeping them all through the season with their heads close to the glass, otherwise they get very tall. Smaller examples will often be fonnd preferable to larger stock grown in the way described; but where there are large stoves to keep gay throngh the autumn and winter, big plants with their large heads associate best with other things among which they are placed. Everything necessary to insure free growth should be done with the stock of Euphorbia jacquiniæflora, for the quantity of flowers forthcoming is dependent on the size and strength whioh the plants attain, and especially their ability to produce a second crop of bloom. Plenty of light and heat, with a little shade in the middle of the day, should be given.

CINERARIAS, like Calceolarias, Primulas, and some other plants that used to be all but exclusively propagated from suckers or by division, are now so much improved that varieties good enongh for any purpose can be had from seed. Among these it often happens that a few plants of unusual excellence make their appearance, and in such cases it is well to preserve them. When the seed which they bear is ripe, the flower-stems should be cnt away, and the plants turned ont in light soil mixed with vegetable mould, selecting a place where they will not be exposed to the mid-day sun. So treated they will make abundance of suckers that can be taken off and potted. J. R.

Flower Garden.

SUB-TROPICAL PLANTS.—The planting of the ordinary kinds of bedding plants having been finished, sub-tropicals should now be put out without further delay. My own epinion, confirmed by practice, is that an entire bed of a species looks better than the incongruous mixtures that one sometimes sees; but this is a point that is best settled by each planter for himself. The following have been among our most effective arrangements in previons years:—A large, oval-shaped bed of Ricinns Gibsoni, with central plant of R. Obermanni, undergrowth of Gnaphalium lanatum, and edged with Chamæpence Casabonæ, or Green Thistle. A large circular bed had as a central plant Encalyptus globulus, Wigandia caracasana over the whole bed, and an undergrowth of Salvia argentea and Perilla nankinensis alternated. Another round bed had for a centrepiece a plant of Solanum giganteum, next three plants of Solannm marginatum, then filled out with Solannm robustum, the edging and groundwork being Laminm macnlatum. Beds of Cannas are planted in mixture, care being taken that the tall kinds have the central places; an appropriate edging plant for these is Centaurea candidissima. Palms, Dracænas, Acacia lophantha, and Ynccas look well in mixture, and a bed or two of these is desirable by way of variety. As soon as planted the plants should be staked, and the surface mulched.

GENERAL WORK.—This now principally consists of mowing, clipping tnrf verges, Box edgings, the watering of lately-moved shrubs and Roses, and the syringing and washing of the latter to free them from blight, which is this season very prevalent. Keep bedded-ont plants well snpplied with water, and peg into form all that need such attention. It will be an aid to quicker establishment and more profuse flowering of the plants if the flowers now showing on Calceolarias, Violas, Ageratums, Heliotropes, Pelargoninms, Verbenas, and Petunias be picked off, and the straggling growths of the plants pinched back.

Fruit.

VINES.—In early honses in which the Grapes are qnite ripe gradually reduce the temperature and maintain a fresh, healthy atmosphere, by damping floors, aad by giving just enough gentle fire-heat to admit of a free circulation of air. Cleanse the foliage with olean water as the Grapes are ont, and stop any extra strong growths to encourage a general break of laterals all over the vines. Succession houses in which the fruit is now colonring may have more air whenever the weather is favourable, and a nice oirculation throughout the night will be highly beneficial to the vines, particularly where they have been hard pressed and perfect finish is donbtful. If Madresfield Court Muscats are growing with the Hamburgh, see that the roots at the time they commence colouring are in a nice growing border, neither too wet nor too dry. Mulch well to keep in moisture, as water given after the skin is set causes many of the berries to crack; allow all the laterals to grow to their fnll extent nntil after the fruit is ont. It will then be necessary to shorten back, and give more water to plump np the buds. Look over late kinds intended for autumn and winter use, and if any of the berries show signs of remaining small, let them be removed while there is yet time for those properly fertilised to fill up the weakest parts of the bunches. In the selection of the bunches of Gros Colmar and other sorts intended for bottling, always give preference to medium-sized taper bunches of good ontline, as they generally set well and keep better than larger clusters through which the air cannot pass so freely. Persevere with thinning the latest crops as they become ready. Mulch and water the inside borders as soon as this tedious operation is finished, stop gross laterals where they are likely to rob the fruit and weaker growths, and then help them along to the stoning period with plenty of heat, air, and atmospheric moisture.—W. C.

Vegetables.

We are now busily mnlching Peas, which are thus rendered independent of the weather. Mulching keeps the ground moist, smothers all weeds, and forms the finest path possible to walk on to gather the prodnce. Spring Cauliflowers are also mulched, and so strong and healthy are onr plants, that after the heads are cut they send up strong eff-shoots, which, in dne time, form small heads just the size for table. Hoeing the land among all growing crops is the very life of vegetation. Onions have ceme well. I now sow them in the last week in March. It is a great mistake to sow small seeds outside early; they come np weakly, get stunted, and generally end in failnre. Young Broccoli and other plants now making their appearance will be mnch benefited by being slightly damped the first thing in the morning, and dusted over with a little soot and dry sand; small plant beetles play sad havoc among them, if snch attention is not paid to them. Sowing Lettuces (White Cos) on the Celery ridges where they have to stand is a step onwards. I never grew such fine examples of Lettnces as those sown with the Onions, and allowed to stand and come to matnrity. Of Broccoli, we are now cutting very fine specimens of Cattell's Eclipse. R. G.

Work in the Town Garden.

BEDDING AND SUB-TROPICAL PLANTS.—The "leafy month of June," long looked for, has come at last, and the weather having apparently changed for the better, and the nights being so mnch warmer, almost any kind of bedding and sub-tropical plants may be safely trusted ont-of-doors—that is, of course, supposing them to have been properly hardened off, and enabled to endure the outer air. This "hardening-off" process, however, is much misunderstood, and many have been surprised to see late-sown or started plants that have been kept growing on rapidly up to the last moment, then exposed somewhat gradually, and planted out, say about the middle of Jnne, turn out very much better than those that were got to work a couple of months earlier, and with a view to getting them well "hardened" (or more likely for want of room and time to attend to them), kept starving in small pots, often short of water, and exposed to cutting currents of air for three or four weeks before planting out. The fact is, such plants are often more than half-starved to death before pnt ont; and then, if this is done early, and a few keen or frosty nights succeed, they are about done for—crippled, if not killed outright. I have known Castor Oils, &c., sown in the open borders in May, beat plants sown in February under glass.

DAHLIAS AND CHRYSANTHEMUMS. — Dahlias shonld now be at once planted out, and if these have had a shift from the 60's into 48's, and been kept growing on, they will make much earlier, if not better, plants than those that have not had more room given them. Dahlias, to do well, must have a deeply-worked and richly-manured soil, especially in towns. Be sure to stake and tie the plants in time as they grow, as they are easily broken by wind; keep also a sharp lookout for earwigs and slugs from the first, and trap and destroy these pests as fast as they appear. Dahlias of all kinds are so successful and valuable in the town garden, that too mnch care can hardly be spent upon them. The same may be said of Chrysanthemums, which will now need constant care np to the flowering point. Plant out at once the early-flowering kinds for the ontdoor display; and also Japanese (but not the very late varieties) and incurved sorts where they can have protection afforded them when coming into bloom. A few of the best of the early kinds for out-of-doors are: Anastasia, violet purple, very fine; F. Marronet, orange; Illustration, blush white; Little Bob, bright-red brown; Isidore Feral, rosy lilac; Lyon, rosy purple, extra; Mdme. C. Desgrange, large white, centre yellow; Mdme. Piccol, rosy purple; Nanum, creamy white; Simon Delaux, crimson red, large; these are all very early. Of October bloomers the best are: Aigle d'Or, bright yellow; Bacchus, crimson; General Canrobert, yellow, fine; La Vierge, pure white; L'Or du Rhin, bright yellow; Mons. H. Jacolot, bright crimson; Mrs. Cullingford, white; Sœur Melaine, white; Margot, chamois; and the white and yellow forms of Cedo Nulli. Good large flowering kinds for growing against a wall are: Lady Selborne, white; James Salter, lilac; Elaine, white; Japanese; and Mrs. Rundle, white; Mrs. Dixon, yellow; Beverley, cream; aurea multiflora, yellow; George Glenny, straw; Lord Derby, purple; and Pink Perfection, pink, incurved. These are all fine flowers, and bloom moderately early.

INDOORS.—Large flowering Chrysanthemums for show or decorative purposes shonld now be at least in 5 or 6-inch pots. If placed in these sizes, according to strength, abont the middle or end of May, they will be fit to shift into 7, 8, or 9-in. pots abont the end of June (or even a week or two later is time enough for plants for decoration), and these sizes will be large enough for spring struck plants. Keep all free from green fly, and syringe overhead frequently in bright weather.

IN THE GREENHOUSE keep everything clean and neat; and afford liberal supplies of water and liquid manure to plants in, and coming into, bloom. Pot on Tuberons Begonias as fast as they need more root room, and afford those just coming into flower a free cnrrent of air around the plants. Pot Balsams off singly into thumb pots as soon as they have a pair of rough leaves, and keep them near the glass and growing. Prick off Primulas and Cinerarias as soon as strong enongh to handle, and protect the seedlings from hot sunshine. All plants nnder glass will now like a little shade in the middle of the day. A canvas blind and roller is best; but if this is not available a little whitening, mixed with water, and a few drops of oil, will break the fierce rays of the sun sufficiently.

B. C. R.

Monotony in the flower garden.—The legitimate office of the flower garden is to administer to onr pleasurable sanceptibilities, and nothing is more opposed to the attainment of that end than monotony. The qnestion naturally arises—Why do we everywhere see monotony the order of the day? May not this unfortunate state of things be attributed to want of inventiveness in people generally, with obseqnious regard to the dictates of fashion? As the individual is nnder no obligation to society as to the manner of the arrangement of his garden, or with respect to his choice of the plants by which it is to be decorated, why should he truckle to the opinion of that most contemptible of characters, the mere votary of fashion? Of course, he should go about with his eyes open, to see and learn all he can, but he shonld be careful that his actions resulting therefrom should be the outcome of an improved individuality, and not an ape-like imitation of the works of others. If everyone were to act upon this principle, what an impulse wonld be given to the love of flowers and of gardening for its own sake! Each individual wonld not only derive the fnllest enjoyment compatible with his circumstances in the contemplation of his own garden, bnt in his walks abroad he would obtain a pleasure from surveying the gardens of others, which is now in few places to be fonnd. Now we have confronting us at every tnrn, Single Dahlias, Margnerites, and Sunflowers—one gets as tired of seeing them as of hearing a street song. What gives us

pleasure is variety of flower and diversity of plan. In a fashionable watering-place in the south of England, when the bedding mania was at its height, an old gentleman lived who conducted his gardening on the self-regarding principle. He was called by some an eccentric old fellow; but his garden attracted more admirers than those of all his neighbours put together. In the same town the flower garden of a working-man consisted of a bed of Dahlias. He did not go around to see what his neighbours had with a view of imitating them, but he adopted something they had not. As far as his own garden was concerned, the planting of one kind of flower only was a decided monotony, but when regarded in connection with those of his neighbours it was an addition to variety. From the numbers that stopped to look at the garden, it appeared to the passer-by a resting-place to the eye from the wearisome sameness that prevailed all around.—L. C. K.

HOUSE & WINDOW GARDENING.

WINDOW PLANTS FOR THE WORKING CLASSES.

The Birmingham Kyrle Society has issued a useful and practical little pamphlet, giving intelligible directions in simple language as to the cultivation of window plants by the working classes. In the course of its nine pages are to be found instructions as to soil, potting, repotting, and training; when to water, and when not to; remarks on the importance of light, cleanliness, and air giving; and a few words of warning respecting the use of stimulating food. The question of

Watering is thus dealt with:—"It is often a mystery to people to tell when a plant requires watering, and, whilst many plants are *starved* for want of water, many a plant is killed outright by giving it too much. When a plant looks sickly you are apt to think it is water that it wants, when it is water that is killing it, and the plant is really being killed by kindness. The way to tell if a plant requires watering is to tap the pot with the knuckles; if it rings out it requires water; if it gives out a quiet sound it is all right; but if it gives out only a dull, heavy sound, then it is clear that the soil is saturated already and will not require any for a day at least. Again, if the surface looks dry, just move the soil with your finger, and if it is almost dry underneath it requires water; if it is wet, do not give any, but wait a day or so. Watering is a most important point in plant growing, and has to be learnt chiefly by experience; different plants require different treatment, but in a short time you will be able to tell at a glance if the plant requires watering. The very best of all water is rain-water, but if you have not any, give water from the tap, only let it stand in the open air for a few hours, or pour it from one jug into another five or six times, which will aerate it. Be very careful by adding a little warm water or otherwise to make the water you use for your plants about the same temperature as the room in which they live, and in watering give each plant a good soaking, and see that it runs out at the bottom of the pot; but do not let the water stay long in the saucer which the plant stands in, or it will rot the lower roots. If it is thought that the water escapes between the pot and the soil, which it will do if the soil is once allowed to get dust dry, it will be a good plan to stand the plant in a bucket of water just enough to cover the pot for ten minutes or so, when it will be all right again. About once in three weeks it will be a good thing to put a small piece of lime about the size of a walnut into the water for the plants; it will sweeten the soil and strengthen the plant, and make the leaves look a brighter green, which is a sign of health."

Plants for window culture.—The following list of plants most suitable for window culture is given at the end of the pamphlet:—Aloes; bulbs of different sorts, especially Crocuses, Snowdrops, and Hyacinths; Cactus (various kinds); Calla æthiopica (Arum Lily); Campanula pyramidalis; Creeping Jenny (Wandering Jew); Echeverias; Euonymus variegatus; Ficus elastica (India-rubber Plant); Fuchsias (various kinds); Geraniums (various); Hydrangea; Imantophyllum (Orange-coloured Lily); Ivy-leaved Geranium; Ivies (various kinds); Lemon-scented Verbena; Lilium auratum; Lilium japonicum; Lobelias (various kinds); Lily of the Valley; Mother of Thousands (Saxifrage); Musk; Myrtle; Oak-leaf Geranium; Orange Tree; Roses—China or monthly; Saxifrages (various sorts); Vallota purpurea (Guernsey Lily).

ROSES.

MOSS ROSES.

This being the season of Moss Roses, the present is a suitable time to say a few words about these beautiful flowers. Although several hundred varieties have been raised since the introduction of the original Moss Rose, there are none superior, if equal, to it in point of beauty and fragrance; its long handsome buds, covered with tufts of the most beautiful mossy excrescence, make it interesting and beautiful in all its stages. The Crested Moss Rose, or Crested Provence, as it is sometimes called, is most peculiar and beautiful; the beauty of its bud alone should obtain a place for it in every garden. The Moss Roses are generally of delicate growth, though some are vigorous and robust in habit, and form good standards. As a rule, however, all succeed best when grown upon low stocks or otherwise upon their own roots; the latter mode is best suited to the old Moss Rose, and no garden where Roses are grown should be without a bed or two of this old favourite. It requires

Common Moss Rose.

rather high cultivation and close pruning, and, generally speaking, rather better treatment than ordinary kinds. It will not thrive in wet or cold, damp soils, as it requires a warm, dry soil well supplied annually with manure. If at any time plants of it appear to decline in health, they should be taken up and replanted in fresh loamy soil, and cut hard back.

The following is a list of the best of the Moss Roses now in cultivation: Alice Leroy, rosy pink, with handsome mossy buds, moderate size and full, free-flowering and good habit; forms a good standard. Baronne de Wassenaer, deep rose, very large and double buds, moderately well mossed, habit vigorous; forms good standard. Celina, velvety-purple and crimson, buds well mossed and very beautiful, flowers moderate size, very beautiful when newly opened; habit of growth rather too dwarf; requires rich soil and close pruning. Clemence Beaugrand, soft pink, handsome well-mossed bud, flower large, not very full, free habit. Common, or old Moss, pale rose, globular, very large and full and deliciously fragrant; buds well mossed, habit free; the most beautiful of all Moss Roses; should be grown upon its own roots in rich soil. Comtesse de Murinais, pale flesh when newly opened, changing to pure white, large and double, though not very full, habit robust, one of the hardiest of white Moss Roses. Cristata, or Crested Provence, pale rosy-pink, changing to full rose, globular, very large and full, buds beautifully crested. Frederick Soulie, crimson, shaded with purple, large and full; well formed, and, like the last, has moderately vigorous habit. Gloire des Mousseuses, pale rose, outer petals whitish, one of the largest and best of Moss Roses; habit vigorous, forms good standard. Gracilis, or Prolific, deep pink, buds handsomely mossed, flowers large, globular, full, and of good shape; moderately vigorous in habit. John Cranston, shaded violet crimson, colour rich and good, flowers well formed, habit free. Julie de Mersant, rosy pink, moderate size, blooming in clusters, buds small and very pretty. Lanei, deep brilliant rosebud, round and handsome, and well mossed, flowers very large; one of the best of the Moss Roses. Luxembourg, purplish crimson, flowers large and full, a very old variety, of most vigorous habit, useful as a pillar Rose, or tall standard. Marie de Blois, bright rose, large and full, an excellent variety, with well-mossed handsome buds, habit robust and good. Princess Royal, pale flesh, very compact and full, flower rather small, very beautiful, habit moderate. Reine Blanche, pure white. Unique, pure white, in dry weather slightly tinted; evidently a sport from the old Unique Provence; habit dwarf and delicate. White Bath, paper white, very beautiful and distinct; one of the best white Moss Roses in cultivation

Hereford. J. C.

CLIMBING ROSES IN GREENHOUSES.

Roses trained on the roofs or back walls of conservatories or greenhouses are often found to thrive well for a few years and then to get into a stunted, weak condition, making little growth, and being equally unsatisfactory in flowering; frequently the cause of this is an insufficiency of manure regularly applied as the roots exhaust it. When Roses are grown under glass the extra warmth they receive, and the consequently much longer period in each year that they are kept on in a growing state, tend to tax the roots proportionately more, and unless the soil is kept constantly supplied with the requisite enriching materials the growth necessarily becomes weak, rendering the plants an easy prey to insects that invariably attack weak growth. Another cause of insufficient bloom is the want of enough thinning out of the weak shoots, whereby the energies of the plants, instead of being directed to the support of a moderate number of shoots that would grow to a size able to produce a crop of flowers, are spent in the production of weak useless wood unable to bloom. Roses when grown indoors are, as they are in the open air, gross-feeding plants, that, moreover, generally are subjected to a free use of the knife, and, to avoid their getting into the condition described, they must have very much more manure given them than would be sufficient for almost any other kind of plants cultivated under glass, and after the principal flowering is over, they should have all the useless wood cut out, and a considerable portion of the old strong shoots annually well shortened back; in this way they make through the summer new wood that will not fail to flower the ensuing season. With that favourite climber Maréchal Niel, it is more necessary to follow this treatment yearly than in the case of most others. A most successful grower of this variety, who has the roof of a very large house completely covered with several plants, cuts them all back each spring, after blooming, almost as close as vines in winter, after they are pruned. As regards this splendid Rose, under all conditions, either where grafted, budded, or on its own roots, it is so short-lived that it becomes necessary to put in young plants at intervals of three or four years, so that they may take the place of those that go off. Winter, before growth begins, is the best time to add new soil and manure, but where the plants are at all weak they should soon be assisted by heavy top-dressings of manure, over which for appearance sake 1 inch of fine soil may be spread; this will be washed down to the roots in the process of watering, and, with diligent attention as regards keeping clear from insects, will maintain the requisite strength. T.

Twin-flowered Tulips.—Robert Sydenham names the Tulips sent by me without first seeing them, much to my surprise, as I have no less than seven distinct varieties with more than one flower on a stem—four double and three single varieties. Surely they are not all named Weenix, though it is quite possible one might be.—T. Goacher, *Barming*.

THE KITCHEN GARDEN.

CULTURE OF CUCUMBERS AND MELONS.

In most gardens the culture of both Melons and Cucumbers is a matter of considerable importance. I have grown them in every form of house, and after a rather lengthened experience I still look upon the half-span-roofed form as the best for the purpose. Those I used were rather large in size, being 11 feet wide and 10 feet high from the ground level to the apex of the roof. The front sashes were made to open outwards, and the top front lights to slide, while the back lights were fixed, ventilators being made in the back wall. The beds for the Cucumbers and Melons were 5 feet wide. Two rows of 3-inch pipes were sufficient for bottom-heat, but it required four rows of 4 inch pipes to keep the temperature up to 65 degs. in cold, frosty weather. In such houses as these there need be no difficulty in obtaining a supply of Cucumbers all the year round; indeed, I have cut from the same plants for eleven months. For several years I propagated plants from cuttings of the original stock of Tender and True, until, by some mismanagement on our part, the original stock got into bad health, and we had to raise some from seeds, but failed to obtain any so good as the original. The supply of Cucumbers from the new year is obtained from plants raised by taking cuttings early in September, or seeds may be sown at that time. The plants are grown on until they cover the trellis, which ought to be a movable one, arranged so that the plants may be trained 6 inches nearer the glass in winter than they are in summer. They must not be heavily cropped during the shortest of winter days; as the season advances they will make good, healthy growth, and bear fruit all the following summer and autumn.

If hotbeds are available, Cucumbers do as well in them as anywhere else during summer. In that case the full extent of trellis work may be set apart for Melons. The latter are much better in quality from a house of this description than from frames. I generally sow our first Melon seeds the first week in January, and if the weather is favourable we look for the first fruits to ripen early in May. Our system of culture is such that the plants have every chance to do well. The depth of soil over the pipes is about 18 inches; it is warmed by the heat from the brickbats placed over the pipes, and its temperature may be set down at from 70 degs. to 75 degs., which is 10 degs. higher than the temperature of the house. I would rather make up the beds in instalments; the 2 feet 6 inches near the glass is made up first; the other portion I generally fill up with fermenting manure. The moist heat from this is very beneficial to the plants, and it also helps to heat the soil in which they grow, thus causing the roots to run at a more rapid rate than they otherwise would do.

This bed of fermenting material is most valuable for the purposes of propagation. Cuttings of all kinds strike freely in such a bed. A house of the size above described is useful for other purposes than Cucumber and Melon growing, and it is for that reason also that I so strongly recommend it. For instance, there is plenty of room to fix a shelf near the glass for Strawberries. On these shelves we had good early fruit, and as the house was in four divisions it was easy to obtain a succession. A good stage against the back wall was useful, on which to grow Tomatoes, Figs, and Oranges, or even vines in pots. The Tomatoes may be had all the year round. The Oranges from these houses were greatly valued. The trees were worked by myself on the Lemon stock, and grew with great vigour, bearing fruit very freely indeed. The best varieties I found to be the Tangierine, St. Michael's, Malta Blood, and Prata or Silver Orange. It is interesting, too, to be able to cut your own fruit with the leaves attached, and perhaps, sprays of fragrant blossoms to garnish the dessert plates. J. D. E.

REPLIES.

13580.—**Cucumbers dying off.**—Your Cucumbers may die off from several causes—dryness at the roots would be one. Do you give sufficient water to moisten all the depth of soil? It may also arise from over-cropping; there is no plant that sooner resents bad treatment than the Cucumber. If your plants have been long in bearing, and have got weak, they would behave in the same way. If you think this is the case give them a rich surface dressing—half loam and half rotten manure, 2 inches thick all over the surface. If after this they recover, repeat the application as often as they show symptoms of weakness.—J. C. C.

—— If "W. J. D." did not use his syringe quite so much he would find his Cucumbers flourishing.—Uncle Joe.

13563.—**Birds and Peas.**—I have had as much trouble to protect our crops from sparrows as most people, and never had much trouble to scare away the old birds, as they are very suspicious of anything in the form of a trap. They will not venture under two lines of crochet cotton stretched over the rows, if a few white feathers are attached to the thread. Young birds are reckless of any threads, or attempts at scaring them. Wire Pea protectors are made, and can be obtained by order from any good ironmonger. I spent £4 all at once for them. They cost 9s. per dozen; and each protector is a yard long. It is a deal of money to invest; but they effectually protect the Peas, and can be used for rows of Lettuce, or any thing of small size planted in rows. With care they would last twenty years.—J. D. E.

—— I advise "J. S. W." to try sprinkling his Peas over with Tobacco powder, sold by nurserymen, as a means of keeping sparrows and other small birds from eating them, having found it effectual myself; but it must be put on fresh after rain, or otherwise it will not be of much good.—Olive Woods.

—— Black cotton stretched along the rows above the Peas will effectually keep off small birds. Don't use any cotton which the birds can see, and, if you watch them, they will get hampered in the cotton and never come near them again. I have tried this for all purposes to keep birds off, and it has never failed.—Henry White, *Wateringbury, Kent.*

FRUIT.

STRAWBERRY CULTURE MADE EASY.

The Strawberry, unlike other kinds of fruit, soon wears itself out and requires renewal; one might, indeed, almost term it a biennial, for, in an ordinary way, Strawberry plants cannot be relied upon to bear well after the second year. It occasionally happens that a plantation will last much longer; but this only occurs in favourable soils, or where particular attention is paid to its culture. In the ordinary way of cultivation fresh plantations have to be made every year, or there comes a time when, through exhaustion or a dry season, the plants die off in the ensuing year, and there is little or no fruit. In places where forcing is carried on, hotbeds serve to keep up the stock of plants. They are planted early enough to bear a good crop the next year, and those who can manage in this way need not fear a dearth; but the amateur generally has no such resource, and he cannot be made to see the necessity of planting annually. I am also inclined to believe that the instructions usually given upon Strawberry culture often have a deterrent effect upon many. The deep trenching and heavy manuring, the planting out at wide distances apart, and the after care required are, though undoubtedly the proper way to insure first-class fruit, often rather more than one is either able or willing to undertake. In soils of an unfavourable character (and there are many such) a considerable amount of skill and experience is required to produce a crop.

In order to obviate these drawbacks I propose here to describe a method of growing Strawberries which I have followed with good results, and which, although by no means new, is so sure and simple, that I have often wondered that it has not been more generally adopted. Choose a piece of ground and mark out a bed 4 feet in width, the length to be optional; let this be dug over, turning in a little short manure. Select a day when the soil is rather dry, rake it level, and tread it firmly; the lighter the soil the harder it should be made. On this bed plant the runners in rows 9 inches apart and 6 inches asunder in the rows, planting firmly. The best and most expeditious method of planting is as follows: Mark the line upon the bed, running the spade along it, withdraw the line itself and set out the distances upon the mark thus made; then with a trowel cut out a piece of soil, lay the roots of the runner against the even part, fill in, and tread firmly. Thus set, no worms or frosts will move them in winter, and they will much better resist the summer's drought. In March they should be hoed between, and they should be kept clean during the growing season. If a mulch of short manure can be given them they will be benefited thereby, and they should produce a fair crop of well-swelled fruit. Beds thus made, if top-dressed annually, will last several years. Being thick together, the leaves shade the ground, consequently they do not parch up in hot weather; the fruit, too, does not fall on or lay upon the soil, and the bloom is not so liable to get cut by spring frosts as it otherwise would be. In fact, I have known beds of this description to bear well when the general crop was almost annihilated. The first and second season the runners should be kept cut off, and when the fruit is gathered, give a top-dressing of soot and a good watering. This will be nearly all the attention which they will require, as, being close together, it is not necessary to promote rank growth. The second year they will have become too thick, when every other plant should be taken out; these, if laid in for a time, will serve to make other beds, being somewhat superior to young runners. I have known beds thus managed to last and bear well for five or six years. The great point is to give them a fresh start when the fruit is gathered, and to keep them just thin enough to allow the crowns to mature. If the planting cannot be done in autumn, it may be deferred until spring, but it should be finished by March; in that case it is better to take up or procure the runners in autumn, and lay them in some leaf-mould; they will then be furnished with plenty of fibres. This kind of culture possesses several advantages, not the least of which is the facility with which the plants can be protected in spring, and again when the fruit is ripening; the fruit, too, is easily gathered without having to trample upon the foliage. One of the best kinds for this purpose is President, as it is robust and throws up its trusses well above the leaves; the berries, too, being firm, resist the wet better than most kinds. When the time comes round for the ground to be prepared I would strongly recommend those who may have hitherto failed to grow good Strawberries to give the system just described a trial. J. C. B.

CHERRY CULTURE.

Cherries, like all other fruits in our climate, have to contend with cold, ungenial springs, and whoever plants a Cherry orchard, even in the Maidstone district and other favourable parts of Kent, should carefully select and prepare the site for it. Cherries must have a situation free from stagnant moisture. The best position for a plantation of them is on the side of a gentle declivity above the range of cold fogs. Cherries will thrive well in a stony soil, if it be fertile; I do not mean gravelly soil, but land which contains a goodly number of boulders, having a smooth, water-worn appearance. I have noticed such boulders lying on the top of the land in some parts of Kent and elsewhere. The necessity for trenching the land as deep as it will bear is an essential condition for all fruit trees. Two-year-old trees, that is, those which have been once cut back, are the best to plant, though older trees may move safely if they have been frequently transplanted. It is important for a Cherry orchard to be sheltered from the quarter whence come the coldest winds. Plantations of deciduous trees form excellent shelter, and should be planted, if possible, a year or two before the fruit trees; then by the time the trees come into bearing the shelter will be high enough to render good service. Avoid in all cases deep planting, and stake or secure the trees from wind-waving as soon as planting is finished, and take care in tying the trees that something soft comes between the bark and the tie. A piece of old sacking, two or three folds thick, is lasting, and answers the purpose very well. The trees must be headed down in proportion to their strength the spring after planting. The distance at which Cherry trees should be planted apart must depend in some measure upon the character of the soil and the varieties planted. I have known trees of the Waterloo variety that would have been crowded at 30 feet apart, but the Bigarreau on the same soil was none too thick at 15 feet apart. The best plan is to plant thick enough and thin out afterwards, giving the most fertile and best trees the most room.

Cherry orchards are best laid down in Grass after the first three or four years.

Bush Cherries may be planted where space cannot be found for larger trees, but they will require lifting or root-pruning occasionally to keep them in a fruitful condition. The May Duke, Late Duke, and Morello do well on the Mahaleb, and require less lifting and root-pruning than some other kinds. The trees may be planted in beds or borders about 5 feet or 6 feet apart, where some temporary shelter could be erected on the windward side, projecting over the trees 2 feet or 3 feet, like a coping, to keep the blossoms safe in spring. The Morello is not often planted elsewhere than against a wall; but though it does well in such positions, and may be used to fill up blanks anywhere, it is also a profitable Cherry to plant either as a dwarf on the Mahaleb, or as a standard tree in any position. The great object to keep in view in the case of dwarf Cherries, especially in rather strong soils, is to keep their roots near the surface. If they are permitted to run down the growth becomes gross, and either they do not produce blossoms, or else the blossoms are imperfect and fail to set. Whenever anything of this nature occurs the trees should be lifted and replanted in autumn. Cherries may be grown in pots, and it is a most interesting way of growing them; the trees should be kept under the shelter of a glass roof till spring frosts are past, and then plunged out, or a part of them, in a sheltered corner in the open air. It will, of course, be understood that trees in pots when plunged out-of-doors must be supplied during dry weather with water; and it may sometimes happen that such trees will require water even in a showery time. I have known cases in which potted trees, when plunged outside, were neglected because gentle showers fell frequently, and the person in charge took it for granted, without troubling to examine them, that they did not require water, when at the same time they were as dry as dust. The light passing showers made no impression on them—in fact, were cast aside by the foliage. All such trees should be mulched to check evaporation, and 2 inches or 3 inches of rich compost, or half-decayed manure, spread over the surface of the soil among the trees, forms a beneficial dressing for them.

Cherries on walls.—In most gardens a wall is set apart for Cherries, though the system of grouping together particular kinds of fruits has some drawbacks. The advantage belonging to the plan is that any kind of fruit requiring special treatment can have its wants attended to better when grouped together than when scattered. And such fruit as Cherries, which must be protected with nets to preserve them from birds, are more easily covered when growing side by side than when separate. On the other hand, there is a decided advantage sometimes in having a tree or two in different aspects, as the May Duke in a sunny position will ripen its fruit a few days earlier than in a less favourable one, while north aspects may be utilised for retarding purposes. This is, however, a question that proprietors of gardens can decide for themselves. I merely throw out the hint because I have met with cases in which a dish of Cherries a few days earlier or later, as the case may be, was appreciated. To prolong the season of any particular fruit is sometimes looked upon as a test of skill, though it is often the result of mere accident. If I had a wall to plant with Cherries, and could take my own course, I should plant the best maidens I could get, 7 feet apart, and should train them as palmettes, allowing seven branches to each tree, laying a young branch at intervals between the main ones. Such a system covers the wall much quicker than any other. Of course, time would be gained if young trees started in the nursery as horizontals could be obtained, but they cannot always be bought. The advantage of buying maidens is that they cost less money, and one can adopt any system of training one likes. There is, perhaps, less necessity for laying in young wood in the case of Cherries (always excepting the Morello) than in that of other fruit trees, as Cherries bear so freely and well on spurs. But the fault belonging to the large old trees with which one sometimes meets is (especially if they are growing on heavy soil that has received but little preparation) that the centre, in the course of time, ceases to bear, and a space of many feet of wall becomes virtually barren. With a good broad border well prepared, warm, and dry, this, however, will not soon happen. I feel that the right course to adopt on indifferent soils, or in places where the expense of border-making cannot be allowed, is to plant the trees closer together than is usually done, and keep the roots near the surface. Trees with their roots near the surface do not make gross shoots, which when cut back are converted into large, ugly spurs that are often flowerless, or whose flowers do not set properly. Those who have such trees must, of course, do the best they can with them, and that is, cut out every alternate branch, and fill the spaces thus left vacant with young wood as soon as possible, avoiding overcrowding. In this way barren trees may be made fertile. The summer management of the Cherry in a trained condition on walls consists in stopping the young wood, beginning towards Midsummer, and cutting back to about four or five leaves. In summer pruning some cut the young wood back too close, not only in the case of Cherries, but in that of other fruits, and, as a consequence, the buds that might in due course be converted into flower buds are compelled, under the excitement of vigorous root action, to burst into growth. There is an advantage in dividing all summer pruning, whatever the fruit tree may be, into three periods—the top first, then the middle, and lastly the bottom. Thus, the top, which is usually the strongest, is denuded of its foliage first, and the bottom, which is nearly always the weakest, by being allowed to carry its surplus foliage a fortnight longer, draws to itself a larger portion of sap, which materially helps to preserve the balance of the tree. The winter pruning of Cherries consists in shortening back the young wood left as spurs, and cutting out all dead and useless spurs.

The Morello is usually employed for furnishing north walls, not because it does not succeed in any other aspect, but it thrives so well in all inferior positions where choice fruits do not ripen well, that some have been led to consider a north wall necessary for its culture. It will, however, grow in any position, and I have already adverted to its use both as a standard and also a pyramid on the Mahaleb stock; in short, the Morello will thrive wherever other Cherries do well. In its growth and mode of bearing this Cherry somewhat resembles the Peach. It has the same slender, flexible branches, and produces its blossoms, if the wood be strong and firm, in the same way; indeed, in most gardens, the Peach tree is taken as a model for the Morello, and I do not think any better system of training or pruning can be suggested. I have seen Morellos occasionally spur-pruned like other Cherries, but the trees have not, to my mind, been satisfactory. Their branches should not be too much crowded. More and better fruits will be obtained by training the bearing shoots not less than 4 inches apart that when, as is commonly done, they are laid in much thicker. The disbudding and thinning should be done early, and those left for bearing should be tied or nailed in or be fastened back to the wall by means of slender twigs of Privet, or of any other tough shrub. The same plan is often pursued in the case of Peaches, and it saves material and avoids driving nails into the wall, which would have to be drawn out again in autumn. E. H.

REPLIES.

13558.—**Mildew on vines.**—If you dust the leaves and stems thoroughly with sulphur it will destroy the mildew, only it must be put on in sufficient thickness to cover every part of the leaf, and allowed to remain for four or five days, when it may be syringed off. The berries also must be made to look quite white with the sulphur if they are affected; and if the first application does not destroy it give them a second dressing at the end of a week. The sulphur is best applied through a dredger. You must also attend to the roots and see that they do not want water, as a dry border sometimes brings on mildew. Unless the weather is very bright and warm you had better light the fire in the heating apparatus, and keep the air dry and warm, not closing the house altogether either night or day. Keep the night temperature at 60 degs. and the day 70 degs., by fire heat, and in bright weather give all the air possible, so that the temperature by sun heat does not get below 75 degs. Whatever the weather may be, all vineries should have a little air left on the top ventilators at night, which will allow the escape of all impure air, and increase the strength of the vines.—J. C. C.

—— Painting the pipes with sulphur will destroy the mildew, if the pipes are heated sufficiently; but if they are not sufficiently heated the sulphur will not have any effect. The pipes should be made so warm that a very slight haze is formed in the house, and its effects will not only destroy mildew, but also red spider. Some people dust the leaves and bunches with dry flowers of sulphur; but this is not so effective as the fumes from the pipes when rightly applied, and the dusting process also makes a mess of the bunches.—J. D. E.

13562.—**Best Fig for cool house.**—The Brown Turkey is the best for your purpose. As a matter of fact, it is the best all-round Fig that is grown.—J. C. C.

—— The best is Brown Turkey.—J. D. E.

13576.—**Killing grubs on Strawberries.**—In a case of this kind the only way to get rid of the pests is to watch for them at night, when they feed, and pick them off. Soot is a good manure for the Strawberry plants, and if dusted on them would perhaps have a deterrent effect, as no grubs or caterpillars like soot.—J. D. E.

13511.—**Grapes turning sour.**—This is evidently a case of what gardeners term shanking, and it is very difficult, indeed, to say what will prevent it. The most probable cause is that the roots have worked into unsuitable soil. If that is the case they must be brought up nearer the surface, and have some good turfy loam or other good soil worked in amongst them.—J. D. E.

BEES.

SEASONABLE NOTES.

The importance of feeding swarms during unfavourable weather cannot be overstated. It is good policy to feed for the first week or ten days, even if the weather be bright and warm, but it is absolutely necessary in wet, cold seasons. As soon as a swarm has clustered in its new hive, the bees begin the operation of comb building—the formation of a series of cells to serve as cradles for the young brood, and receptacles for honey and pollen. The secretion of wax by the bees necessitates the consumption of large quantities of honey; it must, therefore, be a great saving of time and labour if they are fed while combs are being built. Liberally-fed swarms will fill their hives with combs in from twelve to fourteen days, when supers may be put on, and surplus honey obtained without loss of time.

Second swarms usually leave the hive about the ninth day after first swarms, but after-swarms should be discouraged, as thereby a strong colony is divided into a number of weak ones; therefore, if not very early, second swarms should be prevented, by cutting out all queen cells but the most perfect one. The remaining queen in the cell will, in due course, emerge, take her place as monarch of the hive, and no more swarms will leave. The chief indication of a second swarm being about to leave the hive is a shrill piping sound heard within the hive, towards evening generally. This piping is made by the first hatched young queen while endeavouring to destroy her sister princesses yet in embryo. Failing in her intended destruction of her rivals, being prevented by the worker bees, who surround the cells and protect the inmates, she soon quits the hive, accompanied by a part of the community. Second swarms will frequently leave the hive at any time of the day, without regard to the state of the weather. First swarms, on the contrary, will not issue unless the weather be very favourable.

Uniting.—Should two second swarms leave on the same day, they may, if wished, be united in the evening of the day on which they left their hives, by shaking the bees out of one hive on a cloth, and immediately placing the hive containing the other swarm over them, wedging up the hive that outsiders may pass under. They will all ascend and peaceably unite, one queen being destroyed. The bees in both hives should be previously smoked. In uniting established stocks they must by slow degrees be brought side by side, or many bees will be lost. The removals must not be more than three feet each day, and they should not be moved at all on those days on which the bees, on account of unfavourable weather, are unable to take wing. Having

reduced the distance between the hives to about six feet, drive the bees (if the colonies to be united are in straw hives) from the hive to be broken up, then sprinkle them with thin syrup scented with peppermint. Next smoke the bees to which they are to be joined, and sprinkle them also with scented syrup, and put them down between the two stands that the hives previously occupied, propping up the edge of the hive an inch or two, and shake the driven bees out of their empty skep down against its entrance on to a newspaper or sheet; the bees being of the same scent will unite peacefully. In uniting bees occupying bar-frame hives, outside frames are removed from the hive that is to receive the addition; the bees are then smoked, the frames drawn together, and the bees sprayed with scented syrup in both hives. One of the queens is now removed, and the frames lifted out of the second hive, one by one, and placed in proper order beside the frames in the first hive; care being taken to keep all combs containing brood in the centre. Should there be any indication of fighting, a free use of smoke puffed amongst the combs generally restores order.

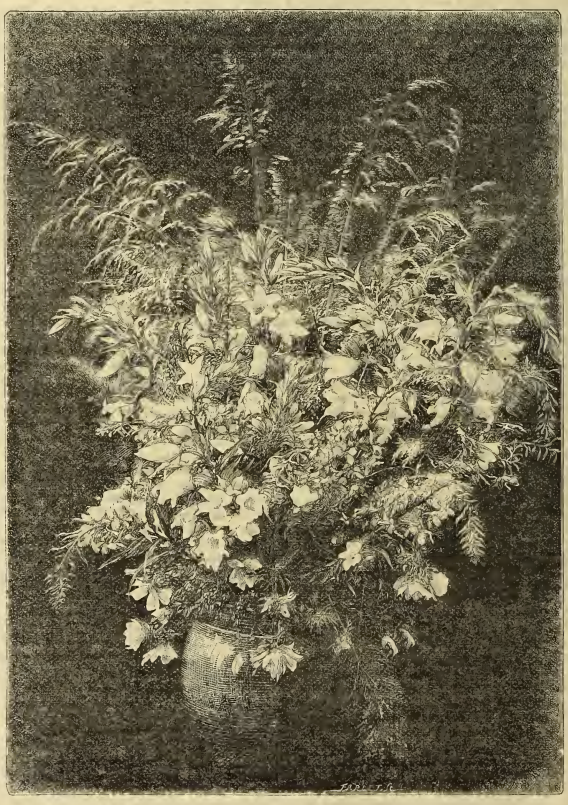
WAX MOTH.—The larvæ of the wax moth is often to be found between the quilt and the tops of the frames, and between the edges of the skep and the floor-board. The moth is a great pest to the apiary at times; when it gains admittance into a hive it deposits large quantities of eggs in cracks and crevices, and the worms which hatch from them feed upon the pollen and brood, forming a silky film through the combs. In about three weeks from the egg they spin their cocoons, and, in due course, emerge perfect moths. It is usually weak stocks that suffer from the intrusions of this pest; in strong stocks it has very little chance of effecting an entrance. Queen wasps are now making their appearance; they should be searched for and destroyed, as each queen starts an independent colony—and wasps sometimes, towards the end of the summer, make great havoc amongst the bees.

Boxworth. S. S. G.

13672. — **Supering stocks** (*W. H. B., Whitehaven*).—The time to put on a super is when all the combs of a hive are covered by the bees (the combs being filled with eggs and brood), and honey coming in abundantly. Supering a hive does not always prevent swarming, but a great point is to have the supers so constructed as to allow of being piled up, if necessary, because when there is a good honey-flow the bees gather it much faster than it can be ripened for sealing over, and, finding no place in which to store the in-coming honey, prepare for swarming; but by raising the super when nearly full, and placing an empty one between it and the hive, the bees will deposit their honey in it, while that in the top super is ripening, and the additional room thus given will tend to prevent swarming taking place. You are misinformed as to bees seldom flying north or west; if there are fruit trees near the bees will doubtless avail themselves of the rich store to be obtained from the blossoms. The feeding of strong stocks may now be discontinued, although the bees will discard artificial food as soon as natural food is abundant. —S. S. G., *Boxworth.*

OUR READERS' ILLUSTRATIONS.

GROUP OF WILD FLOWERS FROM WOODLAND. THIS week we have the pleasure of publishing two of the very interesting illustrations sent to us in response to our invitation. Those that happen to be first ready are: A group of Christmas Roses, grown and photographed by Mr. W. T. Bashford, Argyle House, Portobello; one of the very interesting series of photographs sent to us by him. A summer group of wild flowers, photographed by the Rev. H. E. Fox, of Durham, and composed of the following simple materials: Haskwort (Campanula latifolia), Wood Mallow (Malva moschata), French Willow (Epilobium angustifolium), Hassock Grass (Aira cæspitosa), and Wood Dock (Rumex nemorosus). As will be seen, there are in the group only a few wild flowers (some of them very common), and Grass and Dock, and yet the effect is very beautiful, while the arrangement is simple and bold, as all such things should be.



OUR READERS' ILLUSTRATIONS: Group of wild flowers from woodland, photographed by the Rev. H. E. Fox, Durham, September, 1884. Group composed of Haskwort, Wood Mallow, French Willow, Hassock Grass, and Wood Dock. (Engraved on wood.)

We think we need say no more, as the thing will tell the whole story. We have so many interesting cuts to publish that we hesitate at present to invite any further contributions from our readers; but next time we should like the illustrations to take a special direction—say, for example, the prettiest lawns. At the same time, anybody who kindly sends us photographs of such, and has any others of interesting objects, would confer a favour upon us by sending them, as very often in photographs considered failures there are details which are very suggestive.

Due notice of the next competition will be given. We hope to give one or more of the engravings every week until the present series is exhausted.

INDOOR PLANTS.

GREVILLEAS AND THEIR CULTURE.

THE Grevilleas are exclusively Australian, and in the colony, especially on the south-west side, they form a considerable portion of the vegetation. For general decorative work, whether it be on the dinner table, in the garden, or even the cottager's window, there are few plants that surpass the well-known

G. ROBUSTA, a fact which is abundantly testified to by the large numbers that are sent weekly to Covent Garden Market. Possessing as this plant does graceful Fern-like foliage, and a habit which is neither too thin nor yet too dense for the table or window stand, together with a hardy, robust nature, which enables it to bear a considerable amount of rough treatment, too much cannot be said in its favour for the uses above mentioned. And especially is this true as to its value as a plant for the hall-stand or cottage window; for this latter purpose the demand is ever on the increase, and I have known this plant to do well for over two years in a cottager's window facing north, where it grew freely and kept well through the winter. It is remarkable that although this plant grows into a large tree in Australia, where, in fact, it is one of the tallest, the leaves produced on plants in small pots in this country are quite half as large again as any seen in Australia. For the propagation of this species, quantities of seeds are yearly imported, as it seldom thrives satisfactorily when propagated from cuttings. These seeds should be sown late in autumn, or early in spring, in light, sandy soil, and placed on a strong bottom-heat, where they will soon germinate, when they should be potted into small pots, and kept in a warm, moist house. As soon as these pots are filled with roots the plants should be shifted into 5-inch pots, for which shift a rich loamy soil may be used. This should not be pressed too firmly, as the roots delight in an open soil. A warm, shady position, such as is to be found in a forcing-house or vinery, will now be found to suit them, and frequent syringing overhead will be of the greatest benefit, keeping them clean and free from insects. In about six months from the time of germinating nice useful plants should be formed, which may be hardened off and placed in a cool frame or outside. I have not heard of this plant ever having stood out-of-doors during the winter in this country, yet, judging from its hardy nature, there seems no reason why it should not do so in the warm southern districts. The flowers of this species are not very ornamental, being of a dingy brown colour and small. They are produced on the old ripened wood. In the neighbourhood of Moreton Bay this plant is known among the Pine cutters as the Silk Oak, from the soft silvery pubescence on the under side of the leaves. In some of the colonies, notably in Mauritius and the neighbouring islands, this species is extensively

grown for its timber, which is excessively hard and close grained.

G. ROSMARINIFOLIA is similar in foliage to the Rosemary. It forms a handsome shrub, whether grown in a pot or planted out. It is quite hardy in the south of this country and in Ireland, and therefore of great value as an ornamental flowering shrub. It grows very freely, and will, if liberally treated, soon form a compact bush of about 6 feet in height. In pots it is equally effective, and is frequently met with in some of the gardens about London. The flowers of this species are borne in slightly drooping heads, produced in great profusion at the ends of the short lateral shoots. They are of a bright purple colour, tipped with yellowish green. G. elegans is a shrubby, round leaved species, with flowers resembling those of G. rosmarinifolia.

G. LAVANDULACEA, sometimes known as G. rosea, is not unlike the last-mentioned species, with which it is frequently confounded. The leaves in this species are less rigid, and the flowers paler than in the Rosemary-leaved kind; the flowers, too, in G. lavandulacea are borne in terminal racemes.

G. ERICIFOLIA is a dwarf needle-leaved kind of very slender habit. The flowers are of a bright red colour, and are freely produced on the ends of the numerous twiggy branches, from which they hang in a very graceful manner. It is a very pretty pot plant, and deserves much greater favour than it seems to enjoy at present, from the fact of its flowering in the winter and early spring.

G. THELLEMANNIANA (G. Priessi) is of rather recent introduction to gardens, and is one of the most beautiful greenhouse flowering plants we possess. It grows to a height of 5 feet, is very graceful in habit, and a free grower. The leaves are finely and deeply divided, and are not unlike those of the old Ipomœa Quamoclit. The flowers are freely produced in dense heads, which hang from the ends of the branches by long hair-like stalks, and are of a brilliant rose colour, tipped with yellowish green. The long curving styles of these flowers add considerably to their beauty.

With the exception of G. robusta, all the above are freely propagated from cuttings, which should be selected from the lower ripened shoots of an old plant, as these are less likely to fall victims to damp than the younger, more sappy pieces. Spring is the best time for putting in these cuttings, a sandy peat soil, bell-glasses, and a slight bottom-heat being what they require. As soon as rooted they may be potted into small pots in a mixture of sand and peat—one part of the former to three of the latter—and kept in an intermediate temperature until ready to pot again, when they may be shifted into larger pots and treated to a mixture of loam and peat, equal parts, with a little leaf-mould and sand added. A cooler temperature will now be found suitable for them, and in the summer they should be placed in cool frames or outside in a slightly shaded position. When well established they may be grown along with Heaths and Epacrises. Careful use of the watering-pot is necessary if success with these harder-wooded kinds is aimed at, and especially is this to be said with regard to G. Thellemanniana, which, along with many other beautiful hard-wooded plants, has the bad character of suddenly dying, even when apparently in the best of health. The little extra care, however, which these plants demand is amply rewarded by their fine appearance at almost all seasons of the year. B.

PROPAGATION OF THE INDIA-RUBBER PLANT.

FICUS ELASTICA may be propagated by means of cuttings, taken any time during the growing season, but the spring months are to be preferred, as they then root in a shorter time; besides which plants struck early can get well established before winter. In establishments in which large numbers are propagated annually the cuttings are mostly obtained from large plants kept solely for supplying them, and from which every available shoot is taken once a-year. The shoots should be removed just as they become somewhat woody. Lengths of from 4 inches to 6 inches are suitable sizes for cuttings, and as soon as possible after being taken off they should be potted singly in small well-drained pots of sandy soil. By well-drained pots I do not mean that they should be half-filled with broken crocks, for, as small pots only are used, it is necessary to get the base of the cutting nearly to the bottom of them, and that could not be done if too many broken crocks were used. A good method is to have some crocks and charcoal broken up about the size of Peas, and well mixed together, so that when the cutting is put in the pot and rests on the drainage material a few of these pieces of crock and charcoal may be put in before the soil is added. Owing to this drainage material clustering round the bottom of the cutting, perfect drainage is secured, and the action of rooting is thereby assisted. The soil which we use is peat, loam, and sand in equal parts, the whole being passed through a sieve with a quarter of an inch mesh. After the cuttings are inserted they should be secured to a small stick, otherwise, from the weight of their foliage, they are, if moved, liable to topple over. They should then have a good watering, and be placed in a propagating case or plunged in a gentle bottom-heat therein if it can be obtained. The propagating case must be kept at a stove temperature whether the cuttings have been grown in a stove or intermediate house. Cuttings taken from a plant grown in a stove will root much quicker and with greater certainty than those taken from a plant that has been in a cool temperature. In the case of the latter the better way to proceed is, if the stock plant is not too large, to place it in the stove two or three weeks before the cuttings are taken off.

Another way of propagating this Ficus is by means of single eyes, which with care and attention root freely. If the shoots are long, the upper part can be fashioned into a cutting and the lower cut up into as many pieces as there are leaves. The stem should be severed immediately above each eye, thus leaving the part below to be inserted in the soil. These eyes are put in exactly in the same way as cuttings, and, like them, are secured to a small stick. When they are put in, the stem should be buried up to the base of the leaf. In tying up these leaves, the matting should first be secured to the stick, otherwise it will probably slip down and allow the leaf to sway about. A method which I have seen employed with very satisfactory results is to put in new Cocoa-nut refuse as a plunging material in the propagating case and stick the cuttings therein without pots. By this means the space at command is economised, but in potting off greater care is necessary, as in Cocoa refuse roots are very delicate. In any case the weaker shoots strike more readily than the stouter ones; therefore, supposing the plant to be in a position where its beauty could ill be spared, it would perhaps be possible to take from it a few of the best shoots for propagating without disfiguring it. In the event of there being no propagating cases available, the cuttings may be kept close by placing them under a bell-glass. Under the most favourable conditions they will take from a month to six weeks to root, and often much longer than that. As in the case of most other subjects, cuttings taken from plants grown without stimulants, such as soot-water, manure-water, and the various substances sold for hastening growth, strike better than those taken from plants that have been liberally fed. T.

OUR READERS ILLUSTRATIONS: Group of various Christmas Roses, grown and photographed by Mr. W. T. Bashford, Argyle House, Portobello, N.B. (Reproduced by photographic process.)

13625.—**Plants and flies.**—Some two or three years ago I saw the Castor Oil Plant (Ricinus) recommended for keeping in rooms to drive flies away. Perhaps "J. E. W." would like to try it. It is a pretty plant, even if it turn out useless for this particular purpose.—T. J. W., *Crouch Hill.*

Propagating Aralias.—Among the stove kinds, some, such as reticulata, leptophylla, and Guilfoylei, may be readily struck from cuttings, which are best taken from the plants in a rather soft condition; if allowed to become in any way hard they remain a long time without rooting or even callusing, while, if cut off when young, and kept close and not overwatered, they soon root. On no account allow them to flag, or many will be lost; the case must be open only for an hour or so each morning to allow the superfluous moisture to escape, and shading must be used during sunshine. A. Veitchi takes so much time, and is so liable to go off before rooting, that increasing it by means of cuttings is scarcely practicable. It must be grafted on one of the free-growing kinds, preferably A. reticulata, with which it readily unites, and on which it thoroughly establishes itself. Where there are plants of the latter that have grown too long, the tops should be taken off and inserted as cuttings; then, if it is intended to use the plants as stocks for A. Veitchi, they may be shortened down to a convenient height, but not below 8 inches or 9 inches from the soil, and not so low as that unless there are a few leaves left to keep the sap in circulation. After the top has been off a few days, graft, and with this plant what is known as side grafting is best; thus, a slight incision is made in the stem at about 1 inch above the soil; then the same distance above the cut insert the knife and make a slanting cut down to the first incision. The graft must be fashioned in such a way as to exactly fit the stock, and then tied in securely; the grafted plant must be kept close till a union takes place, when it may be hardened off by degrees and the top of the stock removed. The well-known Aralia Sieboldi is easily struck from cuttings if the small weak shoots produced at the base or up the stems are selected, and the Japanese Rice-paper Plant (Aralia papyrifera) may be increased to any extent if the roots are cut up into pieces of 1 inch or 2 inches long and dibbled perpendicularly into well-drained pots or pans, a method that may be successfully employed with the large hardy Aralia spinosa. When these root cuttings are put in the upper part should be kept about ½-inch below the surface, and the pots or pans should be placed in a close frame.—H. P.

Lycaste Skinneri.—The illustration of Lycaste Skinneri in the number for May 23rd, was an engraving from a drawing made for GARDENING at Messrs. Hugh Low and Co.'s nurseries, Clapton.

REPLIES.

13540.—Spiræa palmata under glass.—This is evidently a somewhat difficult plant to manage in some soils. I have tried it out-of-doors in both shade and sunshine, but it refused to thrive; but as soon as I took up the plants and put them into large pots and placed them in a shady corner of a cool house they grew and flowered in the most satisfactory manner. In fact, they made large handsome specimens. Where they will thrive in the open there is no reason why they should not be grown there; but where they do not I am quite sure many of us devote time and space to other plants under glass that are not nearly so handsome as this Spiræa. I advise all who experience any difficulty with it out-of-doors to try it under glass.—J. C. C.

13561.—Propagating Azaleas by cuttings.—Azaleas strike freely from cuttings made of the half-ripened shoots. Whether the present is the best time to obtain cuttings from your plants depends entirely on the condition of the young wood. If they were forced into flower early, the young growth would probably by this time have got sufficiently hard to take cuttings; but if they are only just gone out of flower, you must keep your plants under glass, and take the cuttings two months hence. As regards the proper time to take the cuttings, the best guide is to do so just as the young growth is getting slightly brown at the end nearest the old wood. There then need be no fear as to their rooting, if properly managed. By using great care, I have struck them under bell-glasses in a cold pit, kept close, and the glasses shaded by placing pieces of brown paper over them, instead of shading the glass in the lights. Owing to the glass lights not being shaded, I kept up the pit at a forcing temperature in bright weather, and the cuttings rooted in about three months. But the most speedy way of getting them to root is to place them in a propagating case which is heated sufficiently to keep the temperature regular at about 85 degs. to 90 degs. After being rooted, they will want careful treatment to harden them off before they are distnrbed. Use 4-inch pots for the cuttings, and have a compost of half peat and half silver sand, and place the cuttings close to the pots.—J. C. C.

—— The plants will not yet have made their growth. They must be encouraged to make good, healthy, young wood, and by the last week in July, or early in August, it will be strong enough and ripe enough to form cuttings. They should be taken off at a joint, potted in fine, sandy peat, and covered with a bell-glass, to prevent the wood from shrivelling, until it has formed root, when air must be gradually admitted.—J. D. E.

13559.—Best Chrysanthemums and Dahlias.—Of Chrysanthemums you cannot do better than get Fair Maid of Guernsey, Meg Merrilies, Prince Alfred, Queen of England, Empress of India, Bismarck, Curiosity, Japanaise, Mrs. George Rundell, Peter the Great, Lucifer, and Cry Kang. And twelve good double Dahlias are—James Cocker, Ovid, Queen Mab, Burning Coal, Prince's Alice, Amy Robsart, Princess Alice, Gem, Pauline, Prospero, Flora Wyatt, and Leah.—C. F. DAVIS, *Leatherhead.*

13568.—Using sulphur to kill green fly.—The burning of sulphur in a greenhouse would be sure to destroy all the leaves, and probably kill many of the plants. Tobacco paper ought to be used instead. We have our fumigator, made by the local blacksmith. It is merely a cylinder made of sheet iron, 7 inches in diameter and 9 inches deep; an iron grating is fixed at one end, and 3 feet are attached, to raise it 6 inches from the ground. A small portion of live coal or coke is placed in the cylinder and over this the Tobacco paper, made damp with water to prevent its burning too rapidly. The Tobacco paper must not be allowed to burst into a flame. The fumigator can be placed in the house while the operator watches from outside.—J. D. E.

—— Fumigate your greenhouse with Tobacco or Tobacco cloth; you will then kill the green fly and not your plant. But if you have Ferns in your house you must remove them, or else the fronds will be killed like your other plants. Sulphur was never intended for greenhouse work; its use is for a vinery. Get a small fumigator, put a few live coals in first, then your Tobacco or cloth; shut up your house, and leave the rest to the fumigator.—UNCLE JOE.

13572.—Culture of Tuberoses.—Where most persons fail in growing this beautiful flower is in having the soil too moist when the tubers are first potted. I find they do best potted in very open soil, of equal parts of good rich fibrous loam, well decomposed cow-manure, and good coarse sand. Pot singly in 4-inch to 4½-inch pots, with plenty of drainage and two or three small lumps of charcoal to keep the soil sweet; then plunge them into bottom-heat of 70 degs. to 80 degs. Till well-started, they should be kept almost dry, if watered they often damp or rot off. When the green is about 6 inches high give plenty of sun and air when possible; when the buds show they can hardly have too much water—that is, where it can easily drain away. Well grown Tuberoses should easily be had in flower five or six months after planting.—ROBERT SYDENHAM, *Birmingham.*

—— Tuberoses will grow very well in a vinery; they want plenty of sun and air when they arrive at the stage "M. L. H.'s" have, and will throw up flower buds in a few weeks. It is early yet for them; give them plenty of water. I put three bulbs in a 48 pot; they do not want much root room, as that causes them to run to leaf instead of flower.—C. F. DAVIS, *Leatherhead.*

13565.—Azaleas after flowering.—When they have flowered place them in a hothouse, and encourage them to grow with a high moist atmosphere until the end of July. If a hothouse is not available they will make their growth in a greenhouse, and flower well the next season. Syringe freely in hot weather to keep down red spider.—J. D. E.

13575.—Gloxinias and shade.—The plants will do very well indeed at a distance of 2 feet from the glass. In the early months of the year, and while the plants are yet in a young state, they require all the light possible; but that does not apply to the month of May, and when the blooms are opening. They must have light shading material placed over them at all times when the sun shines directly upon them.—J. D. E.

13600.—Yellow sweet-scented Jasmine for greenhouse.—I have Jasminum revolutum (yellow Jasmine) in my small greenhouse, and it is scented. If it has a fault it is that it grows too freely. I should think it would do out-of-doors in the south.—H. M. ELLIS.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

13673.—Hoya not flowering.—I have a Hoya in my greenhouse, planted in a border, about five years old; it is a healthy-looking plant, but it has never flowered. Can anyone tell me if there is any special treatment required for this plant?—G. M. S., *Witham.*

13674.—Growing Leeks for exhibition.—Would anyone kindly inform me whether it is advisable or not to keep nipping the tops of Leeks while growing for exhibition, or what is the best thing to do with them? I shall be very glad to receive any information concerning them.—J. SMITH.

13375.—Australian Cress.—Will any reader tell me how this should be gathered? Should it be cut, as ordinary Cress, or leaves picked like Parsley? Also, will it grow again after it has once been gathered?—E. H. K.

13676.—Climbing plants.—Can any reader tell me what climbing plants would grow and flourish on the walls of a new red brick house, exposed to the west wind and on very high ground, at St Leonards? The writer wants something that will grow quickly, and have the effect of dwarfing the house. The soil is clay.—A. P.

13677.—Plants beneath wall.—Will any reader kindly tell me what are the most suitable plants, of a rather small and low character, for growing in a position where a wall would prevent them from getting the sun? Will Fuchsias and Dielytra spectabilis thrive under such conditions?—T. J. R., *Shields.*

13678.—Araucaria excelsa.—I have a plant of this in a cool greenhouse; it is growing too tall and spindly. Is it safe to cut it down, and, if so, how shall I do it? There are five stages of leaves, which come out at a right angle from the stem. Shall I cut it immediately over the top set of leaves?—DALLIS PARK.

13679.—Laying out garden.—Will any reader kindly help me with suggestions as to a suitable and inexpensive design for laying out my garden, which has just been vacated by the builder; the width is 21 feet, length about 50 feet, soil clay, exposure N.E., and situate near London? I prefer a winding path, but would it look absurd on account of the width?—G. G.

13680.—Orchis mascula in London gardens.—A plant of Orchis mascula, which I brought from the Isle of Wight last June, has been ever since in my town garden, and is now bearing a handsome flower. Will any reader tell me whether these plants will permanently thrive in London, and what treatment they require?—NELLIE, *Notting-hill.*

13681.—Vine leaves turning yellow.—Will some vine-grower kindly tell me the reason of vine leaves and bunches turning yellow? My vinery is a lean-to facing south (border outside), heated by a flue. The house is kept at 65 degs. at night, and 75 degs. to 80 degs. by day with sun-heat. The Grapes are Lady Downes, Madresfield Court, and Black Hamburgh; the berries are about the size of Peas.—HERTFORD.

13682.—An amateur's propagator.—I have just bought one of the amateur's propagators spoken of by "J. R. D., Belper," in GARDENING of May 23rd. I have taken pots containing Dahlia and Polyanthus seeds, and plunged them in Cocoa-nut fibre, and I keep the heat at about 60 degs. Is this correct? I should be glad if "J. R. D." would tell me what he uses to put his cuttings in, also at what heat he keeps it, and the kind of oil he uses for the lamp.—J. C. CROWTHER.

13683.—Amateur's greenhouse.—Being fired with the ambition that "Dalta" describes in a recent number of GARDENING, it was with no small pleasure that I read his very interesting article on "An Amateur's Greenhouse." I should like to ask him if he would tell me what should be the size of a furnace to heat, by means of a flue such as he describes, a lean-to greenhouse 8 feet long by 8 feet wide. The back will be boards, not brick.—E. C. W., *Tottenham.*

13684.—Plants for east window.—I wish to know what plants would be suitable for a window in an exposed situation in Leith, on third storey, facing east. Everything seems to shrivel and blacken from wind and smoke. Geraniums, Ivy, Lobelia, Calceolarias, and Chrysanthemums all died, the only survivor being an Echeveria, and even that did not thrive. Will any who have triumphed over similar difficulties kindly give the result of their experience, and mention what plants would be likely to thrive under the circumstances?—N. L.

13685.—Budding Roses.—In GARDENING, May 26th, 1883, it is stated that the bud should be taken off with a thin slice of wood attached to it, and that, by a little jerk with finger and thumb in contact with the point of the knife, the wood should be extracted from the back of the bud. In a work I have on budding it says a portion of the wood must be taken off and attached to the shield; the greater part of this wood must be picked out, but it is essential that a portion should be left at the back of the bud. Perhaps some of your readers will kindly tell me which is correct?—J. B. D., *Bilbao.*

13686.—**Fertilising Moss.**—Will any reader tell me what plants thrive in this, and what method of treatment is required for their growth and success in a room? —G. L.

13687.—**Camellia buds falling.**—I bought a Camellia in the year 1883, and, not having room for it indoors, it had to make its growth outside. Towards the end of the same year I had a house put up for it, and in April, 1884, I gave it a shift into a large pot, and it made splendid growth, and set its buds well. In January, 1885, when the buds started to open, they all fell off. I may add that the buds were very thick and closely packed, and the ball never allowed to become dry. If any of the readers of GARDENING could give me any information as to the cause of the buds falling off they will greatly oblige.—R. F.

13688.—**The use and misuse of manure.**—On the 25th ult. I set some Scarlet Runners in a row, with old rotten manure underneath them. As they do not seem to get on at all well I referred to some gardening works to read about their cultivation. To my dismay I met with the intimation that "fresh dunged ground is poison to the seed." Is that a fact?—L. C., *Bridgend.* *** *Yes; we are continually trying to impress upon our readers the absurdity of putting manure to every plant—particularly dung in a fresh state. Plants require such strong stimulants only when they are in vigorous growth. A slight admixture of manure with good soil is beneficial to strong-growing vegetables, but it should be so incorporated with the soil that the young tender plants cannot come in contact with it until their strong roots penetrate the soil deeply.*—ED.

13689.—**Gooseberry trees diseased.**—I have a rather large plantation (over two thousand) of young Gooseberry trees, now planted out three years, and I notice that they have been attacked with a disease which, I fear, will ruin the crop this season. The leaves, and in many cases the fruit, are covered with orange red blotches, penetrating through the leaf. I have noticed the same disease in the garden before, but never to anything like the same extent. I enclose samples of leaves and fruit, and will be very much obliged if you or any of your readers will kindly say what is the cause, whether arising from the nature of the soil, or from a parasite, and also if you can suggest any remedy. The trees are in a rather exposed situation, soil light, but fairly good, and the trees have done well so far.—S. S. *** The leaves and fruit are badly attacked by a parasitic fungus named Æcidium grossulariæ The same pest sometimes attacks Currants, and even the red-flowering Currant. Soil, culture, and cultivation have nothing to do with the ailment As the disease is propagated by minute spores (analogues of seeds), the only way to prevent recurrent attacks is to set boys to pick off all the affected parts and burn them. This should be done (to save labour) as soon as the disease shows itself. The pest very seldom stays more than a year, or two years at most, in any one locality; it generally dies out speedily, although it will sometimes entirely destroy the crop of one season.—W. G. S.

13690.—**Fine foliaged plants for conservatory**—Charmed with the plate of the Jardin des Plantes (May 9th), I have cleared away the staging on one side of my greenhouse, and have formed a bed 6 yards long by 3 feet broad, and am desirous of planting it after the manner shown on the plate. I have no artificial heat, and would place there only such things as would live through the winter. Could you say where I could get a dozen moderate-sized trees of such class, and their probable cost? Also if they should have any special soil or treatment?—NEOPHYTE. *** It is a question of wise selection of things certain to do under such conditions, and afterwards of application to general nurserymen for the same. The price will depend on the size. Some things are quite easily got, like the New Zealand Flax; with regard to others, like the hardier Chamædoreas, you will have more difficulty. Camellias grow admirably under such circumstances, and can be obtained everywhere. The Dwarf Palms of the South of Europe and Southern States of America, and also the hardy Chinese Palm may be procured without much difficulty, and are almost certain to do. A beautiful climber for a pillar or an arch is the blue Plumbago, which is quite common A most noble climber, but one that requires a very big house, is the Ruscus androgynus; a plant of smaller growth of a similar nature is the Alexandrian Laurel (Ruscus racemosus), also a capital plant for a cool house, but hardy in the south of England. In the Regent's Park the magnificent Monstera deliciosa does very well on rockwork, but the house is slightly heated. Some Tree Ferns will do, and are not difficult to obtain. Many large, bold Ferns from temperate countries do admirably. A variety of Bamboos, hardy in the south of England and south of Ireland, would be charming in a cool house in the north of England, and are easily procurable in the London and Paris nurseries, if not in your local ones. We speak of such Bamboos as Bambusa mitis, B. falcata, and B. viridiglaucescens, a variety of which species we have lately seen flourishing perfectly in the neighbourhood of Cork.—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13691.—**Lobelias 24 inches high** (*I. Chapman*).—It is not usual for Lobelias to attain this height.

13692.—**Iron filings as manure** (*E. S. T.*).—They are of no practical use; in fact, in some cases they would do more harm than good.

13693.—**Evergreen flowering climber for conservatory** (*J. G. W.*).—Clematis indivisa would probably suit you.

13694.—**Nicotiana affinis after flowering** (*Miss Spurrell*).—Yes; they will flower next year. Cut the stems off, and treat them as greenhouse or frame plants.

13695.—**Evergreen creepers for wall** (*G. A.*).—You can have nothing better than Ivy, of which there are many good varieties.

13696.—**Obtaining sea sand** (*J. C. Crowther*).—Apply to any of the dealers in horticultural sundries who advertise in GARDENING.

13697.—**Old-fashioned hardy Fuchsia** (*J. G. W.*).—Fuchsia Riccartoni, F. corallina, and F. globosa are all fairly hardy; but in a cold district they require a heap of ashes in winter to protect the roots.

13698.—**Orange fungus on Hollyhocks** (*E. S. T.*).—A question on this matter was asked in GARDENING, page 135, and interesting replies will be found on page 168, in last week's issue.

13699.—**Tacsonia exoniensis in cool vinery** (*E. H. K.*).—Yes; this plant will grow and flower in a cool vinery, but you must bear in mind that it is not hardy enough to stand any low temperature.

13700.—**Purchasers of cut flowers** (*Subscriber*).—We are afraid, judging from what you say, that the supply is already large enough, and that it would be of very little use to mention the names of any other firms.

13701.—**Rose-leaf turning yellow** (*J. G. Dower*).—It is difficult to advise you, inasmuch as you do not say a word as to the conditions in which you plant lives. You had better show it to some good gardener in the neighbourhood.

13702.—**Daphne Cneorum with naked stems** (*W. B.*).—It is the habit of this plant in an old stage to have naked stems, and, as it is not an easy plant to manage, we should advise you to leave it as it is. Young plants often form pretty tufts in soils that they like.

13703.—**Winter Aconite from seed** (*Hales Owen*).—Yes; Winter Aconite can be raised from seed, but it is not worth while doing so, as it is as common as Chickweed in many parts of the country, and plants ought to be supplied at a few shillings per thousand.

13704.—**Removing Tulips and Narcissus while flowering** (*A New Subscriber*).—You should leave them in the ground. The bulbs will certainly be injured if you take them up now when in full growth. Your best plan would be to leave them in the ground, and put the summer plants around them.

13705.—**Destroying Colt's foot** (*E. C. M.*).—Hoe the ground every second Monday morning. Do not let the leaves live and the root will soon perish. The question shows that this kind of plant should never be planted in the garden proper, but on some wild bank or waste place where it can do no harm by spreading.

13706.—**Cast iron labels** (*Mr. I.*).—The labels mentioned in the "English Flower Garden" were made by Cooper, of Drury Lane, London, from models supplied by the author. Many of them are in use in the Botanic Gardens at Regent's Park. The iron labels for Kew Gardens are supplied by Giles, High Street, Brentford.

13707.—**Rose leaves falling off** (*G. B.*).—You have not given us any particulars of the treatment you give your Rose trees, so we cannot tell you what is wrong. The leaves you send look as if they have been scalded—that is, the sun has shone full upon them through the glass when they were wet This would have been prevented by better ventilation.

13708.—**Ants in Cucumber frames** (*C. G. G.*).—The ants must be very numerous, indeed, to injure the plants; they do most harm by loosening the soil. They may be destroyed by pouring boiling water into their holes. Paraffin poured in places where they are found is also said to be a good means of getting rid of them, but it must not touch the leaves or roots of plants.

13709.—**Raising Aucubas and Ivy from seed** (*E. S. T.*).—Sow the seed in the open air; but they will be a year before they begin to come up. It is the usual practice, when the berries are gathered in quantities, to put them in a heap covered with soil, and let them remain in that condition for about a year, and to sow the spring following the year in which they are gathered.

13710.—**Hydrangeas** (*E. S.*).—You may cut back the old plants, but they never form such fine heads of bloom as do the plants raised from cuttings. Cuttings ought to flower the second year.——(*Amateur, Burton-on-Trent*).—You did right in nipping out the flowers in order to strengthen the plants, which ought to bloom this year if strong.

13711.—**Growing Cucumbers** (*Pro bono publico*).—You cannot have a better variety than the one you mention—Rollisson's Telegraph. Judging from what you say as to your plants running to leaf, we should say you have been too lavish with your manure, and you will have leaf at the expense of fruit. You will find sufficient instructions on Cucumber culture if you consult recent numbers of GARDENING.

13712.—**Insects in gardens** (*Constant Reader*).—We cannot tell what your grubs are without seeing them; if you will send some we will name them and tell you how to treat them.——(*O. B.*)—From your description the grubs infesting your garden are leather jackets, the grub of the daddy longlegs. They are very difficult to destroy. Being underground, and having very tough skins, no insecticide is of any use. They may be trapped by burying slices of Turnips, Carrots, or Potatoes, with a small skewer in each slice to show where it is, buried just below the surface.—G. S. S.

13713.—**Procuring hardy herbaceous plants** (*S.J.S.*).—The "Burning Bush" (Dictamnus Fraxinella) should be obtained from any grower of hardy herbaceous plants, and, as similar questions are continually being put to us by our readers, we here give the names of a few nurserymen in different parts of the country, who, among many others, supply such plants: Dickesons and Co., Waterloo Place, Edinburgh; F. and A. Dickson and Sons, Chester; James Backhouse, York; Ware, Tottenham; Smith, Nowry; Forbes, Hawick, N.B.; Roger McClelland, Newry; R. Smith, Worcester; Vertegans, Edgbaston, Birmingham; Clibran, Altrincham, Cheshire; G. Paul, Cheshunt.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages*

Names of plants.—*J. C.*—Ornithogalum nutans. ——*F. Woolstone.*—Pedicularis palustris (pink); Ajuga pyramidalis (blue).——*Dr. Bradle.*—Prunus Padus; other next week.——*R. W. Green.*—Ceanothus dentatus.——*Sunflower.*—A curious freak; worth increasing.——*Penkridge.*—Limnanthes Douglasi.——*E. H. K.*—1, Kerria japonica fl.-pl.; 2, Lonicera Ledebouri; 3, Double-flowered Cherry; 4, Prunus Padus.——*E L. Y. D.*—Lonicera Ledebouri (in flower); other seems to be a species of Rhus—send a flower.——*Miss Brooke.*—1, Ceanothus dentatus; 2, Cannot name without flowers; 3, Diplacus glutinosus.——*Mrs Bettersby.*—1, Epinedium (send in flower), hardy; 2, Tiarella cordifolia; 3, Saxifraga Cymbalaria.——*A. H. Belton and Anglia.*—Next week.——*J. H. B.*—We cannot possibly name your plant from a single leaf only, so many have leaves similar to that sent.——*Miss Welby.*—The one in the tuft of Moss, Cerastium arvense; the single specimen, Arenaria trinervis; Prunus Padus.——*R. F. S.* —1, Adiantum cuneatum; 2, Adiantum mundulum; 3, Adiantum gracillimum; 4, cannot identify (too small). Send larger specimens next time.——*Anglia.*—1, Lastrea decomposita; 2, Asplenium bulbiferum; 3, Adiantum Capillus-Veneris; 4, Asplenium fontanum.——*A. Keen.*—1, Selaginella cœsia; 2, Polypodium pustulatum; 3, Selaginella involvens; 4, Selaginella Wildenowi.——*H. E. T.* —1, Lithospermum purpureo-cœruleum (common); 2, Asperula odorata; 3, Saxifraga cæspitosa; 4, Orchis mascula.

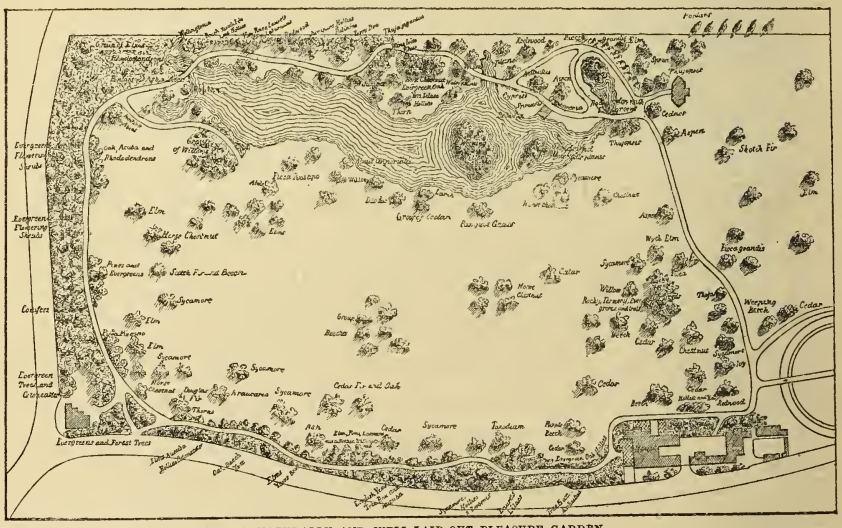
OUTDOOR PLANTS.

RAISING GLADIOLI FROM SEED.

I HAVE found in practice that quite as good results are obtained by sowing Gladiolus seed in the open ground as by any system of coddling under glass that can be adopted. I do not say that if I had a two-light frame to spare I would not place it over the seed bed, to enable me the better to shade the bed, so as to keep the surface moist until the seedlings came through; but I would not use it after that time, as I find the young plants grow stronger without any protection than with it. In raising seedling Gladioli, the principal points to observe are, not to sow the seed too early, and to have a fine rich soil and a warm, sheltered position for the bed. It is of the greatest importance that the soil be rich and broken up into fine particles. Where the soil is lumpy and hard, it should be sifted, so that there is a depth of 4 inches of good material for the roots to work in. The seed should be sown in drills half an inch in depth and 4 inches apart, and be lightly covered with fine earth. Thick sowing should be avoided, for if the plants stand too thickly in the rows the bulbs will be small. As a matter of fact, it all depends on the first year's treatment whether the bulbs will flower the second year or the third. If grown thinly in a good soil, in a warm position, many of them will flower the second year; but if the plants are crowded in the rows, they will not get large enough to flower until the third year. The summer management of the seedlings is a simple matter. All that is required is to stir the surface of the ground occasionally for the purpose of destroying weeds, and to keep them well supplied with water in dry weather. Seedlings like old plants, must have a sufficient supply of water to make a satisfactory growth, and this must be continued up to the end of September if the weather should be dry. The behaviour of young seedlings is very different from that of young plants raised from the young bulblets. The seedlings will keep on growing as long as mild weather lasts; but those raised from bulblets will begin to die away early in September, and no amount of coaxing will stop them from going to rest; in mild winters I have known seedlings to keep green up to the middle of December, and while there is no danger of severe frost there need be no anxiety concerning them, as they are better in the ground than out of it; but to obviate any risk they had better be taken up by the middle of December. Directly they are out of the ground the bulbs should be buried in dry sand, with the green tops left on them. At one time I laid out the young stock to dry on the floor of a loft, but I found that the air shrivelled up the young bulbs more than was good for them. I now store the roots away in dry sand, and a fortnight later cut off the stems and leaves to within an inch of the bulbs. The stock is then laid out on the bottom of some shallow boxes, and a layer of dry sand put over them to keep the air from them. In order that they may be as cool as possible I place the boxes on the damp floor of a shed, from which severe frost is excluded, and as the bulbs of Gladioli, whether old or young, suffer by being kept too long out of the ground, they should be replanted by the middle of March, or as soon after that as the state of the ground will allow. A warm position and a rich, strong soil are necessary in order to secure vigorous growth. J. C.

PLAN OF WELL-DESIGNED PLEASURE GARDEN.

What is most needed in garden design is simplicity, complicated designs seldom producing happy results. The plan we print shows in a striking manner the beautiful effects obtainable from a simple design. It is typical of the true English style, and is a rare example of correct taste. The walks, it will be observed, are few; indeed there is uninterrupted lawn between the house and the water, the result being a beautiful sweep of Grass, planted with groups of select trees and shrubs. The whole place is comparatively small, bnt by skilfnl arrangement it is made to appear much larger than it is. To effect this, the house, as will be scen, simply occupies a corner of the lawn; whereas had it been placed more in the interior much of the green open space between it and the water would have been sacrificed. The kitchen and forcing garden to the right, though in convenient proximity to the house, is effectually screened both from it and other portions of the grounds. The ornamental water is graceful, the margins not showing such indentations as are too often deemed essential to the outline of artificial water. The termination of the walk to the left at an arbour is thoroughly unconventional; in the majority of instances it would have been made to encirole the lake entirely. If this walk had been extended the view from the house across the fine breadth of lawn would have been marred considerably. The circuitous route of the walk is so arranged as to embrace the whole of the scenery of the garden, and yet at no part is it obtrusive. For three parts of its length it skirts the boundary, which is effectively screened by shrubberies and plantations that form, moreover, good shelter. R.



PLAN OF A NATURALLY AND WELL-LAID-OUT PLEASURE GARDEN.

Clematis.—The magnificent specimens of Clematis shown by Messrs. Jackson and Son at the Crystal Palace and at the Royal Botanical Society's Exhibition reminded me of how seldom in Gardening I had seen any mention of these lovely climbers. The variety of them is so great and their culture so easy that they are brought within the reach of all. The outdoor varieties simply need to be planted in peat and loam, and watered in hot, dry weather, and they grow freely in one season, sometimes growing 12 feet. Clematis looks remarkably well planted at the foot of an old fruit or other tree, and allowed to climb up and flower among its branches, and, unlike Ivy, it does not choke the tree. One of the most beautiful of the species is Clematis coccinea (scarlet); it is quite hardy, but can be grown in pots in a cool greenhouse, if desired. I give the name of a few choice varieties for the open air: Alexandra (pale violet), Jackmanni (purple), Fair Rosamond (white sweet scented), John Murray (mauve), Lady Londesborough (silver grey), Magnifica (crimson), Mrs. Howard Vyse (tinted white), Tunbridgensis (dark blue), William Kennett (lavender). All these are propagated by grafting, but as they can be bought so cheaply it is hardly worth the trouble to any but professional gardeners. Now I am on this subject I should like to say a few words on a greenhouse Clematis (indivisa), as among other more showy specimens it is apt to be overlooked; and yet it ought to occupy a prominent place in our greenhouse, as it covers the roof, at the time of its flowering in the spring, with pure white star-like blossoms, and for the remainder of the year with beautiful green foliage. It should be planted in the border in soil composed of peat and loam, with a little sand. It is a native of New Zealand. One of its greatest charms is that it is an evergreen.—C. F. Davis, *Leatherhead.*

Curious Anemones.—I send you three Anemone blooms. You will observe that the under petals are crimson feathered on two of them, the other was entirely green—in fact, the whole bed is the same, entirely green, except some with the under petals colonred. Many of them are throwing up a shoot, as per sample, from the centre of the flower. Those are bnlbs imported from Haarlem last season—that is, in October, 1883. They flowered as you see sample last season, and also this season. I was in hopes they would bloom to colour this season, and advised my cnstomer to leave them, for which he is anything but obliged to me. I am anxious to know the cause, as I cannot understand it. They have been treated well, planted in good soil in an open garden, and a most healthy locality. Can you tell me why the blooms are of snch a colour, or perhaps some of your readers will be able to enlighten me? —J. T. N. *** *We regard this merely as a monstrosity, of no value whatever for the garden, particularly as we have so many beautiful Anemones in cultivation.*—Ed.

The Purple Bugle—The beauty and usefulness of Ajnga reptans purpurea as a summer bedder goes without saying, and every year it increases in favour, but few seem to know of its beauty as a flowering plant for the late spring borders. It would be hard to find anything richer than the effect of its dense masses of purple-blne flower-spikes ronnd a bed of Parrot Tnlips, or white Narcissus, or other spring flowers. Then its hardiness and endurance of transplanting at any time (I have taken it np and replanted it in full flower, without injury) makes it a most reliable plant. It likes a sunny place, but not too dry, and increases with great rapidity, all of its numerous shoots rooting at their extremities, and forming plants that flower next spring.—A. M. O. T.

THE CAMELLIA OUTDOOR AND INDOOR.

This flower was introduced into Spain towards the end of 1739, from one of the Phillipine Islands, by a Jesuit missionary. The flower was named after him, and for a long time it remained in a state of semi-obscurity, and cuttings were jealously guarded and carefully cultivated in hothouses. Conld the good Jesuit come to life now he would be surprised to see this flower so universal, and grown in cold houses and oftentimes out-of-doors. The Camellia in reality is much hardier than the common Laurel, and in a nursery at Epsom there are three large white Camellias which have been planted out for the last ten years; one winter was so oold that the bark was all taken off; but they survived, and bloom freely every year. For outdoor culture all that is required is to plant them in soil composed of peat, leaf-mould, and cow-dnng. Never let them suffer from drought, and after flowering they shonld be well watered with liquid mannre. A good plan for preventing evaporation of the moisture is to put some small stones round the stems of the plants. The borders should not be disturbed more than is necessary for the removal of weeds, and care shonld be taken that the snow does not rest on their branches. The best sorts for planting-ont are—Caroline, Prince Leopold, Perfection, Eclipse, and Duchess of Orleans.

For indoor cultivation the best soil to grow them in is a compost of two parts peat, one loam, and one silver sand. Keep them in a temperature of 55 degs. until their flower bnds are formed; syringe frequently, and towards the end of April remove them to a cold house or a sheltered place out-of-doors, and put them back into the cold house in October. Their blossoms will then expand during November, December, and January. During this time water them copiously. More bnds drop from lack of moisture than from any other cause, and remember that they do not want any fire-heat, except when making their growth. They should not be repotted too often, as the roots are delicate, and if bruised will oause the bnds to drop. When, however, they are repotted it

should be when the last flower has fallen. In gathering the flowers never cut the wood. They must be mounted on wire or laid in a saucer of water. The following will be found good ones—Alba plena, Archduchesse Marie, Jenny Lind, The Bride, Princess Royal, and Prince Frederick William.

Leatherhead. C. F. DAVIS.

Two good town flowers.—The old Canterbury Bell is a free bloomer—every bud will expand in impure air. Good plants should be obtained now. Any position, either in the full sun or partial shade seems to suit them, and when planted in a position surrounded by miles of houses, I have always found them to bloom as freely as if in a rural garden. With the exception that in the situation described the plants soon dry up after blooming, the same remarks apply to the Sweet William, which is eminently fitted for gardens in town. Unlike many plants that wear a smoke-begrimed appearance in winter time, this well-known herbaceous subject remains fresh looking the winter through. On one occasion I purchased some seedlings in July, and during the severe winter following the little plants received no injury from frost, and the smoke-laden air affected them not. The following spring they bloomed well, sending up many good trusses of scarlet and white flowers, also those of pure white, &c. The plants may be increased by cuttings taken after flowering. The young growth should be selected and dibbled in pots under a bell-glass or in a border of partial shade, previously working in a little silver sand to facilitate root formation. Mention of many other reliable town flowers for immediate effect will be found in GARDENING ILLUSTRATED, pp. 27 and 28, No. 315.—A. E. A., *Stamford Hill.*

Twin-flowered Tulips.—Two double-headed Tulips are flowering in this garden at the present moment. Both are dwarf, white, double Tulips, and in each case two stems, a stouter and a slighter one, have evidently grown together, starting in a combined state, out of one large surrounding leaf. An inch or two higher up another leaf surrounds the united stems, which can be clearly traced as distinct, though covered with one outer skin or bark. After a couple of inches more the stems separate, and each has then a small leaf or two to itself. The flowers are complete and fairly good, one being smaller than the other. When the plants are taken up it will be worth while noticing whether the stems start from a single crown or from twin bulbs under one sheath.—HAWKHURST.

REPLIES.

13566.—Double Rockets.—I have four varieties of double Rockets and grow fifty plants of each yearly—the dwarf white, which puts up a flower-spike of from 9 to 12 inches, beautifully shaped and very close in flower; the tall French white with a flower spike of from 12 to 18 inches; and the tall Pink, which is the most showy of all. I cut some spikes of this variety last year that measured 23 inches. I have never seen stocks on a show table that could come near to this class of plants when properly looked after. I have also a yellow variety, which adds to the beauty of my beds; it is not such a close flower as the others, but of great beauty. I propagate all my plants from cuttings made from the flower-stem or side-shoots. I have put my cuttings in this week (ending 23rd May). My plants are always very strong, and put up from 4 to 5 spikes each. I never allow more than two or three on each plant to flower, and from the others I make my cuttings. They root freely in a mixture of sand and leaf-mould in a cold frame, but care must be taken in shading from the sun for a few days. I always give plenty of air and see that they are a little moist. When rooted and hardened off I remove them to the open border with a south exposure, giving them a good supply of old cow-manure, and a little clean sand round their roots; I plant them 9 inches apart and await the result. Next season they need no protection through winter, if grown in a south exposed dry bed.—A. Y. D., *Aberdeen.*

13582.—The sparrow curse.—As "Puss" and "L. H., Hammersmith," are so annoyed with sparrows, I should advise them to get some small iron bird-traps. They are like rat-traps, but much smaller. We get them at a general dealer's shop, 6d. each. Bait them with a bit of meat, tie them to a stake or tree, and hide as much of the trap as possible, or cats will most likely walk off with them if they are not fastened to something. The trap is not strong enough to hurt cats, if they should get caught, and they soon learn to leave it alone when they get a bird or two. The trap should be moved about. Sometimes it will catch garden mice as well as birds.—EMMA.

—— This question is partly answered in another place (see reply to 13563). It would not do to use poison; this would be quite illegal, and would bring the person using it before a bench of magistrates. Poisoned Wheat was sold about a quarter of a century ago, and was a most effective agent for the destruction of sparrows; but the danger to domestic animals owing to its use was so great that its sale and use were put a stop to by the legislature. Put a price upon their heads, and pay boys to take their nests. The young ones are easily trapped. —J. D. E.

—— I beg to respond to the appeal of yourself and correspondent on the above subject. Several years ago, when I lived in another county, my garden was a good deal pestered by sparrows to my great annoyance. By some means I learned that they might be greatly reduced in number by using poison; but the poison I used requires great caution, or more may be effected by it than intended. I purchased some Nux Vomica of a chemist (the Bean from which strychnine is derived). The Bean much resembles a Broad Bean, but is a deadly poison, being very powerful in its effects. I cut the Beans, and simmered them some little time in a small saucepan in some water. The cutting was mostly done after being soaked somewhat, as I found them very hard, and to guard against harm I used a fork to hold them with, but a little of the liquor got on my fingers, and its effects were felt a long time afterwards. I then soaked some Wheat in the liquor, and, when it had had time to be saturated, I threw some about the garden for the sparrows. The result was marvellous; the birds supplied themselves, and then attempted to fly, but could only rise a few feet from the ground, quivering and shaking, and then dropped down dead. I am of opinion that bread would answer better for the birds, but I was deterred from using it lest I should have destroyed my neighbours' cats. The fingers should be kept clear of the liquor.—J. TAYLOR, *Cinderford* *** *Is our correspondent quite sure that this is not a dangerous practice? May not other creatures also be poisoned?*—ED.

13624.—Hardy plants for late autumn flowering.—Japan Anemones (red and white varieties), Pyrethrum uliginosum, Sedum spectabile, Michaelmas Daisies, Perennial Asters, such as A. lævis, A. Novæ-Angliæ roseus, A. amellus, A. polyphyllus, and A. versicolor; Tall Phloxes, Pompone Chrysanthemums, and African Marigolds, the last being an annual. Among bulbs, Colchicums may be obtained in August, and the flowers will appear in October and November. They do well in grassy spots, as the leaves do not come until spring. I had almost forgotten Snapdragons. This year's seedlings are pretty sure to give some bloom at the period desired; but, of course, during November one must not expect a great deal out-of-doors.—T. J. W., *Crouch Hill.*

13492.—**Eradicating Dandelions from green.**—Use a long thin knife and cut them off under ground; drop a little Clover seed with a little earth on the top and they will soon be got rid of.—I. C.

—— The easiest and most effectual way is by the use of Watson's lawn sand. Apply it from a powder flask or narrow-necked bottle, on the crown of the Dandelion, and not only will it kill the weeds, such as Daisies, Thistles, Plaintains, &c., but it invigorates the whole lawn if spread broadcast. My gardener laughed at the idea at first, but he soon changed his mind when he saw the good results, and now I have as good a lawn as any I have seen.—E. L.

13571.—**Golden yellow Wallflowers.**—I believe the one that "L. H." has seen is the Cloth of Gold. Tom Thumb is not worth garden room by the side of this. Seed may probably be obtained from any large firm.—H. W., *Preston.*

13623.—**Procuring fertilising Moss.**—You can obtain this at Messrs. Barr and Son, King Street, Covent Garden.—C. J. L.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—VIII.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

GOOSEBERRIES.

THE Gooseberry is such a well-known English fruit that there is little occasion here to dwell upon its value. Since the last century it has been carefully cultivated by our British gardeners, and there is no country on record, up to the present date, where the Gooseberry has attained such perfection as in England, although the bushes may be found growing wild in many rough and rocky districts. There are only two varieties worthy of mention—namely, the Red and the Yellow. Red Gooseberries make a good jelly, very refreshing, light, and digestible. White or Yellow Gooseberries, when perfectly ripe, prove an excellent table fruit, and are best for dessert. Unlike other fruit, the Gooseberry may be used for food as soon as the berry is full grown, and up to the time when it is quite ripe; its combination of the two acids, malic and citric, with sugar, produces a wholesome food with a pleasant flavour. The hairy or rough Gooseberry is the best for bottling, makes an excellent preserve, and furnishes a tolerably good wine.

TO BOTTLE GREEN GOOSEBERRIES.—Provide some wide-mouthed bottles with corks or bungs to fit each, wash and dry them thoroughly, and place them at the mouth of the oven so as to exhaust all the damp air from each bottle; procure some rough or hairy Gooseberries, full grown, but not yet ripe, and let them be gathered perfectly dry. Top and tail the Gooseberries with a pair of scissors, taking care not to tear the skin; put aside any that are broken or not quite fresh, and rub the whole ones in a dry cloth; fill each bottle quite full, and put in the cork. Place some hay or straw at the bottom of a large pan, stand the bottles in with enough cold water to come up to their necks, and put the pan on the fire. Take care to place the bottles in such a manner that the ebullition of the water shall not cause one bottle to rattle against another, or they will assuredly be broken. Bring the water slowly to the boil, and then remove the saucepan from the fire, and let it remain for ten minutes; then lift out the bottles, beat the corks in tightly, and cover with melted resin, so as to exclude all air. When more convenient the bottles may be placed in a cool oven instead of the saucepan of water, and left in the oven until the Gooseberries have turned white and sunk down one-third, then cork tightly and seal as before. Keep the bottles on their sides in a cool, dry place. Gooseberries thus preserved will keep for months; but if stored in a place that is in the least damp, the fruit will very soon become mouldy.

GOOSEBERRY FOOL—although an old-fashioned dish—is still a welcome and refreshing article of diet, light and wholesome, especially for children. What is more cooling and delightful, after a ramble in the woods, or a romp in the hay meadows, than a refreshing cup of Gooseberry fool? To make this preparation have, if possible, the hairy-skinned Gooseberries. Cut off the tops and tails, put them into a jar or enamelled saucepan with one gill of cold water, and enough good moist sugar to sweeten, in order that the 'fool' may be palatable when finished. Cover the saucepan, and cook gently until the Gooseberries are soft enough to break easily. Then let them be pressed through a hair sieve. Do not omit to scrape under the sieve before putting it away, as a great deal of the thick pulp will adhere, and not fall off without assistance. To every pint of pulp thus procured allow one pint of cream, or half-a-pint of cream and half-a-pint of milk. Where all cream is used, whip it briskly with a whisk for ten minutes, and then add it gradually to the Gooseberry pulp, which must be constantly stirred the whole time that the cream is being added, and then beaten for a few minutes. This should be served in a large china bowl, or small glass cups. If milk be used, it should be added very slowly to the Gooseberry pulp, and when these are well mixed the cream should be whipped and lightly stirred in, so as to give the preparation a light and frothy appearance.

A CASSEROLE OF GOOSEBERRIES WITH CREAM.—One quart of green Gooseberries, moist sugar to taste, three-quarters of an ounce of gelatine, half-a-pint of water. Top and tail the Goose-

berries, and stew them with one gill of water and some sugar in a porcelain-lined saucepan, until they are sufficiently soft to pass through a hair sieve. Dissolve the gelatine with one gill of water, and mix it with the Gooseberry pulp; put it into a saucepan, and stir over the fire until nearly boiling. Have a casserole, or border mould, with cold water in it, and when the mixture is ready throw away the water and pour in the Gooseberry pulp; stand aside in a cool place to get firm. Then dip the mould into warm water, wipe it with a cloth, and reverse on to a crystal dish, shake, and remove the mould; have half a pint of double cream; put it into a large basin, and, standing in a cool place, whip it briskly with a whisk until it is stiff and rocky looking; then stop beating immediately, or the cream will turn to butter; sweeten with powdered sugar; put some of the cream in the centre of the casserole, and the remainder round it; serve as soon as the cream is added.

Gooseberry cream.—Half a pint of prepared and sweetened Gooseberry pulp, half a pint of cream, one gill of milk, half an ounce of gelatine; heat the milk, and pour it over the gelatine, and stir near the fire until it is quite melted; do not put these over the fire, as too much heat in the gelatine will cause the milk to curdle; carefully whip the cream in a cool place until stiff; then stir it lightly into the Gooseberry pulp; add the dissolved gelatine with a very little Spinach greening; stir until nearly cold, and pour it into a prepared mould; set aside until firm; then turn on to a crystal dish in the usual manner.

A Gooseberry shape.—Take a quarter of an ounce of isinglass dissolved in one gill of hot milk, half a pint of milk, the yolks of three eggs, one tablespoonful of sugar, half a pint of Gooseberry pulp; beat the eggs and sugar to the consistency of cream, then pour over them half a pint of hot milk; return to the saucepan, and stir until thick, but not boiling; add this gradually to the pulp and dissolved isinglass; stir for a few minutes until nearly cold; mould and serve as in the preceding recipe.

Puddings and tarts.—Green Gooseberries may be used for puddings and tarts in the same manner as described for Rhubarb in a previous article, without the addition of any flavouring, as Gooseberries in themselves are, when sweetened, of sufficiently good flavour and highly appreciated.

Crute's patent flower-pot. — *To the Editor.*—Sir,—In looking through Gardening of the 23rd instant, I find a drawing of a flower-pot said to be invented and patented by Mr. Crute. I beg to say that the pot shown is not the invention of Mr. Crute; as I can prove that we made the same kind of pots, with movable bottoms, thirty-four years ago, and sent samples of the same to the Great International Exhibition in London in 1851, along with our hollow-bottomed pots (not movable), which we have made ever since, and are still making. Kindly insert the above in your next issue, and oblige, yours obediently, Thomas Kay & Son, *Holbeck Moor Pottery, Leeds.*

13348. — Destroying cockroaches. — Take a teacupful of well-bruised plaster of Paris, and mix with it double the quantity of oatmeal, to which add a little sugar (the latter is not essential). Strew it on the floor, or in the chinks where they frequent. James's phosphor paste is said to be the best poison for cockroaches. Spread on slices of bread, or mixed with honey, the insects take it readily, as do also mice; two or three applications are enough to clear a house. The fresh cut fronds of Pteris aquilina (Bracken) laid about are said to drive them away. The ordinary beetle traps sold at oil shops, if baited with honey, or sprinkled with beer, will catch large quantities. Basins, partly filled with beer, or beer and water, and having a few sticks placed against the sides to form a road, will also be found successful. Soda-water or champagne bottles partly filled with beer and water or black honey, and sunk in the earth, will prove very effective traps if not too often disturbed. Cockroaches, like crickets, will not always eat the same thing, and, therefore, if one poison fails another should be tried.—Celer et Audax.

BIRDS.

13714.—**Treatment of blackcaps.**—Can any reader tell me the proper treatment for blackcaps, and the food for them and other birds of their class, such as the white-throat, &c?—A. T., *Canterbury.*

13715.—**Belgian canaries.**—I should feel much obliged if someone would be kind enough to tell me what degree of heat Belgian canaries require during the winter? Also if the old birds should get green food for their young ones, and what is the best kind for them?—Ireland.

POULTRY.

13716.—**Rearing ducklings.**—Having a trustworthy incubator, &c., a capital Grass run, and a good pool, I wish to rear ducklings for market from Aylesbury or Pekin breeds all the year round. Will any reader give me information how to procure fertile eggs, and to proceed?—Iolanthe.

13717.—**Fowls dying.**—I have some game fowls, which have a large Grass run. After they begin laying they droop and gradually die. They are fed upon mixed Corn. Can any reader kindly tell me the cause, and state a remedy?—A Young Beginner.

TO CORRESPONDENTS.

Notice. — *Some of our readers send us questions to which, because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*

Cowkeeping and Management of Farm (*Hopeful*).—These subjects are not suited for Gardening; we have passed on your letter to the editor of *Farm and Home*, in which journal you will, no doubt, get all the information you require.——Addresses (*Asphodel*).—The address of the firms you refer to is "Covent Garden, London, W.C."——Sending Cinerarias (*P. Kendall*).—The blooms you send are very good; it is one of the best varieties that we have seen.——Pea Protector (*J. C.*).—Thanks for note. A protector of a similar character was figured in Gardening, March 7th last.——Vine-leaf (*W. L.*)—Next week.

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NO. 6.—Princess of Teck, Guernsey Nugget, Vesta, Sœur Melaine, Rose Trevenna, Aigle d'Or, Mdme. Domage, White Eve, Queen of England, Elaine; this set, post free, 1s., P.O.

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12 SUPERB PANSIES, fancy varieties to name; splendid for exhibition, 3s. post free.—R. MANN, Howden Dyke, Howden, E. Yorks

ALEXANDER LISTER, Garfield Nursery, Rothesay, N.B., offers, till cleared out, 12 exhibition show or fancy Pansies, distinct varieties, for 2s. 6d.; 12 seedling Single Dahlias, saved from finest varieties, for 2s., named, 4s 6d. dozen. Red and white Cactus Dahlias, 6d. each; all strong healthy plants; post free. Numerous testimonials this season.

SWEET VIOLETS —12 well-rooted plants, to flower next autumn and winter, free 9 stamps.—R. FIELDER, Maude's Elm Vineries, Cheltenham.

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BEAUTIFUL PERENNIALS. — Pyrenean Poppies, yellow and white, just coming into blossom, will transplant well, six plants for 1s. 6d.—R HESTERWORTH, Aston-on-Clun.

HARDY BRITISH FERNS.—Lastrea æmula, Thelypteris, rigida, collina, Oreopteris, dilatata, erosa, Asplenium marinum, viride, crenatum, Polypodium semilacerum, Oak, Beech, calcarcum, Parsley, Athyrium, Scolopendrum, dentata, lobatum. 12, 1s 6d.; 20 large rockery roots, 2s. 6d.; 50, 6s. 6d.; 100, 10s., named, carriage paid.—JAMES BELL, 6 and 15, Stramongate, Kendal

HONEYSUCKLES.—Fine Climbers, 6 well-rooted, 1s. 3d., free; Travelling Ivy, fine climbing Ivy, 6 1s. 3d., free.—J BAKER, Horncastle, Lincolnshire.

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GARDENING ILLUSTRATED.

Vol. VII. JUNE 13, 1885. No. 327.

OUTDOOR PLANTS.

THE JERUSALEM SAGES (PHLOMIS).

The Jerusalem Sages are among the finest of hardy plants belonging to the Sage family. Of Phlomis in cultivation there are about a dozen species and varieties of great diversity of size and habit. Some, such as P. fruticosa, are shrubs, others noble herbaceous plants; while others, again, such as P. armenaica, are sufficiently alpine in character to allow of their being grown in the rock garden. The most desirable of the species to cultivate is P. fruticosa, a half shrubby plant, growing from 3 feet to 4 feet high; its branches and leaves are covered with a rusty down, and the flowers are produced in large dense whorls, clothing about half the length of the branches. Their colour is a rich yellow, and they are very attractive during June, July, and August. This species is perfectly hardy, thrives well in any common soil, and may be grown in the mixed border, or associated with shrubs, but it should always be placed in an open spot. P. ferruginea is similar, but not so hardy, and, moreover, not such an effective plant as the preceding. There are a few other shrubby kinds, but none of them are so fine as P. fruticosa.

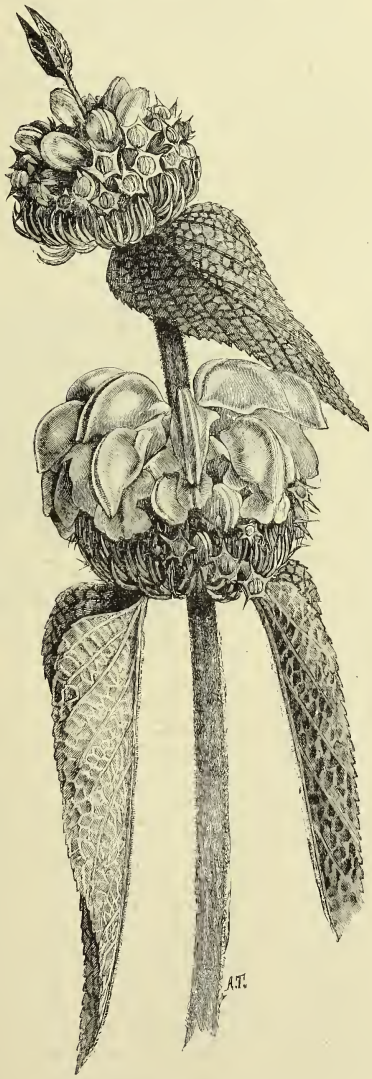
Of herbaceous kinds the best is P. Herbaventi, a strong growing plant, which forms an erect spreading mass from 1 foot to 3 feet high. Its flowers, which are borne in dense whorls, are a rich purplish violet. P. tuberosa and purpurea, both with purple flowers, are handsome plants when grown well, and, with P. Herba-venti, are excellent subjects for naturalising, as they flourish in any soil or situation. The best herbaceous kinds with yellow flowers are P. Russelliana and P. Samia, both of which grow about 3 feet high, and bear in summer a profusion of flowers in whorls. They are strong growers, and do well for naturalising.

P. armenaica is a very dwarf species, with neat silvery leaves and reddish-purple flowers, and is very suitable for the rock garden. P. cashmeriana, a handsome species, is herbaceous, and somewhat resembles P. Herba-venti, but the flower-heads are denser; the flowers, too, are larger, and have a broad violet-purple lip. All the species are easily propagated—the shrubby kinds by cuttings and seed, the herbaceous sorts by division and seed, which latter they freely produce. W. G.

White Pinks.—These sweetest of all hardy flowers, coming as they do with the earliest Roses and late Apple blossom, are ever welcome in all gardens. White Pinks are everywhere at home, everywhere welcome; a princess may wear them and a cotter may give them to his wife or daughter, since they are at once regal and homely, beautiful alike amid all surroundings. I know old farmhouse gardens where they grow in great patches and rings a yard across, bearing their soft white blossoms by the thousand. As you walk along the village streets at night the air is redolent with their magic sweetness. So it is also in market gardens near London, and a big bunch of their blossoms is a gift that a duchess will not think a poor one. In the matter of perfume no hothouse blossom can rival them. You could tell a white Pink in the dark from any other flower, and there never yet was a garden that was too full of their swandown-like beauty and their indescribable satisfying perfume.—V. E.

THE ARRANGEMENT OF FLOWER BEDS.

The most important thing in a flower garden is to grow the plants thoroughly well; but when once the details of cultivation are mastered the next important matter is to arrange the plants grown so that each enhances the beauty of its neighbour, and all produce a good decorative effect. It is a comparatively easy matter to do this, provided certain broad principles applicable to all good grouping are attended to. First, as to wrong ways of grouping plants. These might have been passed over without notice were it not for the fact that in the Metropolitan public parks and many large gardens nearly every possible wrong way of arranging plants is to be seen, and these erroneous methods so carried out have a certain amount of spurious authority which is likely to lead the unthinking amateur astray.



Shrubby Jerusalem Sage (Phlomis fruticosa).

Errors to be avoided.—Never aim at a flat effect, but contrast low growing plants with tall ones. Never arrange plants in rows, stripes, or patterns of any kind. Always arrange plants so that each kind can grow as much as possible in its own natural way. Never place a conspicuous plant in the exact centre of any space. Never arrange the plants in a bed in any order that will suggest that one-half of the bed should be a repetition of the other half. What is wanted in a garden is artistic grouping, not mechanical arrangement. Two of the very first principles in grouping of forms of any kind are, that the principal object, or group of objects, shall never appear in the exact centre; and that in no group of objects shall the two sides be exactly alike. So important are these two principles that no good grouping is possible unless they are recognised. All symmetrical plans of beds, such as circles, ovals, rings, crosses, &c., should be banished from the plans of gardens; when that is done beauty will become possible. The beds should have flowing outlines, and should be irregular in width, and as large as possible. In arranging the plants the habit, colour, and season of flowering should all be taken into account. The plants should be arranged in groups and colonies; but this should be done judiciously, or the result will be ridiculous. I remember a year or two ago noticing an absurd attempt at natural planting in a London park, where success could easily have been attained. The plants were placed in irregular groups, but these were so ludicrously unnatural; the outline of the group was irregular, it is true, but within that outline the plants were placed at as exact distances as if they had been set out with a pair of compasses. Groups should be set out at irregular distances, and stray plants should straggle away from the leading groups. Groups of Stocks, Pentstemons, and similar tallish things should be of different varieties, so as to vary in height. Broad masses look best when formed of low-growing, spreading, and trailing plants. Large plants should be placed either singly or in groups of three at the most; planting big foliage plants in beds with an edging or in rows is not design, but imbecility. A row of Cannas, or Solanums, is no more a decorative feature than a row of Peas or Potatoes, and not nearly so much so as a row of Globe Artichokes. Even a single Potato-plant in flower possesses a good deal of beauty, but a row of Potatoes is not decorative; the plant does not become uglier in itself by being grown in rows, but its forms become confused through so many being grown together, and the ugliness of uniformity, artificiality, and straight lines overpowers the beauty of the plants and vulgarises the whole.

Even where a straight lined bed is necessitated by convenience, or circumscribed space, it can be made decorative by slightly irregular edging or by overstepping the boundary to a trifling extent here and there, by an overhanging plant. Box edgings, or any regular or rope-like edgings to

beds are simply hideous, and have only become tolerable, like chimney-pot hats, because we are used to them. One of the best edgings to beds is that used by Miss Jekyll in her garden at Munstead—thin flat stones set upright and sunk nearly to the level of the ground. Brickbats answer very well where stones cannot be had cheaply. Diminutive rock-plants thrive well close to such edgings, and any seedlings of dwarf plants which come up close to them may be allowed to remain with good effect. I have had such an edging bright from end to end with self-sown Pansies, which stood the summer drought far better than those planted in the beds close by. J. D.

PLANTING IN HOT WEATHER.

In hot weather planting should, if possible, always be done on dull days. When ground is prepared and everything is in readiness, a large number of plants may be shifted into their new quarters in the course of a few hours. It sometimes, however, happens that such a favourable occasion does not present itself, and there is but the option of planting in a dry time or of waiting on the chance of a change, and risking the injury which crowding or a root-bound, starved condition brings about. By choosing those portions of the day freest from the sun's influence, the work of transplanting may be comfortably and satisfactorily accomplished. The morning is a good time, but the evening is better; for, with a good watering given in the form of a refreshing shower, and a sprinkling once or twice during the following day, their foliage will scarcely show signs of the removal. An excellent plan when planting out in hot weather is to stick in a branch of evergreen on the sunny side of each plant or group of plants, leaving it there until they show signs of having fairly grasped the soil. There is a great difference between the progress of plants which have received these attentions and such as have more or less taken their chance, when more favourable atmospheric conditions supervene. Although for a time there is no apparent benefit, the plants are gathering strength and are making a quantity of roots, the result of which is a strong and robust growth.

In transplanting, no care or labour should be grudged that will preserve intact all the roots, for it must be said that want of scrupulous attention in this respect is a too common error, the greatest offenders being naturally young gardeners, whose experience does not allow of their realising that a dried or mutilated root means serious loss of vital energy never again to be fully restored. How often have I seen young seedlings or cuttings lying on the potting bench for an hour or more at a time, their roots in full exposure, or in planting the plants perhaps just laid into a box or a basket open to the air whilst the operator leisurely committed them to the soil. I speak all the more feelingly upon this matter, because I know that ninety-nine gardeners out of a hundred have at some time in their lives committed this mistake.

I know I did, and when at one time I had half-a-dozen young learners with me, one of my greatest troubles was to get them to realise that a root preserved, however small, was strength and progress gained. When a young cultivator once perceives the importance of roots and their action, his progress in plant culture really begins, and not before that. In planting in the open there is nothing so good as an ordinary galvanised iron pail, as it is air-tight, and if covered with a piece of cloth the plants may be kept fresh and the roots moist, no matter how drying the wind or unfavourable generally the weather may be.

One great mistake in planting is to rake the soil finely after planting, as in the course of a few days it then forms a hard crust, and if the plants are set out in a rounded bed, the greater portion of the water given runs off to the sides. The best way, I think, is to cut down straight with a trowel, spread out the roots on the side of this little trench, and press firmly round the collar, leaving the soil rather crumbly on the surface. Then the water penetrates easily, and goes where it is wanted to go. This kind of planting is not so neat as when the surface is made smooth, but whoever wishes for good specimens will be ready to make a sacrifice in this respect if such is needful. There is often too great an inclination to make neatness the primary consideration in gardening operations, and plants have often to suffer in consequence. J. C. B.

CULTURE AND PROPAGATION OF CANNAS.

Cannas (Indian Shot) deservedly occupy a high place among ornamental-foliaged plants adopted for the decoration of our flower gardens in summer. Their stately, massive growth renders them conspicuous in pleasure-grounds, and as we now possess varieties which vary much in their leaf tints, running from glaucous green to almost crimson, and many of them being very floriferous, we find that they are alike valuable for beauty of foliage and abundance of flowers. Cannas are but seldom seen in villa gardens, a circumstance for which I think it is easy to assign a reason. In the first place, they are generally considered difficult to preserve during winter, and, again, they are often planted in unsuitable situations, such as in small beds in the centre of the lawn, where they not only fail to harmonise with other plants, but are apt to get beaten down by wind and rain. Their proper place is out of the direct line of sight—a sheltered corner, for instance, backed up by shrubs, where they do not present a too obtrusive appearance, suits them admirably; there they grow freely and flower finely. It must not, however, be inferred that they should be planted where they fail to get full light; it is simply shelter, not shade, that they require. If thus treated they would not fail to give satisfaction, and they would be oftener seen in small gardens than they are at present. Cannas may be successfully grown in pots, and when so treated they are often found serviceable for indoor decoration. They look well by gaslight, and where large-foliaged plants are often required some good potfuls of them should always be grown, as they may be often used in situations where choicer kinds could hardly be employed without risk. They may be propagated either by cuttings made from shoots taken from the old stools or by seed. In order to induce the formation of suitable cuttings, the old roots must be placed upon a gentle hotbed early in March; after the roots are in position, fill in between them with some good light soil. As the plants start into growth, take off the cuttings when about 3 inches long, and insert them singly in small pots, plunging them in gentle heat. They will soon root, when they may be shifted into 4-inch pots, and replaced in the hotbed. Thence they may, when fairly established, be removed to a cold frame, and so gradually inured to the full air and sun. A considerable quantity of plants may be thus worked up from a few strong stools. The seed, which is hard and round, and which gives to the plant the name of Indian Shot, must be soaked in warm water for forty-eight hours before sowing, and requires a brisk bottom-heat to induce a free germination. The seedlings may be treated in the way above described for cuttings, but this method of obtaining plants is hardly to be recommended in a general way, as they are never so strong as those obtained from cuttings. Cannas are gross feeders; they flourish best when the roots can freely ramble where they do not lack for either nourishment or moisture. In France, Cannas are generally mulched with good rotten manure, the copious waterings combined with great solar heat inducing a grand development. I have grown them to perfection in Normandy by planting them upon large raised beds, and I believe they do best when the roots are raised rather above the ordinary garden level, as the heat of the sun is better enabled to penetrate to and warm them. They must, of course, be well mulched, or there will be a difficulty in saturating them in hot weather. I should recommend a trial of this method to those who may have to deal with a cold soil, as the success of sub-tropical plants depends quite as much upon the amount of warmth which they get at the root as on that experienced above ground. There need be no difficulty experienced in keeping the roots over the winter. They merely require a cool, dry place into which the frost cannot penetrate. The soil should be cleared away from the roots when lifted, and if packed away quite close they will keep in good condition and come out quite fresh when required for propagation. In making a selection, due regard should be paid to securing as much variety of leaf-tint and colour of flower as possible. In grouping them together in masses some knowledge of their individual growth is necessary, as they vary considerably in height and spread of foliage. The following varieties are among the best, and would give satisfaction:—Bihoreli, distinct, of a good habit, and floriferous; Rendatleri, a tall grower; nigricans, tall, with dark leaves; Annei; erecta, fine growth; and Warscewiczi major. There are many varieties now to choose from, and individual tastes differ, but these are all calculated to create good effects in either large or small establishments. J. C. B.

Laying-out gardens.—May I be allowed to make a short comment on "J. D.'s" valuable remarks on the fashion of devoting, in villa gardens, more than half the ground space to lawn and shrubbery. To-day, when walking through some of the suburban streets of Portsmouth, I noticed that in front of every villa the greater part of the ground was taken up with turf and shrubs, all Euonymus. In each garden were a few flowers, starved by the roots of the shrubs. In the majority of instances the Grass was so long that it had evidently not been cut this year. Some plants appeared to have recently been cut for the first time this year, and its stumpy yellow appearance was the result of the neglect. In scarcely a single instance did I see a piece of lawn without bare spots. Turf soon gets bad in towns. I thought what a pity it was that these small plots, capable of affording such pleasure, should be appropriated to what, in most cases, could be no other than an eye-sore to its possessor. Is it not a thousand pities that people will persist in moving in herds like oxen instead of each individual acting as an independent, rational, and discriminating being, intent on pursuing his own pleasure in his own way, and cultivating originality by attending to his individual tastes and peculiarities? The following hints may be useful to those who will persist in having their Grass plots. To prevent the appearance of bare spots, it should not be walked on any more than is absolutely necessary. Children and dogs should be prevented from going on it. To keep the Grass fine it should, during the spring and summer months, be cut once a week. If having a jobbing gardener so often is considered too expensive, get a pair of shears (price 2s. 6d.), the same as sheep shears, only with a crank to keep the knuckles off the ground when used, and do it yourself. A large sized piece would be got over in an hour in that way.—L. C. K.

Border Carnations. — These usually receive special culture, and are nursed through the winter with great care. It requires an effort on the part of some people to believe that they are as hardy as the common Sweet William, another member of the same family; but it is so. Border Carnations—by which term are simply meant the better growing varieties of florists' Carnations—are propagated by layers or cuttings annually, about July, and these young plants are put out where they are to bloom in spring, the old plants being thrown away. Such young plants, if there be enough of them to plant them thickly on the border, will produce a good effect; but the most that a one-year-old plant can do is to produce one flower-stalk, or two at the very most, and several flowers. This is not a great result; therefore, we counsel growers to give up the annual propagation of flowering plants, and to keep the old ones, layering the shoots if they like, but leaving them on the spot to swell the mass of flowering growth round the parent plant. In this way a large plant is formed by the second year, and it produces a great quantity of flowers, such as it would require a number of young plants to do. In short, the best plan with border Carnations, where quantities of flowers are wanted with the least labour, is to keep all old plants as long as they appear to grow freely, and make up blanks only by means of young stock. I have often seen masses of Carnations that were six or seven years of age, and these had been divided from former masses that had spread and rooted naturally. When beds of Carnations and Pinks are formed in this way they yield by far the greatest quantity of flowers, the latter being of

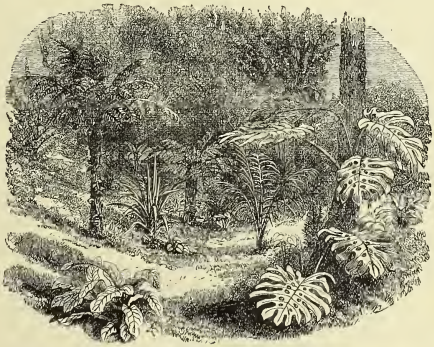
size and substance, just according to the culture which the plants receive. Mulchings of cow or horse manure, or good fresh loam, are all excellent in their way, and keep the plants in vigorous health. Long and rather straggling kinds may be pegged down to the soil and covered over. It will not check them in any way, and they will root and make independent plants by August or September, when they may be transplanted. No tonguing or manipulation with the knife is needed, and this is the best way to propagate Carnations and Pinks in places where frames and other appliances are not available.—J. S.

SUB-TROPICAL PLANTS IN SHELTERED DELL.

ONE of the boldest and most charming little pictures formed by Mr. Gibson, when superintendent of Battersea Park, was placing, in a shady and thoroughly sheltered nook, stove and greenhouse plants, and Ferns that will not suffer from exposure to our summer climate. The plan is well worthy of imitation in the southern and milder parts of the country. Our illustration shows a scene somewhat more free in its disposition than the admired nook at Battersea.

Some Palms, like Seaforthia, may be used with the best effect for the winter decoration of the conservatory, and be placed out with good result, and without danger, in the summer. Many fine kinds of Dracænas, Agaves, Yuccas, &c., are eminently adapted for standing out in summer, and are, in fact, benefited by it. Among the noblest ornaments of a good conservatory are the Norfolk Island and other tender Araucarias, and these may be placed out for the summer much to their advantage, because the rains will thoroughly clean and freshen them for winter storing. So with some Cycads and other plants of distinct habit, the very things best fitted to add to the attractions of such a nook. Then there are tall hardy Ferns, and other picturesque hardy plants, with a tropical aspect, that might be planted out in such a dell, and they would make the furnishing of it an easy matter. In fact, there is no moderately large gardening establishment that ought not to be able, between tender and hardy plants, to embellish such a dell in a most graceful manner. There are, however, many districts in which it would be unwise to place the stove plants in the open air, and it would be necessary to secure the most perfect shelter in even the warmest localities.

R.



Warm and sheltered dell, with sub tropical plants and Tree Ferns put out for the summer months.

Czar Violets.—Divide the plants yearly in April into single crowns, each crown having a piece of root. Plant out in well-prepared ground in rows 15 inches apart, the plants 18 inches apart in the rows, in a partly shaded place. The east or north-east side of a row of fruit trees or bushes is a good situation. If planted in a sunny place they are liable to get too dry in summer, and to be attacked by red spider. All runners should be cut off as soon as they appear. Copious waterings in dry weather, and occasionally liquid manure should be given, and early in September a mulching of leaf-mould or rotten manure. The flowers will appear early in October, and the Violets will continue to bloom in all open weather during the winter till the middle of March.—G. J.

REPLIES.

13635.—**Spring bedding.**—Does "W. B. W." (Tenby), know what he loses by attempting spring bedding? Does he know that in his mild climate he can almost every season have a gay garden all the year round? He wants to use Anemones as bedding plants. In his climate, where frost rarely puts in an appearance, he can have Anemones, Violas, and dark purple Pansies in full bloom all the winter. Where there is no winter to speak of it is utterly useless attempting to get spring flowers to bloom together. The only way is to plant all winter and spring flowering things in plenty, and let them bloom as they choose, taking care to sow large patches of annuals in September, and plant large groups of Tulips and Crocuses, which are not injured by moving, so placed that when they are lifted half hardy and tender plants can take their places for the summer and autumn. Does "W. B. W." know that he can leave florists' Gladioli in the ground permanently, and has he ever seen them so grown? Among my first attempts at gardening was Gladiolus brenchleyensis. I did not know they were not hardy, and planted them with Tulips in autumn. Three winters almost without frost followed, and I have always wanted to see those Gladioli again as they bloomed the third year. "W. B. W." should use Rhododendrons, Azaleas, Camellias, Kalmias, and Andromedas for shrubs; and plant groups of Ixias, Sparaxis, Babianas, and Tritonias, Iris Histrio, I. persica, I. reticulata, and I. stylosa, Christmas Roses of all varieties, Anemones of all kinds, and Pansies for winter flowering. Among the shrubs plant Liliums of all kinds, Dielytra spectabilis, and Spiræa japonica plant Belladonna; Lilies, Tigridias, and Sparaxis pulcherrima everywhere. Ceanothus azureus and C. Gloire de Versailles will do to drape walls with. Of hardy plants give prominence to Pentstemons (they will do in the open), and use Salvias, Geraniums, Fuchsias, Balsams, Schizanthuses, Daturas, (in peat), and all tender plants for beds in summer. For a novelty try Michauxia campanuloides—a biennial, with the habit of a Canterbury Bell, but with flowers like a Passiflora. Sow now, and plant out when large enough. Plant Anemones as early as you can get them, in rich, friable soil, plentifully dressed with old hot-bed manure, or leaf-mould, or both; water if the autumn prove dry, and the floral reward will be great. Don't forget the new large-flowered coronaria. I have some in bloom now as richly-coloured and velvety as the finest show Roses. Clumps should be made of Alstrœmerias, and a prominent object may be made of the Agapanthus, with its fine head of blue flowers. Other plants which will do well are the yellow tree Lupine (Lupinus arboreus), Hydrangea paniculata grandiflora, Deutzia gracilis, and Erythrina Crista-galli. These are shrubs for which the general climate of these islands is too cold. Magnolias will do to cover walls with. Other good plants are Zauschneria californica, Zephyranthes Atamasco, Platycodon autumnale, Ixiolirion tataricum, Schizostylis coccinea, Lobelia cardinalis, and L. fulgens, and Pancratiums of several kinds. There are many other plants, and, of course, those which do well generally will do in a milder climate; but the above-named are beautiful things, which usually require protection, and yet are best in the open air. Finally, "W. B. W." should make a feature of Chrysanthemums. Get immediately all the finer sorts, plant at once in a good border of light, well-drained, and heavily-manured soil. Push them on with weak doses of liquid manure, water well in dry weather, and never stop or pinch them in any way, and the last three months of the year will be as showy in the garden as midsummer. Get especially the Japanese kinds and the broad-petalled incurved ones, such as Eve, Beethoven, and Countess of Dudley. These do not show their true beauty unless grown in the open air, and there they usually get nipped by early frosts.—J. D.

13571.—**Golden yellow Wallflowers.**—For some years I have cultivated these. One spring a group of Golden Queen was a much admired ornament of our small garden. Improved Cloth of Gold is a splendid Wallflower. Notwithstanding the ungenial weather and exposed situation (near Pontypool, Monmouthshire), it has done well here. I enclose a bloom. [Colour very rich and bright.—ED.] Any good firms will probably supply seeds. Among plants from a packet of mixed German Wallflowers, I have several single yellows, golden primrose, canary, &c. Variety is charming, and if "L. H." were to get the whole of these Wallflowers, I think the result would be satisfactory.—AN ENGLISHWOMAN.

13677.—**Plants beneath wall.**—With a fair depth of soil there are many things useful for such a position. Among them may be mentioned Primulas, in variety; Saxifrages also, especially S. Camposi, Anemone nemorosa, winter Aconites, Erythroniums, Snowdrops, Daisies, Violets, Fritillaries, Pansies, Forget-me-nots, and the small form of Solomon's Seal. Fuchsias would do tolerably well, but I am not so sure about the Dielytra. I have usually seen it doing best in full exposure. Many small Ferns are available to give variety.—T. J. W., *Crouch Hill.*

13500.—**Fernery.**—I was glad to see "J. D. E.'s" reply to this query (p. 158). I think anything so artificial as varnishing clinkers in a fernery decidedly objectionable. A few pieces of good healthy Moss (that gathered off large stones is the best), planted in the fernery, and kept moist, would soon spread and be most beautiful. A good plan, too, if the fernery has stone or brick walls, is to spread large pieces of Moss, with good roots, on wire netting, with the green side next the net. Spread some light soil over the roots, and nail the netting to the walls. Small Ferns, such as Oak, Beech, Polypodium, &c., could be planted here and there with a little more soil, and would grow well. The whole effect, if the Moss is kept well watered with a syringe, is delightful, as I can testify from my own experience. I planted a small fernery in this way, and the Moss completely hid the netting and lived for years.—E. T. D.

13624.—**Hardy plants for late autumn flowering.**—There is nothing better for this purpose than Chrysanthemums, especially those of the early flowering section which bloom in October in the open-air, and these may be followed by the ordinary Pompon varieties, and indeed by the large flowered ones, as in ordinary years they give good blooms in the open air. Very much, of course, depends upon the weather, as when very hard frosts come early in November they get much injured. Last autumn they flowered grandly in the open borders. In any case they should get a sunny sheltered position, as they require more warmth to develop the buds than the small flowered varieties. The red and white Japan Anemones are grand for late autumn; they require, however, to be well fed. Through the early autumn give them a deeply-stirred soil and a good mulch of manure, with occasional good soakings if the weather should prove dry. Lobelia fulgens is very bright through the autumn, and Pansies and Violas flower well at that time, if planted in March, and encouraged to make good growth by mulching and picking off seed pods as they form. Among other things may be mentioned China and Gloire de Dijon Roses, Coreopsis grandiflora, Saponaria calabrica sown in May, also Sanvitalia procumbens sown at the same time, and the sweet-scented Clematis Flammula.—J. C. B.

Many-flowered Tulips.—I send you a Tulip [apparently Tulipa Celsiana], evidently not a garden variety, but a species. A friend brought it last autumn from Holland. He gave me six roots; four had spikes of two flowers each, one had three, and one five. It seems to me to be the normal condition of some species of Tulips to be multifloral on one stem.—SOUTH DEVON.

TREES AND SHRUBS.

THE FLOWERING ASH.

AMONG the rarer trees, to be seen sometimes in the London parks and gardens, and here and there throughout the country, is the Flowering Ash, of which we give this week a very pretty illustration, showing a bunch of the flowers and a few leaves. It is a tree well suited for ornamenting grounds, and is very striking in its profusion of creamy flowers. The only drawback in it is that it has a very unpleasant odour, and, therefore, although we like it, we could hardly advise our readers to plant forests of it, or even to plant it too close to their windows.

A various-coloured Laburnum.—On walking on June 3rd through the shrubberies at The Tile House, Denham, Buckinghamshire, we came upon such a remarkable-looking Laburnum tree that I got my gardener to break off one of the higher branches, in order to send it to you. As you will see, three different blooms are thriving on the tree, which is a full-grown healthy Laburnum. About half the tree is salmon colour, the rest yellow, with here and there tufts of the purple bloom. Can the tree have been grafted in its youth in so many different places?—ELLEN E. WYLD.

*** Such freaks in the way of colour are by no means uncommon in the Laburnum. The salmon coloured variety is called Cytisus Adami, and is the result of a cross between C. purpureus and the yellow Laburnum. The purple is grafted on the yellow, and the salmon colour is the result of the union. M. de Candolle about eighteen months ago stated as the result of his observations that he had formed the opinion that it was not a hybrid but simply a degenerate variety of the Laburnum. Recently, however, a correspondent of the *Garden* pointed out that on his specimen, "both the yellow and purple Cytisus produce seeds, the red form never. The three varieties are about evenly distributed over the tree, and I have on several occasions cut off shoots about 2 feet long, on which the three varieties were perfectly developed. This seems to be opposed to the conclusion of M. de Candolle that Cytisus Adami is not a hybrid (graft or otherwise) between C. Laburnum and C. purpureus."—ED.

Lilacs.—From Mr. Stevens, of Byfleet, we have received a beautiful group of Lilacs, which we think the most charming shrubs in flower at this season. They have been particularly good this year. People generally only grow the common Lilac, forgetting altogether that there is a variety of really good kinds, mostly raised in France and on the Continent. Many of these come very near each other, but there certainly are at least a dozen well worth a place, and distinct in colour. A new double one has been raised lately, which, like the double Wistaria, is not worth a farthing, so far as we have been able to judge of it up to the present. To grow the best of these Lilacs, and to grow them in a fair way, not crowding them in a shrubbery, but giving each plenty of room and grouping them nicely together, would be one of the best things one could do in the open air garden.

Shrubby Mallow (Hibiscus syriacus).—Some years ago on the 1st of September, having just arrived at New York, as I passed through streets of dwelling-houses, I was delighted with the magnificent bushes of H. syriacus, 9 feet or 10 feet high, laden with bloom, pink, lilac, and white, double and single, which adorned the door-yards, as they there call little front gardens or lawns. Through Pennsylvania and Ohio it is a favourite flowering shrub, bearing much harder winters than we ever experience in these islands, and also warmer summers. Do they need the latter to bring them to such perfection? The Americans call them Altheas.—AIDYL.

Pink Hawthorns.—Mr. Stevens, of Byfleet, sends us a beautiful group of pink Hawthorns; one very pale variety, with a white centre, which is called carnea, seems to us very distinct and beautiful. We need not mention Paul's and the other well known kinds which are known in nurseries under the name of punicea. Paul's double scarlet is by far the best of the double kinds, the flowers lasting so much longer on the trees.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, June 15th to 20th.

Potting young Primulas, and placing them in a cold frame where they can be kept close until established. Planting out Walcheren, Snow's Winter White, and White Cape Broccoli. Sowing Champion of England and Nonpareil Peas and French Beans; also London Coleworts and Incomparable Cabbage. Planting Asparagus; also Celery in trenches for main crop. Putting in Lavender cuttings out-of-doors under a handlight. Thinning Onions, Carrots, and other root crops. Sowing Giant White Cos and All the Year Round Lettuce. Potting Stocks, Asters, Alyssums, Lobelias, and Calceolarias for room and conservatory decoration. Sowing Chicory and American Cress. Planting Scotch Kale, Fearnought Cabbage, Savoys, Broccoli, and Vegetable Marrows.

Watering, thoroughly, outdoor Strawberries that are swelling their fruit, and afterwards covering the ground with short Grass, in order to keep the fruit clean. Nailing in shoots of wall trees, and removing all curly leaves infested with insects. Potting Musk plants for autumn use; also Lady Plymouth Pelargoniums. Sowing Shilling's Queen and Atkins's Matchless Cabbage, and various kinds of Endive, Lettuce, and Radishes, also Golden Ball and American Redtop Turnip. Thinning Apples, Pears, and Plums. Layering British Queen Strawberry runners for next year's forcing. Sowing Canadian Wonder and Long-podded Negro French Beans. Striking Peas and getting them earthed-up. Thinning Turnips and Spinach. Sowing Coleworts and Savoys. Dividing and planting out double Daisies. Clipping Box edgings. Mulching Peas with rotten manure.

Shifting Chrysanthemums into their flowering-pots; also Achimenes. Sowing Silene pendula and Forget-me-nots. Turning gravel walks to give them a fresh appearance. Nailing in all the leading shoots of Plums and Peaches, and giving the latter a good washing with the garden engine every evening to keep down red spider and other insects. Cutting back Ivy where overgrowing windows. Gathering green Currants for bottling.

Work in the Town Garden.

BEDDING OUT should now be nearly, or quite, got through with, though it is not at all too late to fill up beds or spaces still remaining

Flowering Ash (Ornus europæa).

vacant, or to use up any surplus stuff, if space can be found for it. Great attention should be given to all recently-planted stuff, especially such things as Asters, Stocks, and others of a soft nature, which soon flag badly if not supplied with moisture. If hot sunshine occurs within four or five days of planting these, or before they have got hold of the fresh soil around them, the plants should be shaded by some means, which will greatly assist in giving them a good start. It is much better, however, to defer planting, if possible, until a dull, showery period occurs, or seems probable. In any case, all freshly planted things should have a thorough soaking on the evenings of all hot, dry days, or whenever they seem to require it, leaving the plants all dripping, and the surrounding air laden with moisture; this will be of the greatest benefit, and in hot, forcing weather causes a rapid and luxuriant growth all round. Look well after the stock of Dahlias. Keep all insects, &c., at a distance, and keep the plants well supplied with water. African and French Marigolds are well worth attention in the town garden. If none are in hand, procure and plant a few at once, remembering that the African attains something like the proportions of a Dahlia, while the French are dwarf and bushy in growth. Nicotiana affinis is deserving of a place in every garden; it grows very freely planted out in a bed of good soil, and its large white, deliciously-scented flowers give a fine effect, especially in the twilight of the long summer evenings, when they are fully expanded. A plant that is now making a brave show in town gardens is the common Thrift (Armeria), of which there are two varieties, differing only in height and strength of growth. It is a pretty thing, though quite old-fashioned, and does well anywhere.

THE DECORATION OF OUTSIDE WINDOW-SILLS by means of well-grown plants in pots or boxes is a matter that requires, and often receives, a considerable amount of care and attention. The present being about the time for getting this sort of thing done, a few remarks upon the best way of going to work may not be out of place. Firstly, it may be taken as a general rule that it is much better to put the plants in a box of some kind than to simply stand the pots on the sill, as is often done. On a shady aspect this is not of so much consequence; but if flower-pots—especially those of small sizes—are stood fully exposed to the summer sunshine they naturally become quite hot, often so much so as to be unbearable to the hand, after a strong sun has been acting upon them for some time, to the great injury of the tender rootlets coiled round the inside of the pot. Again, another consequence is very rapid evaporation, necessitating such frequent waterings that the goodness is soon washed out of the soil, and the plants become starved and sickly. A much better plan is to have a box, which should be 5 inches or 6 inches deep, and should fit the window as nearly as possible, to fill this with good loamy soil, providing sufficient drainage by means of holes in the bottom and a thin layer of crocks over these. In this soil the plants are put out, and may be either small stuff from 3-inch pots (60's) such as is generally used for bedding-out, or even good sturdy "box-stuff," which may be purchased very cheaply; or else large strong plants from 5-inch or 6-inch pots, just coming into bloom; these will, of course, produce a show almost immediately. The only objection to this planting-out system is that the plants often grow too freely, and become rank and over-crowded, while if one or more from any cause die or go wrong it is some time before its place can be filled up. In our opinion, which is the result of a good deal of practical experience, the best way of all is to have the box filled with Cocoa-nut fibre refuse, and simply plunge the plants, pots and all, in the fibre. If regularly watered, this will always be in a moist condition, and maintain the pots and the roots contained in them in a constantly moist and comparatively cool condition to the great benefit of the plants. These should be in pots, 5 inches or 6 inches across, and should be sturdy, well-grown stuff, just coming into flower, not in full bloom, or at all past their best. If kept well supplied with water, and fed with liquid manure when the roots are too numerous to obtain sufficient nourishment from the soil, they will go on growing and flowering most of the summer, and if any should go out of bloom, it is the simplest thing possible to lift out the plant and put a fresh one in its place. Above all, avoid buying, for this purpose, the market-grown plants from costermonger's barrows in the streets. These are almost invariably young stuff grown very quickly in high temperature, and fed up to the last degree with strong stimulants. Such plants have no stamina, and when removed from the artificial atmosphere in which they were grown, and deprived of their accustomed "physic," speedily lose all their bloom if they do not droop and die outright. There are exceptions, of course, but the above is the rule; on the whole, home grown plants are the best, but if these are not available, go to a good local nursery, and choose plants, not too forward, that have not been forced or fed up. The most useful subjects for window decoration are Zonal Geraniums, both single and double, whether of common scarlet and white kinds or the choicer named varieties (and, by the way, a window full of really first-class double zonals, carefully selected and arranged as regards colour, and well-grown, produces a very fine and rich effect), Fuchsias, Calceolarias (shrubby), Heliotropes, Lobelia, Musk, Petunias, Pelargoniums (show and fancy), Coleus, Balsams, &c. The Pelargoniums, though very showy and much employed, do not, as a rule, continue in bloom so long as Geraniums, Fuchsias, &c., though a few are very continuous bloomers. However, as they are very effective,

especially in large windows, they should not be omitted by any means, and their places, when past, are easily refilled. Where the boxes are wide enough to contain more than one row of plants, the tallest, as Fuchsias, should be placed behind, and the dwarfer growers in front; while a few plants of some long growing Lobelia, the pretty scarlet Tropæolum, "Fireball," drooping Campanulas, or hanging Fuchsias, or Petunias, placed along the front, will droop over the box, and give a very graceful effect. B. C. R.

Glasshouses.

Herbaceous Calceolarias.—Any of these that show marks of superiority in habit of plant or form and marking of the flowers should be placed by themselves, and kept for purposes of propagation, as well as for seed saving. By selecting individual plants in this way the strain may be continually improved, but in all cases remember that a vigorous, healthy constitution is of the first importance, so that the plants are able to make plenty of stout foliage, for without this the flowers, however perfect, are of no value for general decorative purposes.

Kalosanthes —These strike readily, and stocks should be propagated yearly. Cuttings will root if merely laid on the surface of the soil in a greenhouse or pit. The best way is to put single cuttings into small pots filled with ordinary loam and sand. Select from established plants moderately strong shoots that have not set any flowers, and they will root in a fortnight if kept a little but not too moist. In preparing the cuttings all that is necessary is to make a clean cut at the base, and to strip off the leaves of the lower portion that is inserted in the soil. When well established in small pots move them into others about 4 inches in diameter, which will be large enough for this season. They will make good flowering plants in two years. During summer they will succeed in an ordinary greenhouse or pit, giving them enough water to keep the soil in a healthy condition. To have the flowers highly coloured the plants require to be placed in the open air just before they begin to open. Give them the north side of a wall where they will get plenty of light, but will not be exposed to the mid-day sun.

Cockscombs.—A sowing should at once be made of the feathering Cockscombs (Celosia pyramidalis). Where there is a good strain of this elegant feathery Celosia, comprising the brightest shades in yellow and pink to deep crimson, and the plants are well managed, there is nothing more beautiful. The small side branches of the flower-spikes are most effective when mixed with any combination of cut flowers. The length of time during which they will last either in a cut state or on the plant is not the least valuable property which they possess, but to prevent their getting tall and leggy, they should, from the time when the seedlings first vegetate, be subjected to plenty of light, and receive as much air as can be admitted without the atmosphere of the house or pit being too much dried up.

Balsams.—When these are allowed sufficient head room, with timely shifts into pots big enough to admit of due extension of the roots, they have a very different appearance from the starvelings too often met with. Both Balsams and Cockscombs enjoy a liberal application of manure water after they have begun to grow away.

Oranges.—While in full growth the plants should have frequent applications of manure water, in which soot ought to be an ingredient, as it is distasteful to worms, usually so troublesome in the soil. Where Oranges are grown in more or less warmth, one of the principal things requiring attention is keeping down scale and mealy bug, which seriously injure the foliage.

Flower Garden.

Roses —A good deal of attention as to cleaning from aphis and maggots should still be given to Roses; copious waterings in dry weather and surface mulchings, which keep the plants in vigorous health, will do much to prevent the attacks of parasites. Climbing Roses should be kept well secured to their supports, and the old flowers should be regularly cut off, an operation which will assist in the production of a second bloom. Those who prefer perfect blooms to a multitude of small ones must disbud freely, leaving the centre bud and taking off the smaller ones. In case the premier bud gets eaten or otherwise damaged, it will be necessary to leave the largest and most healthy side bud. Suckers, both on the Brier and Manetti, must be kept down; they always come off freshest after a shower or early in the morning. In damp, cloudy weather liquid manure should be applied.

Flowering shrubs.—All seed vessels should be picked off the earlier varieties of Rhododendrons, straggling shoots pruned in, and grafted kinds examined, with the view of removing stock shoots and root suckers. Any plants moved in the autumn and winter should still be kept mulched, as that will obviate the necessity of watering. Lilacs, Spiræas, Weigelas, Broom, Gorse, and others that have done flowering, should, if needed, either through restricted space or to ensure the keeping of the plants equable as regards growth, be pruned into the required form. Keep the clumps free from weeds by means of surface-hoeings.

Climbers.—Clematises and other climbers should be closely trained in; they also need plenty of water at both root and top, more particularly those plants that are growing close to buildings and under over-hanging projections where the rainfall cannot reach them. Supports should be placed to Sweet Peas, Scarlet Runners, Canary Creepers, Convolvuluses, and every other kind of annual climber, before there is any risk of the growth getting matted. Such plants are alike useful for festooning, or drooping over ledges of rock or root-work, but even in these positions it is necessary to occasionally go over them to single out, and, if needs be, to cut away portions of their growth.

General work should now be the finishing of bedding out and removal of every trace of untidiness. Trim or peg into form every kind of plant that will look the better for such manipulation. Pinch the flowers of Calceolarias, Violas, Verbenas, Petunias, and Pelargoniums, to ensure their earlier and more vigorous establishment in the soil. In the early stages of growth, Alternantheras and Coleus quickly resent artificial watering by refusing to grow at all; preference should therefore be given to mulching the beds with Cocoa fibre refuse; this renders unnecessary all waterings, except the first to settle the plants in the soil.

Fruit.

Grapes and Melons.—Thin the shoots and berries of Grapes as required; allow only one bunch to each lateral, and pinch the shoot at the second eye beyond the bunch. If the borders are indoors, see that they are thoroughly moistened. Syringe Melons twice a-day with clean tepid water; but if mildew be suspected, mix with it a little flowers of sulphur. Melons ripening require to be kept a little on the side of dryness. As the frames are now cleared from bedding plants, the latest-sown Melons should be put in them. These will come in late in the season. The beds need not be made so substantial as was necessary earlier in the season; if a good supply of last autumn's leaves are at hand, they may be made of at least one-half of this and well-prepared manure. Three feet in depth will be enough.

Orchard house.—As they are cleared of fruit remove the early kinds of Peaches to a cool part of the house, or to a separate house. Thin out the wood from which the fruit has just been gathered, stop exuberant growths, and syringe well to free the foliage from spider. Vigorous young trees, which require a shift into larger pots, may either be potted as they are cleared of fruit, or they may be kept well supplied with water of a stimulating nature until the whole of the first batch is ready for overhauling. Keep them under glass and maintain a moist, growing atmosphere until the roots have taken to the new compost, then plunge in ashes in the open air; mulch to economise watering, and syringe overhead on fine evenings. Pay particular attention to the watering and syringing of all kinds of fruit trees in mid-season and late houses, and make sure of the water reaching the roots of those planted in the borders by mulching or forcing a basin round the stems. The best time to ascertain whether a tree wants water is just before the afternoon syringing, when a glance at the pot or the foliage will tell whether the roots are dry. Make the final thinning and shorten back the shoots where a sufficient number of promising fruits are swelling near home, and the shape of the trees can be improved thereby. Let the trees be well syringed soon after six on fine mornings, and not later than four in the afternoon. Open the ventilators when the temperature begins to rise, and let the time when the fruit is wanted be the guide in closing for the day. Late or unheated houses, which now in many places give a more certain supply of fruit than can be obtained from open walls, may from this time forward have the ventilators left constantly open until the fruit is ripe.

Vegetables.

Early Potatoes should now be earthed up, and if this operation can be done after a night's rain, they will be made almost independent of the weather, the soil added to the rows and the foliage together making a capital mulch. Early Broccoli raised under glass should be pricked out. 1 use 2 inches of Mushroom manure and a thin layer of soil, placing them in the alleys left for fruit trees by the side of the wall—generally a west one. The bottom, under such circumstances, is hard, and the Broccoli does no harm for the short time it requires the ground; in fact, in dry seasons the mulch actually benefits the wall trees. Keep a good supply of Lettuces tied up and plenty of small salads sown. Mushrooms more than anything enjoy a pure atmosphere. Outside beds are bearing here very well. Keep them damp by watering the covering of the bed, letting the water soak through the straw slowly, but surely. Tomatoes should now be planted out; bear in mind they want good sound loam, but not much manure. It is a question whether we do not, as a rule, use too much manure. If Tomatoes require any assistance after the fruit is set, they will show it by their looks; and if so, give them a couple of good waterings, either with manure water or guano; one pound of the latter to thirty-six gallons of water is sufficient. In localities not favourable to the growth of Tomatoes, or where a difficulty has been experienced through attacks of disease, it would be advisable to grow some in frames. If the plants are put into 12-inch pots and plunged in the ground, and the frames elevated on bricks, so as to give increased head-room, good crops may be secured. The principal thing to be observed in their culture is to keep the plants sufficiently thinned and well tied out, not allowing them to suff r for want of water, and giving enough air to induce stout growth. R. G.

Flower and garden painting.—If anybody wants to see the degraded condition of what is called flower and garden painting he has only to go to the New Water Colour Society's Exhibition in Piccadilly; anything so feeble we could not believe possible in drawings that concern the various lovely things of nature. The general impression is that of a mixture of mustard and green paint; with a few exceptions the display is terrible. There is some vicious system of drawing taught young artists that has not truth for its aim, and that prevents things being drawn correctly. The compositions, too, are, for the most part, purely conventional, such as we have seen hundreds of times in pictures, but never in nature—birds nests, flowers, and fruit grouped upon impossible Moss-banks!

Using hen manure.—The following extract from the *New England Farmer* may be useful to those readers who frequently ask for information as to the use of fowl manure:—I consider mine to be the best way to dispose of it, and I know that it will grow any crop as well as any commercial fertiliser, and at small cost. I have a large box, and a half barrel that I use to mix in. Take twenty pounds of ground bone, wet with water, to which add ten pounds of sulphuric acid, and stir until the bone is all cut up. Put into the box one barrel of hen manure, and, after thoroughly pulverising it, add one barrel of good earth or loam, and 200 pounds of ground plaster; after adding the bone mix thoroughly. After standing a day or two it is fit to use. There will be about three barrels of it, which is sufficient for ten acres. I have tried it beside leading commercial fertilisers and could see no difference. It costs here about 2 dols. per acre; probably nearer the city the material would cost less than it can be obtained for here.—H. C. B.

LILY OF THE VALLEY.

Mr. Hawkins, of Twickenham, a few days ago brought us some very noble bunches of Lily of the Valley, in which the flowers and foliage were of unusual size and perfection. Finding him disposed to be communicative we questioned him and elicited from him a few particulars as to the manner in which he produces such admirable specimens of this favourite flower. "In the first place," said Mr. Hawkins, "let me say that the original plants from which these fine flowers are obtained were those of the common Lily of the Valley, and were picked from a ditch and from woods at Woburn. The plants are arranged in beds 6 feet 6 inches wide and 200 feet long. Along the back and front of the bed we erect woodwork for the reception of the lights, and very careful attention is necessary in the early stages of growth, as if the lights are too close the plants draw, and if not close enough they do not grow at all. As growth proceeds very frequent sprinkling with water is necessary, and more and more air should be gradually admitted, until the lights are altogether removed. Then the plants are covered with cloths every night to keep the foliage free from frost; this is very important, as if once frost attacks the bloom the poor plants get curled up, and are soon spoilt. The cloths are spread on wires stretched over the beds.

"In very dry weather the plants require an immense amount of water, and in our nursery we have water laid on near the beds for the purpose. A succession of bloom is kept up without difficulty; we have been cutting flowers since the 28th of March, and the plants bear still. The soil is loamy, and in the beds a quantity of cow and horse manure, very short, mixed together and well-rotted, is worked. Manure is applied every autumn, and the beds require renewal every six years. They do not come into bearing for three years, and the beds from which the plants were gathered are five years old." Mr. Hawkins wished strongly to enforce the necessity for the use of cloths and lights, and pointed out the effect on the bloom of neglect in these matters. We give a life-sized illustration of Lilies of the Valley grown a few years ago by Mr. Hawkins.

Lilies of the Valley (life size) from plants grown by Mr. Hawkins, of Twickenham.

Flowers for graves.—A piece of flower border, with a dense mass of white Woodruff in full bloom, has suggested that that is a very appropriate plant for graves. Being of such close dwarf habit, any device, symbol, or form could be made. It is so hardy and fragrant, withal so free flowering, as to be literally a sheet of pure white, although I have culled a great quantity for a grave.—An Englishwoman.

Yellow Fumitory on walls.—This plant (Corydalis lutea) is accused of breaking down walls. I think this must depend on the formation, geological and structural. It has grown for years on the walls about the railway station at Lucan, even under the platform. They continue to stand, and it is not probable that the G. S. & W. Railway Company would sacrifice their property to beauty or romance by allowing it to remain.—Aidyl.

ROSES.

Rose, Celine Forestier.—This is a hardy, vigorous, and free flowering Rose. It appears to do well on most soils, but is, I think, most at home on a sunny wall, as it should be pruned much in the way of Gloire de Dijon. I used to grow this Rose in pots for forcing, and liked it much for that purpose. Well grown it has a nice appearance as a standard, the foliage being abundant and of a pleasing shade of green. Those who have large conservatories to embellish should make a point of growing a few standard pot Roses. They have a fine appearance among other things, and they do not need half the trouble generally given them. Liberal waterings and good feeding through the summer, with occasional top-dressings with some concentrated stimulant from the time they start into growth, will keep them healthy and vigorous for several years without the trouble of annual repotting.—J. C. B.

Tea Roses in the house.—After six years' experience of Rose culture in the house with great success, I will give my treatment of the Tea Rose. In the fall, I repot my Roses in good, rich earth, one-third well rotted barnyard manure, in two-quart common earthern jars. Cut them well back, and water. Then place them in a room, upstairs, with an east window, heated by a hall coal stove, never exceeding 50 degs.; every fine day leave the window open. When buds commence to show themselves, give them a good drenching with water. Do not water again for three or four days. I repeat this three times during winter, and have always lovely buds, blossoms, and foliage, which is beautifnl in itself. I have no insects until April or May, when there are a few aphides. In June, cnt back again, and place in a rich border, where they blossom until I take them in. I have only lost two plants in six years.—*Vick's Magazine.*

REPLIES.

13636. — **Worms at the roots of Rose trees.**—The worms are merely attracted by the moisture. Standard Roses will not do at Forest Gate. It is a good light soil on gravel, and the climate dry, consequently Roses should be grown on their own roots as bushes, with a preference for Teas, Bourbons, and Chinas, to the exclusion of the Hybrid Perpetuals. The locality is much too near London, and too much in the track of prevailing winds for Roses to keep on anything but a struggling existence in any form, and especially if budded or grafted. If "G. E." is so fond of Roses that he cannot allow Lilies and Carnations to supplant them in his affections, he should procure some bushes of strong-growing kinds on their own roots. Glory of Waltham might do among Perpetuals, Aimée Vibert among Noisettes, and Gloire de Dijon among Teas; Cheshunt Hybrid and Brennus will do for climbers, and the old Albas and Damasks as bushes; the Old White, the Maiden's Blush, Madame Audot, La Séduisante, Madame Legras, Madame Zœtman, Madame Hardy, La Diadème de Flore, and La Ville de Bruxelles are the best Roses for any garden within reach of the London smoke.—J. D.

—— Worms would not injure Rose trees, but an over dose of liquid manure would. Roses should be planted in good, deep, loamy soil, well drained, some manure being dug into it before the Roses are planted, and, besides this, a dressing on the surface around the stems should be given. So far as this season has gone yet, no water of any kind has been required. Giving plants liquid manure, or water of any kind, when they do not require it cannot do any good, and may do harm. Water with clear lime-water to destroy the worms. Standard Roses are not to be recommended; they degenerate very often after the third year, and the suckers they produce cause much annoyance.—J. D. E.

—— The worms near the roots of your Roses need not be the cause of any anxiety, for, unless

they are there in most unusual numbers, they will do no harm. Your Roses are, no doubt, in the same condition as many more Standards—weak and altogether unsatisfactory, the result of the Rose being on an alien stock, and the form altogether unsuitable to many tender varieties of Roses. You appear to treat yours very considerately, which is the more vexatious. I should advise you to try Roses on their own roots, and allow them to grow into large bushes, and to a great extent leave off pruning them.—J. C. C.

13685.—**Budding Roses.**—The quotation you make with reference to picking out a portion of the wood from Rosebuds is difficult to reconcile with practice; for in attempting to pick out the thin slice of wood, it generally comes ont altogether; and, therefore, to leave a portion of it with the bud is almost impossible without manipulating upon the bud much more than is desirable. I always take out all or as much of the wood as will leave the bud, with one dexterous jerk. If any remains I let it alone, because I am quite satisfied that the bud will grow as well with the wood as without it. Nevertheless, I always advise the removal of the wood when it can be removed without injury to the other part of the bud.—J. C. C.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

13718.—**Propagating Cinerarias.**—Will any reader kindly tell me when and how Cinerarias should be propagated by cuttings or division?—Max.

13719.—**The hardiest Cucumbers.**—Hints as to how best to grow the hardier Cucumbers for exhibition will be gratefully received by—D. C. B.

13720.—**Maiden-hair Ferns.**—My Maiden-hair Ferns grow well, but the foliage keeps very fine or tiny, not filling out well. Should the Ferns be close to the glass?—E. C. G.

13721.—**Clearing walks.**—Will anyone be so kind as to tell me whether salt is a good thing to lay on garden walks to kill weeds, or is it injurious to the Boxwood? What is the best way to get rid of weeds?—Mrs. L.

13722.—**Growing hardy Melons.**—I should be grateful for information as to the best way to grow these successfully. I can give any quantity of stable or artificial manure if required.—D. C. B.

13723.—**Double Narcissus becoming single.**—Will any reader kindly tell me how I can prevent my double Poet's Narcissus becoming single? Three large tufts in different places show this tendency this season.—T. V. B., *co. Meath.*

13724.—**Easily cultivated stove plants.**—Will any reader kindly give me a list of a few easily-cultivated stove plants, and state what the lowest temperature should be?—M. R. B., *Epsom.* *** *Mr. Baine's book will appear very soon.*—Ed.

13725.—**Maiden-hair Ferns in cool house.**—Will any reader kindly tell me the names of the Maiden-hair Ferns most suitable for a cool greenhouse, and state whether they should be placed on the stage or under—Ignoramus.

13726.—**Gloire Rose after flowering.**—Will any grower of Roses in pots tell me whether, after a Gloire Rose has finished flowering (in a greenhouse), it should be repotted; what sort of soil should be used, when should it be pruned, and how should I do it?—Acacia.

13727.—**Garden labels.**—Having bought some zinc labels, I wrote the names on in ink, but find that they rub out. I should be much obliged if any reader would tell me with what I should write the names on, so that they would last.—Xenia.

13728.—**Rating greenhouse.**—Will any reader who has had experience in this matter inform me whether a corporation can make mo pay rates for a small greenhouse 4 yards by 3 yards? The foundation is laid on the surface, and it is built on wood.—T. W.

13729.—**Growing Grapes on spur system.**—Would "J. M., South Hants," or any other reader, kindly give us a paper on growing Grapes on the spur system? I have bought two young vines this spring, the stems about 1½ inches round at 6 inches from the ground, and should like to hear all about the spur system, as some here say it is the best for cottagers who have had no practice with vines.—Inquisitive.

13730.—**Ants and Rose-buds.**—I find that ants have been eating the Rose-buds on some of my trees, and should like to know how to prevent them, as they almost destroy the bud. Will any reader who knows how to get rid of them give me the information?—Xenia.

13731.—**Procuring Gloxinia maculata.**—Will Mr. Douglas, or any other reader, tell me where I can get this? I have tried several nurserymen, but without success.—D. C. B., *Oban.* *** *This is a nice little plant, which will, we believe, soon be increased and sold by nurserymen, if they have not got it already.*

13732.—**Treatment of double Narcissus.**—Will some one kindly tell me why my double white Narcissus plants, with plenty of buds, die in the bud? Last year I was told to water them; this spring there has been plenty of rain; the leaves look healthy, but the flowers wither before coming out.—Sophia.

13733.—**Gladioli from seed.**—Will any of your correspondents kindly tell me how to propagate choice Gladioli from seed? 1, How to save the seed from the flowers; 2, How to sow and grow it; and 3, How soon may I expect the first flowers from the seedlings?—Vectis.

13734.—**Passion-flower leaves turning yellow.**—Will any kind reader inform me why the leaves of my Passion-flower and French Honeysuckle turn yellow and fall off? They are in a cool greenhouse, where a small gas-light is burning continually. Would too small pots cause this, or lack of sunshine?—

13735.—**Chimonanthes fragrans not flowering.**—I have a Chimonanthes fragrans against a wall facing south-west, which, though healthy, never flowers. Will any reader who has observed this plant tell me whether it ought to be pruned, and what aspect it should have?—A. D., *West of Ireland.*

13736.—**Single Chrysanthemums.**—In a good many of the flower catalogues this season single Chrysanthemums are much extolled. Will any Chrysanthemum grower tell me what are their recommendations? Do they flower as freely, and at the same time, and have they as great a variety of colour as the double ones? Further, do they require the same cultural treatment?—Mrs. L.

13737.—**Diseased Rose tree.**—I have a Maréchal Niel Rose tree, the stems of which are covered with a large reddish-brown insect from top to bottom. The disease is called the "brown scurf." It has also green fly. Will "J. C. C.," or any other reader, kindly tell me what I can make use of to destroy these insects, for I have tried several plans, but cannot get rid of them?—Nemo.

13738.—**Apple tree roots eaten away.**—My Apple trees were planted three years ago, and now the roots are eaten away, so that the trees can easily be pulled up bodily. People here say it is done by a sort of mole. Will any of your fruit-growing readers tell me what the real cause probably is, and what is the best way of preventing further mischief?—Mrs. K., *Cologne.*

13739.—**Tomatoes not setting.**—Can any of your readers kindly inform me why the bloom of strong healthy Tomatoes do not set? In 1883, 600 lb. were grown in the same house from the same variety of seed—Hathaway's Excelsior and Ne Plus Ultra. Last year the crop failed in the same way—viz., plenty of bloom, but the fruit did not set.—Henry, *Yorkshire.*

13740.—**Woodlice.**—Will any reader kindly tell me the best way to get rid of woodlice? They are particularly troublesome in some pots of British Ferns, living among the stones in which they are planted. A beautiful potful of Asplenium Trichomanes they have destroyed. Would any of the insect powders kill the lice without hurting the Ferns?—G. R. Dawson.

13741.—**Growing Lily of the Valley.**—Four years ago I planted in good and bad soil two beds of Lily of the Valley. They both have leaves, but few flowers. Will any experienced grower kindly tell me what is the reason?—Gardener. *** *See our notes from Mr. Hawkins. Probably some of our readers who succeed well in growing these flowers in the open air will also assist you.*—Ed.

13742.—**Spiders in greenhouse.**—My greenhouse (a wooden structure wholly) is infested with small spiders, which depend from almost every plant and spin their webs between them. I do not syringe the plants much because the leaves become browned with the sun afterwards, and the flowers get spoiled. Can any reader suggest a destroyer for these pests? The spider is not red, but a darkish colour, and yellow on the under surface of the body.—Nemo.

13743.—**Clematis not flowering.**—I purchased a scarlet Clematis last year. It grew freely to about 2 feet long, and then gradually died away without flowering. This season it started into growth, and looked healthy till it grew to about the same length as last year, and, as then, died away. I have examined the root, and found it in a healthy condition. It is in a cool greenhouse, and carefully tended to. I shall feel obliged to any reader of Gardening who could tell me the reason of this.—J. C. T., *Scilly Isles.*

13744.—**Blight on Gooseberry and Currant bushes.**—Will any grower of bush fruit tell me whether the best cure for blight on Gooseberry bushes is to pick off the ends of the green shoots when the blight appears? Will this prevent the blight descending to the fruit, and is there any advantage in picking off the ends as soon as the shoots have made a sufficient growth and before the blight appears? Can the same treatment be adopted safely with Currants, particularly Black Currants? Both sorts of fruit in my garden get badly blighted every year, the Black Currants perhaps the worst.—E. T. D.

13745.—**Making soot-water.**—In describing the manufacture of soot-water several of your correspondents refer to its colour. One says it should be like tea, another like ale, and a third dark brown. Now, I have tried all the methods recommended, making it with hot water and cold water, with lime and without lime, in a bag and without a bag, with rain water and the ordinary town water, keeping it once before using more than six weeks; but I have never obtained a tinge of colour except what arises from the presence of stray particles of the soot itself. Would some of your readers kindly say whether the brown colour is essential, and if there is any fertilising power at all in the colourless soot-water which I get?—W. T.

13746.—**Poisoning birds.**—Will anyone kindly tell me whether I could legally poison pigeons that destroy my Peas?—F. M.

13747.—**Gnat bites.**—Can anyone of your readers tell me a preventive of gnat bites? Under trees these insects are exceedingly annoying. Smoking, I have heard, is a remedy, but for ladies, whom they especially annoy, this is impracticable.—Gardener.

13748.—**Raising alpine Auricula.**—I recently sowed a box of alpine Auricula seed and placed it in a cold frame with a sheet of glass over the box to keep the mould evenly moist. A colony of ants have taken possession, and I suppose I have no alternative but to throw the contents of the box away and try again. The seeds have not germinated, but there has, as yet, been hardly time. Will any Auricula grower tell me whether my way of sowing this seed is the right one, or would they be better sown in the open ground with or without a frame, and in a sunny (or shady) situation?—E. T. D.

13749.—**Plum tree failing.**—Will "G. S. S.," or any other observant reader of Gardening, tell me the cause of a Victoria Plum tree losing all the top branches? Last year one large branch went off; this year two more have gone. The leaves become of a peculiar leaden colour. The three lower branches are loaded with Plums even now; but I fear a worm or insect of some kind is eating into it, as I see a gum oozing out from the trunk here and there. I once dug or probed out a dark-headed worm from an Apple tree, and fancy it is something of this kind. I value the tree very much, and should be obliged for instructions how to save it. It is a large standard tree in the open.—Mabor.

13750.—**Geraniums turning yellow.**—I have a conservatory leaning to the side of my house, which catches the sun nearly all day. It is 20 feet by 14 feet, with sloping stage, the roof glass, and one end, which catches the morning sun, is of thick-ribbed, ground glass. It is heated properly with hot-water pipes (and which, of course, are only used in winter). All my Geraniums put up small stems, and dwindle off yellow when in bud, and if they do open the flowers are the smallest possible, being no larger than a threepenny-piece. No matter how good the plants are when put in, they all dwindle away in this manner; in fact, nothing at all does well except Ferns. Is it likely that the glass would cause this, as I cannot in any way account for it, as it kills everything? If any reader will kindly tell me how to change this state of things I shall be greatly obliged.—X. A.

13751.—**Spring-bedding.**—"Marie" would be very glad if anyone would tell her a good spring-bedding plant. She has used Myosotis and Silene pendula, but does not find the latter answer; it is only now coming into bloom, and has to be pulled up for summer bedding. *** The day we had your note we saw a garden with many scores of lovely hardy flowers in bloom—a perfect Paradise of flowers. How anybody can be modest enough to be looking out for only one spring bedding plant in the midst of such riches is curious to us. There are a dozen plants or so among Nemophilas and annuals generally that will suit you, and of which you can find a list in any catalogue; and we would urge you at this season to go to various gardens and nurseries and see a number of the beautiful things that you can have, and which will live on with you from year to year. Of course you know it is the rule with all who grow spring bedding annuals, and even Wallflowers and the like for bedding out, to pull them up at this time of the year, and unfortunately leave their beds in a scarecrow condition exactly at the time when all nature and all good gardens are brimming over with verdure and beauty.—Ed.

13752.—**Grapes cracking.**—I have a Foster's white Seedling Grape, and have now a splendid show of fruit; but every year about this time the berries crack open, and after a few days they become fusty, and I lose the best part of the bunch. It is when they are swelling that they crack, and I should be glad if any Grape-growing reader would give me advice. There is a good shade from the leaves of the vine. Would any thicker shading help them?—Subscriber. *** The variety Foster's white seedling does not usually crack when the berries are swelling. It is doubtless caused by the too rapid development of the fruit after stoning, the skin not expanding in unison with the fleshy part. As soon as I see any fruit begin to crack when it is colouring I stop it by cutting a notch in the lateral, between the bunch and the main stem; this stops the flow of sap partly, and generally the evil is mitigated, if not entirely averted. Mr. W. Thomson, a noted Grape-grower, of Clovenfords, near Galashiels, advises making a hole with a gimlet in the stem instead of notching it.—J. D. E.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13753.—**Bedding out Begonias in exposed position** (*A. D. O.*).—Bed them out as soon as possible. Protecting the plants for a few nights if cold.

13754.—**Sowing East Lothian Stocks** (*J. W.*).—Sow in the open next month. An article on the subject will be published very shortly.

13755.—**Keeping pigeons from Peas** (*F. G. M.*).—You say you have tried netting, but to no purpose. Try the effect of a cat; but we fear nothing short of destroying the birds will be quite satisfactory.

13756.—**Getting rid of Sow Thistles** (*Lough*).—The simple and proper way is to hoe down at once and dig them in. Dig them in if you can, but in any case hoe them down.

13757.—**A gawky Abutilon** (*Acacia*).—The best way is to cut it down boldly, and at once, to within about a foot of the pot. It would, perhaps, have been better done earlier, but the plant is not worth having in its present state.

13758.—**Vine leaves, and Names of Plants** (*An Anxious One*).—We have not received your plants. Letters should always be enclosed in the parcels to which they refer. We receive large numbers daily, and correspondents should remember that identification is impossible if not a word accompanies their specimens.

13759.—**Treatment of Lilium auratum** (*E. C. G.*).—Place it as near the glass as possible. Remember that Lilies when in a very active state of growth require abundance of water, provided the pots are well drained.

13760.—**Book on greenhouse and conservatory management** (*Mrs. Gonge*).—Mr. Baines' book on greenhouse, stove, and fine-foliaged plants will be the most suitable for you. It will be published very soon.

13761.—**Shoots coming out below the graft** (*C. W. W.*).—The stock is not quite content with its repression by the scion, and therefore takes the liberty of sending out a strong shoot now and then. To remedy that you have only to remove them.

13762.—**Hydrangea foliage dying** (*A. Brown*).—The leaves seem "scalded," but to give you good advice it is necessary that we should know the conditions of culture. Could you not show it to some good gardener in your neighbourhood?

13763.—**Growing Gladioli and Dahlias** (*Scotch Amateur*).—Do not associate Dahlias and Gladioli. Although both would do in fair garden soil, gardeners get a better result by giving the Dahlias a good dressing of manure. The Gladioli do admirably with sweet free loam, without any fresh manure.

13764.—**What is a good Vegetable Marrow?** (*Palmam qui meruit ferat*).—Vegetable Marrows for exhibition should be young and uniform in size. In all cases judges should select those that are most suitable for the table when cooked. It is a great mistake to think that the largest are the best. Vegetable Marrows vary very much in size, so that no criterion as to size can be set. They are at their best when half or three-parts ripe.

13765.—**Growing Giant Gourd** (*D. C. B.*).—Plant out as soon as possible on any rich heap of refuse, old manure, or the like, in a warm place, where the full sun will be enjoyed. Give plenty of water in case the heap on which you plant should lack moisture. Through the warm season Gourds may be grown on the ground or on low walls. We know a case where beautiful effects are got by training the shoots over the roofs of low sheds.

13766.—**Dracenas in glazed pots** (*E. A. K.*).—We have not had much experience with glazed pots, but given good drainage and good soil we believe plants would do quite as well in pots less porous than those in which they are usually grown. The question is of little importance in any way; experiments made years ago proved that plants do perfectly well in slate pots. The soil gets sufficient aeration from the surface and drainage.

13767.—**Raising Myrtle and other half-hardy plants** (*Geo. L. Barley*).—If you are sowing so late as the present time the natural heat of the soil in a cool frame or even out-of-doors would be sufficient for the germination of such plants. At any other time less favourable as regards temperature, what gardeners call a gentle bottom-heat would suit well—such heat as might be generated in a mild hot-bed or greenhouse near the glass, or pit, or any of the simple propagating contrivances now obtainable.

13768.—**Gooseberries diseased** (*Mrs. B.*).—The Gooseberries are suffering from a very virulent attack from a parasitic fungus named Æcidium grossularie. The fungus is unusually prevalent and destructive this year. To prevent a repetition of the attacks the safe plan is to collect all the diseased leaves and fruits and burn them. The same fungus often destroys Currants, and at times it invades the foliage of the red-flowering Currant.—W. G. S.

13769.—**Diseased Jargonelle Pear** (*E. M.*).—Do you refer to shoots pushing below the graft? Because, if so, they are not Jargonelle shoots, but those of the stock on which it is grafted. You give us no particulars of the conditions under which the tree grows, and you do not state your county. Under the circumstances the best advice we can give you is to show the tree to some good gardener. The leaves are probably attacked by some blight or insect, but as you do not send us any we cannot help you.

13770.—**Cutting back Weigela** (*G. R. Dawson*).—Cut out only the old shoots, so as to prevent overcrowding of the young growth. Prune in autumn, but we never like to see such beautiful shrubs as these so mutilated as they sometimes are. Remember that Weigelas always flower on the young growths, and therefore it is important to retain as many of these as possible. Doubtless you are aware that this is a perfectly hardy shrub, and will thrive in any part of the garden, even away from a wall.

13771.—**Sempervivums flowering** (*Mrs. R.*).—There is no definite period for Sempervivums to flower. They flower more quickly if the runners or suckers are pulled off so as to throw the strength into the main rosette. Keep them in the ground; never grow them in pots. *** *We must repeat our request that you should read our rules, which state distinctly that correspondents should write on one side only of the paper, and send different queries on separate pieces of paper. Your other questions will be inserted if you send them to us in the manner pointed out by the rules.*—Ed.

13772.—**Insects on Fern** (*A Subscriber, Waterford*). Your Maiden-hair Fern has insects on it—probably some kind of aphis; but they were so crushed in postal transit that we cannot be certain. Please send some more in a small box, with the address and stamp on a label tied on; the box will thus not be stamped on.—G. S. S.

13773.—**Large fungus** (*Mrs L., Blagdon, Somerset*).—The very large fungus is a gigantic and edible Morel found for the first time in Britain a few years ago by Mr. W. G. Smith. Its name is Morchella crassipes. In some recent books the name has been altered to M. Smithiana. It is probably rather rare, but since attention has been directed to the plant it has been detected in several places—chiefly in or near gardens.—W. G. S.

13774.—**Insects** (*Aidyl*).—The creature you forwarded is not a snake millipede, but a centipede or scolopendra (Geophilus longicornis). It is an animal feeder, and will not, I believe, injure your plants; its jaws are not fitted for vegetable food, having a poison gland like spiders. I should, however, watch them, and see if they do cause any injury to the plants. If in great numbers, and their natural food not plentiful, it is possible they might attack roots.—G. S. S.

13775.—**Raffia** (*J. H. B.*).—Raffia, or Roffia, is the cuticle of the leaves of species of Raphia. It is possible that the Raffia of commerce is furnished by R. ruffia and R. vinifera, as well as other species.—J. R. J.

13776.—**Aphis on Black Currants** (*H. C. Fitzpatrick*).—Your Black Currants are attacked by an aphis (Rhopalosiphum ribis), a common pest on Black Currants. Syringe your bushes with the following mixture:—1 lb. soft soap, 1 lb flowers of sulphur, dissolved in 10 gallons of water.—G. S. S.

13777.—**Vines unhealthy** (*W. L.*).—Probably they have rooted into the clay soil beyond the border. It is the nature of vine roots to push ahead through stubborn obstacles into bad soil. The only effectual remedy is to begin at the outer edge of the border and dig a deep trench, cutting through all the roots that have pushed beyond their limits. A considerable portion of the border itself may be removed carefully by forking out the soil and saving the roots. Get the roots up near the surface; replace the exhausted soil with some fresh loam. The vines, when at rest in winter, should be painted over with a soft soap and sulphur solution; it destroys mildew in its incipient stage.—J. D. E.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired.*

Beautiful trees (*G. Harding*).—Thanks; but, as a rule, we do not care to insert verses in Gardening.——Geranium buds dying (*E. C. G.*).—You do not state the kinds nor the conditions under which they are growing.

NAMES OF PLANTS.

Naming plants or fruit.—*We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*J. C. T.*—Mountain Clematis (C. montana grandiflora).——*Dr. Brodie.*—Cytisus tomentosus.——*A. H.*—Nicotiana glauca.——*Adept.*—1, Anthriscus sylvestris; 2, Caucalis daucoides.——*An English-woman.*—Yes; it is the Yellow Fumitory (Corydalis lutea).——*Flax Bourton.*—There is nothing special about the Forget-me-not. The Veronica is V. speciosa; the Rose seems to be Fortuno's Yellow.——*O. M. H.*—Double Saxifraga granulata (not Fair Maids of France) ——*H. Andrews.*—The British Holly Fern (Aspidium Lonchitis).——*Martha.*—Bird Cherry (Prunus Padus); Borage (Borago officinalis).——*W. F.*—Butterfly Orchis (Habenaria bifolia), not rare.——*T. Waite.*—We cannot name Pinks or sorts of Spinach.——*Mrs. R.*—1, Scilla peruviana; 2, Primula verticillata sinensis (Abyssinian Primrose). The other specimens are of the single and double forms of the common Columbine.——*South Devon.*—Apparently Tulipa Celsiana; Griselinia littoralis; Rhododendron fragrantissimum.——*S. M, M.*—Oxalis hirta (not a native).——*Kashmir.*—Please send us a specimen packed in damp Moss, so that it will not wither.——*Barthalomew.*—Variety of common Columbine (Aquilegia vulgaris).——*Bagot.*—1, Azalea amœna; 2, Kalmia glauca; 3, Spiræa hypericifolia; 4, Bird Cherry (Prunus Padus).——*W. B., Worthing.*—Diplacus glutinosus.——*T. C. Stut.*—1, Berberis Darwini; 2, Laurel; 3, Double Cherry; 4, Ribes aureum.——*E. F. C.*—Apparently Orobanche minor (a parasite).——*R K.*—Variety of Azalea pontica.

THE KITCHEN GARDEN.

Runner Beans in succession have been recommended. We find one sowing most satisfactory and sufficient. We sow about the the end of April. Having started the Beans in the warmer part of the garden, we lift them to a situation sheltered by the house from the morning sun. In this partially-shaded position they suffer less from early and late frosts, and are not parched by the summer heat. We put two or three to a stake at intervals between between small Carrant bushes, running cords between the stakes and connecting them with a trellis. We frequently water them at the roots, especially through bearing time, chiefly with kitchen slops and suds. Our summer Beans are green and vigorous, when a closely-planted row in full sunshine in a neighbouring garden looks stunted and yellow. We pick the pods as fast as they become fit, before there is any string in them, give them away if we do not need them, and let none go to seed. We cook them without slicing, merely breaking the point and stalk end, and thus we have a better flavoured vegetable than the ordinary dish of watery sliced Beans. We have both ornament and plenty of produce at small cost.—Aidyl.

Summer Lettuces.—There can be no question that Lettuces to be crisp and succulent require to be grown without check from the first sprouting of the seed until pulled up for use, and the best way to ensure such a condition is to sow the seed where it is to remain and avoid transplanting, for, while plants are getting over the check occasioned by removal, those left undisturbed will be nearly fit for use. The best plan is to sow rather thinly in drills 1 foot apart, and as soon as the plants are large enough to handle to thin them out partially, and by pulling out the largest for mixed salads as they become fit for use a succession of crisp Lettuces may be kept up with very little trouble. The main thing is to have a deeply cultivated, well-enriched piece of ground dug up some considerable time before it is wanted for sowing, in order that the surface may get mellow and friable, for on loose, freshly-dug soil it is useless to expect Lettuces to grow freely in dry weather. A sowing of the Brighton White Cos and All the Year Round Cabbage Lettuces made about once a fortnight will yield a constant supply, and if the same course is adopted with Radishes and Mustard and Cress, there need be no fear of the salad supply running short, even during the driest periods of the year. Transplanting should be looked on as an evil to be avoided as far as possible in the case of such things as salading, in which the quicker the growth the better the produce.—J. G., *Gosport.*

Sowing Cabbage seed.—In this locality it is a very general practice to sow Cabbage seed in June, so as to have plenty of thrifty young plants ready for filling up Potato ground in July and August, and by this means an abundant supply of young Cabbages is secured for winter. The early, small-hearted kinds, like Early York and the Rosette Colewort, are great favourites in private as well as in market gardens, as they can be set thickly on the ground and produced a quantity of useful vegetable food from a small area; as frost is seldom severe enough in this district to injure Cabbages, they, to a great extent, take the place of the hardier kinds of Kales so much grown in the colder parts of the kingdom.—Hants.

REPLIES.

13631.—**Chou de Burghley.**—This being a cross between Cabbage and Broccoli is as easily grown as either. The treatment required is that of a good Broccoli like Snow's Winter White. It is quite hardy, and may be either sown early to come in in the autumn, or later to stand the winter. Sown in the open ground in April last year we had it fit for use in August and September. The flavour of the whole plant resembles Broccoli a good deal more than Cabbage. There is only one drawback in its cultivation, and that is that it is about the best-flavoured Cabbage grown, and every species of vegetable-eating creature finds that fact out but too quickly. Our experience of it was remarkable. It was sown in a small nursery bed amongst others of the Cabbage family, and all living creatures—birds, maggots, snails and slugs, "dropped everything and came." Out of a good packet of seed we only got some three dozen good plants, and there was great difficulty in keeping these clear of vermin. We only managed to get about a dozen heads. Scarcely anything else of the Cabbage tribe was touched by depredators. This year the plants have been sown under glass, and will be put out this week (beginning of June) with a good ridge of salt round the bed. Would Mr. Gilbert describe again the "crowbar" system of planting Cabbages and its advantages, described by him a few years ago either in the *Garden* or Gardening? I have great difficulty in persuading people to make the ground sufficiently firm for the Brassica tribe in this light land on chalk; they keep the land loose, and the plants tumble over and heart badly. A note from an experienced grower like Mr. Gilbert would carry some authority.—J. D.

13627.—**Growing Vegetable Marrows for exhibition.**—This is one of the easiest vegetables to cultivate. What it requires is a rich and deep soil. Dig a hole 4 feet square and 2 feet deep; put in 18 inches of decayed manure, and over it a foot of the best soil taken out of the hole. Plant (or sow seeds) in May in a handlight. We plant out the last week in May or first in June. The plants are first raised on a hotbed. The lights are removed in three weeks.—J. D. E.

13675.—**Australian Cress.**—Pick this Cress in the same way as you would Parsley. It will continue to grow and furnish young leaves for picking until it runs to seed. The time at which it will run to seed depends upon when it was sown. Generally speaking, three sowings a year will furnish a constant supply.—J. C. C.

INDOOR PLANTS.

THE VICTORIA HOUSE AT CHATSWORTH.

Although few of our readers are dukes, and few would care to devote a large hothouse to tropical plants, we think they will not see this graceful little picture without pleasure. The house contains the great Water Lily of the rivers of South America, a wonderful and beautiful plant, whose leaves are boats, and are built up and supported with a most wonderful series of little walled divisions on the under side, as a perfect lesson in engineering construction. The Victoria regia, being an annual, dies in November, when the water in the tank is drained off and the soil removed, and in Chatsworth the aquarium, stripped of all its summer occupants, is in winter filled with large Chrysanthemums, for furnishing cut blooms. The seeds of the Victoria Lily, of which a good stock is annually ripened, are preserved in vessels of water until sowing time comes round—generally about the middle of December, or between that period and January. The plants are potted singly and repotted as they advance in growth, until they have attained sufficient strength, when the best is planted out in a heap of fresh soil. At Chatsworth the Royal Water Lily luxuriates and flowers more freely than in any other place in the country, the largest leaves in summer measuring as much as 7½ feet in diameter.

INTERIOR OF THE VICTORIA HOUSE, CHATSWORTH.

Treatment of Tuberoses.—These should be potted singly in February in 5-inch pots, firmly in good rich soil, consisting of two parts turfy loam, one leaf-soil, and one part spent Mushroom-bed manure, road grit, or coarse sand, the whole incorporated well together; they are then plunged in a pit in which there is a gentle bottom-heat from leaves; they are not watered until they make a start, and then but very sparingly. When they show their flower-spikes, water of the same temperature as that of the pit or 10 degs. higher is administered more freely. The temperature of the pit should not exceed 55 degs., as during their early stages of growth they dislike excitement, and would probably make foliage at the expense of flowers. When the spikes are from 1 foot to 18 inches long, the plants are removed to a Vinery or Peach-house, and when in flower to the greenhouse. Later batches are simply plunged in leaves without peat. Under the foregoing treatment they may be had in flower from June to December. We use them very largely for button-hole bouquets, a purpose for which they are very suitable.—J. C. M.

WINTER FLOWERING PLANTS (BULBOUS).—XVIII.

Tulips

Come next, and, at the prices for which good bulbs can now be obtained, a gorgeous show may be had for a merely nominal sum. Few Tulips can be induced to bloom before the new year, but by careful treatment many of the Duc Van Thol class are brought in very early, and March sees a wealth of Tulip blooms brought into the market daily. Amateurs are often troubled with green-fly on their Tulips, which sometimes quite spoils them before they bloom at all. This is caused by too dry an atmosphere, and sometimes by want of sufficient warmth to keep the growth advancing properly. Growers for market plant their Tulips in boxes, with only 2 inches or 3 inches of earth, cover them over with fibre until thoroughly rooted, and then bring them, as required, into a warm moist house, where they stand on a comparatively cool bottom of damp ashes, but a brisk growing temperature above them soon induces a rapid growth, and when nearly expanded the blooms are either cut, taken to market, roots and all, and sold by the dozen, or potted four or five together into 5-inch pots, often with a small Fern in the centre, and a ground work of Lycopodium. Some of the London market-growers dispose of nearly a quarter of a million Tulips in a single season, and out of so large a number scarcely a failure, or a single aphis, can be seen. Even when in bloom, Tulips stand transplantation well, and, if carefully done, and well watered, will scarcely show any signs of having been disturbed, though, of course, the bulbs suffer subsequently—but this is of no consequence.

Snowdrops may be had a little earlier, cultivated in pots under glass, than out-of-doors; but the difference is not much, and they will not stand anything like forcing. The bulbs are potted, about a dozen in a 48 inch pot, in the ordinary way, and when well rooted brought on quietly in a cool house with plenty of light.

Crocus will not force at all, so need not be treated of. They may be grown in pots certainly, but will not bear a temperature of over 50 degrees—at least, until just on the point of opening.

In the next paper we shall treat of the culture, under glass, of the universal favourite, the Lily of the Valley. B. C. R.

A LIVERPOOL COTTAGER'S "FAIRY CAVE."

I herewith send you a drawing of a portion of my "Fairy Cave"—rather a romantic name for a rough building in a back yard of a Liverpool cottage. I know that many of your readers are placed like myself in a large town, surrounded by bricks and mortar, with a smoky, dirty atmosphere to contend against; the only space at our disposal to cultivate plants, a back yard of a cottage house, or, worse still, a window-sill of a court-house; yet with these and sundry drawbacks in the shape of prowling cats, mischievous children, and evil-disposed roughs, we do manage to get a large amount of enjoyment and amusement out of the cultivation of Ferns and flowers. It is in the hope that some of my fellow working-men will be induced to embrace the opportunity you have given, and enter into the Illustration Competition, that I send you this rough drawing, and why I venture to send it in this early stage of the competition is, because I am afraid that, as the summer advances, the drawings of so many grand things will be sent in, that our more humble ones will be nothing thought of, and may get crushed out. But I hope that will not be the case; by all means let us have the grand and beautiful, by which we may improve our taste and knowledge, but at the same time do let us have the competition of the humble cottage gardener, even if it be but the drawing of a window Fern case or aquarium, or the

photo of a group of plants or Ferns which have been grown on the window-sill of some obscure court-house. Let each of the competitors give a short account of how he overcomes the various obstacles opposed to his cultivation of plants in a densely populated town, because my experience has taught me that simply a country gardener's knowledge is not sufficient for such town gardening. I have had many plants killed by taking the advice kindly given me by country gardeners. For instance, place a potted plant out-of-doors in a country garden where the moisture rising from the ground, pure air, and sunshine will build up and strengthen the plant, and make it a thing of beauty. Put the same plant out in a town back yard, with the flags and bricks burning hot, and a dry parched and smoke-laden atmosphere, and the plant would soon become a dried-up and unsightly object.

To overcome these and sundry difficulties we town-bred people ought to help each other by giving our experience; that they can, to a large extent, be overcome I know. In my "Fairy Cave," I have had growing now for three or four years an Orange tree, which has flowered profusely, and once I let three Oranges come to perfection. I have two Gardenias just coming into bloom, the roof, &c., is pretty well covered with Hoya carnosa, Stephanotis floribunda, Clerodendron Balfourii, and Cissus discolor, all of which I have struck from cuttings kindly given me by gardeners. Ferns and Begonias do well with me. The reason I have not shown any plants in the drawing is because I wished to show the rock work which the plants and Ferns would, in a great measure, hide, also my economical way of heating. The "cave" is built against the kitchen wall; against which is the kitchen fire. I have had a boiler put in the wall, and the reservoir and flow pipes (much larger in diameter than any of the other pipes) are shown in the drawing. As we have always a fire in the kitchen the heating of the "cave" costs nothing.

When I want to exhibit to a friend I can turn on the water, and have a miniature cataract. The water falls into a basin in the rocks about 12 inches in diameter, 16 inches deep, and flows from it over the rocks into a miniature lake about 3 feet long, and from 6 inches to 12 inches wide, both places being good for keeping small fish, or growing water, or water-loving, plants. I have a Calla growing in the lake, also Water-Cress, Ferns, and Forget-me-nots by the side of it in the rock-work. The cave is 8 feet long, 8½ feet broad, and 8 feet high. The view is taken looking in at the front window—a very difficult place from which to take a drawing. If you think this will be of any interest to your readers I shall be pleased to give any one what information I can to enable them to make the back yard of a town cottage house more attractive. In conclusion, I may say that the cave is used by my girls to sit and sew in, by my acquaintances when they call upon me to smoke in, and by myself to read in. It is, therefore, not only ornamental, but useful. H. J. C.

*** *The drawing sent by "H. J. C." was not, unfortunately, clear enough to show plainly the attractions of the "Cave."*—Ed.

Dendrobium Wardianum and D. crassinode.—This genus contains some very beautiful species, and some that are amongst the most popular of Orchids. D. nobile is grown in almost every garden, and held in universal esteem; but were the question put to me, "What do you consider the best of all the Dendrobiums?" I would say D. Wardianum. Some Orchid fanciers prefer D. crassinode; but the largest number would select the first-named species as the best. They are very easily cultivated, and a number of other species and varieties require to be grown in the same way, such as D. aureum (heterocarpum), D. Ainsworthii, &c. As soon as the flowers fade the plants may be repotted, if it is thought necessary to do so. I do not grow them in pots, but in baskets or pans, keeping them close to the glass during the whole period of their growth. In fact they are so close to it, that the young growths as they advance come in contact with it; and the plants must be gradually lowered to prevent the growing points from being injured. I find this close contact with the glass promotes a sturdy short-jointed habit, and plenty of bloom the following season. It is the nature of D. nobile to produce its flowers not on the growth of the previous season, but on that of the season preceding it; while D. crassinode and D. Wardianum, produce the flowers on the previous season's growth. I never cut away any old growths while they remain plump; when they begin to shrivel they doubtless take something out of the plant; and had better be removed. The resting period begins as soon as growth is completed; water should be given freely during the whole period of growth, and the plants kept in a warm stove; they must now be removed to a cooler house and water must be gradually withheld. The resting period may be for two, three, or four months. By a little management any of these Dendrobiums may be had in flower for six months, if a sufficient number of plants be cultivated. Two or three of each may be put into heat at intervals of three or four weeks. The same treatment applies to D. nobile.—J. Douglas.

REPLIES.

13579.—**Layering Chrysanthemums.**—This is certainly one way of obtaining dwarf plants, and it is serviceable in the case of the strong-growing, large-flowered kinds, which may not be stopped late enough to cause them to become dwarf. All you have to do is to bend the branch down into the soil; cutting partly through the stem at a joint, peg it down, and water now and then in dry weather. By the middle of September they will form a bunch of roots, and may be lifted and potted; put them under cover, and see that they do not want for water, and sprinkle the foliage twice a-day until they make new roots. We grew some plants of Ethel in this way last season, and they did remarkably well, coming into bloom at Christmas, and being quite low of growth. A way coming into favour now, whereby dwarfer specimens are obtained without diminishing the quality of the blooms, is to cut the plants back down to the hard wood in the first week in June. It is asserted that quite as good blooms are to be had from such cut-back plants as from those which are allowed to run up without being stopped at all. Another method of obtaining dwarf plants only a few inches high, in 4½ inch and 6-inch pots, is to take off the points of strong-growing specimens about the middle of August. They are to be taken off about 3 inches long; dibble half-a-dozen in a 4½-inch pot in sandy soil, and place under a handlight in a cool place, keep close and moist, giving air for an hour every morning until roots are made. Then inure to the full air and sun and you will get little specimens about 6 inches high and bearing really good blooms. Only the small flowered kinds are suitable for such manipulation, the large flowering ones would not perfect their blooms under such circumstances.—Byfleet.

13621.—**Gloxinia maculata.**—This is a South American species introduced into this country so long ago as 1739. It is a noble plant, and when well grown very ornamental. In the first place, pot three large or fine small roots in a 7-inch pot, and place in a stove temperature. When they have grown a little, and well filled the pots with roots, repot in a 10-inch pot, and just before the first flowers open repot again into a 12-inch or 13-inch pot. The soil used should be good loam with a third part of peat, enriched with a liberal proportion of decayed stable manure. Keep the plant growing in a stove; a cool stove answers well; but the plant grows more freely in the warmest house. With good treatment it will grow between 4 feet and 5 feet high.—J. D. E.

13673.—**Hoya not flowering.**—It would have been easier to reply to your question if you had given the name of your Hoya. If it is H. carnosa you have probably given it too much root moisture, and not enough sun. As it is planted in a border you should be very careful in watering the roots; in such a position it would not want any water all the winter. The cause of your plant not flowering is no doubt that the growth is not ripened. I should advise you to lift your plant from the border, and put it into a pot; one 10 inches in diameter will hold sufficient soil to support a large plant, as it is not a strong-rooted subject. After the roots are established in the pot give it a position in the warmest corner where the growth gets well exposed to the sun. This Hoya is really an accommodating plant as regards sun and shade, as I have seen it thrive and flower wonderfully well in a stove temperature, trained on a shady wall; but in this case temperature explains everything.—J. C. C.

13629.—**Treatment of Deutzia gracilis.**—They may be flowered in any sized pots—small examples in 5-inch aud large specimens in 15-inch. Useful sized pots for ordinary greenhouses are those 7 inches, 8 inches, and 9 inches in diameter. They do not require any manure water if the potting soil is good loam, some leaf-mould, and decayed manure. The plants may be turned out-of-doors during summer. We grow ours in pots always, but they may be planted out to make their growth.—J. D. E.

13570.—**Tropæolum tricolorum not flowering.**—Undoubtedly for want of air, for, although tuberous-rooted Tropæolums are not fond of strong sunlight, they do not like to be kept very close. The fact that Ferns do well in the case shows that the air is too damp and confined for Tropæolums. They grow freely enough in a confined atmosphere—more rapidly, indeed, than where they get more air—but the growth made is not sufficiently solid to allow of the production of good blooms. Try for the future to give more air in fine or mild weather from the time the plants start into growth, and you will probably succeed better another year. As the growth is free the treatment in other respects must be right.—J. C. B.

13496.—**Worms in flower-pots.**—Slake a little lime into fine powder; mix this up with the potting mould. This will kill them all and not injure the plants.—I. C.

HOUSE & WINDOW GARDENING.

PLANTS IN SITTING-ROOMS.

I think a great reason why many people do not succeed with these is that they do not regulate the watering by the weather. It is a safer plan to give water when the soil feels dry than on a stated number of days in a week; when the sun shines I find my plants are dry on the surface nearly every day, and I give them water accordingly. Sometimes, after a succession of wet or cloudy days, the soil remains damp for nearly a week, and I give no water. In a sitting-room where there is a fire all day I give water nearly daily. Some plants, such as Myrtles, I find require a great deal of water—twice a-day when very sunny, and the pots are small; also, they are better for being placed where other plants shade them in the full heat of the day, and at sunset in a westerly aspect. My scented-leaved Geraniums also flag if I do not water them daily, unless the atmosphere is very moist. The lemon-scented Genista, I find, likes being placed in the shade when the sun is out. Geraniums revel in full sunshine. In a room where there is no sun after twelve o'clock my Ferns are most luxuriant; I water them daily, but never over the fronds more than I can help.

In order to really succeed with plants you must study them, and when one treatment does not answer, try another. I look well at each of mine every day, and if it does not look "comfortable" I try to find out what is amiss and rectify it. In the garden just the same. My aim is that everything shall have a "comfortable" look, nothing strained, or tortured, or ungainly. My indoor plants bloom very freely in their season; at other times I let them rest as much as possible, only watering sufficiently to keep them healthy. Every day I turn each plant slightly round to the left, so that all sides get an equal share of light. A friend of mine goes upon the principle of constant freshening up and syringing every plant irrespective of weather, aspect, or season, and the result is most beautiful, healthy foliage, but very few flowers. Mark.

English names of plants.—If any of our readers should happen to meet with pretty English names of plants, not mentioned in Miller's "Dictionary of English Names of Plants," we shall be very glad if they will send it to Gardening. We believe there are a good many pretty and fitting names in use in cottage gardens in various parts of the country, that have never got into books at all. Mr. Miller naturally dealt only with those that he found recorded in horticultural and other books of various kinds and ages.

THE VILLA GARDEN.

(Continued from page 163.)

Celery.

THIS is one of the most useful of winter vegetables, and has been recommended to be eaten by those who suffer from rheumatism in any of its forms. Scarcely anyone grows enough of it, even to meet the demand there is for it in a raw state, and it makes a delicious dish stewed after it has been well grown and properly blanched in autumn and winter.

FOR EARLY USE

Seeds of a good white and a good red kind should be sown in heat early in February. The seeds are small, and should not be covered too deeply. I simply cover with a sprinkling of sand. They take some time to germinate, and must be kept at an even state of moistnre. When tho young plants appear, if they seem thick in the pans or boxes weed out a few of the weakly ones, and place near the glass in the full light; and when large enough to handle prick off into other boxes or else into pots. If in boxes, set them 3 inches apart, to give room enough for full development. If in pots, either pot singly in 3-inch pots or place three or four plants round the sides of a 5-inch pot. They must occupy a light position in a genial temperature, where there is artificial heat enough to ensure regular steady progress, but not enough to draw the plants up weakly. In April move the plants to a cool pit or frame, and harden off preparatory to planting out in May.

THE MAIN CROP

Should be sown early in March, and this also must be sown in a nice genial temperature. A vinery at work, where the boxes can get a fair share of light, will do. Sometimes where a large number of plants are required, a hotbed is made up on purpose for the Celery. It should be made of two-third leaves, mixed with one-third stable-manure; and, as soon as the frame and lights are placed on, 6 inches of soil may be placed over the bed, and pressed down, to give firmness, and the seeds may be sown. There is no occasion to wait for the heat to get up, as we know that with such a bed the temperature will not get too high; and the moisture and air in the soil will be acting upon the cuticles of the seeds, and when the heat rises the young plants will be in a condition to move. In any case, when the young plants come up—whether sown in boxes, or on the surface of a hotbed—the weaklings had better be taken out.

In pricking off the plants, I do not think there is any necessity to use bottom-heat for the crop. If the young plants have been carefully treated and properly hardened, a close frame should do admirably. Place it on a hard bottom, lined with coal ashes, so as to keep out worms. On this place 3 inches of very old manure, pressed down firmly, and on the manure place 2 inches of light rich soil, and in this prick the plants from 3 inches to 4 inches apart. Very often a temporary place is made for them with boards, with a covering of oiled calico instead of glazed lights. Very good plants have been obtained by this latter plan. Glazed lights, of course, are best, but the simpler, more economical plan will yield successful results. For late use, a third sowing may take place towards the end of March or beginning of April. Very often this sowing is made in the open air in a warm corner in a light rich soil specially prepared. In establishments where Celery must be had as late as possible this late sowing is very useful, as the plants produced from it do not bolt so early as do those sown earlier. I know many people only sow once, but there is an advantage in doing as I have set down here.

PREPARING THE TRENCHES.

It is a good plan to get the trenches ready as early in the season as possible, as then the soil and manure become so nicely blended that the plants sustain less check, and start away at once and grow steadily and continuously. Whatever manure is used should be well decomposed; but a crop like Celery, which depends so much for quality upon regular treatment and the absence of fluctuation, either from forcing manures or any other cause, will always succeed best when the manure for the Celery trenches has been worked into a compost. Assuming that we know at the beginning of autumn how much manure will be required for Celery, late Peas, Onions, and any other crop for which special preparation is made, we commence to form the heap of compost by laying the proportion of manure from the stables and pigstye and old hotbeds in a heap; to this heap is added a part nearly equal in bulk from the heap of decayed vegetable matter, sweepings from the potting shed, some burnt earth and wood ashes, and some soot and lime. This is all mixed together, and, the manure being rather fresh, it will ferment a little but not enough to do harm, as the earthy matter will arrest and absorb all manurial gases which might otherwise escape. This will be turned perhaps twice in winter during frosty weather, and in March it will be in excellent condition for putting in the trenches and mixing with the soil; and if the trenches have to be made later, near the time of planting, the result will be better than if strong manure were used. The cause of hollow stems and rough coarse produce might often be traced to improper manuring. The size and depth of the trenches are matters of less importance, as local circumstances may have some influence—as also whether the rows shall be single or double, or if the bed system shall be adopted. In small gardens, and for late use,

THE BED SYSTEM

Of planting has advantages. It economises space, and on inferior soils the strength is not so likely to be washed out of a large mass of rich soil as out of a narrow strip. The earliest plants may be set out as soon as they are ready in May, and as little disturbance of the roots should be suffered as possible. The holes should be made with a trowel, and made large enough to receive the ball of earth and roots. The soil should be crumbled in around and over them, and enough pressure given to make all sufficiently firm. Watering and shading should follow if the weather is dry. A few branches laid across the trenches may furnish sufficient shade, and their shelter may also be beneficial. The main crop should be put out towards the end of June, and the late crop in July and August. I have often had useful Celery, not large, but sound and good, from making a plantation on the level ground towards the end of July without any great amount of preparation, simply using up the surplus plants. They are planted in rows across a border, and mulched and watered if they need it. They grow until November, and are then tied up and blanched with ashes.

THE TRANSPLANTING

Should be done, if possible, in showery weather, or in the evening. It is bad management to plant during hours of sunshine, as the fewer and the less severe the checks the better. To obtain really first-class Celery the treatment should be regular—the plants should not be nourished and starved by fits and starts. Water should be given when needful, but not otherwise, as one cannot deluge the land with water without washing some of its goodness down to drains. And though this tendency can be met by giving liquid manure, yet if the land is moist enough for steady progress, that is all that is required; and, to enable the plants to do with as little water as possible, the soil between the plants should be mulched with old hotbed manure, or leaf-mould, or something of a like nature that will check evaporation. The growth at first will be slow, but when the nights begin to lengthen and the dews of autumn appear on the foliage, the progress is rapid. The distance between the rows must depend upon the kinds grown. Tall, vigorous varieties, such as Sulham Prize, must obviously have more room than such dwarf kinds as Incomparable Dwarf White, or Carters' Incomparable Dwarf Crimson, both excellent kinds. Four feet from centre to centre will give abundant space for the dwarf sorts, but 5 feet will not be too much for the tall kinds if planted in single rows. If double rows are planted, the spaces in each case should be a foot more. Where the bed system is adopted, the trench may be from 4 feet to 6 feet wide, and may contain from four to six rows of plants.

EARTHING UP.

A little earth will be scattered round the plants when hoeing, and later on the edges of the trenches may be hoed down with the view of giving the leaves an upward tendency; and this may be done without stopping the water supply if the weather should be hot and dry. But the principal earthing up should be done all at once, about five weeks before the Celery is required for use, and when the necessity for artificial watering has passed. Every part of the plant must be dry, and any small outside growths, which will be of no value, may be taken off. It is a good plan to wind a string of matting round each plant before the earth is placed to it—this saves an extra hand and the work is done better. Frequently in earthing up Celery one walks backwards astride the row and holds the plants up in succession, and a couple of men move on each side parallel with him, and break down the soil and place it around the plants with spades. It is important that the soil be well broken up, and it should be built up carefully round the plants, but not so high as to fall over into the heart, as that will not only check growth but bring on decay. In soils much infested with snails a little lime or soot may be scattered along beneath the foliage, after the plants are tied up, and mixed with the soil. A few coal ashes also may be used with advantage, as snails will not penetrate far where ashes are mixed with the soil. If the Celery is expected to keep far into the winter the ridges or banks of soil should be made straight and firm, with a smooth face to throw off the water.

PROTECTING IN WINTER.

At the approach of very severe weather a few dozen heads may be lifted carefully without any trimming, and be laid in damp sand or ashes in a pit or somewhere where it can be easily got at when wanted for use, and where it can be easily protected from frost. But the main bulk of the crop will have to be sheltered where grown with dry litter. It is best to wait, till the first night of frost is over, and then, when the top of the ground is frozen and the weather looks settled, and the frost likely to continue, cover the rows not only on the top but also on the sides with dry litter, and the covering must remain on till the frost is over.

VARIETIES.—*White:* Incomparable, Grove White; Seymour's Solid White. *Red:* Carters' Incomparable Crimson; Major Clerk's Solid Red, and Sutton's Sulham Prize Pink.

DISEASES AND INSECTS.

Of these the Celery Fly (Tephritis onopordinis) is the most troublesome. The pupæ or grubs remain all winter buried in the earth in the chrysalis state, and in spring all that survive are transformed into flies, which in summer lay their eggs on the foliage of the Celery plant, and in course of time these become small brown maggots, which lie within the membranes of the leaves, producing a most disagreeable burnt-up appearance, and effectually checking the growth of the plant. The best remedy is to try to stamp it out by picking off the affected parts and burning them. In districts where the fly has been troublesome in previous years, syringing the plants about the commencement, or, rather, perhaps just before the eggs are deposited, with something distasteful to insects, has been found beneficial. Gishurst compound and Tobacco liquor are good. Soft soap is also beneficial, and the slops from the house may be diluted and applied over the foliage with a rosed pot, but of all these remedies or preventatives, several applications will be necessary. Slugs in damp soils are troublesome, and must be met with soot and lime, or ashes, in earthing up. Canker arises from a damp unsuitable soil, and the remedy for such a state of things is well known. Hollow stalks may arise from more than one cause. I believe "breed" has something to do with it. Get a good strain of a good kind, and be careful about saving seeds, though the way in which the plants have been grown from the first has much influence upon this matter. In short it is partly a question of breed and kind, and partly a question of culture, and the greatest prominence should, of course, be given to the last item, as that is, in a measure, in our own hands. The quality of the manure is important, more so than is often thought. It should not be rank or too forcing, and the soil should be kept steadily and fairly moist.

The Turnip-rooted Celery.

For cooking this is excellent. The seeds are sown in spring, and the plants treated when small

like the common Celery, and when large enough transplanted into shallow trenches which have been manured as for ordinary Celery, though they need not be so deep or wide, and of course the rows need not be so far apart—2½ to 3 feet will be ample. The plants do not make so many leaves as the ordinary Celery, neither are they so long, as the strength of the plants seems arrested by the Turnip shaped solid mass situated just above the roots, which is the edible portion, though in times of scarcity the leaves may be available for flavouring soups, &c. When full grown, the plants should be earthed up in the usual way. The earthing-up is, perhaps, a matter of taste. Some cooks think it adds to the delicacy of flavour.

The Leek.

When well grown the Leek is a very valuable vegetable. In the north, where it receives more attention, it is in high repute. It is very hardy, especially in its early stages. When fully grown, and highly fed, and blanched to the condition fit for use, severe frosts should be kept from the plants by placing dry Fern or litter over the rows. Some growers shorten the tops—*i.e.*, cut off the ends of the leaves at intervals of a month or so, with the view of giving increased size to the stems or necks of the plants. It is very seldom attacked by insects, and is subject to no disease—at least, I have met with none of an injurious character. The Leek is a very strong-rooting plant, and this feeding power should be utilised to the utmost. They should be planted in very deep, rich soil. Some people think any odd waste corner will do to raise Leeks on, but this is a mistake.

Sowing the Seeds.

Early in March is time enough to sow in the open ground, which may either be done broadcast or in drills. I prefer the latter plan; but in either case sow thinly, and transplant as soon as large enough, before the plants receive any check from overcrowding. The enthusiastic grower sometimes sows the seeds in a pot or box, and starts them in a frame to get the plants on early for the shows, as size and weight, when accompanied by the finish which time gives, will win the prizes. But if the seeds are soaked for twelve hours in lukewarm water they will grow much quicker. This, in fact, gives us nearly as much advantage in point of earliness as placing in a warm frame. But seeds whose germination has been hastened must be placed in a comfortable bed. Scatter thinly and with care when the land is in a fine tilth, and cover with some rich sifted compost about a quarter of an inch in depth.

Transplanting

Should take place as soon as the plants are large enough. Plant in rows from 12 inches to 18 inches or more apart, according to the purpose for which they are required, and the season. If sown early for exhibition, 2 feet between the rows may not be too much, to allow the necessary space for earthing-up. But the late-sown plants will not need so much room. The land must be in fine condition. Leeks may succeed any crop which can be cleared off in time for the ground to be manured and trenched-up not later than the first week in March. The Onions delight in a firm soil, but, provided it be rich and deep, it cannot well be too loose for Leeks. I have planted them sometimes by making a good-sized hole with a dibble, placing the roots in the hole, pushing a few crumbs of earth in first to cover them, and then leaving them loosely standing in the hole without applying any pressure to the stems. From natural causes the earth, of course, will consolidate; but when the soil has a tendency to get hard a frequent loosening up is very beneficial if large Leeks are wanted. Where the soil is poor it is a good plan to open trenches about the width of the spade, and a foot deep, placing in the bottom a good layer of thoroughly decayed manure; mix it up with the earth, and plant the Leeks along the centre of the trench. The rows should be from 18 inches to 2 feet apart. As they advance a little in growth a little of the soil from the sides of the trenches may be broken down at intervals to enclose the stems, for the purpose of blanching them, as first-class Leeks should have the whiteness of ivory, and at the same time be firm and compact, and possess great length and size of stem.

Liquid manure

May, with advantage, be given during the growing season in dry weather until the final earthing has been given. When planted on the surface, the earth to blanch with will be taken from between the rows with a hoe; but when planted in trenches the plants will be deeper in the land, and the earth taken out of the trenches will be used for blanching. Leeks are always ready for use when well blanched, whether full grown or not; and until they push up their flower stems in spring they retain their condition. In winter, just before severe frost sets in, a few dozens should be lifted, and laid in closely together where they can be easily sheltered, and at the same time be easily accessible.

Varieties.—The Lyon and Ayton Castle Giant for exhibition; the Musselburgh is a good hardy Leek for general culture.

E. Hobday.

FRUIT.

FRUIT CULTURE IN POTS.

Much may be said in favour of the culture of fruit trees in pots. Under good management fruit can be had from them quite as cheaply as it can be obtained from wall trees, and the crops are more easily protected from frosts, and therefore more certain. Heated walls are out of date now, and no one would think of building such walls. Protecting the blossoms from frost by means of netting, canvas, &c., is but a poor makeshift compared with having the trees under glass. Fruit, too, can be grown on trees in pots of as large size and as good quality as it can be had in any other way. Moreover, the owner of an orchard house may obtain a good crop the second season after the house is built at a very small expenditure for trees. I like to begin with what are called in the trade maidens—*i.e.*, trees one year from the bud. They have one stout central stem, with many lateral branches, the longer ones nearest the base. They can be bought very cheaply, and when brought home in November or December they should be at once potted in 9-inch and 10-inch pots. The season following they cannot be expected to produce any fruit; but the trees can be well prepared to produce fruit the year after that. By that time they will be three years old, and strong enough to produce from one to two dozen fine fruit.

As to pruning, there are two methods which I adopt—viz., the bush and pyramid forms, and the latter is preferable to the former for this reason, that by it the fruit is more exposed to the sun, although a few bush-trained trees may be placed in positions where pyramids could not be accommodated. The yearling stem of a pyramid tree should be cut back to rather more than two-thirds of its length—*i.e.*, two-thirds should be left. For the bush from one-third of its length should remain, and the side growths should be cut back considerably. The training of pot trees while making their growth is a pleasant occupation—much more pleasant than attending to wall trees, and it can be done without exposing the operator to the biting east winds of our uncertain climate. Nailing trees to walls or tying them to wires in the open air in winter or early in spring has too often impaired the health of many young gardeners. To maintain a wall of Peach and Nectarine trees in good condition and to keep it well furnished with bearing wood requires much anxious care and skill on the part of the cultivator. An orchard house may be heated or unheated, but I prefer a heated structure. In a house say 60 feet or 70 feet long, 20 feet wide, and span-roofed, it is astonishing how large a quantity of good fruit can be obtained, and of so many kinds. We grew in a house not quite so large as that just named Peaches, Nectarines, Pears, Plums, Apricots, Grapes, Apples, Cherries, and Strawberries, and to these might be added Figs, although we discontinued growing Figs and vines after they could be obtained in other houses. Cherries and Apricots do best in a house or compartment by themselves, as they like a rather drier atmosphere, with more air through the whole season of their growth, than the other fruits just named.

An orchard house may, and it should be, interesting during the whole year. In January the trees should be brought in from out-of-doors, and they may be placed on the borders rather closer than they will be allowed to remain through the season. There ought also to be a shelf all round the house on which to place Strawberry plants in pots. These, of course, must be prepared the previous season. The trees and Strawberry plants will require but little attention until they are in flower, when some little care is necessary as regards watering and ventilating. When the fruit is set a few of the trees may be placed out-of-doors, but this must not be done too early. I remember placing some trees out-of-doors in May, in 1870, I think; the fruit was then of considerable size. On the 9th of that month the thermometer fell to 26 degs., and the whole crop was lost. During a good many seasons a crop of fruit may be obtained without any aid from hot-water pipes, but sometimes continued dull, cold, frosty weather, when the trees are in blossom, prevents any of it from setting. During such weather it is desirable that the trees should be aided by artificial heat night and day. The secret of growing good fruit on pot trees lies in giving judicious surface-dressings. A handful or two of rich compost laid on the surface of soil in the pots at intervals of a fortnight will yield amazing results. This should be continued until the fruit has gone nearly through its second swelling stage. I have heaped it up until the dressing was an inch or more above the rim of the pots, and this has soon become firmly compacted with stout vigorous roots. At this time they require very abundant supplies of water.

The Strawberry plants on the shelves by the middle of April will also be in flower and require constant supplies of water, and up to the time the flowers open they should be well washed with the syringe daily. We do not syringe them when the fruit is setting, but, as soon as it is set, water is applied as freely as before. A good supply of Strawberries can be kept up by placing some pots of Black Prince on a shelf in the warmest part of the house. These are succeeded by Keen's Seedling, President, British Queen, Frogmore Late Pine, and last Loxford Hall Seedling. The Strawberry plants need not remain in the house after the fruit is gathered; by that time it will be surprising if they are not well infested with red spider, which, if care be not taken, may get upon the Peach trees. As soon as the Strawberry pots are removed

The fruit trees may be more freely syringed, and this must be continued twice a-day until the first fruits show signs of ripening. Here again the value of pot trees is exemplified in the rich variety that may be obtained. The early American kinds, Amsden June, Alexander, and Hale's Early, are very valuable, succeeded by Early York and our own mid-season varieties, of which Royal George, Grosse Mignonne, Bellegarde, and, later, Barrington, are the most prominent examples. It is well to grow a tree or two of the Salway Peach, a yellow-fleshed sort that is sometimes very good. Among Nectarines Lord Napier is a splendid early kind; Stanwick Elruge is also a fine highly-coloured variety. Humboldt and Pine-apple are very fine yellow-fleshed varieties. Violette Native we cannot yet do without, and Victoria is a fine late Nectarine. The best of the newer Peaches are Alexandra Noblesse, Goshawk, Princess of Wales, and Sea Eagle—that is, so far as my knowledge of them goes. When the fruit has all been gathered and the wood well ripened the trees should be moved out-of-doors, and the pots plunged over the rim in Cocoa-nut fibre refuse. The house may then be filled with Chrysanthemums and other choice winter plants.

J. D. E.

Vine culture on long-rod system.—In Hayward's "Inquiry into the Causes of the Fruitfulness and Barrenness of Plants and Trees" (London: Orr and Smith, 1834) it is stated that in creeping and climbing plants—of which the Grape vine is one—the sap flows to the extremity of the branches whether their position be horizontal or perpendicular, and whether such branches be long or short. In hot climates the present writer has found this tendency to be exceedingly marked, so much so as to make the long-rod system of culture there to be quite unprofitable, 3 inches of bearing wood being as good as 3 yards, so far as the number of breaking buds is concerned, for the sap flows

so quickly and with such force as to pass all the intermediate buds and fly to the extreme one. But such is not the case in this country, the most valuable of the buds for fruiting purposes being those that are developed in the middle of summer along the shoot, and which, if well ripened, will seldom fail to break for fruit the following season. Still the terminal bud will generally be found to be the most vigorous in the absorption of sap, and consequently of growth, and this tendency is the cause of such an accumulation of old wood as one so often sees on Vines grown on open walls; because the cultivator, seeing so fine and promising a shoot at the end of a branch, is tempted to encourage its growth rather than stop it. Thus it is permitted to extend itself unrestrictedly, and in its turn becomes the source of a further extension, and so on. To remedy this, a certain space should be fixed upon within which all the successional fruiting shoots should be made to spring, and any growths originating beyond that should be rubbed off, if barren, but, if fruitful, stopped by having the end pinched off one joint beyond the fruit. This practice should be rigorously and uncompromisingly observed. Its effect will be to check growth of new wood at the extremities, and, on the other hand, to promote it where it is wanted—namely, within the area above-mentioned.—J. M.

REPLIES.

13639.—**Grapes not ripening.**—It is quite unusual for Foster's Seedling to crack, and I think there must be too much moisture either at the roots or in the atmosphere of the house. If you attempt to keep this Grape after it is ripe it will get spotted, which leads me to think that the internal air of your house is overcharged with moisture. Try a dryer atmosphere and ventilate freely in suitable weather. Your Lady Downe's getting mouldy is no doubt caused by scalding, to which this sort is very liable to, even under the most painstaking management. You may lessen the risk of scalding by keeping a drier atmosphere, and giving more air at the time the berries are stoning.—J. C. C.

—— Black Hamburgh succeeds where the other sorts named would fail. The cause of their failure is probably too much moisture in the atmosphere and not enough heat at the time of ripening. From the description I think that the berries of Lady Downes are scalded. This may be avoided by giving plenty of air when the fruit is colouring.—J. D. E.

13634.—**Grapes not stoning.**—Black Alicante is usually a free setting grape. No doubt you have over-cropped your vine, and thereby weakened it. Next year you should try to fertilise the Alicante with the pollen of Black Hamburgh. Get a sheet of white paper, and when the Hamburghs are in flower hold the paper under the bunch, and shake the bunch lightly, when sufficient pollen will fall on the paper to admit of its being gathered upwith a camel's hair brush; then the brush can be applied to the flowers of the Alicante. It is a delicate operation, and will require repeating for four or five successive days, as all the flowers do not open at one time. If you do not care to undertake such an operation, try drawing your hand, which must be quite dry and warm, down the bunch twice a-day when the bunches are in flower.—J. C. C.

—— The reason that Black Alicante does not produce perfect seeds in a house where Black Hamburgh and Foster's Seedling succeed well is the want of a sufficiently high temperature at flowering time. Alicante requires a much higher temperature all through the growing season. The bunches ought to be gently shaken once a-day when they are in flower, to distribute the pollen.—J. D. E.

13558.—**Mildew on vines.**—One way of destroying mildew is to lay some sulphur on the hot-water pipes; but this must be done in the evening when the house is damped down, as the fumes in a dry atmosphere are apt to scorch the foliage, and injure the berries. If this is done before mildew appears, and a nice sweet atmosphere maintained, avoiding currents of air, and being careful not to overdo the moisture, it will never get much hold, and will in a general way be kept off. A sharp look-out should always be maintained, however, especially from the time the berries are formed, as mildew generally first makes its appearance at that period. If there be but the slightest trace of it on them, they must be dusted with sulphur. A great deal in one place is not required; it is the even distribution of the grains that has to be looked to. I have found nothing better than a fine muslin bag for distributing it. On no account use black sulphur; it is very dangerous under glass.—J. C. B.

13681.—**Vine leaves turning yellow.**—You appear to have managed your vines right as regards temperature, but I think their present condition arises from one of two causes—a wet border or want of more air—the latter being the most likely. Try the effect of more air, but do not let the temperature go down below your present standard, and make a point of leaving a little air on at the top of the house all night. You must be the best judge as to the condition of the border. If you find it too wet at 1 foot below the surface, you must adopt some means of keeping off the rain until the fruit is ripe. Vine leaves also turn yellow when they are attacked by red spider, but that would not affect the bunches.—J. C. C.

13637.—**Espalier Pear tree.**—As the tree has outgrown its available space in the short period of four years, it has not room enough to do it justice. Plant it on the south wall, where it will have more space to develop itself. November is a good month in which to transplant it.—J. D. E.

—— Lift the Pear tree in the autumn, prune the roots, and replant.—KENT.

13626.—**Cherry Plum or Myrobalana.**—The plants can be had from The Royal Norfolk Nurseries (late Ewing and Co.), Eaton, Norwich. We bought one hundred in December for a hedge, which are growing most satisfactorily, and some have bloomed.—C. G., *Guildford.*

13628.—**Best Black Currant.**—Lee's Prolific is the best in all respects, and an abundant bearer. Plant the bushes 5 feet apart.—J. D. E.

THE USE OF ARTIFICIAL MANURES.

ONE hardly likes to say anything that may cast a doubt on the value of artificial manures, but, speaking for myself, I can unhesitatingly say that I have no difficulty in fixing a limit to the good they do, and anyone else may do the same if he will take the trouble to ascertain what plants they permanently benefit and what they injure. I would emphasise the word "permanently," because it is on that that the chief value of these manures should rest. My opinion is that they are valuable only for annual plants. When used with care, they may be made to do good service in the case of plants of fairly vigorous growth that are to be thrown away as soon as they go out of flower. I may mention Primulas, Mignonette, Cinerarias, and zonal Pelargoniums as plants to which artificial manures may be given with advantage, and, if judiciously applied, surprising results may be obtained. On the sort of plants here indicated the inexperienced may practise without doing permanent injury, but on hard-wooded plants much harm may be done by an injudicious use of stimulants. In fact, they require to be dealt with in a very cautious manner. The tendency of these manures to show the effects of the first application in a very short time is not the least of the evils attending their use, as it increases the desire to use them more and more freely; consequently, they are sometimes used in excess, and an early collapse of the plants operated upon is the result before the cultivator knows what has caused the mischief. When applied to hard-wooded plants in small quantities, and at the most not more than twice a year, they may not do harm to such subjects as Azaleas, Camellias, Clerodendrons, Allamandas, and a few other strong-growing plants, but if used oftener than that there is great risk of the plants gradually getting into ill health after three or four years of such treatment. Practically, I do not think there is anything very injurious to plant life in any of these compounds, *i. e.*, provided the proper quantity is given, but for the most part we have to guess at the quantity, and we are still more unenlightened as to what plants they will benefit and what not. On this point I hold a very decided opinion, because I have many times proved that some races of plants will bear more than others. For instance, Roses will bear stronger doses extending over a longer period than any other class of plants with which I am acquainted. On the other hand, Fuchsias will only bear very moderate supplies at long intervals, or both leaves and flowers will drop. Again, all the plants I have operated upon will bear a larger quantity if mixed with the soil when potted than when put on the surface and watered in. On the whole, I look upon the plan of mixing manure with the soil as the most satisfactory. It is less spasmodic in its action, and plants of all kinds are benefited thereby for a longer time. No one could be mistaken as regards the action of any of these manures, even if they have not exceeded the quantity the vendors recommend for particular sized pots, as after the first application the plant to which they have been applied (I mean where applied on the surface) will require more water than it did before, and the larger the quantity and oftener it is applied the more water will the plants want, which plainly shows that the manure is forcing in its action, and if the needful supply of moisture is not given the result will be the reverse of what is expected. As a matter of fact, certain plants may be grown at express speed to a large size in a short time by the aid of these manures, all other things being equal; but unless such stimulating agents are used cautiously, not many plants can sustain an active life for a lengthened period under their influence. As to the value of any particular compound, I may say that I have tried a good many of them, and although their composition may vary somewhat, they are all of about equal merit for horticultural purposes. J. C. C.

13630.—**Fertilising Moss.**—I believe Mr. Finlayson, of Alma Road, Southampton, is the only agent for "Mousse Fertilisante." Directions are given in each bag. I have used it for three years with great satisfaction. I believe most plants would grow in it. Ferns, Sweet Peas, Nasturtiums, Geraniums, Isolepis gracilis, and Heliotrope do well, and I shall be glad to give any further information that may be required. I may add that the Moss is sent quite dry, and is inodorous.—A. E. B., *Buxted, Sussex.*

Notes from Ireland.—White Fritillary here was as pure white as the Lily of the Valley, and most lovely. Bulbs came from Holland. Wallflowers, if properly cut, flower year after year. I have one six years old, on which I counted at once over 120 heads of bloom, and I think I must have pulled a hundred more. Double Golden Wallflower flowers on the two-year-old shoots. I have it covered with dense spikes; it improves each year it is kept. I have dwarf double white Rocket so often asked for. I find Gladiolus, fine kinds, are apt to go into leaf when not lifted. All hardy kinds I leave out always.—C. G. O. B., *Foynes, Ireland.*

Fruit the cheapest food.—We must produce better fruit and more of it. Nutritious, healthful, economical, it was meant to be eaten. As a peep into possibilities, we find that one Apple tree, growing on less than two rods of ground, has produced in a single year a hundred bushels of fruit—in some recorded instances more. Two Pear trees on the same amount of land have done as well. It is safe to say that never in the history of the world has one-fourth as much sustenance for man and beast been derived from roots or cereals occupying equal space. A Grape vine is a wonderful economist of space; occupying a crevice in a rock, or a contracted corner where nothing larger than a Thistle could grow, it climbs a tree, the side of a building, or runs along a fence, and furnishes a delicious dessert for fifty people. Considerations like these are worthy of attention.—*Western New York Horticultural Society's Proceedings.*

Where does the West of England begin?—I was much interested with the communication of "South Devon" in the number of GARDENING for May 30th, on variation of climate, and I agree with him that the River Exe should form the boundary of the south coast. But I should like to see it more universally recognised, because I am of the opinion that all that part of the country on the south side of the Exe which extends up to Bristol should not be recognised as belonging to the West, but to the South of England. My observations of the South coast extend from Hastings to a few miles inland of Brighton, and although I have resided some years on the south side of the Exe, reputedly in the West, I cannot find, for all practical purposes, any difference in point of earliness between Hastings and Exeter. I therefore should say that the country between Bristol and Exeter clearly belongs to the South of England.—J. C. C.

PACKING FLOWERS FOR POSTAL TRANSIT.

JUDGING from what I have seen, and also from what I have been credibly informed, advice is much needed as to the best manner of packing both flowers and fruit for post and rail, and it is my intention to offer a few hints on the subject. It is surprising what a number of people persist, and that, too, in spite of published condemnatory notices, in sending flowers and other perishable moist subjects in thin cardboard boxes. These, besides being liable to be crushed, are quickly saturated by the moist contents, and in this state are no better than brown paper. That the local post-office employés take all reasonable care of the packages consigned to their care I have almost daily proof, but they must not be expected to unduly favour delicate parcels, or to re-pack any that are broken up. That they do frequently tie up any requiring it many well know, and I have known cases in which the contents of two or three crushed boxes of flowers, after having become inextricably mixed, were equally divided among the consignees, some thus getting choicer flowers than were really sent to them. We use both

TIN AND WOODEN BOXES, and find the latter to be much the best. These we make ourselves, as the local carpenters are apt to make them too heavy. Those in which we despatch buttonhole bouquets and small wreaths are of a size to admit of their being when filled just a trifle under a pound in weight, and thus they go any distance for 3d. For this purpose we buy a quantity of light, yet strong, boxes from the confectioners at a cheap rate. These we cut down to a depth of 2½ inches, and the bottoms have a few fresh fine wire nails driven into them. Most of ours are about 9 inches long and 5 inches wide, and weigh rather less than half a pound. If made lighter than this they are liable to be damaged, whereas ours have made several journeys and are yet uninjured. For a few or many loose flowers to go under 3 lb. for 6d., or not exceeding 5 lb. for 9d., and not exceeding 7 lb for 1s., we find boxes obtained from the grocers the most serviceable, such as black lead, cocoa, and fancy soap boxes, the first being the lightest, and the latter of an intermediate size. These, and also still larger boxes which the grocers likewise have at their disposal, are available for sending by rail. All paper advertisements or otherwise pasted inside or outside of these boxes can usually be easily removed if moistened with a sponge and hot water. The boxes can thus be cleaned, if necessary, without much wetting. It is a great mistake to nail down the lids of those light boxes, as this splits them and soon renders them useless. One or two very small nails or tin tacks may be safely driven into the ends, but more dependence should be placed upon strong string; this secures the lids, strengthens the boxes, and perhaps prevents their bursting should a great weight of boxes or packages be placed on them. The parcels post deliveries are much earlier—in towns especially—than they used to be, but if we have any doubts about a small quantity of choice flowers reaching their destination quickly, we pack them in light tin boxes about 6 inches long, 3 inches wide, and nearly 2 inches deep. These when filled vary in weight, but never exceed 12 oz., and can thus be sent for fourpence or less by the ordinary letter post. They are tied up strongly, and have a loose parchment label attached for address and stamp. This receives the punching or stamping by the officials instead of the box. This precaution is especially necessary in the case of more fragile boxes. All the boxes sent to town are returned regularly in large vegetable and fruit hampers, but where this is not possible let me advise those who return empties by rail to make them into bundles, as several, if labelled "returned empties," will be delivered for the same money oftentimes charged for a single empty. Those living near large towns, where there are agencies, can also send parcels cheaply, quickly, and safely by Sutton's and other parcels delivery companies. By these agencies I find heavy packages can be sent cheaply.

METHODS OF PACKING.—In every case it is of primary importance that the box or basket be well filled; otherwise the flowers are certain to damage each other. If there are not sufficient flowers to fill the box, then use some kind of packing material, nothing being better, perhaps, than clean fresh Moss, and nothing worse than cotton wool. The latter, if employed, must not come into contact with the flowers, as, being absorbent, it robs them of much of their moisture. If damped it discolours white flowers, and does not improve the others. Our small boxes are lined with clean green and nearly dry Moss; on this are disposed a few fronds of Maiden-hair Fern, and on these the flowers are laid as flatly as possible, and close together. A piece of tissue paper is placed on the top, then a strip of cotton wool, and on this the lid closes tightly, so tightly, in fact, that the box may be shaken violently without displacing or injuring its contents. We sometimes line the boxes with Spinach or Lettuce leaves, and flowers laid on these are preserved surprisingly fresh and well, but they are rather heavy, and for that reason they are not always used. The larger boxes are packed in much the same way, the Fern fronds resting on Moss or leaves lining the boxes, and the flowers laid in as flatly and closely as possible. If the box will hold more than one layer, the heaviest and best travelling flowers, such as Roses, Rhododendrons, Carnations, Pinks, Delphiniums, Stocks, Wallflowers, Spiræas, and double Primulas, are packed in the bottom; over these are placed either more Fern fronds, leaves, or paper, and then another layer of flowers. Too deep boxes should never be used, especially in hot weather, as the contents are apt to ferment and be quickly spoilt. A bulk of moist Moss will do the same thing. I have seen a quantity of Rose-buds—packed upright in it by a professional grower, too—completely spoilt in one night. Boxes or baskets, which we send in larger hampers with fruit and choice vegetables, are usually made to fit in tightly; otherwise there is danger of their getting loose and the contents being shaken to pieces.

WHEN TO CUT THE FLOWERS.—To cut and pack flowers at once is a mistake, especially during hot days, when much of their moisture will have evaporated, and they are liable to lose the rest by bleeding or absorption. If the flowers are to be sent early in the morning, they are best cut overnight and placed in pans or jars of water, and they should be cut in the morning and similarly treated if they are to be despatched in the evening. They will thus be perfectly fresh, and their stems well charged with moisture. Roses, especially, should not be packed in a fully blown state; if they are to be really serviceable when they reach their destination they ought not be more than half blown. Most other flowers should be fully expanded and should be cut directly that stage is reached. It is only a disappointment to send anyone a quantity of single Pelargoniums, as, unless these are gummed, they are certain to shatter, and there are a few other single flowers that are not much better in that respect. Water Lilies, which are so much prized, should be cut and packed when the buds are just bursting, and those receiving them must open the petals with the hand. The Iris family should also be packed in a bud state; Primroses, Snowdrops, Pansies, and other small flowers are best bunched, and these will thus be found to preserve one another. Many err in being too cautious—do not, in fact, pack the flowers close enough. The lid ought always to fit down tightly, as the flowers are certain to shrink somewhat, and, being laid flatly and closely, are not so easily crushed as some may imagine. W. I. M.

13682.—**An amateur's propagator.**—In reply to J. C. Crowther: I filled the propagator with Cocoa-nut fibre and sand—about two-thirds to one-third of the latter. I generally keep a heat of about 70 degs., and use paraffin. The makers recommended another oil, but I cannot now remember it. I sometimes put the cuttings direct into the fibre and sand, and sometimes into pots, plunged. Seeds I place in pots plunged. Only sprinkle with tepid water if the atmosphere gets very dry.—J. R. D., *Belper.*

13604.—**What is an amateur?**—Literally a lover—as it comes from the Latin *amator*, a lover. An amateur in gardening is one who amuses himself with gardening, not practising it as a profession. It makes no difference whether he employs "skilled gardeners" or does the work himself.—A. W.

BEES.

Supering.—Having read the "Seasonable Notes" on bees with much pleasure, may I give my mite? In many cases (even with strong stocks) it is difficult to get the bees to work in supers. I have, however, this year been most successful in the following way: Allowing a stock to be healthy and strong, or say from seven to ten frames worked out, place on case of supers, and on centre of same feed with warm syrup. This entices the bees into supers, when they readily start filling with honey.—SUPER.

POULTRY.

Hens not laying.—One of the causes of hens not laying is the want of water. As water enters largely into the composition of eggs, the necessity will be seen of giving hens a liberal supply at all times. Good, pure, and fresh water is fully as necessary to egg production as food. Milk is a good thing to make hens lay, and more will be eaten if some good bran is stirred into it. If you have no Grass runs for the chicks sow Lettuce, Oats, or whatever else will grow quickly. Both old hens and chicks will appreciate this move, and thrive under it.—*American Cultivator.*

QUESTIONS.

13778.—**Poultry keeping for profit.**—I have kept fowls in confinement in a back garden facing north in a town, on a clay soil; I supplied green food daily, and found them worms, and, allowing 1d. each for eggs, brought both sides of my account equal, but I think circumstances were against me. Now, would some one of your readers kindly give me their opinion whether it would be wise to take some waste land adjoining garden in country and try again? The ground is very light, in fact, sand. The turf is rather bare, studded with tufts of long dry Grass, with a little Moss in places. Would there be sufficient green and insect food without supplying artificially? How much should I require for fifty fowls? Also what breeds or first crosses would answer best for the supply of eggs? Any information would oblige.—ALBION, *Dundee.*

13779.—**Dropsy in fowls.**—Perhaps some of your correspondents can tell me whether they have had any experience of dropsy in chickens. One of my hens has been getting very large since setting, and at last waddled about like a duck. I thought she must be egg-bound, and applied remedies, but without effect. Ultimately we determined to kill her, and as soon as a knife was stuck into the abdomen about a quart of water came out like a fountain. As I have had chickens die of the same complaint, I should be glad to hear of a remedy.—F. STUART.

The Orange-Ball Tree (Buddlea globosa), which is so free and so pretty in many warm seashore districts, particularly in Ireland, and which one so seldom sees about London, is sent to us in excellent condition by Mr. Stevens, of Byfleet. The form and texture of the leaf are beautiful, and the flowers distinct and pretty, and in his dry, warm soil it forms a handsome bush. We are really surprised that this shrub is not more often seen in the home counties. It cannot be difficult to obtain.

A hint.—Take two flower-pots. Let the soil on the top of one be hard; that on the other mellow. Sprinkle both with a given amount of water and expose both to the sun until the surfaces become comparatively dry. Upon examination it will be found that the soil with the mellow surface is moist to a greater depth than the soil with a hard surface. If these pots be exposed to the hot moisture-laden air of the evening or early morning, what will happen? The dew which is deposited upon the hard surface is retained there to be evaporated by the first rays of the sun, while with the other the air deposits its moisture not only upon the surface but beneath, where it is condensed and longer retained by the walls, as they may be called, of the less compact soil. To make an extreme comparison, one surface may be compared to a sponge, the other to a brick. Now let us extend the surfaces of these pots until they become fields, and a part of the desirableness of preserving a friable surface during droughts may appear.—*American paper.*

13613.—**Obtaining Balm of Gilead.**—If "J. H. C. will send me his address I will forward him a plant of Balm of Gilead by post.—JOHN THIRLAWAY, *Guthrey Villa, Sunnyside, W. Gateshead-on-Tyne.*

13122.—**Rough porous jars for Ferns.**—Porous jars are to be had from Mr. Pottern's, Youghal, co. Waterford.—C. G. O. B., *Foynes, Ireland.*

Using German yeast.—Will any housewife, who is a reader of GARDENING, kindly tell me how to use the German yeast in bread making? I have tried it with hot water and with cold, and it never has any effect.—A YOUNG WIFE.

GARDENING ILLUSTRATED.

VOL. VII. JUNE 20, 1885. No. 328.

WATERSIDE VEGETATION.

THE plants that grow by the waterside, so much admired in natural scenery, are seldom taken so much advantage of for cultivating as they might be; otherwise the bare water edges so often found in connection with lakes and other ornamental water would be of less frequent occurrence that they are. With the vast resources of suitable plants at our service, if appropriately employed, the margins of artificial water might be made to surpass even the choicest examples of natural riverside vegetation. In the majority of cases, if the edges of artificial water are clothed at all, they have a monotonous appearance on account of the continuous fringes of plants of a commonplace type; whereas if a greater variety of kinds of varied height, habit, and flower were employed and disposed in bold irregular groups—some close to the margins, others at a distance from them, and some even partly submerged—some of the most charming effects could thereby be obtained. The principal consideration is a knowledge of the positions in which the plants thrive best, the degree of moisture in which they will flourish; then effective grouping is easily accomplished.

The following enumeration consists wholly of vigorous growing plants that when once planted can take care of themselves. Our native flora affords great numbers of really handsome waterside plants, many of which are in no way inferior to exotic kinds.

Among the showiest are the Willow Herbs (Epilobium). These, being well known, need but little description. E. angustifolium is the finest. In rich, moist soil it grows 5 feet or 6 feet high, and in summer is covered with a profusion of showy, purple-red flowers. There is a white variety which is even more effective than the type, as the colour is so uncommon among water plants. The great Willow Herb, or Codlins-and-Cream (E. hirsutum), is a true water plant, and, though not so showy as the preceding, should never be omitted. Of the Purple Loosestrife (Lythrum Salicaria) there are now some extremely fine varieties; one, named roseum superbum, may be said to be one of the finest of hardy flowers, and all the Epilobiums are excellent companions for our beautiful native Meadow Sweets (Spiræa). Many of the Grasses of the larger type flourish better in moist places near water than elsewhere. One of the handsomest is the Great Reed Grass (Arundo Donax), which grows 10 feet and even 15 feet in height when planted near the margins of water where the roots are continually moist. It requires, however, a rather sheltered position, as it is apt to be injured by severe cold or cutting winds. A bold isolated group of this noble Grass is one of the fairest types of hardy vegetation which we possess, yet, singular as it may appear, it is often overlooked. The New Zealand Reed Grass (Arundo conspicua), as well as the Pampas Grass (Gynerium argenteum), flourish by water far better than in other positions, provided there is not an excessive amount of stagnant moisture about the roots. One or two kinds of Lyme Grass (Elymus) are excellent for planting in wet places where choicer plants would not flourish, the most suitable being E. giganteus, which grows some 4 feet or 5 feet high; E. virginicus, and canadensis, both North American species of tall vigorous growth. Some of our British Grasses of noble aspect look well if planted in distinct groups, and not allowed to run in a monotonous fringe. The best of these are the common Reed (Arundo Phragmites), which abounds in many parts in wet ditches; the Wood Small Reed (Calamagrostis Epegeios), which grows from 3 feet to 4 feet high, and flourishes as well in open wet places as in woods and thickets; Purple Small Reed (C. lanceolata), taller than the last; the Reed Grass (Digraphis arundinacea), from 3 feet to 5 feet, with broad leaves and handsome plumes from 6 inches to 8 inches in length—all interesting when properly planted. There is a variety of this with variegated leaves called the Ribbon Grass or Gardener's Garters. Among the choicer exotic Grasses of large growth are Eulalia japonica, 5 feet high, Gymnothrix latifolia, Erianthus Ravennæ, Stipa gigantea, Sorghum halepense, and Andropogon strictus—all of which delight in moist situations.

There is no type of hardy plants from which such beautiful effects can be produced by water margins as from the various kinds of Bamboos which thrive so finely in our climate. Planted by the side of a running stream, or near the margin of a lake or pool, they succeed better than in any other place, and soon attain a great height. Among the hardiest are Arundinaria falcata, Bambusa arundinacea, Metake, viridis glaucescens, nigra, and Phyllostachys bambusoides. Then there are Sedges and Rushes. The majority of the former are essentially water plants, and many of them form beautiful objects when planted in bold groups. For this purpose some of the finest and most suitable are Carex paniculata (a native species, which grows into luxuriant tufts as high as 4 feet if planted in wet, boggy places in which little else will grow) and the extremely graceful C. pendula, one of the largest of our native Carexes, with its long catkin-like spikelets, produced in early summer on plants 3 feet high. The Fox Carex and C. acuta are likewise well adapted for wet places, each attaining 2 feet or 3 feet in height, and of C. acuta there is a handsome variety with variegated foliage. There is also a variegated-leaved variety of C. riparia, which is very handsome, and retains its character well, even in water.

One of our handsomest native water-loving plants is the Galingale (Cyperus longus), whose stout stems, terminated by singular tufts of leaves, attain a height of even 4 feet or 5 feet. As it flourishes best when its lower part is wholly submerged, it is a capital subject for planting in shallow water at a little distance from the margin. When disposed in bold groups, and these not repeated too often, it greatly relieves the somewhat monotonous appearance of an even fringe along the water's edge. Another fine Cyperus is vegetus, which has wider leaves than the last and lighter green in colour, but it does not grow so tall. Nearly allied to the Cyperuses are the Club Rushes (Scirpus). S. triqueter (3 feet high), S. lacustris (from 4 feet to 8 feet high), and S. Holoschœnus, a stiff Rush-like plant (some 3 feet high), are all excellent waterside plants. Of similar growth is the Prickly Twig Rush (Cladium Mariscus), which is useful for planting in poor and wet soil where little else would thrive.

In addition to the common yellow Flags (Iris Pseud-acorus and fœtidissima) several of the other kinds make good water plants, particularly I. sibirica, a tall-growing kind with glossy foliage and flowers, either of a rich purple or white. The beautiful Kæmpfer's Iris, too, though not of a large size, must be included in our list, as it flourishes best in wet places, and if such a position could be allotted to it where the water now and then could be made to flow over the soil for 1 inch or so in depth, it would, if planted in a peaty soil, flourish far better than in an ordinary border.

Among plants remarkable for fine leafage, few excel the large Water Dock (Rumex Hydrolapathum), the leaves of which grow nearly 3 feet long, and they are nearly 1 foot across, reminding one of a Banana plant in miniature. In some situations it grows as much as 5 feet high, and forms a bold plant close to the water's edge, where the roots would be continually submerged. The Great Spearwort (Ranunculus Lingua) is another of our bold foliage native plants; it grows from 3 feet to 4 feet high, and has long broad leaves of a pale-green colour. Its flowers are showy, being of a bright shining yellow, and more than 1 inch across. A position similar to that recommended for the last suits it best. The Stripe-flowered Water-Lily (Nuphar advena), a plant with large, broad, deep green leaves, is one of the noblest of hardy aquatics, and the only kind that sends its leaves erect out of the water to as great a height as 3 feet. The bases of the plants should be submerged to about 1 foot or 1½ feet in depth. They should be planted in bold groups a little way from the margin, and surrounded by Water-Lilies and other aquatics with floating leaves. N. lutea is the well-known yellow Water-Lily, common in most parts of Britain; and Nymphæa alba is often called the Queen of Water-Lilies.

Butterbur (Tussilago Petasites) is a noble plant when in its largest state, and the accompanying illustration shows how pleasing a little colony of it looks by the banks of a stream, where it delights to spread. The Burdocks, too (Arctium), though they naturally affect poor, dry soils, attain enormous dimensions by the side of water, but they must not be planted so near that their roots are submerged.

The Sweet Flag (Acorus Calamus) is a Reed-

like plant growing some 3 feet or more in height. It is very vigorous, and soon spreads itself over a wide area, and will overrun plants of weaker growth if not checked; it is, however, a handsome plant, and the highly-aromatic leaves make it all the more desirable. It should be planted at the base of a projection, or, better still, round an islet, so that it may be

Purple Loose-strife (Lythrum Salicaria).

kept within bounds. The Bur Reed (Sparganium) is somewhat similar, but more tufted than the Sweet Flag, and not nearly such a rapid grower. The Great Bulrushes or Cat's-tails (Typha latifolia), which in autumn are furnished with black, club-like flower-spikes, though abundant in many parts of the country, should always be planted where not indigenous, as they are so distinct in aspect from most water plants. T. stenophylla and T. minima are alike graceful plants, growing in tall dense tufts. Pontederias, of which there are three species, are about 3 feet high. They have arrow-shaped leaves and blue flowers of various tints, produced on stout stalks well above the foliage. The three kinds require to be planted in 1 foot or so of water, and are therefore well adapted for planting a little way from the margin. The Marsh Marigold (Caltha palustris) flowers freely about the margins of ponds and rivers, and the Bog Bean (Menyanthes trifoliata) is also an excellent water plant.

The Flowering Rush (Butomus umbellatus), one of our native plants, should adorn the margins of every piece of ornamental water, as it is not only an elegant plant as regards foliage, but its blossoms, which are produced in large umbels, are rosy-tinted and beautiful. The Water Plantain (Alisma Plantago) is a bold plant, which often attains 3 feet in height. It grows in watery ditches and edges of streams; the leaves are broad, similar to those of the Great Spearwort. Caladium virginicum is a noble Aroidaceous plant having large, broad leaves, arrow-shaped and of a deep green. It is excellent for planting in shallow streams or pools, in about 6 inches of water. It rises 2 feet or 3 feet in height in a manner similar to the Callas or Richardias, which should on no account be omitted. Another highly ornamental North American water plant is the

Flowering Rush (Butomus umbellatus).

Giant Horsetail (Equisetum Telmateia). This is an extremely fine plant when fully grown, and one which attains several feet in height in moist, shady places, producing graceful plumes of pendulous, thread-like branches in drooping whorls of a cheerful green colour. It is by far the finest of all the Horsetails, but seldom seen in full growth.

There are many other plants which, though not strictly aquatic, flourish well near water, and have a fine effect. Similar treatment may be given to the Giant Knot-weed (Polygonum cuspidatum and sachalinense), Astilbe rivularis, Senecio japonicus, North American Lilies, several of the larger Spiræas, Trollius, the Royal Fern (Osmunda regalis), Lysimachias, and many others. W. G.

EAST LOTHIAN STOCKS.

AMONG Stocks for spring flowering none are better than these. They are fairly hardy, and, when planted in good soil, flower in great profusion, and continue to do so for many weeks. A peculiar feature belonging to this class of Stocks is that as soon as the centre spike begins to fade the side branches extend with greater vigour than before, and make even a greater display than the first flowers. There are three distinct colours of this Stock which come remarkably true and produce a good percentage of double flowers, viz., white, purple, and scarlet, the last being very bright. For flowering next spring the seed should be sown in July. I like to sow in the open in a well-prepared piece of ground, taking care to make the surface rather fine for the reception of the seed. Drills are then made by pressing the angles of a square rod into the soil, thus securing a uniform depth. A drill as ordinarily understood would be too deep; a depression made a quarter of an inch deep is all that is required. As soon as sown the seed should be covered with finely-sifted soil, and if dry it should be watered. In dry weather it is best to shade the seed-bed with a few evergreen branches, a practice which not only saves watering, but keeps the soil moist about the seeds, so that they vegetate quicker than in a medium that is sometimes wet and sometimes dry. If seeded thinly, there will be no necessity to move the plants until they are large enough to go out to where they are to flower. They are excellent subjects for lines or masses. To be effective in mixed borders, they should be put in clumps of from seven to nine plants, according to the width of the border. In whatever position they are planted they should, however, stand 9 inches apart each way; if nearer to each other, the flower-spikes will be weak. In order to secure a good bloom, they ought to be in the places in which they are to flower by the middle of October. I find that here in Somerset I lose more plants during winter from damp than from frost, and to obviate this I have to sprinkle some dry earth between the plants about twice during the winter. Early in spring I take advantage of the first few dry days to move the surface soil with a small hoe. This admits air more freely, and tends to keep the surface drier than it otherwise would be. Stocks of this class are also admirable subjects for

SUPPLYING CUT FLOWERS DURING AUTUMN AND WINTER, when they can be properly accommodated. For this purpose the seed should be sown in the open early in April, and as soon as the plants are large enough to handle they should be transplanted, in order that they may be kept short-jointed. To effect this, the most suitable conditions are a moderately rich soil and plenty of room between the plants. About the beginning of June they should be large enough to move. If the weather should be very dry it may be necessary to water them a few times in order to get them established, but when they have well taken hold of the soil they will give no further trouble during the summer. In September, whether the summer has been favourable to good growth or not, they should be taken up and potted. If strong and showing flower take them up early in the month, but if not fairly vigorous it will be better to wait another three weeks in order to give them time to gain more strength. They should be taken up with as little injury as possible to the roots. The strongest may be put in 7-inch pots, but a size less will serve for the greater number of them. As soon as potted shut them up in a close frame or pit. Keep the soil in the pots fairly moist, and damp the leaves once a day with the syringe. At the end of a week give a little air, and gradually increase it as they get established. In a warm brick pit they will continue to flower all the winter if there is an absence of long spells of cold weather, but the best place for them is an airy shelf in a house that receives a little assistance from fire-heat to keep up the temperature in severe weather. J. C. C.

Monotony in gardens. — The simple Arcadian picture which was drawn by a writer on the "Monotony of Gardens," in GARDENING, June 6, is too poetical, I fear, to recommend itself to the practically prosaic man of this century. The true son of Adam, delving among his flowers, guiding and controlling nature, and assisting her to develop the best she has in her,

Co'ony of Butterbur (Tussilago Petasites) by waterside. (See "Waterside Vegetation.")

is a rare sight. If the idea of "every man his own gardener" were carried out, for every miniature Eden springing up here and there, we should have numberless floral wildernesses over which the angels might weep. Those who are debarred by circumstances from studying nature in her perfect freedom must, perforce, be wanting in the power to harmonise her effects. The apparent love of monotony which oppresses us everywhere is after all only a struggle for the beautiful by people who don't know enough of beauty to be able to recognise it when they see it. Somebody said "Sunflowers and Marguerites are beautiful!" Soon they appear everywhere, the majority being afraid to follow their own taste because they know they have but an uncultivated instinct to guide them. I have observed in many gardens blue Forget-me-nots blooming side by side with brown Wallflowers. In this case the contrast is not happy, though nature produces some of her sweetest effects with blue and brown, for instance, a rich brown Beech wood upon a clear spring sky. Why are not all children trained to study nature and love her? They do so at first by instinct, and dig their little gardens only too industriously, but if they meet with no encouragement they lose interest, and a taste which brings health and enjoyment is neglected. We cultivate their love of art in every possible way until the love of nature is crowded out. There was an unconscious touch of truth in the practical teaching of Mr. Squeers. "Bottinney, noun substantive, a knowledge of plants. When a boy has learned that bottinney means a knowledge of plants he goes and knows 'em."—K.

The German Iris as a town plant.—The chief attraction just now in Southwark Park is the German Irises, than which we have never seen finer even in the country—which is saying a great deal for the German Iris as a town plant, this park being in the midst of a most populous neighbourhood. These Irises give a glow of purple to the whole park.

One sees them at every turn, and the paucity of other hardy flowers which would thrive equally well, and would be quite as attractive, makes them the more conspicuous. Some of the masses are as much as 4 feet through.

TIDYING UP GARDENS.

One of the most destructive creatures that can find its way into a garden is a man who does gardening in a routine and mechanical fashion as he has been taught, without any consideration of the nature and habits of the plants he is dealing with. A few morning ago I watched for a minute or two the process of tidying up a border of hardy plants for the summer. All attempts at spreading on the part of the plants was being rigidly curtailed. All the young shoots springing round the outsides of the clumps were being cut away, and only a few in the centre of each clump left. There are a very few hardy herbaceous plants that do not flower well until the clumps have somewhat exhausted the soil; in these the vigorous shoots on the outside of the clumps are flowerless, those from the centre of the clump bearing good flowers; but in the vast majority of plants the fresh shoots on the outside, which are pushing their roots into fresh soil, produce the best flowers, and it is these which ought to be left in any thinning out, and not the shoots from the centre of the clump which spring from a hard rootstock in exhausted soil.

Then, what can be worse than forking over the borders in April and May when fresh roots are pushing in every direction? A great part of the vitality of plants is centred in the very tips of the young rootlets; these plant cells form most rapidly, and the life of the plant is strongest. To disturb the young roots is to cut those vital portions away from the plant and lower its vitality, making it weaker and less alive. Let us hope the old-fashioned system of chopping all the roots off round each clump and turning over the soil between them has completely died out. How many plants have disappeared from flower-beds in times gone by through this system of wholesale plant murder? Everything minute which was in an inconspicuous and dormant condition was sure to go. Small bulbs, corms, and tubers, such as Anemones, Ranunculus, Jonquils, Star of Bethlehem, and Gladiolus, were buried in the general turn over, sometimes under two spits of soil, and their place knew them no more. Such things as did live in these old borders lived not by the gardener's help, but in spite of his ill-usage.

In London parks and gardens shrubs are too often treated in an unthinking and foolish way. In a thin soil many shrubs do not form a single stem, but ramble about slightly, and form bushes of shoots of short duration. It seems to be the habit in many places to cut all the vigorous young shoots away, and leave nothing but two or three scraggy and decrepit shoots in the centre. These struggle through the summer, producing unhealthy leaves, which fall a prey to caterpillars. J. D.

The jobbing gardener.—"H. H. H.," Darlington, who desires to reply to "J. D.'s" remarks at p. 133 (May 16), points out on behalf of the jobbing gardener that very few of the villa gardens with which he has to deal have been laid out properly, and this not because of his neglect, but because the ground has been roughly made by labourers, speculative builders' *employés*, &c., into mounds, or levelled to suit their fancy, and roughly dug over, and a bit of good soil put into the top-spit or so. He objects strongly to "J. D.'s" observation that the jobbing gardener should be excluded from gardens, and labourers only called in to do the heavy work which owners cannot do for themselves. "How," he asks, "is a labourer casually called in to know where all the choicest bulbs are planted and where all the choicest things are hidden?" He continues: "'J. D.' says that bedding out plants require only small accommodation. I should like to be shown how he makes that out. I admit that hardy plants require more room in the nursery, but do they require one-half the labour, or do they require expensive structures to grow them in? How much land can he get for £10 per annum if near a town? It can be had from £3 to £20 per acre, and how many hardy plants can he grow in that space, and which pays the best—the hardy plants or the summer bedding plants? How many hardy plants will he get for 2s. 6d.? Not many, while he can get a dozen good Geraniums. Or if he wants something cheaper he can have a dozen Lobelias for 1s., or a dozen Calceolarias 1s. 6d., or Phlox Drummondii 1s., or Stocks, Asters, and many other things at 6d. How many of his hardy friends can he get at the price? Certainly not many. I know I can make more money with hardy plants, and no houses or frames to buy or make, no burning the midnight oil as it was two winters ago to keep out frost. Again, if hardy plants are planted in many of the little gardens, how long do they last, enclosed, as they often are, by trees, high walls, &c.? They get drawn up, weak, and sometimes spindly, and succumb to the first spell of hard weather, and how many of these little places are so situated that not a ray of sunshine penetrates them in the winter months? I have one in my mind's eye now that the sun never shines on from September till well into March. How would 'J. D.'s' hardy plants do there? Why some would die out, while others would linger on, eking out a miserable existence, as 'J. D.' would have the poor jobbing gardener do, from his remarks, for he grudges them a day's work, or the sale of a few bedding plants!"

Marsh Marigold (Caltha palustris). (See "Water Vegetation," p. 191.)

REPLIES.

13751.—**Spring bedding.**—That dreadful spring bedding, when will people open their eyes and see the folly of it! The following hardy flowers have bloomed, or are now in bloom, in various gardens, and all of them the indulgence in the foolish practice of spring and summer bedding would exclude from our gardens. I will omit everything difficult to grow or expensive to buy. Christmas Roses, Winter Aconites, Adonis vernalis, Erica carnea, Iris stylosa, Iris reticulata, Iris pumila, Iris olbiensis, Iris sibirica, Bearded Iris of many splendid varieties, Saxifraga Burseriana, S. Wallacei, double Meadow Saxifrage, Pansies of many kinds and colours, Polyanthuses, Auriculas of many colours, Primroses double and single of many kinds, Anemones of many splendid varieties, many as beautiful as show Roses, Ranunculus of many kinds, Columbines of many kinds, Narcissi of many beautiful varieties, Biennial Stocks and German Wallflowers, a host in themselves; Pyrethrums double and single, the double-like Chrysanthemums, the single-like Marguerites of various shades of crimson, rose, lilac, pink, white, and purple; Iceland Poppies, white, yellow, and orange; Papaver umbrosum, crimson; Papaver orientale and bracteatum, huge perennial Poppies, with flowers nine inches across, scarlet and crimson; Pinks of many kinds, perennial Lupines, Florists' Tulips, Parrot Tulips, Spring Phloxes, Crown Imperials, yellow Alyssum, Arabis albida, Aubrietias and Thrifts, Sweet Williams, Sweet Sultan, and Canterbury Bells. For spring flowering, annuals should be sown in autumn, but they will not do after bedding plants, for they must be sown where they are to bloom in the first week of September in the south, and earlier in the north. Bedding of any kind, therefore, curtails the floral display in a garden by, at least, five months—three months in spring, a month from the last week of May to the last week in June, and quite a month in the autumn. "Give it up, and grow hardy flowers" is the only rational advice for everybody. To have Silene pendula in flower in spring it should either be sown where it is to bloom early in September, or sown thinly in prepared beds in August, and transplanted with a good ball of earth in the first week of October. Spring bedding is always aiming at something it cannot accomplish. It could only be made a success by planting five weeks before the date when the bedding plants are taken up.—J. D.

13679. — **Laying out garden.** — If "G. G." had asked advice before taking a house and garden on the London clay, I should have said—"Don't, don't by any means have anything to do with the London clay in the outskirts of London; avoid it as you would a pestilence." The London clay is a stiff, cold, tough, intractable soil, very difficult to deal with, and requiring a great amount of labour to make it fit for a garden. Crops on it are backward, and liable to mildew all through the summer. In the clay districts of Middlesex one is really safe from night frosts only for some six weeks in July and August. "Thorough" must be the word with a clay soil. The best way is not always the prettiest. With "G. G.'s" garden I should "take things easy." Run a straight path of sifted cinder dust a foot deep down the centre, and divide the rest into vegetable plots, throwing up the soil out of the path into heaps in any convenient place, to bake hard if the summer is hot and dry. When baked as hard as a brick, and then just damped, the clay will break up easily, and can then be mixed with old rotten manure and sand. If, fortunately, the top-spit of soil has not been removed, that may be cultivated as a temporary measure. It should be removed bit by bit as convenience offers, and the subsoil dug up, manured, and pulverised, the cultivated top-spit being replaced after the soil beneath has been well broken up. A very strong narrow spade that contractors use for excavating the London clay is the best tool to use in digging it. For vegetables, all digging, breaking up, and exposure to the air of London clay is extremely beneficial, as nitrates of potash and of soda are formed with the nitrogen of the air. For the front plot, I should buy soil to begin with, as that must be sightly at once, but with the back garden work to a plan gradually, beginning with the path near the house. Save all house refuse, cinder dust, and soot, and make soil with the help of these mixed with the clay, as the latter is broken up by drought or frost. It is invaluable to have these materials ready for use when the clay is in a powdery state, as when it gets soaked it runs together again and becomes as stiff as ever. The best plant for a heavy soil is the Rose. Unfortunately Roses do not thrive near London smoke. Sweet Williams do well and break up the clay soil. For the rest trust to annuals, for two beds next the house. The Canary Creeper makes a nice screen on the clay. When the soil has been got into a workable condition, and has grown vegetables for two, or, better, three years, flowers and shrubs may be planted with success. If sifted refuse—as plaster and brickdust from an old building—can be had, it will be useful to mix with the soil, and beds can be made of it, mixed with soil, which will grow Wallflowers, Stocks, and Antirrhinums in the meantime. If the garden runs north-east to north-west the best plan would be to have a path nearest the shady side winding in a curved form and reaching the centre, some distance from the foot of the garden; have flowers between the walk and the shaded fence, then Grass, and another irregular flower border between the Grass and the sunny fence. At the bottom of the garden might be a circle, oval, or a square bed in the middle with walks round it and flower borders between that and the boundaries. In the two farther corners two flowering shrubs would look well of different kinds—always avoid pairs of things in a garden. J. D.

13384.—**Pansies.**—Put in cuttings of the small shoots that grow from the base of the plants in July. The choice varieties of Pansies are not so well adapted for spring bedding as the more hardy Violas, and for that purpose

they should be propagated by division, and planted in the beds as soon as the summer occupants of them are removed. They are sufficiently hardy to withstand severe frosts. My plan with choice Pansies is to plant out early in the autumn, but we reserve one plant of each variety to grow in small pots under the shelter of a frame through the winter.—J. D. E.

13395.—**Tennis-ground and worms.**—It is very difficult indeed to get rid of worms on a lawn. The gas lime would kill some at the time it was laid on, but they have evidently increased since. We destroy them by watering with lime-water. They come to the surface and die there, or die underground. After the

Great Water Dock (Rumex hydrolapathum). (See "Water Vegetation," p. 191.)

application of lime-water worms appear again in a couple of months. We have now left off trying to kill worms. Running the lawn mower over the ground once a week keeps it in good order, and the worm casts are not seen much.—J. D. E.

13680.—**Orchis mascula.**—This and many other hardy Orchises are easily lifted when in flower; and they establish themselves in gardens quite near to London, well within the smoke and fogs. I have lifted them in flower, and do not find any of them fade; the flowers develop as if they had never been disturbed. They grow in ordinary garden soil if it is good; but some soil in London gardens is so bad that it is scarcely fit to grow anything. A little good loam can be obtained from dealers, of which there are several in London. This plant prefers the soil to be moist. Yellow loam is best, they do not require peat.—J. D. E.

13582.—**The sparrow curse.**—Having frequently been made very angry by the depredation of sparrows I tried the "small iron traps" as recommended by your correspondent "Emma," and, to my great disgust, the first bird I found in my trap was not a sparrow but a beautiful thrush. No more "small iron traps" for me. I would rather suffer from the sparrows than run the risk of killing blackbirds, thrushes, linnets, &c. I now sow my seeds in rows and use wire guards, or pea-protectors, and so bid the sparrows defiance.—ELDON HOUSE.

—— "An Old Subscriber," who urges that gardeners "are quite fond enough already of traps and poison," writes:—"During the close season might not your correspondent 'Emma's' suggestion (p. 175) of iron bird traps, if carried out, bring the capturer of absolutely protected birds under the penalties of the Wild Birds' Protection Act? and the equally barbarous proposal of poison by J. Taylor, if acted upon, also deserve the attention of the police?"

—— Sparrows can be destroyed in a wholesale way by laying a "train" of corn, or something of which they are fond, so that the space it occupies can be swept by a discharge of small shot from a gun. A friend of mine, whose residence was near a large rick-yard, once succeeded thus in killing 60 at a shot. I should think 25 yards from the gun would be a good distance to lay the "train." It would be advisable before firing the first shot to put a little corn on the spot where the "train" is to be laid for a day or two first, to get the birds together.—L. C. K.

—— I saturate sawdust with paraffin oil, put a little in the seed beds and between the rows of growing plants. Sparrows have forsaken my garden and inundate my neighbour's; jackdaws and crows fly over my portion and destroy other gardens. Give the oil a trial.—J. C., *Limerick.*

13409.—**Climbing Clematis in pot.**—One of the best varieties to grow is C. Jackmani. You had best purchase a plant. They are grown in pots, and a good one will cost 1s. 6d. It might be in a 5-inch or 6-inch pot when received; repot it into a 9-inch one. Use loam, a little peat, and decayed stable manure. It may be planted at once.—J. D. E.

13385.—**Clematis montana.**—If a good specimen is planted out in the autumn it might flower the following season; but any ordinary plant, with good culture, would flower the second season.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, June 22nd to 27th.

Planting Stocks, Asters, Veitch's Autumn Giant Cauliflower, Snow's Broccoli, Savoys, and Scotch Kale. Layering Strawberry runners and earthing-up French Beans. Sowing Snowball, Red Globe, and American Strap-leaf Turnips. Planting out Capsicums in open spaces against south walls. Sowing Laxton's Omega, Ne Plus Ultra, and British Queen Peas. Planting out Borecole, Brussels Sprouts, and late Broccoli. Putting in cuttings of choice sorts of Pelargoniums. Looking over Globe Artichokes, and cutting off all stems and heads not required for use. Sowing French Beans. Nailing Apricot, Plum, and Peach trees out-of-doors. Planting out in the open-air newly-struck Pink and Carnation cuttings. Keeping floors of Vineries where fruit is swelling frequently watered.

Digging all vacant ground and hoeing between growing crops. Tying in all leading shoots of espalier Pear and Apple trees. Sowing Imperial and Heartwell Early Marrow Cabbage, also red and white Turnip Radishes. Planting out Lettuces and Endive. Cutting back Laurels encroaching on walks. Pegging down and stopping Vegetable Marrows. Putting strings round Peas forcing their way through the sticks. Sowing Giant White Cos the Favourite, and All the Year Round Lettuces. Planting out Celery and Cardoons. Clipping all Box edgings.

Looking over all cordon-trained Apple trees, tying down leaders and loosening any that require it. Sowing broad-leaved and green curled Endive, also Canadian Wonder Beans, Spinach, Mustard and Cress. Stopping and nailing in Tomatoes. Thinning out Parsley and Spinach. Watering all newly-planted fruit trees. Putting loose ties round all young Raspberry canes to protect them from the wind. Pinching back the breast wood of Cherry, Pear, and Plum trees, and nailing in the leading shoots. Sowing some dwarf and Negro Long-pod French Beans. Planting Broccoli among Potatoes. Plunging Roses that do not require repotting. Leaving a little air on vinery all night where Grapes are changing colour. Potting Stocks, Heliotropes, and Carnations. Thinning out Lettuces and Endive, also late-sown Carrots. Nailing and tying in all Roses, creepers, and Ivy on walls or trellis work. Placing sticks round Asparagus beds to protect the young growths from wind.

Work in the Town Garden.

OUTDOOR.—The great point now is to keep all freshly planted stuff outside clean and healthy, and growing as fast as possible. Plenty of water must be given directly it is needed, and even if the soil is not very dry, a good shower overhead with a rose-pot or garden engine will not only wash the dust off, but create a moist growing atmosphere round the plants, which will be highly beneficial. This should be given in the early morning, or in the evening of fine warm days, or even at both these times if the weather is so dry as to make it appear advisable. If the ground, however, is really dry a mere sprinkling will do as much harm as good, and in this case a thorough soaking must be afforded, enough to

White Water Lily (Nymphæa alba). (See "Water Vegetation," p. 191.)

reach every root fibre of every plant. Slugs and other similar plagues will probably do some damage among tender seedlings if not very carefully looked after. A ring of soot, ashes, or lime round any plants to which they seem particularly partial will be a preventive to some extent; traps of Cabbage leaves, &c., may be set, and on the evenings of damp days a grand clearance may be made by going round with a candle or lantern as soon as dusk has set in. Set traps for earwigs among the Dahlias by inverting a small pot, partly filled with dry Moss, on the top of the stake to each plant. These stakes, which should be about 4 feet out of the ground, should be put in at once, and the plants loosely but securely tied up to them. Carnations, too, will need light sticks and careful tying up as the flower stems rise. Never tie these, or anything else, indeed, at all tightly, but leave room for the stems to swell or elongate as may be necessary.

CHRYSANTHEMUMS, both in pots and borders, must be staked and tied as they advance, and the former shifted on into larger pots as fast as they fill the last with roots, particularly if large exhibition blooms are desired, and tall strong plants are not objected to. In this case

Yellow Water Lily or Brandy Bottle (Nuphar lutea). (See "Water Vegetation," p. 191.)

it is better not to stop the plants at all, but grow them on to a single stem as strongly as possible, when they will shortly branch quite naturally, and if two or three only of the strongest of these growths are allowed to remain, if the plant is well fed and only one bud left on each shoot, grand blooms can scarcely fail to be produced, though the plants, in 9-inch or 10-inch pots, will probably be 7 feet to 10 feet high when they come into bloom. Plants for decorative purposes, which should have more shoots and blooms of moderate size, may be frequently stopped during the next month, so as to induce the formation of dwarf, well-furnished plants. Indeed, most of the taller-growing Chrysanthemums, if of a free-flowering character (such as Mrs. Rundle, Mrs. Dixon, Beverley, etc.), may, if desired dwarf and bushy, be cut down bodily to within 6 inches or 8 inches of the pots at the present time with the best results. This operation will cause a number of fresh shoots to be thrown from the base of the plants, and these, if grown on well, will bloom abundantly. Some of the larger-flowered and less easily-bloomed varieties, however, will not submit to this treatment.

IN THE GREENHOUSE keep Fuchsias, especially spring-struck plants, growing on as fast as possible in a nice, sweet, moist atmosphere, syringing them plentifully overhead, and closing the house about an hour before the sun goes off it. Keep the plants fairly near to the glass, to produce stocky, sound growth, but shade lightly from hot sun and feed the plants liberally with liquid manure as they come into bloom. Some of the best Fuchsias for town culture are Mrs. Marshall, Miss Welsh, Star of Wilts, Elegance, Sedan, Scarcity, Try-me-oh Improved, Lady Heytesbury, Daniel Lambert, and Mrs. E. Bennett, of the single kinds; of double white corolla'd varieties, few seem to do much good, except, perhaps, Elizabeth Marshall and Kingsburyana, and dark doubles are also shy in really smoky town air, and only a few vigorous sorts, such as Purple Prince, the old Marquis of Bristol, etc., seem to flourish.

Look well to the young stock of Primulas, Cinerarias, and Calceolarias; never let the sun shine strongly on them while small and tender, or allow them to get really dry, or you may loose the whole batch. Seedling Gloxinias may be potted off into 60's when strong enough, and

should be pushed on as fast as possible in a close, warm, moist atmosphere. Pot on larger plants as required, using a mixture of good peat, leaf-mould, and sand, with a little fine loam. These do very well in towns if kept clean and growing.
B. C. R.

Glasshouses.

Cold draughts must be avoided as much as possible now that plants are growing vigorously; there must, however, be plenty of ventilation, and abundance of water must be given, and shade of some kind provided as a protection to plants in bloom. Give weak manure water to gross-feeding plants, and remove all superfluous shoots and suckers from specimens planted out in borders. Fuchsias trained to rafters require thinning, and Clematises should be tied to trellises. Do not allow deciduous climbers to intertwine with evergreen ones, as they are apt to spoil the latter. Keep up a succession of Hydrangeas, zonal, show, and sweet scented Pelargoniums, Fuchsias, Coleuses, Lobelias, Salvias, Cockscombs, Balsams, Schizanthuses, and similar plants, and transfer to frames or the greenhouse such plants as have done flowering. Heaths and some early-flowering hard-wooded plants may now be set out-of-doors on a bed of ashes. Cut in hard-wooded Veronicas that have done blooming, so as to encourage fresh growth.

Pot off seedlings of Primula japonica, and keep them out-of-doors, where they form stronger plants than if nursed under glass. Plants of Kalosanthes should have some assistance in the way of stimulants, as should also Liliums that have formed their flower-buds, and some other soft-wooded plants. Erythrinas in pots should be grown in a cool and light house near the glass; they require plenty of water, and their main branches should have supports of some kind to keep them in proper position. Bouvardias that were cut back after flowering should now be making good wood; they must, therefore, be kept moist and warm for some time yet. Persian Cyclamens should be kept in cool and shady frames, or against north walls; they should receive a little water during the summer months. Azaleas that have done blooming, and which have had their seed-pods picked off, should be repotted, if necessary, and put into a warm pit, where heat, moisture, and shade can be given them. Camellias also make good growth under similar conditions, so do also Oranges of various kinds. Pinching in should be practised freely until the plants have attained the desired form.

Veronicas.—Whether the autumn and winter flowering supplies of these useful plants are in pots or planted out for subsequent lifting they must be encouraged to make bushy, stout growth. It is well to again pinch out the points of the leading shoots, but with the autumn-blooming kinds, such as Andersoni, the next stopping is the last they should receive.

Coronilla glauca is a pretty summer-blooming floriferous plant. It is not a large grower, and on that account may be used plentifully. Small examples of it in 6-inch or 7-inch pots bloom freely. It requires ordinary greenhouse treatment, and should be cut back freely after flowering.

Statices.—The different species of Statice supply various shades of a colour not common among greenhouse plants—blue; the flowers are most enduring, and the plants, when healthy, keep on producing a succession as long as they are in active growth. The plants last for a number of years when well treated, but there are several matters connected with their cultivation in which they differ somewhat from the generality of other subjects. To keep the leaves in a healthy condition they must not be exposed to the full force of the sun from the time it gains considerable power until it wanes in autumn; otherwise they assume an unhealthy, bleached appearance, and do not attain nearly their full size. The plant should not be kept lower than from 40 degs. to 45 degs. during winter, or the growth becomes stunted. They are free rooters, and require more pot room than many things which attain larger size. Good yellow loam is the best soil in which to grow them, and when in full growth during spring and summer they are much assisted by frequent applications of manure water. They require no training for ordinary uses. S. profusa, S. Butcheri, S. imbricata, S. brassicæfolia, and Holfordi are all deserving of cultivation. Cuttings may be put in now; those made of moderate-sized shoots, kept in a medium heat and confined under a bell-glass, strike freely.

Chrysanthemums.—Plants that are grown from cuttings put in about the close of the year, and which will produce a greater profusion of fully-developed flowers than the later struck ones, will be ere this in their blooming pots, and all the later propagated ones should at once have their last shift, for if kept confined in little pots too long the consequence will be the loss of the lower leaves and a hardened condition of the shoots, both of which it is not possible afterwards to set to rights. Leaf-mould as a mixture with the soil is sometimes recommended for Chrysanthemums, but when this is employed the plants have a greater disposition to make shoot growth than to flower freely. Good turfy loam, with a moderate addition of sifted rotten manure and sufficient sand, will grow them well. Pot firmly, and, as soon as they have got fairly hold of the soil, stop the shoots as far as necessary, but not more, as this pinching is frequently carried much too far and resorted to too late.
T. B.

Flower Garden.

Little, if any, planting out should be necessary now, and the thinning out and transplanting of annuals should be nearly finished. Mulch or keep the ground loosened with a small hoe, or, where the plants are very close together, with a pointed stick. Carpet beds are best mulched with Cocoa-nut fibre; Violas, Calceolarias, &c., with droppings. Sub-tropicals are indirectly mulched by pegging down the ground-work plants as soon as practicable. Trivial as these operations may appear, they are important factors to real and speedy success. Staking, tying, and keeping the flowers picked off Cannas, Castor-oils, &c., to aid their more rapid growth, are the only other immediate requirements needed by sub-tropicals. Ordinary kinds of bedding plants should frequently be gone over in order to remove bad foliage and flowers. Pansies, Violas, and Calceolarias are quickly exhausted, and cut a sorry figure in dry weather if the old flowers and seed vessels are not removed frequently.

Hardy plants.—A little extra care should now be bestowed on them. Lift such Hyacinths, Tulips, and Crocuses as interfere with them, and spread them out to dry without removing any of the leaves. Cut over the decaying stems of Snake's-heads (Fritillarias) and similar early-flowering plants. Gather seeds of Squills as soon as they are ripe, and sow them at once. To plants that require support apply strong stakes, but Campanulas, Larkspurs, Pentstemons, Antirrhinums, Pyrethrums, and some others of a similar character look best when unsupported in that way. Transplant hardy Primulas kept in pots on to a shady border, where they should be kept clean and secure from slugs; P. japonica always grows better when planted out-of-doors than when grown in pots. A mulching of rotten manure, spent Hops, Cocoa-nut fibre, or leaf-soil should be spread over the ground, and if its appearance on the surface is objectionable cover it with soil. Phloxes like plenty of nourishment, consequently a little manure water should now and then be given them. Everlasting Peas wintered in pots may now be planted out. Viola cornuta and other bedding Pansies should be kept well furnished with young shoots by occasionally cutting out the old ones, and the beauty of both English and fancy sorts will be greatly prolonged if they are grown in a moist and partially-shaded situation. Such herbaceous plants as have been wintered in frames may now be planted out, but for plants intended still to be kept in pots a shady position on a bed of ashes is best, and upon no condition should they become at any time perfectly dry. Remove decaying flowers except in cases in which the seeds are to be sown. Double Rockets which have bloomed should have their shoots layered, an operation which will soon induce the production of shoots in abundance, and these, when they have attained a length of 2 inches or 3 inches, may be taken off and made into cuttings. Pyrethrums for late blooming, if cut down and allowed to grow afresh, will come into bloom during the later summer months.

Hardy annuals for late blooming should be sown in shady spots, to be transplanted hereafter to the positions in which they are to flower. Seeds of Brompton, Emperor, and Queen Stocks should also now be sown for flowering next spring.
W. W.

Fruit.

The disbudding and thinning of Peach trees should be completed and the points of young shoots likely to become too strong pinched out before the laying-in of the shoots is commenced. On no account should a single shoot be laid in unless it is wanted to carry fruit next year, or to complete the furnishing of the tree. Pears, Plums, and Cherries may now have all the strongest breastwood cut away to the third or fourth eye, but the system of leaving all the growth to be cut away at once is not a good one. It is much better to commence earlier and carry on a regular system of pinching. In wooded districts the early kinds of sweet Cherries will require netting to protect them from birds. Strawberries, too, will require attention. There are numerous modes of treatment recommended for the production and protection of this valuable fruit. The most important points at the present time are copious supplies of water, a ground covering of straw or litter to keep in moisture, and protection from birds and slugs. Where slugs are numerous, and, indeed, even where they do not exist—quantity and quality being the first consideration—the most economical plan is to place four short sticks to every old stool, and two to younger plants, and form a support for the fruit by running a piece of matting or twine round them some 9 inches from the ground. All the trusses can then be turned outwards to the influence of sun and air. Slugs are isolated, and the fruit dries quickly after showery weather. Disbud, stop, and train in new growth on vines in the open air, where such is required, as in the case of indoor vines; young canes produce the finest fruit, and provision should be made for the renewal of old ones by occasionally training in new shoots to take their place at the winter pruning.
W. C.

Vegetables.

Few things are so profitable and scarcely any so hardy as Brussels Sprouts, which we are just now planting in their permanent places, the previous crop being spring Cabbage and Lettuce. Brussels Sprouts being strong feeders, we treat them to a good manuring and a deep digging. Our first lot of Celery is already out and in the trenches, and the bulk of our crop will be out in a day or two. My favourite varieties are Carters' Incomparable Dwarf and another dwarf white called Hasting's White Celery. I also have a few rows of Major Clarke's, which grows to a large size, and is most useful on special occasions. Among the best varieties of Peas to sow at this season is William I. and Unique, both of the green marrow type, and not so subject to that fatal disease, mildew, as many of the strong growing varieties. Parsnips, Carrots, Beet, and Onions will now require thinning, hoeing, and cleaning. I find the smaller Onions keep better than giants, and are better liked by the majority of cooks.

Late Potatoes should be cleaned and moulded up at once. I may add that we have begun lifting Ashtops from the open ground—a capital crop. Sow at once a good bed of Parsley for spring use; sow a little Lettuce seed, but I would defer sowing Endive until the first week in next month; if sown earlier it often runs to seed. Scarlet Runner Beans and late Peas must at once be staked. Thin the main crop of Beet-root before the plants get so large as to interfere with the growth. Some Colewort seed should be sown; they will be useful for planting thickly late in the season, after other crops are cleared off. Where dwarf French Beans are held in particular estimation, a few more may at once be sown; these should occupy a south border, under the shelter of a wall, where, by a slight additional protection from September frosts, they will frequently go on bearing longer than those grown on more open situations. Autumn-planted Cabbages that have been cut and the stools left to produce a crop of sprouts should, where the sand is at all poor or of a light nature, have a good soaking with manure water. The hoe should be kept going among advancing crops of every kind on all favourable occasions.
R. G.

OUR READERS' ILLUSTRATIONS.

Dipping Well in Garden.

The engraving that we publish this week as the third of our prize illustrations represents a "Dipping Well" in the garden of Mrs. Bensted, Maidstone. We are sure that our representation of this charming little nook cannot fail to please our readers, who will admire alike the taste of the gardener and the skill of the artist. In most drawings and photographs the introduction of figures mars the effect, but here even the pitcher has its appropriate place and serves a useful purpose. The engraving is executed from a photograph sent to us by Mr. H. Bensted, of Rockstow, Maidstone, who designed the well and sends us the following note relating thereto:—"The Dipping Well is a cemented tank of irregular shape and serves primarily the useful purpose of tempering the water for use in the garden, the supply being from a company's main. It also suitably fills a shady corner behind a projection of the house and forms an artistic termination to the lawn."

Our Readers' Illustrations: Dipping Well in Garden at Maidstone.

Winter in summer.—At this time of year, when the earth is full of beauty, and many of the trees can scarcely find room for their flowers, it is sad to see so many ugly borders in the public gardens of Paris and London. In Paris, lately, owing to the practice of bedding-out, the beds and borders looked at their very stiffest and worst—in the very middle of summer! This system cannot last, and will be discarded as soon as people generally see through it.

Large Apple blossom.—I enclose a bloom from Codlin Apple which measures 2½ inches. Is it not an extraordinary one?—T. G. F., *Woodstock.* *** *It is simply an accidental monstrosity.*—Ed.

ROSES.

Rose, Celeste.—What an exquisite Rose this is! and its rich fragrance is most exquisite also—pure and fresh as the ottar of Cashmere! That this lovely old variety is not better known is little short of a calamity, seeing that but few other Roses in the bud stage are more lovely or so sweet. I think I know half a hundred single and semi-double old-fashioned Roses, but none fairer or more deliciously sweet than this in its earlier stages of blossoming.—J. R.

The Manetti Rose in a village churchyard.—Few, probably, think of growing this as an ornamental plant, and yet I doubt if the choicest variety in cultivation can produce a more pleasing effect than this single kind does when allowed unrestricted freedom of development. I have been much gratified lately with the quite charming appearance of several large bushes of the Manetti growing in our village churchyard. One ought not, perhaps, to be gratified when a choice Rose dies, but I certainly own to feeling pleased that the death of several good varieties gave birth to a form of beauty such as few double Roses could produce. The soil of our churchyard is not rich, and when some years ago it was tried to induce good Hybrid Perpetuals to grow and bloom there in a border some 12 inches wide, with no more nourishment than the soil itself naturally furnished, the plants refused to grow, bloom, or even live under such disheartening circumstances. Luckily, however, they were on the Manetti, which evidently found the position congenial to it, and quickly grew up into large bushes, some 10 feet high and nearly as much through, and which, not knowing the knife, have grown as Nature intended them to do. They are therefore just as irregular in outline as the common Dog Rose of our hedges. Even though they have nothing but the poorest of soils to grow in, they show no signs of declining vigour, but promise to be things of beauty for many a year to come. Looking at these Rose bushes, so healthy, so full of pretty bloom, so happy in adverse circumstances, and all this with absolutely no care, I could but think that in trying after what is too often the unattainable we neglect the most simple and effective means of embellishing our gardens. There are so many plants which, grown on Nature's plan only, given the position they like best, and left alone, would prove so highly satisfactory, that the wonder would seem to be that we should often take so much pains for slight recompense. The Manetti is not the only single-flowered Rose which is suitable for growing as untrained unpruned bushes. There is, for instance, the Ramanas, and there are many others. How fine a sunny bank would look dotted with them, or, better still, planted in irregularly-formed groups. This is a phase of wild gardening which deserves the attention of those who have space for carrying it out, and Roses on the Grass would form a charming feature in any garden.—J. C. B.

REPLIES.

13685.—**Budding Roses.**—I have budded hundreds of Roses, and have been very successful with them, but never left any portion of wood at the back of the bud, nor is it usual to do so. The task of picking out a portion of the wood and leaving some of it in is one that a practiced budder would not care to face.—J. D. E.

—— The bud should always be taken off with a thin slice of wood attached, which should be (partly) taken out with a jerk with finger and thumb-nail or point of knife, taking care to leave a little wood immediately at the back of the bud to conduct the sap to the

growing bud. Should all the wood come out, as sometimes is the case, leaving a little hole at the back of the bud, do not insert, as it would not grow, but prepare another. Tie with worsted or bast (wet) firmly, and as near the bud as possible. If the tying material is used dry, should there be a continuance of wet weather it shrinks, and prevents the proper flow of the sap. In the work you quote from on budding the sentence should read thus:—"A portion of the wood should be taken off with the shield."—E. T. P., *Horngrove.*

—— The bud should be taken off with a portion of wood, but as little as possible, just behind the bud. Then prick out as much of the wood as possible without disturbing the bud; if the little bit of pith, which will be found running into the bud from the wood, be picked out, the bud will have no life in it, as from that the branch-forming springs; in fact, it is the young branch, the green outside being only the shell.—T. Burgess.

13402.—**Poultry and blood manure for Roses.**—Poultry manure spread on the surface, and lightly dug in during winter, is good for Roses; but it is a powerful manure, and must not be used too freely. I would throw the slaughter-house blood over a heap of manure, and dig it into the ground when it had become well incorporated with it.—J. D. E.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

13781.—**Increasing Genista.**—Will any reader tell me how and when to propagate this plant?—J. R. C.

13782.—**Tea Roses.**—Will any Rose-grower kindly give me the names of half-a-dozen Teas with flowers as double as those of Mrs. Bosanquet?—Ayrshire.

13783.—**Difference between Pansies and Violas.**—Will any reader be so kind as to tell me how to distinguish a Pansy from a Viola?—G. E.

13784.—**Hyacinths from seed.**—Will Mr. Douglas, or any other reader, kindly tell me how to raise Hyacinths from seed?—Erin, *Salisbury.*

13785.—**Cyclamens after flowering.**—Will any Cyclamen grower kindly tell me what to do with my plants after they have flowered?—S. F. G.

13786.—**Value of garden land.**—Can any reader tell me the average price of land per acre, suitable for a market garden, in Berkshire, or about seventy miles from London in any other county?—Graham.

13787.—**Treatment of Clianthus Dampieri.**—Will some reader of Gardening kindly tell me how to treat this plant, the soil, and time of planting?—F. R., *South Shields.*

13788.—**Slugs in garden.**—"Ignorance" would be much obliged if someone would tell her how to rid her garden of slugs, which are making terrible havoc amongst the young plants.

13789.—**Bright and large Pansies.**—Will someone kindly tell me which Pansies are the best, having regard to bright colours and large size? They must be hardy enough to stand the winter in open ground.—R. D. O., *Swansea.*

13790.—**Figs dropping off.**—Can any reader tell me the cause of Figs turning a yellow-brown colour and dropping off when about the size of a nutmeg? The tree seems healthy; it is against a wall facing west, and well set with fruit.—A. B., *Dorset.*

13791.—**Site for greenhouse.**—I want to put a lean-to greenhouse on wall facing south-east, but it would be partially shaded till eleven a.m. by trees, and after three p.m. by the house. Will any practical reader tell me whether this site is suitable?—G. B. P., *Kent.*

13792.—**Unfruitful Currant trees.**—Seven years ago I planted a dozen Black Currant trees; they all thrive, and have grown large. They are full of flower, but the berries all drop as soon as formed every year. Can any reader tell me the cause and suggest a remedy?—Mrs. S., *Sussex.*

13793.—**Crop to follow Potatoes.**—I have about half-an-acre of land, which I have cultivated with Potatoes successively for about five years. Last year it did not yield well, and this year does not show much promise. Will any reader tell me what would be the best remunerative crop in place of Potatoes—I mean for sale? The land does not grow good Cauliflowers, but does well for Onions. I mean to grow Potatoes again after the land has had rest.—Doncaster.

13794.—**Double Rockets.**—Will "A. Y. D., Aberdeen" (who wrote the note published on page 175 on Double Rockets), or any other correspondent kindly oblige several readers of Gardening by informing them where the plants referred to can be obtained? His note has called forth a large number of letters of enquiry.

13795.—**Amateur's greenhouse.**—I am building a span-roofed greenhouse of wood at the bottom and glass all round. I want to have the fire outside and to carry the pipes, which are earthen and 6 inches in diameter, through. I shall be very glad if any reader will tell me what distance the pipes should be off, so as not to set fire to the wood.—An Amateur.

13796.—**Starting market garden.**—Will any reader kindly inform me how much money is required to start a market garden and keep it going until it begins to make a return with profit, and what amount of profit can be made out of a 6-acre garden after wages, &c., are paid, if the manager knows how to do his work well?—Oakfield.

13797.—**Virginia Creeper withering.**—About September, 1883, I planted a Virginia Creeper outdoors. It made good progress last year, but this year the new leaves are withering and dying off after about a fortnight's growth. Can anyone tell me the reason and how to prevent this? The soil is pretty rich and rather wormy; position west.—Virginia, *Mile End Road.*

13798.—**Picea nobilis.**—A Picea nobilis, about fifteen years old, is throwing out cones; is this a sign of debility? It has also thrown out what look like catkins.—Hibernia. **** It is not unusual for these Conifers to flower in a small state, but if the tree appears to be stunted at the same time the appearance of the cones is a sign that it is not in a thriving condition. You do not state the height of your tree.*—Ed.

13799.—**Young Acacias not growing.**—I have two or three little Acacia plants (the one with the pink flower) which I raised from seed. After growing to a height of 4 inches they have remained stationary, and the leaves are dropping off. Could any reader tell me how to treat them, what sort of soil they like, and if they require much heat and water? They are in a greenhouse, but it is not kept very hot.—Acacia. **** Our readers will probably help you; see also reply to "T. Y."*—Ed.

13800.—**Copper Austrian Brier.**—I enclose you a Rose cut from a bush now growing in my garden here, and of a kind which, tradition among successive gardeners shows, has been cultivated here for more than 125 years. We have always known it as the "Copper-coloured Rose." What is it, and what is the best mode of propagating it?—H. B. T. S., *Somerset.* **** The name is as above, and a very beautiful and brilliant thing this is. We occasionally see it well grown in cottage gardens in certain parts of the country; but in large gardens it is by no means so often seen as it should be.*—Ed.

13801.—**Culture of Asparagus.**—I shall be much obliged if any vegetable grower will give me any help in the culture of Asparagus. Formerly Asparagus did very well here, but for the last ten or twelve years it has failed altogether. For a couple of years all seems to promise well, and then the roots perish, and very few heads are to be seen. There are some old beds in North Lancaster which do well, but I hear great complaint of the beds lately made.—W. H., *Lancashire.* **** Refer to our number for December 27th, 1884, page 530, where you will find an article on the culture of Asparagus. In the last volume there are also numerous notes on the subject, and probably some of our readers will give you assistance.*—Ed.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13802.—**Hothouse Grapes** (*McD.*).—Try Mr. Munro, salesman, Covent Garden Market.

13803.—**Book on market gardening** (*J. Bennett*).—Shaw's "Kitchen and Market Garden," Crosby Lockwood and Co.

13804.—**Rose with poor centre** (*M. A. P.*).—Your Rose looks as if it has had too much manure; the flower has all the appearance of being from a grossly-fed plant.

13805.—**Floral device for jardiniere** (*Amateur*).—We know of no treatise on this subject. You had better see what others do, and try to improve upon their work.

13806.—**Rumex nemorosus** (*Borderer*).—We know of no other English name than that of Wood Dock for Rumex nemorosus, nor are we acquainted with any other Latin name.

13807.—**Name of Perennial Poppy** (*X. Y. Z.*).—The flower you describe is the Oriental Poppy (Papaver orientale).

13808.—**Planting over Anemone fulgens** (*Hibernia*).—Do not put any other plants in the bed at all, as the Anemones will develop leaves in a very short time, and any other plants would injure them.

13809.—**Treatment of the Hare's-foot Fern** (*A. C. R. Le M.*).—As there are so many Hare's-foot Ferns we cannot assist you. If you send us a frond, and repeat your question at the same time, we will advise you.

13810.—**Handling Grapes** (*Amateur*).—Provided the berries are not injured in any way the bloom would not be affected by handling previous to colouring. Thinning ought, however, to be done without touching the berries.

13811.—**Mimosa pudica and Clianthus Dampieri from seed** (*P. Robson*).—Raise both plants in a hotbed. You will find the Mimosa an easy plant to grow, while the other is one of the most difficult.

13812.—**Summering Cocos Weddelliana** (*C. Herbert*).—If the spot is very sheltered we see no reason why they should not be put out in their pots for the summer; but we have never seen it tried. It is a plant that requires an abundance of heat and moisture.

13813.—**Blight on Rose trees** (*J. O., Oxford, and Ignorance, Camberwell*).—Try syringing with Tobacco water. We doubt whether "Ignorance" will ever be successful in growing Roses in her locality. We have never yet seen good Roses grown in London.

13814.—**Self-sown Geraniums** (*Col. R. S.*).—Such self-sown Geraniums are not uncommon.

13815.—**Rough-skinned Grapes** (*T. T. R. F.*).—The Grapes you send appear to be "shanked;" shanking arises from different causes, but generally from deficient root action. The berries also appear to be affected by rust.

13816.—**Increasing Zonal Geraniums** (*R. Sheppard*).—How are you to know whether your plants are worth propagating unless you let them flower? Do not propagate them until you see whether they are worth the trouble.

13817.—**Excrescences on leaves of Cherry** (*Cantit*).—The excrescences you mention are perfectly natural; they are called glands, and occur on almost all Cherries and Peaches. There is nothing whatever the matter with the leaves.

13818.—**Melons and Cucumbers** (*Waltham*).—Melon seeds cannot, of course, produce Cucumbers; the probability is that, the seeds not being unlike each other, you have mixed them. We have never heard of Melons and Cucumbers being hybridised.

13819.—**Culture of Tomatoes and Vegetable Marrows** (*Grick*).—The culture of these vegetables is fully treated of on page 76, April 11th, 1885 (Tomato), and page 163, May 30th (Vegetable Marrow). You had better refer to those articles, and, if you desire any further information, write to us again.

13820.—**Treatment of young Acacias** (*T. Y.*)—Most Acacias grow freely in a cool and airy greenhouse; but, of course, you must attend to them as regards cleanliness, abundant water, good soil, and plenty of light. Indeed, they sometimes grow too freely if attended to in these respects.

13821.—**Contradictions in botanical works** (*Borderer*).—If you follow Hooker you will be correct. You will see, however, if you again refer to Hooker's "Botany" primer, that you have made a mistake. Birch and Alder are not there entered under Monocotyledons, but under Dicotyledons—at least, it is so in our copy.

13822.—**American blight** (*James*).—Scrub the affected parts with paraffin mixed with water in the proportions of a wineglassful to the gallon; afterwards put a composition of clay and cow manure over the cankered parts. If your neighbour's trees are not cleansed the blight will probably reappear on yours.

13823.—**Means of training Roses** (*Mrs. L.*).—We never like Gloire de Dijon so well as when it is allowed to grow rather freely on the wall. The main and stronger branches might be tied with Willow twigs. The effect of Tea Roses when a mode of training that is not stiff is adopted is good; but the main branches must, of course, be attached. We ourselves prefer a rough strong trellis of horizontal wires and upright sticks half an inch square, or Willow wands; but this, for the sake of convenience, is best applied over the whole surface, and, in justice to the common plan of nail and shred, we should say that we often see beautiful climbers trained that way.

13824.—**Pyrus japonica** (*Mrs. R.*).—The Japanese Quince grows perfectly as a shrub all over the districts with which we are familiar, and, therefore, there is nothing whatever to prevent you from growing it in a bed. It might grow among pretty bulbous and other plants, which would no more injure it than it would them. Of course the proper way would be to prepare the ground thoroughly at first, and plant and let alone, and keep clean by weeding; or, better still, let small plants surface the ground. We mean such plants as Hepaticas and Forget-me-nots. Do not plant one bush only; it makes a beautiful group, and you know there are various colours—salmon, white, cream, and various shades of red. We have seen the Japanese Quince form a good hedge. A few hardy Tulips would thrive freely, but you must not pull about the bed for bedding-out purposes.

13825.—**Hairworms on flowers** (*Snake*).—The creatures you found on your flowers are hairworms (one of the Gordiaceae). These creatures live the greater part of their lives as parasites within the bodies of insects. They will not injure your plants.—G. S. S.

13826.—**Spotted Peaches** (*Eveleen Constance*).—The cause of the discoloured patches on the Peaches is very obscure. Nectarines are often affected in the same way. A fungus named Glœosporium læticolor often grows on the patches, and good observers are of opinion that this fungus is the cause of the mischief. The idea seems supported by the fact that the disease spreads from one fruit to another as if from germs. The same disease will sometimes spread to Grapes, if grown in the same house with affected Peaches or Nectarines.—W. G. S.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers by post.—*Correspondents are requested to note that we do not answer questions by post; we shall be obliged, therefore, if they will refrain from sending us post cards and stamped envelopes for replies.*

Welsh Auricula growers (*Blackbird*).—We cannot give you such a list.——Procuring Myrobalana or Cherry Plum (*J. Selsby*).—The information is desired not by one correspondent alone, but by several, and it should be given through Gardening, and not by post.——"Silfast" (*Durham*).—We do not know the name. Send us a specimen of the plant, and we will give you the information you desire.——Calycanthuses (*F. Watts*).—If you want plants you must either advertise for them or apply to those tradesmen who advertise them for sale. You will

find the names of many firms in each issue of GARDENING. ——DOUBLE ROCKETS (*Mr. Pumphrey, Mrs. White, and several others*).—We cannot supply you with the address of our correspondent; but a query in this week's issue may elicit the information you require.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*R. N.*—Tacsonia Van Volkemi; T. Buchanani is scarlet.——*J. F. Rayner.*—1, Polygala vulgaris; 2, Species of Sedum, too small to name.——*C. M. B.*—1, Spiræa hypericifolia; 2, Rhodanthe Manglesi (annual everlasting); 3, Limnanthes Douglasi.——*Miss Elliott.*—Alexandrian Laurel (Ruscus racemosus); Asplenium bulbiferum.——*S. A. E. F., Somerset.*—Large white Wood Lily (Trillium grandiflorum).——*Uncle Jeff.*—1, Too small to name; 2, One of the Sun Roses (Helianthemum); 3, Pyrethrum Tchihatchewi; 4, Veronica Teucrium. Send larger and better specimens next time, with numbers attached, so that they may be readily seen.——*Clover.*—Celsia cretica.——*J. C. K.*—Clustered Bell-flower (Campanula glomerata); St. Bruno's Lily (Anthericum Liliastrum); Saxifraga granulata.——*R. N.*—Campanula glomerata.——*H. B. F. B.*—1, Trollius europæus; 2, Campanula glomerata; 3, Euphorbia Cyparissias.——*Kilwinning.*—Not at all uncommon, simply a double Petunia.——*A. B.*—Double Columbines (common).——*C. F. Price.*—Prunus Padus (Bird Cherry).——*H. B. T. Strangways.*—Copper Austrian Brier.——*Tomsett.*—1, Species of Echeveria (name next week); 2, Maurandia Barclayana alba; 3, Alonsoa incisa.——*J. M. E.*—1, Saxifraga ungulata; 2, S. Aizoon var; 3, S. cuneifolia; 4, S. Andrewsi.——*J. M. G., Devon.*—Flowering Ash (Ornus europæus); other too small to name. Please send larger specimen, and tell us where it grows.——*H. J. Beviton.*—Ceanothus dentatus. Take cuttings at the end of summer, and insert under a bell-glass in a frame.——*T. Birch.*—You enclose two young leaves, both of which are almost entirely hidden by the labels gummed to them, and you ask us to give you the names of the plants from which they are gathered. One of the little leaves seems to belong to a family in which there are no less than fifty species which differ very little in their leaves, so you will see how far your scrap assists us in identifying it. Please read our rules above; send us a fair specimen, and we will try to give you the information you require.——*R. W. Green.*—1, Apparently Euphorbia Lathyris; 2, Weigela hortensis.——*C. W. S.*—Wild Service (Pyrus torminalis).——*Captain M.*—Next week.——*C. H.*—1, Habenaria bifolia; 2, Æschynanthus grandiflorus; 3, Send in flower.——*Kashmir.*—Lindelofia spectabilis.——*B. C., Sunbury.*—Weigela hortensis.——*W. Redmond.*—Some kind of Apple or Crabb.——*J. Taylor.*—White Beam Tree (Pyrus Aria).——*Mrs. R.*—Your flowers have not been received.——*D. T.*—1, Campanula glomerata; 2, Saxifraga cuneifolia.——*R. M. B.*—1, Weigela hortensis; 2, Flowering Ash (Ornus Europæus); 3, Bird Cherry (Prunus Padus).——Others next week.

INDOOR PLANTS.

CULTURE OF HERBACEOUS CALCEOLARIAS.

A REASONABLE amount of care is required in order to grow these properly, and some trouble should be taken to select the seed from a good strain. I find that if the seed is sown any time in July, strong plants may be obtained. Always sow in a rather large and deep seed-pan, because a small and shallow one requires constant watering to keep the soil moist. The pan need not be drained so carefully as for plants that have to remain in it all the winter, and the soil should consist chiefly of loam, with some sand added, and both should be run through a rather fine-meshed sieve together; after the pan is filled with soil it should have a good watering before the seed is sown; then cover the seed very lightly with fine sand. A slate should be placed over the pan, which should be set in a vinery. After the third day it will be necessary to watch the pan narrowly, and as soon as the plants appear the slate must be taken off. The cooler the quarters after this time the better. Light without the sun shining on the seedlings they must have, or they will make but poor progress; a cool, shady greenhouse or cold pit where the pan can stand on a cold bottom, such as a bed of soil, is what they like. It will be necessary to water very carefully and only give enough to keep the soil regularly moist.

In six weeks from the time when the seed is sown the plants should be large enough to prick out. For this purpose some fresh pans should be prepared by filling them with fine, rather light, sandy soil, into which the plants may be put about 2 inches apart each way, taking them back again to their old quarters. They may be allowed to remain in the pans until the leaves touch each other, when they will want more room both for roots and leaves. The next move must be into 4-inch pots, which should be clean and well drained. The same soil will be suitable for this and all subsequent pottings. It should consist of three parts good fibrous loam and one part leaf-soil or well-rotted farm-yard manure, with some coarse sand or road grit added. As these plants require a free and open medium for the roots, the compost had better be used rather dry than wet, for if potted in a soil that will run together in a mass the roots will not take to it in a kindly manner. The most suitable place for them during winter and until they come into flower is a brick pit, in which the pots can stand on a bed of ashes and the tops of the plants be about 12 inches from the glass. They do not require any artificial heat; in fact, they are always better without it, and bottom-heat they greatly dislike. With a good lining of either leaves or manure placed close to the walls of the pit, and plenty of external covering on the glass, there will be no difficulty in keeping out the severest frost, and they will take no harm if shut up for six weeks or more if the weather should be severe. As a matter of fact, it is better to keep them covered up in frosty weather than to expose them to a fluctuating temperature. On all occasions when the weather is mild they must have plenty of air.

In regard to root moisture, it is only necessary to say that they require as much as they can make use of so long as the soil does not get overcharged. With a good substantial soil clear water is all that is required to secure healthy plants and good heads of bloom. It is essential that they should have more root room as soon as they have filled the pots full of roots in which they are growing until they are put into those in which they are to flower. In our own practice we shift from 4 inches into 6 inches, and from these into 8-inch sizes, which

Heart-leaved Pickerel-weed (Pontederia cordata).
(See "Water Vegetation," p. 191.)

are the largest we use, and which will be found suitable for many purposes. To obtain good specimens in the last-mentioned size, they ought to have their last shift, if the weather is mild, about the end of December. Green fly is sometimes troublesome, but it can be got rid of by fumigating with Tobacco. J. C. C.

13740.—**Getting rid of woodlice.**—Woodlice can be trapped like earwigs, or poisoned like cockroaches. A bucket of hot water is in most cases necessary to put them in when the traps are emptied. Fill some 10-inch pots with half-dried horse droppings, and lay where the insects congregate. Once a week turn the droppings into the fire, and put fresh into the pots. If this is persisted in a riddance will soon be made. Or into some small pots put cold boiled Potatoes, and cover with Moss. Examine night and morning, and transfer the woodlice to a bucket of hot water. The Potatoes will last for some time, and the traps are about the best for the purpose. Wherever toads and tomtits can be induced to stay in the houses, or robins build nests, woodlice will soon become scarce, and, therefore, both toads and robins should be encouraged, for, if taken early enough, woodlice never become very injurious. (From "Garden Pests and their Eradication.") —CELER ET AUDAX.

WINTER-FLOWERING PLANTS.—XIX.

THE LILY OF THE VALLEY

IS one of the sweetest and most favourite winter and early spring flowers we possess, and the supply, either as pot plants or in a cut state, is seldom or never greater than the demand. Growers for the London market generally succeed in obtaining at least a few potfuls, and some quantity of cut bloom, as early as Christmas, when they fetch high prices; but it requires great experience, and the necessary appliances ready to hand, to produce Lilies thus early. Most market growers prefer, especially for early work, the single crowns, as imported from Holland and Germany. These are planted in good loamy soil, either in boxes or pots, and after standing in a cool place for some time, to induce the formation of fresh roots, they are placed in a strong, moist heat, generally in small frames, kept closely shaded at first, on a bottom-heat bed in a low, close, warm house. This is the general practice for the earlier batches, though almost every grower has a method of his own, differing more or less from that employed by others. Some, for instance, place the roots in wooden boxes, bury them rather deeply in Cocoa-nut fibre, and place them, almost immediately after planting, on the hot-water pipes in an ordinary greenhouse. As soon as the growth is seen pushing through the fibre, this is shaken out from between the stems, and by the time the growth is coloured, the flowers, in a fairly warm temperature, are expanded. But treatment that suits roots obtained from one source will not always prove successful with others, the reason of which appears to be that different growers of the roots on the Continent have also different modes of treating the plants, so that one method of forcing does not suit Lilies from all sources.

Later batches need less artificial warmth, and are allowed to come on more naturally. As a rule, very early Lilies are, to a great extent, drawn and weak, from the severe treatment required, and the insufficient amount of light obtainable early in the year. The finest blooms are usually produced during March and April, when a really good grower will turn out flowers that for size, beauty, and fragrance, far surpass any even of the natural out-door grown Lilies of the Valley. The amateur grower however, will find the clumps (imported, of course) more generally useful and easy to manage than the single crowns. Well ripened clumps potted as soon as they can be obtained in autumn, and stood, or, better, plunged, out-of-doors or in a cold frame or pit, and introduced into a gentle heat about the turn of the year, will be almost certain to start and bloom well. They should be kept in comparative darkness when commencing to force, and gradually exposed to full light as the blooms develop themselves. After forcing, the best plan is to turn the roots out into a shady border of good loamy soil, where in a few years they will become established, and produce a quantity of very nice blooms with no trouble.

TUBEROSES

Are, to some extent, grown for flowering in winter, as though they produce but very few blooms, or "pips," on a spike during the short days, they are always delightfully fragrant, and often fetch high prices when scarce. The roots are potted singly, generally into 3-inch pots, with any light loamy soil, and stood in a cool frame for some time. Some growers introduce them directly into heat, particularly if started in cold weather; but, if potted any time in summer, they seem to do best if allowed to start in cool quarters. The main point, however, is to keep the soil almost dry until growth commences. When the points of the first leaves appear place in a close, warm, moist house, on bottom-heat, if it is desired to force them quickly. They should, however, be kept as near as possible to the glass if anything like short plants are required, as a strong bulb will throw a very tall stem if away from the light. Give plenty of water and liquid manure when well in growth, and any very strong plants may be shifted into 5 or 6-inch pots. Tie up the stems to straight sticks as they advance, and in due course the blooms, more or less according to the season and the strength of the bulbs, will be produced. For cut flowers the single pips are taken off as they

expand, wired, and worked into bouquets, buttonholes, &c.

As a rule, the bulbs are of no further use after having been once forced. The African bulbs produce the finest blooms, but grow very tall, and are rather difficult to manage at times. The American and Pearl varieties are dwarfer, and more generally grown where presentable plants are desired especially. B. C. R.

AN AMATEUR'S GREENHOUSE.

Having given a full and accurate account of my small greenhouse, I now proceed to describe its inmates, and how I manage to utilise them. My object is to have flowers as long as I possibly can, and I think, with the exception of a week or two in January, there is no portion of the year in which I cannot cut something for the house. When I give a list I dare say some people may be incredulous, or think that my plants are merely poor crowded-up things. Let me say, with reference to the latter, that when my Camellias and Azaleas are too large for me, I have no difficulty in disposing of them, and that a neighbouring nurseryman is very glad to get my Pelargoniums, when I have had them a couple of years, and depend on younger stuff. Now, I do not think that either of these results would be attained if the plants were badly grown. I shall first give a list of those which I regard as permanent inhabitants of that house, and then of those which, as bulbs or hardy plants, only remain there for a brief season ; and then show how I utilise them :—

Hard-wooded plants.—1 Lapageria rosea, 1 L alba, 12 Camellias, 15 Azaleas, 3 Libonia floribunda, 1 Clematis indivisa, 1 Lonicera sempervirens, 1 Rhododendron fragrantissimum.

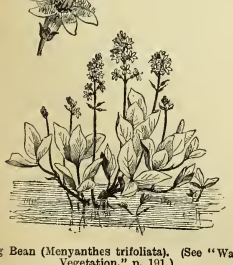
Orchids.—2 pans of Disa grandiflora, 4 Masdevallias, 2 Odontoglossum Alexandræ.

Soft-wooded plants.—4 doz. show Pelargoniums, 1 doz. decorative Pelargoniums, 4 doz. zonal Pelargoniums, 12 Cinerarias, 12 Chinese Primulas, 18 Fuchsias, 12 Abutilons, 12 Winter-flowering Carnations.

Bulbs.—3 pots of Roman Hyacinths, 3 pots of Allium neapolitanum, 3 pots of Ornithogalum arabicum, 4 doz. Cyclamen of sorts, 5 doz. Hyacinths, 3 Tropæolum tricolor, 6 Richardia (Calla) æthiopica, 3 pots of Paper White Narcissus, 6 pots of Freesia, 4 pots of Triteleia laxa, 1 doz. tuberous Begonias, 1 doz. Tulips, 6 pots Tritonia crocata, 8 pots Ixias, 6 pots Gladiolus, the Bride.

Herbaceous plants.—6 pots of Primula Sieboldi, 6 plants of Francoa ramosa, 6 pots of Aquilegia Hybrids, Primula obconica.

Perhaps the better way of showing how I manage with them will be to describe the appearance of the houses during the three or four different stages through which it passes in the course of the season. Let us suppose it to be the 1st of January ; at that time the Lapagerias, both rosea and alba, occupy their permanent position at the east-end of the house. Until this year I have had them each separated in a large pot, but this year I have planted them both together in a box, which rests on the foot stage of the house, and is about 3 feet long by 20 inches wide. They are now quite cover-



Bog Bean (Menyanthes trifoliata). (See "Water Vegetation," p. 191.)

ing the east end, and will be brought along the centre of the roof, but only partially. The box is well drained, about a third of it being filled with broken crocks, and it is then filled up with lumps of peat, turfy loam, and charcoal. On a small narrow shelf just above this box I have my four plants of Masdevallia and Odontoglossum Alexandræ. They are in the shade, and come

Siberian Iris (I. sibirica). (See "Water Vegetation," p. 191.)

in for the syringing which the Lapagerias constantly receive, and I tried them as an experiment. Of course orchidists would smile at them ; but the Masdevallias have bloomed, and I have now one of Harryana, with as good coloured a flower as I have seen. M. tovarensis succumbed to the cold weather, but I had one spike of O. Alexandræ last year, and it promises to flower again. I was told I could not do them, and am therefore pleased that I have so far succeeded. At this end of the house are planted the two pans of Disa grandiflora superba, with which I have been very successful, and have not only kept two vigorous pans, one of which I should think has twenty bulbs on it, but have distributed it to my friends, and sent one to the Glasnevin Botanic Gardens. There are some indifferent varieties of it about, but this is not a grand one, and I hope to have a spike this year with seven or eight blooms on it. All grow simply in peat (in lumps) and charcoal, and are well syringed. After the severe weather is over they are moved to the other end of the house, close to the door, and kept constantly moist. One side of the house is filled with the hard-wooded plants—Camellias, Azaleas, &c. At one end the Richardias are placed ; on the other side the soft-wooded plants—Zonal Geraniums, &c., but the show varieties are now kept on the shelf, which, as I have mentioned, runs down the centre of the house over the staging ; on each side on the front row are placed the Cyclamens, while the pots of Roman Hyacinths and early flowering bulbs are scattered amongst the other plants. The Tropæolums have been potted, the tuberous-rooted Begonias are under the stage quietly at rest, the Fuchsias are in the annexe, while the Hyacinths and Tulips are safe under their coverlet of leaves where they are pushing their way, ready to be brought into the house when room can be made for them. Finally, the herbaceous plants are in a frame ready to be brought forward when the time comes. Primulas and such like do very well when so treated. Now, if anyone at this time comes into the house they will not see much bloom, but they will see some. They will see some of the Camellias in flower, the Roman Hyacinths, Paper White Narcissus, Roman Jonquil in flower, the Cyclamens beginning to push up their buds ; the Cinerarias and Primulas, showing colour ; some pots of Schizanthus, of which the seed was sown in July, and, I hope, a general appearance of comfort about the plants.

And now we must suppose that severe weather comes on. It will be necessary to be prepared against it. I found it to be safe and wise to have the fire lighted every night rather than to depend on what we fancy the weather may be. Of course, should it be very severe, more attention will be paid to it ; more coke will be used, and the fire looked to later on in the evening, so as to insure its burning through the night. As frost is accompanied with stillness in the atmosphere the draught in the fireplace is not so strong, and as the fireplace is on the outside, this is a matter of some moment. And now one word to anyone who may be encouraged to try an amateur greenhouse such as I have described :—Be satisfied with having the best varieties of the several plants you grow. It is of no use growing inferior things when really good ones are easily procurable. I do not mean to say, rush for novelties ; but let it be remembered that the high-priced novelties of this year are to be had at a much lower figure next season, and in most things nowadays, the Zonal Pelargoniums for example, the perfection to which they have arrived is such that the progress is very small, indeed. If you take those of some six years ago, you will perhaps see the difference, but I think if you were to transpose the labels of those sent out in 1883 and 1884 you would be very much puzzled to replace them, and you are forcibly reminded of the showman, who, when the little girl asked him which was the Duke of Wellington and which Napoleon, replied, "Whichever you please, my little dear ; you pays your money, and you takes your choice." I hope to give an account of the transformation scene which takes place for the spring and summer arrangement of the house, and to show how much may be done in a small way to obtain enjoyment, for I honestly believe that one can have as much with a small house as perhaps the owner of stately rows of hot-houses and stoves. Delta.

BEGONIA METALLICA.

This is one of the very best of Begonias either for summer or winter use, and, in addition to its flowers, its bronzy leaves make it a desirable plant for grouping along with others in the intermediate house during winter and in the cool greenhouse during summer. The flowers, which are of a light rosy colour, are set upon stalks sufficiently long to show them up well above the foliage. Young healthy plants of this

Yellow Flag (Iris Pseud-acorus). (See "Water Vegetation," p. 191.)

Begonia growing in 4½-inch or 6-inch pots will be found to last a long time in flower when used in rooms or in windows, and small neatly-grown plants of it are suitable for dinner-table decoration, the bronzy foliage looking well upon the white table-cloth. The flowers, too, when cut are very useful. In order to keep up a supply of flowering plants all the year round recourse must be had to cuttings. A few put in early in February will yield a plentiful supply of flowers during the summer and autumn if grown in a cool house or pit, and few plants can be found to grow and flower more freely in a shady conservatory, heavily draped with climbers, than this Begonia. Another supply of young plants should be raised from cuttings put in about the middle of July, and kept growing on in a pit or house as close to the glass as possible. Pick off the flower-stems as they appear, which will induce the plants to grow more vigorous and healthy. In the end of October or beginning of November place them in the coolest end of a plant stove or intermediate house, and if in good healthy condition they will be in full flower by Christmas, and will keep up a supply of bloom for six or eight months. We have now some old plants which have been in bloom about fourteen months.

This variety of Begonia will be found to be suitable for planting out against the back wall of a warm house, or to train up pillars or rafters. In order to obtain strong, healthy plants which will yield a supply of flower in a short space of

time select cuttings from old plants which have been previously cut down. Cuttings made of shoots growing from the base of old plants will be found to root freely, Let them be 4 inches long, strike them in light soil, consisting of equal portions of good turfy loam and fibrous peat, sifted through a fine sieve, mixed with plenty of sharp silver sand.

Fill 4½-inch pots with this compost, pressing it firmly into the pots, put a little clean silver sand on the surface, and water through a fine rose. The cuttings may then be inserted round the sides of the pots. Place the latter in a propagating pit or house, and when rooted pot them off singly in 3-inch pots, using the same compost as for the cuttings, with a portion of leaf-mould added, but with less sand. After potting place the plants in the same temperature as before until they get well established, when they may be transferred to a cooler house and be shifted into larger pots. They will soon grow into useful flowering plants. When the pots get full of roots they will be greatly benefited by being fed either with liquid manure or with some other fertiliser. W. C.

REPLIES.

13445. — **Plants for frame during autumn and winter.**—Pansies would do well, and their sweet perfume makes them more desirable; Colchicum autumnale, in variety; and C. speciosum. Various Croci would open their delicate tinted flowers during the above period, such as Crocus nudiflorus, C. odorus, C. Imperati, C. Sieberi, and C. speciosus. Helleborus niger, var. angustifolius, and altifolius, Hepatica angulosa, and the varieties of H. triloba would be very charming; Iris reticulata, Saxifraga Burseriana, and S. oppositifolia. The above are all hardy plants, and would form a fund of enjoyment to anyone who would give them wise and careful attention.—J. D. E.

13405.—**A Londoner's Geraniums in pots.**—Although the plants were well watered every evening it is just possible that they suffered for want of water. The roots would be burned up in the pots exposed to the sun all day. Success may be attained this year by erecting a shade over the plants, to shelter them from the hot sunshine; and do not let the roots get quite dried up. We have watered plants out in the sun three times in a day.—J. D. E.

13407.—**Carnations in cold greenhouse.**—They will grow and flower well in a cold greenhouse during the summer and autumn months; but they require artificial heat during the winter and early spring to cause the flowers to open well. The details of the treatment that Carnations require have often been given in GARDENING. The plants ought to be well exposed to the light, by being at all times placed near the glass. They do best out-of-doors in summer.—J. D. E.

13673. — **Hoya not flowering.** — The Hoyas are nearly all stove plants; some of them, such as H. carnosa, will flower in a greenhouse, but they like a stove temperature when making their growth. Hoya bella, from Moulmein, and H. Paxtonia, from Java, should be grown in a stove. In asking a question of this kind the species should be stated as well as the genus. The reason the plant in question has not flowered is no doubt the want of heat.—J. D. E.

——I have grown the Hoya plant for twenty years; it always flowers abundantly. I water in winter only once a week, and give very little heat. In the summer I keep the plant in a small greenhouse, with no more heat than that which comes from the glass, and I water not more than once or twice in very hot weather.—W. E. C.

13387.—**Staging for greenhouse.**—A house 12 feet wide should have a stage on each side 4 feet wide; that would allow of a path as wide down the centre. The stages may be 3 feet or 3½ feet from the ground line; they ought to be of laths, 3 inches wide, formed of 2-inch deal, and painted stone colour, white, or green according to fancy.—J. D. E.

13440.—**Plants for aquarium.**—My selection of two plants for a small aquarium would be Villarsia nymphæoides and Aponogeton distachyon (Cape Pond Weed).—J. D. E.

13451.—**Heating rooms.**—There need be no difficulty in heating both the rooms and the entrance hall from the greenhouse boiler. The work ought to be done by a qualified engineer. The flow and return pipes should be 2-inch. There must, of course, be valves at the entrance to each room, and in that way they could be heated separately or all at once.—J. D. E.

FRUIT.

PLANTING GRAPE VINES.

OF the two methods of planting in vogue I give the preference to young growing vines rather than to ripened canes. I have several reasons for this, but it will suffice to say that the canes formed by vines raised from eyes or cuttings early in the year, and planted when large enough—say early in May—are invariably the most short-jointed, are the hardest when ripened, and have the least pith. The less pith there is in the rods the less danger of shanking and other evils resulting from the shrinking which will inevitably occur.

The best methods of arrangement.—At the outset it has to be determined how the vines shall be arranged in order to secure as many Grapes annually as the house and other circumstances will admit. The majority of vineries are lean-to structures, and considerable numbers are arranged with borders wholly inside or with a combination of inside and outside borders. It is also an orthodox practice to plant double the number of vines that it is intended to retain permanently, the supernumeraries being arranged between the latter. This I consider altogether a mistake, as they not only impoverish the border, thereby greatly interfering with the desirable free root action of the permanent vines, but also unduly crowd and weaken their top growth. Instead of arranging the supernumeraries along the front and between the permanent vines, they should be planted nearer the middle of the house, or, at any rate, on the opposite side of the path usually arranged at no great distance from the front. They should have their separate border built up square with turves, the walk being between the two sets of vines and similarly constructed borders. The position of the vines would be the same, the permanent vines going one to each rafter and the supernumeraries between being taken up by stout stakes till the trellis is reached. Supposing the border to be wholly outside and that the arrangement of the house prevented the formation of a temporary inside border, I would still endeavour to fruit the supernumeraries either in tubs or pits formed with loose bricks. It is really remarkable what can be done with vines the roots of which are much restricted. In such cases they are well under the control of the cultivator, and can and must be fed up or largely supplied with liquid manure. For two or, at the most, three seasons, commencing with that following planting, they may be cropped heavily; after that they would not repay keeping, even if those in charge were disposed to try the experiment. It is surprising how few there are who think of

Utilising the back walls for Grape culture, yet in these positions it is possible to annually grow heavy crops of serviceable bunches. The vines in this case are best planted at the same time as the other two rows, as they then have a better chance of forming well-ripened canes, which are essential to a long and profitable life, but if those on the roof are thinly trained, they may be planted at any time. These also may have their small border between the back path and wall, or be planted with the others in the large and necessarily completed border. Where there is no inside border, it is yet possible to grow fairly heavy crops of Grapes at the back on vines planted in a narrow raised border enclosed either with turves, bricks, or boards, always supposing they receive annual rich top-dressing and abundance of moisture and liquid manure at the roots. It is useless, however, to attempt utilising the back wall if the rods are crowded together over the roof. Instead of taking up the rods about 2 feet apart, a hy no means unfrequent occurrence, they should be confined to one on each rafter or from 4 feet to 5 feet apart, those on the back wall being planted midway between them, thus getting a fair amount of light and sunshine. I have been fairly successful with such white Grapes as Foster's Seedling, Tokay, and Calabrian Raisin on back walls, but, as a rule, it will be wise to rely exclusively on Black Hamburgh and Madresfield Court for the early houses, and Black Alicante, Lady Downes, Mrs. Pince, and Gros Maroo for Muscat and late houses. I can answer for these colouring well, if they are not always of the best table quality.

Planting and training.—In the case of a newly formed border, which is certain to be much colder than the temperature of the house in which the vines are being raised, it should be warmed where the holes are to be made by plunging several heated bricks at each place. Unless this is done a check will be given to the young vines—especially if much cold clayey loam is mixed in the compost—from which they may not recover the same season. I find that when they have experienced such a check the growth is weakly, and the leaves small and curled, presenting the appearance of being affected by mildew or some other fungus. The root action, however, in such cases is not wholly arrested, and the vines break strongly and grow well the following season. If the young vines are rooting in square turves, they appear to take to their fresh quarters more quickly, but do not greatly surpass those planted out in 6-inch or larger pots. In either case no attempt should be made to spread out the roots, as when the vines are gaining strength they push out their primary roots, and these will be straight enough. Plant slightly below the level, employ a little good soil about the balls or turves, making this rather firm, and form a small basin about the stems with the soil when finishing off. Care must be taken to keep the turves or balls uniformly moist, especially at the commencement, always using tepid water; later on, when well established, the basin will be less required, and if the soil is levelled about the stems it encourages the emission of strong surface roots. When growing freely, vines must have abundance of moisture at the roots and the border may be well mulched with straw litter. It is not advisable to maintain a high temperature with much moisture, as this induces the growth of thin, warty leaves, which are not of the best description for swelling the stems, forming the buds, or for stimulating strong root action. If the night temperature is maintained at about 60 degs. with a little top air whenever the air admits, giving a rise in the daytime of from 5 degs. to 10 degs. and another 10 degs. when air is given, closing early and damping the vines and house at the same time, the vines will generally grow quite fast enough and be proportionately robust. The young vines should be carefully trained up stakes till the trellis is reached, and be encouraged to grow as straight as possible up the roof or wall as the case may be, those on the back to be stopped when near the top. All the laterals should be stopped once and then allowed to ramble or to form as many leaves as there is space for without crowding, this serving to increase the number of roots as well as being a safeguard against pithy rods. I would allow any extra strong permanent vines that were planted last season to perfect one or two bunches in order to check the very coarse growth that is certain to result if they are hard pruned and not cropped. W. I. M.

PLUMS ON WALLS.

A WALL should be set apart exclusively for Plums, and it may have an east or a west aspect. In addition, however, you should, wherever there may be a vacancy of a few feet on a wall, and when you are in doubt as to what to utilise it for, plant a Plum, whatever the aspect. They soon come into bearing, and, if lifted occasionally, a quantity of good fruit may be gathered from a small space. Plant the best dessert kinds on the best aspects, and fill up the north walls with kitchen fruit. If the young fruits set too thickly in spring, the thinnings may be sent into the kitchen, where they will be useful for tarts. The Plum is a much hardier fruit than the Apricot, but so far as regards the culture of the choicer kinds on walls both succeed well with the same treatment. On a good dry bottom many people dislike going to much expense in preparing borders for Plums. But where the expense of walls has been incurred it seems much like the proverbial case of spoiling the ship for the sake of saving the half-pennyworth of tar, to begrudge the formation of a good, sound, suitable border. It may, like the Apricot, be made to produce its crop on the young wood, or it may be encouraged, by stopping the young shoots in summer, to bear on spurs.

The common plan is to lay in as much young wood as there is space for during the summer

dressing, and also encourage as many spurs along the main branches as can be left without crowding. In the matter of training the fan is a very popular shape, and I may say also that it is an excellent one. It is easily filled up if a branch dies, and it is one that commends itself to cultivators generally for that reason, and because its outline is simple, and, as a rule, simplicity in any matter is a decided advantage, and often leads to its adoption. But the fan shape is not without its drawbacks. It is a long time filling up a wall, and it cannot easily be made applicable for the filling of a small space. A fan-shaped tree against a wall 12 feet high must have a considerable horizontal space to give it proper proportions, and as I have been recommending Plums for the filling up of smaller spaces—to, in fact, fill up vacancies anywhere—I should recommend the adoption of the Palmette Verrier, or some modifications of it, for that purpose. The Plum is easily trained in any direction when young, and if we have a space 5 feet or 6 feet wide, and 10 feet or 12 feet high, and wish to plant a Plum or Pear on it, that is the form of tree I should recommend, and train the main branches far enough apart—say 1 foot—to permit of young wood being laid in between. I know some people may complain of the cost of the young trees, but there is no occasion to buy trees more than one year trained, or maidens if they could be obtained strong—in fact, older trees would not be suitable. E. H.

Caterpillars on Gooseberry bushes.—Some of your readers occasionally want to know the best means of destroying the Caterpillar on Gooseberry bushes, and the usual method recommended is the unsightly and dirty practice of sprinkling hellebore powder over the leaves and berries. A more cleanly and a cheaper method is to mix the hellebore with water to the consistency of cream, and paint the stem of the bush with this mixture. As the caterpillars have to crawl up the stem of the bush they will never attempt this while it is covered with hellebore. Of course the painting must be done before the caterpillar comes out of the ground to ascend the bush.—T. M. C.

Mildew on vines.—**A suggestion.**—I have for some time thought that a small quantity of Condy's fluid, mixed with a large quantity of water, and the vines well syringed with it, would be of service, and perhaps a cure, in cases of mildew on vines. Will some reader try it on a small scale and report the result?—R. H. L., *Fishersgate*.

REPLIES.

13729.—**Growing Grapes on spur system.**—I have been asked by "Inquisitive" for a paper on this subject; but, presuming that it is his intention to cultivate out-of-doors on this plan, all I can say is that should he adopt it he will be disappointed, so far as the production of fruit is concerned. And for this reason—the spur system answers best in warm climates, and perhaps under glass and artificial heat in this country, but as, in order to carry it out strictly, the fruit bearers of last summer's growth must, at the autumnal or general pruning, be reduced, at the utmost, to three eyes each (many leave but one), and as, when grown on open walls here, it has been found that very seldom indeed are any of these eyes fruitful, the consequence of such pruning is that all the valuable bearing wood is cut away. Thus, being unable, from experience, to recommend the spur system for out-of-door culture, I must leave "Inquisitive" to gain his information respecting it from others; and this he will have no difficulty in doing. Many books treat of the subject.—J. M., *South Hants*.

13681.—**Vine leaves turning yellow.**—It is difficult to say what is the reason of this, as the information is very meagre. The temperature has been right so far. Probably they are badly attacked with red spider. This troublesome pest very soon makes the leaves turn yellow, and if not checked will destroy them entirely. If spider has done the mischief it ought to be destroyed by painting the flue with flowers of sulphur. See that the vines are well watered at the roots. When the borders are inside, the roots are frequently over dry, and the cultivator is not aware of it.—J. D. E.

13727.—**Garden labels.**—Sulphuric acid written with a clean quill is the best thing for writing on zinc garden abels, it being indelible.—E. G. K., *Walbrook*.

THE KITCHEN GARDEN.

13563.—**Birds and Peas.**—I find the most ready way of keeping birds from Peas is by watering as soon as they begin to appear with a solution of petroleum. A small quantity will go a long way when properly applied. The best way of applying it is by the syringe. Twine, well saturated with the petroleum, will retain the smell a long time, and will not rot. The string used for mending corn sacks is very good, and lasts for years; one line over each row just high enough to clear the ground is sufficient. It is a mistake to suppose that birds do not see black thread. Their sight is keener than some people imagine. Sparrows are not readily scared by the display of rags or feathers, let the colour be what it may. A sprinkling of soot (not quick) when through the ground is very serviceable, but I do not advise it for town gardens. I find the above the best remedy in the absence of wire protectors, and I am very little troubled by sparrows, although I grow many varieties of Peas. Should the birds attack your Peas after they are staked, try Quassia, with just a little petroleum added.—E. T. P., *Horngrove, Kidderminster*.

13674.—**Growing Leeks for exhibition.**—The Leek is a gross feeding plant, and to grow it successfully for exhibition the ground must be very richly manured; pig manure is the best. Water freely until the plants have attained a considerable size, and then earth-up. Do not nip or cut off the tops of the Leeks. The Scotch growers do it at the time of planting, but it is unnecessary and may be injurious. A deep drill is drawn with a hoe, and the Leeks are planted with a dibber at the bottom of the drill; they should be a foot apart, and 14 inches between the rows. A good exhibition Leek should have a foot of blanched stem.—J. D. E.

—— Transplant when about as thick as a goose quill into trenches of heavily-manured soil, one foot apart, so that the leaves grow across the rows, and thus do not come in contact with each other; nip the ends of the leaves only when planting out. Give abundance of liquid manure, or, if not obtainable, a sprinkling of guano on a wet day, about once every three or four weeks—say half-a-pound to eight square yards. If light soil, salt, one pound to four square yards, is of great assistance, and during dry weather soapsuds as much as you like. Do not earth up until well established; do the work in dry weather, and be careful not to get soil into the centre of the plants. It is important for show purposes to have long, thick, blanched stems. By attending to above, and growing a good strain, you will have something to be proud of.—E. T. P., *Horngrove*.

13388.—**Treatment of White Plume Celery.**—It is recommended to be crown without earthing-up, but it has not the flavour of the ordinary sort. I saw well-grown specimens and tasted them last year, but did not think it worth while to grow it. Plant Major Clarke's Solid Red for use, and grow White Plume for a curiosity.—J. D. E.

13675.—**Australian Cress** should be sown once every fortnight. It is not so hardy as the common, but is superior, and it is also useful for garnishing. It should be cut as Ordinary Cress, and if well watered will last longer, otherwise it will run to seed.—E. T. P., *Horngrove*.

13389.—**Boiler for heating houses.**—Such a boiler would easily heat the house, but it would, of course, require a flow and return pipe attached to it. The house would require three rows of 4-inch pipes; 2-inch pipes would do to attach to the boiler.—J. D. E.

"The English Flower Garden."—An index of this work has now been prepared. The arrangement of the book is, for the greater part, alphabetical, but it was found that a thorough index would be useful in showing, at a glance, the kinds mentioned and their number, in giving a ready reference to all parts of the book and indicating the illustrations by the use of italics. Between 8,000 and 9,000 names are enumerated in this index, which will be bound up with all future copies of the book.

The Horticultural Society and new plants.—The sapient committee of the Royal Horticultural Society has lately been giving certificates to common rubbish in the shape of Alliums entirely unworthy of cultivation, and to seedling forms of the Common Iris far worse than many that have been in cultivation for twenty years; while they pass by a beautiful and new shrub from California, one of the finest things introduced into our gardens for years—Carpenteria.

TREES AND SHRUBS.

SUMMER PRUNING OF SHRUBS.

SHRUBBERIES, to a greater or less extent, come, in the majority of instances, under the care of the gardener. Some allow their occupants to grow uncontrolled after planting, and this may be admissible in woodland drives or in extensive pleasure grounds, but it will not suit in a limited space, or where the surroundings are of a formal character. In many cases shrubs are about the last things to be attended to in the busy time of spring and early summer. If, however, they are to be kept attractive and each subject separate from its neighbour, as should be the case in the mixed shrubbery, pruning must be systematically carried out, at least annually, and in many cases much oftener, or the plants will soon get unshapely and overgrow each other. Let us separate the shrubs with which we intend to deal into those grown principally for flowering, many of which are deciduous, and those grown for their evergreen or ornamental foliage.

Probably the majority of shrubs make their flower growth the previous year; consequently to cut back late in autumn or before flowering takes place in spring simply destroys the whole of the flowers for that season. As soon as possible after flowering is over is the best time to prune all shrubs belonging to this class, thin the branches where crowded and remove the old wood that has borne the flowers to make room for the growth of new shoots for the succeeding year. Forsythias, Deutzias, Weigelas, shrubby Spiræas, Genistas, Lilacs, Viburnums, and many others may be so treated. Berberis Darwini may be kept somewhat dwarf and yet flower very freely if it is planted young and if the leading growths are either shortened or tied in annually, but allow these to grow up and the plants soon become unsightly at the bottom. The growth of Rhododendrons cannot be cut away without reducing the number of flowers for the next year. On the other hand, if allowed to grow thickly in clumps without cutting, the inner and undergrowths soon have to succumb to the stronger ones. For clumps of these to be kept low the common R. ponticum should be used, as its flowers are not of so much importance as those of better kinds, and the plants soon thicken again after severe cutting should that be necessary. Hybrid varieties are too good for this treatment, consequently positions should be given them where they can be allowed to grow up, merely thinning a little and removing superfluous shoots with the seed-pods, should the latter be practicable, after flowering is over. The height of the plants in clumps should be in proportion to the length and width of the clump, and they should gradually rise from the edge to the middle. Hardy Azaleas do not grow so strongly as Rhododendrons; consequently they are not so difficult to keep within bounds. Pruning is but little required, as they form themselves into fairly good shape if allowed sufficient room. The same remarks apply to Sedums, Kalmias, and Pieris (Andromeda) floribunda.

Most of the evergreen and ornamental-foliaged section may with advantage be cut over occasionally in summer, or they may be pruned as each subject requires according to the position which it is meant to occupy. A sloping bank of the smaller-leaved sorts of common Laurels looks well when the plants are established and are cut over evenly with the knife two or three times during the summer. Dwarf clumps of these may be treated in a similar way, and the plants, unless they are very old, break well when cut back hard. Berberis Aquifolium is also well adapted for certain positions, but, as a rule, it does not transplant successfully except when young. Aucubas grow somewhat flat and uneven if allowed to have their own way; remove and thin some of the growths and the plants will be greatly improved thereby. Golden Elders are extremely effective in summer, planted at intervals between other shrubs or in masses. They might be used extensively where only a summer display is required, as Elders are unfortunately deciduous. They transplant very easily, and may be kept quite dwarf by pinching out the points occasionally in summer. The leaves are of a bright golden colour if in an open, sunny position. Silver Elders are very

liable to revert to the green form, but so far as I have seen the golden Elder has shown no signs of reversion.

In mixed shrubbery borders each plant should have sufficient room, and those in the front line should be of a dwarf-growing character, or such as can be kept dwarf without being unsightly. Pruning should all be done with the knife, or special shears for the purpose that cut in the same way as secateurs. Where these are used none of the leaves left are injured, and much of the cutting cannot be detected by outward appearances. J. G. S.

The common Lilac.—This tree is worthy of a place in every shrubbery, either trained on a stem, or growing as a large shrub. Where it does not interfere with other plants I like it best in the latter form. Sending out, as it does, an innumerable mass of young suckers it covers a good area, and its foliage reaches completely to the ground. For this reason it is very useful in covering unsightly spots in the garden and shrubbery, and it has the further advantage of growing in almost any position and in a great variety of soils. The young wood, so far as I know, does not flower, but the more matured wood of this tree is now a mass of blossom. In the purple variety, perhaps, there is not the depth or intensity of colour we see in many of our flowering shrubs; but, nevertheless, by the side of other trees—the white Hawthorn, for instance—its effect is very good.—D. J. Y.

BEES.

SEASONABLE NOTES.

WHITE CLOVER, which is now coming into flower, is in many districts the chief source whence bees derive their supplies, the income of honey therefrom in favourable weather being very great. Advantage should be taken of this honey glut by removing the honey from the combs with the

HONEY EXTRACTOR, which leaves the combs uninjured, so that they can be returned to the hive to be refilled by the bees. Comb is very valuable, and should never be taken from the bees except when desired to render the honey more saleable, as in the case of section honey. And then, by extracting, more room is given for brood-raising, as sometimes during a good honey flow the brood-nest becomes so filled with honey that the queen has no empty cells in which to lay, the result being a cessation in the production of brood; but in giving more breeding space by extracting the honey from the cells, the population continues to increase, and the bees are stimulated to greater activity. Oftentimes when the honey yield is great every cell becomes full, and the workers from necessity become unwilling idlers and hang out of the mouth of the hive in large clusters. The extractor, again, enables the bee-keeper to secure honey even in poor seasons, when little or no section honey is to be obtained, and, in good seasons, he can thus secure nearly double the amount that he could get by working for sectional comb-honey; and if it be wished to work for honey, instead of increase of colonies, by the use of the extractor swarming can be avoided. The frames of honey-comb to be extracted should be removed from the hive, the adhering bees brushed or shaken back, the cappings of the cells removed by an uncapping knife, and the combs placed in the revolving cages of the extractor; a few turns then given to the handle will throw out the honey from one side of the combs. In some extractors the cages in which the combs are placed are suspended on pivots at opposite corners, so that when one side of the combs have been extracted, they can be swung round, which brings them in position for extracting the other side; if the extractor in use has not this arrangement the combs must be taken out and turned. If the combs be of different weights it will be better for the working of the extractor to use those of as nearly equal weights as possible on opposite sides, which will cause less strain to the gearing. During a great honey yield extracting from the same combs can be performed every four or five days. It is best to extract from store combs, but with care honey may be extracted from the combs partly filled with brood. If the revolutions of the extractor be not rapid the brood will receive no injury, and the honey only will be thrown out.

RIPENING HONEY.—After the bees store their honey in the cells, and before it is sealed over with wax cappings, it undergoes a process of ripening. The heat of the hive assists in evaporating the superfluous moisture, and when the process of evaporation is complete the cells are closed. As the bees collect the honey they put a little into each cell so as to expose a large surface of the honey to the influence of the heat of the hive, and are able during the following night, if warm, to evaporate the moisture sufficiently to enable them to carry the honey from the lower cells to those above, where it is permanently stored. If more honey has been collected through the day than can be evaporated during the night it is not stored in the upper cells. All the cells being in use the bees the next day returning with stores have nowhere to put it; they, therefore, convert it into wax, which they add to their cells, and make preparation for swarming. By extracting unripe honey much valuable time is saved the bees, and swarming prevented, but unripe honey is liable to ferment if bottled as soon as extracted; it should, therefore, be allowed to remain for a few days in an open galvanised vessel, placed in a warm, dry room, when the watery honey rises to the top, leaving the ripe honey at the bottom. A honey evaporator has lately been invented, which consists of a series of trays heated with hot water, the honey, passing over these trays, is received into a tank below sufficiently evaporated and in a fit state to put up into bottles at once.

Boxworth. S. S. G.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—IX.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

SAUCES.

THERE is scarcely any dish of fish or meat, whether served hot or cold, that cannot be improved by the accompaniment of a well-made and appetising sauce; and as so many different kinds can be made from fruits and vegetables, we shall devote a few lines to those now about in season.

MINT SAUCE TO BE SERVED WITH ROAST LAMB.—Select some fresh green leaves of Spearmint (which is a pleasant aromatic herb); wash them well in cold water, place them in a dry cloth and wring as dry as possible; place the leaves upon a chopping-board, and with a sharp knife mince them very finely. Take four tablespoonsful of powdered sugar, one teaspoonful of salt, and one gill of vinegar; put all into a sauceboat, stir, and let stand for one hour before serving, so that the vinegar may acquire the full flavour of the Mint. This sauce will keep good for some time if placed in a bottle with a tightly-fitting cork. The only drawback to keeping it is that after the first day the colour is not so good as when freshly made. Those who object to this may strain away the Mint and serve the flavoured vinegar. A pleasantly-flavoured and refreshing sauce can be made in the same manner by substituting equal quantities of finely-minced Parsley and Mint instead of all Mint.

MELTED BUTTER.—This valuable preparation, which forms the foundation of many good English sauces, is best made as follows:—Take two ounces of butter, one dessert-spoonful of flour, half-a-pint of water, and a pinch of salt. Melt the butter in a saucepan over the fire, add to it the flour and mix free from lumps; pour on the water, gradually stirring all the time, and continuing to do so without stopping until the sauce boils; add salt and any other flavouring that may be desired; boil four or five minutes and it will be ready to serve. When melted butter is made in this manner you can insure the starch globules of the flour being thoroughly burst and well cooked; and if the instructions be carefully carried out there should be no lumps in the sauce—a fault which often occurs with the old-fashioned method of mixing first flour and water together, and adding the butter lastly.

FENNEL SAUCE.—Take a large handful of young Fennel shoots, wash them free from dirt or grit, and tie the stalks together. Have a saucepan of boiling salt and water over the fire, plunge the Fennel into this, and let it boil very fast for twenty minutes. Drain the Fennel when it is well cooked, chop as small as possible, add it to half-a-pint of melted butter, and boil very fast for five minutes. Turn into a hot sauceboat, and it is ready to serve. This is a usual accompaniment to boiled mackerel, and is sometimes served with other full-flavoured fish, such as skate, grey mullet, &c. The fresh green leaf of Fennel is frequently used as a garnish for cold savoury dishes. Fennel may be preserved for winter use by procuring some very young shoots perfectly fresh. Wash them free from dirt and dust; tie them in small bunches and plunge into boiling salt and water; let them remain uncovered while the water boils again for three or four minutes. Then drain them and lay them upon a clean cloth for twenty-four hours, to become perfectly dry. Place the Fennel thus prepared in a wide-mouthed jar or bottle, but do not overcrowd it; cover with pure white wine vinegar, add a small portion of salt, cork tightly, and store in a cool, dry place.

PARSLEY SAUCE.—The plain-leaved Parsley will do quite well for this purpose, while the curled leaf may be reserved for decoration or garnishing. Make half-a-pint of melted butter in the same manner as described in the foregoing recipe, add salt, and two table-spoonsful of finely-minced Parsley, boil very quickly for four or five minutes, when the sauce should be of a good green colour, and the Parsley sufficiently cooked. This inexpensive and easily-made sauce furnishes an agreeable accompaniment to fish, fowl, and vegetable; and any small pieces of the two former, if neatly trimmed and coated with Parsley sauce before being allowed to become cold, may be presented when cold as an appetising dish for breakfast, luncheon, or supper.

To mince Parsley very fine.—First wash it well, pick away all the stalks, and wring it in a clean cloth until quite dry; then chop it with a sharp knife, toss it upon some porous paper, and it is ready for use.

GREEN GOOSEBERRY SAUCE.—To be served with boiled mackerel, roast pork, or boiled lamb. Boil one pint of green Gooseberries in a very little water until they are tender (about half an hour), pour away the water, mash the Gooseberries, and pass them through a hair sieve; then add one gill of white stock or milk, a small pat of butter, a little grated nutmeg, and two tablespoonsful of sugar. Beat all together, and stir over the fire until hot, when it is ready. Sometimes the Gooseberries are simply boiled until tender, and served plain, without any sugar or seasoning; or, for variety's sake, a wineglassful of good brown sugar may be substituted for the milk, but in this case a little Spinach greening should be added to keep the sauce a good colour.

SWEET HERB SAUCE.—Suitable for serving with cold lamb, veal, or calf's head. Secure some fresh Parsley, Chives, Chervil, Basil, Tarragon, and Marjoram; wash thoroughly free from any dirt or grit; dry well, and mince very finely. Allow one table-spoonful of the three first-mentioned herbs (after they are minced) and half a table-spoonful of the three latter. Put these into a sauceboat, with one dessert-spoonful of salt and half-a-pint of white wine vinegar; cover and let stand for at least three hours before serving. *Another way.*—This sauce is more suitable for either of the above-mentioned viands when served hot. Take one table-spoonful each of finely-minced Parsley, Sorrel, and Shallots, six or eight small Mushrooms, one small Lemon, half-a-pint of broth, one ounce of butter, one dessert-spoonful of flour, pepper and salt to taste; melt the butter in a small saucepan, toss the Parsley, Shallots, and Sorrel in this for about five minutes over the fire, add the flour, and stir until nicely browned, add the stock, and continue to stir until boiling, when throw in the Mushrooms, which must have been previously skinned and cut in halves; let boil for ten minutes, during which time remove any scum that may rise to the surface, then add the juice from the Lemon and seasoning to taste; pour into a hot sauceboat and serve very hot.

CLEAR TARRAGON SAUCE.—Take a large handful of fresh green Tarragon leaves, put them into a clean saucepan, with one pint of good white stock, free from the slightest particle of fat, a small bunch of Chives, one tablespoonful of white wine vinegar, and the shell and white of one egg. Place these over a slow fire and whip briskly with a whisk until a froth appears, remove the whisk, and allow the

contents of the saucepan to boil well up; remove from the fire, cover, and let stand for ten minutes, then strain the sauce through and through a tammy cloth until it is clear and bright. It is then ready to be heated as required.

TARRAGON SAUCE THICK.—Wash and chop some young green leaves of Tarragon until you have two tablespoonsful, add them to half-a-pint of white sauce made with one ounce of butter, one dessert-spoonful of flour, half-a-pint of good white stock or milk; proceed in the same manner as in the recipe for melted butter. When the sauce boils add the Tarragon and salt to taste, and let boil for five minutes, draw to the side of the fire, and add one teaspoonful of fresh Lemon juice. On no account allow the sauce to boil after the Lemon juice is added. Either of these sauces may be served with boiled fowl, fillets of chicken, or, in fact, any boiled white meat.

Using German Yeast.—"A Young Wife" (p. 190) should mix the German yeast with warm water in the proportion of two ounces to the half-pint, and add the paste thus made to the flour, mixing the whole with water slightly warm. The yeast must be quite fresh.—E. H.

Bottling green Gooseberries.—I cordially endorse what Miss Griggs says about this (p. 175), with the exception of the corking. We have tried her method in bottling fruits for winter use, but we find that the following is a better plan:—Proceed as described by Miss Griggs (always excepting the corks), until she speaks of lifting the bottles from the saucepan and beating in the corks. Instead of this, after the bottles have stood in the water after boiling until the Gooseberries turn white (ten minutes is mentioned in the article), take them out, fill up the bottles with boiling water, and immediately tie down tightly with bullock's bladder, or the membrane of some other animal. If the tying-down is carefully performed, the bottle will be perfectly air-tight. Whether the operation is successful will soon be known, as if defective the membrane will preserve a perfectly horizontal position across the mouth of the bottle, but if thoroughly done, as the heated water in the bottle becomes cool and a vacuum is created, the membrane gradually sinks from the pressure of the external air until it assumes a saucer-like shape. When this is the case and our bottles are kept in a dry place, we have fruit from year to year as good as if freshly gathered. We prefer, however, to keep the bottles upright rather than lying on their sides.—D. J. Y.

The use of old newspapers.—As a preventive of cold feet, a piece of newspaper folded in the sole is quite equal to, if not so elegant or expensive as, cork or lambskin soles, being light, soft, and easily renewed. If you wish to test the power of a newspaper in excluding cold, try tacking one, doubly folded, between your window and your stand of plants, and see how nicely they will be protected, and how frosty the window will consequently be. Newspapers will in the autumn, before severe black frosts come on, effectually protect greenhouse plants, before you take them up, from cold and wind. The writer remembers once driving up about dusk to a country place, and being startled at seeing what looked like a platoon of ghosts drawn up in white array before the house which turned out to be, on closer inspection, rows of tender plants all tied up in newspapers to protect them from the sudden frosts incident to the season, that in one night might cut them all down. We have known Tomato plants protected in the same way, and made to ripen in the open garden much longer by this inexpensive, easy precaution within every one's reach. Old newspapers are admirable as floor coverings under carpets, retaining all the dust, which neither remains in the carpet nor sifts through to the floor; then they can be so easily removed that it is a great saving to use them in this way, especially as, the dust well shaken out, the papers are equally serviceable for kindling purposes afterward, so can do double duty beside the legitimate one of heralding the news of the day.—*American Traveller.*

Large Columbine.—I gathered, on June 11th, from a seedling Aquilegia (lavender-coloured) the second flower, measuring about 4 inches across the flower from tip to tip of sepal; 2¼ inches from base of petal to extremity of spur.—A. R. G., *Surrey.*

THE VILLA GARDEN.

(Continued from page 188.)

Shallots.

IN the majority of situations these are best planted in February, or early in March. Select an open position, where the land has been manured and deeply worked in winter, and the surface ridged up roughly to expose and sweeten it. A fortnight before planting fork the ridges down, and leave the surface to dry and become pulverised. Plant when the ground is dry, treading it once over to firm it; then rake smooth, and plant in rows by pressing the bulblets into the ground, leaving the neck and upper part of the bulb exposed. The rows should be 12 inches apart, and the bulbs 6 inches apart in the rows. It is a good plan to prepare a heap of compost in the general clearing-up of the compost yard for covering seeds, or anything which may require such help. With us it consists of the charred heap of refuse, mixed with the old potting soil, and a little old manure. This is all blended together and protected from heavy rains. It is passed through a ½-inch sieve, to take out all bits of unburnt wood, stones, &c. In the case of the Shallots a handful is placed over each bulb, forming at first a slight mound. It helps to fasten the bulbs in the ground by its weight, and by the time the young green shoots break through it is crumbling away, and gradually settles down, forming an excellent and nourishing mulch round the cluster of bulbs, adding much to the health and vigour of the plant, and, consequently, to the weight and bulk of the crop.

After the planting is finished Shallots will pretty well take care of themselves; but weeds, of course, must be kept down either by hoeing or weeding, or both. In July, when the growth is finished and the tops are dying down, pull up the bulbs and lay them in the sunshine on a hard surface, turning them over occasionally till fully dry and ripened, and then store them away on the shelves of a dry, cool store-room or shed.

VARIETIES.—There are several; but one known as the Jersey Shallot is the largest and freest from mildew and other forms of disease. Sometimes this kind produces seeds, which, when sown in spring, like Onions, produce good bulbs the same year.

Garlic.

French cooks use this for flavouring, but their English *confrères* seldom ask for it. It is easily grown, treated as the Shallot. Plant small cloves in rows 12 inches apart and 6 inches from each other in the rows. Press the bulblets into the soil, and cover with a little compost. When the leaves die down take up the bulbs, dry them, and hang in bunches in an open airy shed.

The Turnip.

Turnips, like Carrots, are nearly always in request for flavouring, but, of course, the autumn is the time when Turnips are at their best; the long, cool nights of autumn give rapidity to the growth and tenderness to the flesh. The site for the first sowing should be warm and sheltered, but not in the full blaze of the sun on the south border. An eastern or western aspect will be better. Though not commonly forced, the Turnip is amenable to forcing, and may be helped forward under glass on a bed of leaves on which 6 inches or 8 inches of soil has been placed. Another way of helping the early crop of Turnips is to dig a wide trench and fill it with warm manure, place 6 inches of nice light soil over it, sow the seeds broadcast, and thin out to 6 inches apart. The Strap-leaved Stone is a good variety for this work. Wherever Turnips are forced, if glass cannot be had, a covering of some kind should be used on cold nights. Canvas screens, or covers made of oiled calico, will do. Covers made of reeds or straw are cheap, and if taken care of are durable. I have had some in use several years, and they do not cost much to make or renew.

SMALL SOWINGS AND OFTEN

Should be the rule till June. Through March, April, and May, a few seeds sown once in three weeks or so, if rightly cared for, will give a supply. The land must be in good condition both as to manure and also as to tilth. In some situations early in the season Turnips are a difficult crop to get established, and under such circumstances the culture and treatment cannot be too liberal. It is always best to rush the crop over the bad time by the use of stimulants in the shape of artificial manure. In districts where the fly has been troublesome I have used superphosphate with advantage, and in a dry time I have soaked the drills with liquid manure, guano, and salt; in cases where the crop had been frequently destroyed by fly gave a remarkably vigorous plant, with a marked freedom from the fly's depredations. In a general way I like to sow in drills, as it gives such facilities for hoeing, and stirring the surface between the plants is a great help. Kicking up a dust with the hoe when the flies or beetles are hovering round very often serves to banish them to some other garden or field. The May and June sowings should be made in the coolest situation available, but in July sow in an open exposed place for autumn and early winter use, and in August to obtain nice little Turnips to stand the winter. The first or second week in August is as late as they can be sown usefully. Thin the early crops to 6 inches. Later on increase the distance apart to 12 inches or 15 inches, which need not be exceeded for garden Turnips, as they are not required very large.

PRESERVING THEM IN WINTER.

A full-grown Turnip is more susceptible to injury from frost than a smaller bulb; therefore when frost sets in, if we want Turnips in a good fresh condition, we must either cover them with leaves or litter on the ground, or take up the roots and clamp them, as Potatoes are done. It is always a good plan to take up a part of the crop and preserve the roots in this way:—Some may be packed away in a cool place in the cellar or Potato store, the top being first cut off to within half-an-inch of the crown of the bulb. Sometimes the plan adopted in the field may be usefully employed in the garden. A deep drill is drawn or opened with a spade, and the roots placed in with their leaves only above ground, the earth closing in over the bulb. Except in very severe winters this keeps them safe, and there is no deterioration of flavour, which there must necessarily be when fresh vegetables of any kind are packed up in a heap, as vegetables when massed together will always ferment.

INSECTS AND DISEASES.

The fly is the most troublesome, and the best antidote is to sow on fresh land. Do it well as regards securing a good tilth, and help the plant over the bad time with artificial manures, which should be sown in the drill either in a liquid form or dry, according to times and seasons. Dustings of lime, soot, and wood ashes are beneficial given early in the morning before the dew is dissipated, and frequent hoeings are, perhaps, equal to anything in scattering and banishing the foe. There is a caterpillar which attacks the young plants in summer by severing the main root, so that the plant perishes, and this caterpillar attacks other plants in the same way when young, eating through the root stems and giving a sudden termination to the life of the plant. The best—in fact, the only—remedy is to find and destroy the enemy by keeping a sharp look-out over every plant, and when any flagging takes place clear away the earth and find the caterpillar before he has left the spot. "Ambury, or Finger and Toes," is produced by the puncture of an insect, the insects' eggs being deposited in the wound. Change of soil is the best remedy. There is no doubt, I think, that the best flavoured Turnips are obtained from the open field where they are brought under a regular rotation. In Norfolk, a Turnip-growing county, I always liked the field Turnips better than those grown in the garden.

VARIETIES.—The white Dutch and the strap-leaved Stone are best for forcing, and very early sowing. Veitch's red Globe is an excellent main crop sort. Cattell's Silver Ball and Jersey Navet are excellent varieties. For winter sowing the Golden Stone and Chirk Castle Blackstone are very hardy.

The Carrot.

In the Villa Garden it is often more convenient to obtain a constant succession of sweet young roots than to grow a lot of large ones to store for winter. In a general way, Carrots, for a winter supply, in autumn can be bought

cheaper than they can be grown; and, being fresh from the fields, are usually of better quality than if grown in a highly-manured garden. The best kind of soil for Carrots is a sandy loam in good condition, without fresh manure. Soot and lime and salt in moderate quantities are excellent dressings for it, and they may be given in February or March. Those who want large roots of the intermediate and other kinds in field culture sow about the middle of March, sometimes earlier. It is true some of them will bolt, but plenty of seeds are sown, and the general crop is larger when sown in March than when sown in April, but the earliest crop in a long succession of young Carrots which I have just spoken of will be forced in a frame and slight hotbed, the second will be sown on a warm south border, towards the end of January, or as soon after as the land can be got into suitable condition. These two sowings should consist of early French Horn. The crop in the frame will be sown broadcast or in drills from 4 inches to 6 inches apart, and be thinned out, if sown broadcast, to 2 inches apart, or, if in drills, to 1 inch apart, as soon as they are so large that the strongest plants can be distinguished. The young forced Carrots are large enough to use for soups, &c., when quite small, and by drawing out the largest the smaller ones have more space to grow in. The same remarks apply to the first crop on the early border. A further sowing of early Horn Carrots may be made towards the end of February. This time the Nantes Horn should be selected, and this may be sown again about the end of April, again in June, and again about the end of July. The last sown will stand the winter in the open bed with some dry litter to protect from frost; the litter to be placed on just as the frost sets in. It will thus be seen that

A SUCCESSION OF CARROTS

May be kept up without difficulty from repeated sowings of Early Horn, and especially do I recommend this plan where the Carrot grub is troublesome. When we place our reliance upon one main crop in a garden subject to maggot, the roots are nearly always useless before the winter is over; but with a bed of young Horn sown in July, the roots, drawn from the bed as required, are sweet and good till the young crop is getting large enough for use in the frame; in fact, there is no difficulty in bridging the season over with young Horn Carrots. But where there must be a

MAIN CROP,

The seeds should be sown in April, early or late in the month, according to the season and the condition of the land. Nowadays most of the large seed houses dress the beards off the seed, so that Carrot seeds are as easily distributed as Onion or any other seeds, and I prefer to sow the seeds direct from the bag, with no preparation at all; as, if the soil is right, good seeds will soon germinate. Sow in drills from 12 to 15 inches apart, and, as soon as the rows can be seen, run the Dutch hoe between to stir up the soil and kill the weeds when small (the only satisfactory way of killing them). This stirring of the surface should be repeated frequently so that not a single weed gets a chance to become established.

THINNING THE CROP

Should be commenced when the plants are about an inch high by drawing a 4-inch hoe through the drills at frequent intervals so as to leave the plants in little patches from 4 inches to 6 inches apart. In the course of time these patches should be thinned to one plant, leaving, of course, the strongest, but this singling should not be done at the same time that the hoeing-out occurs —it would chill and check the young plants too much. The after culture is almost *nil*, as the tops of the plants soon cover all the land, and keep down the weeds.

LIFTING AND STORING.

This usually takes place in October, and the roots are pulled, the tops cut off within half an inch or so of the crown, and the roots packed in sand in the root shed. A portion of the crop may with advantage be stored in the open air as Mangolds and Potatoes are stored—covered with straw and soil. A few good

CARROTS FOR EXHIBITION,

When the soil is naturally unsuitable, may be obtained by making holes, 15 inches deep and 5 inches or 6 inches in diameter, at the surface with a crowbar, in rows 15 inches apart and 8 inches apart in the rows. These holes are filled with sandy loam, with which some wood ashes and a small proportion of some artificial manure has been blended. When the holes are filled with the compost, drop four or five seeds into the centre, and cover lightly. The usual routine of culture will be all that is necessary afterwards.

VARIETIES.—For early work the early French Horn is best. This is a small stumpy Horn Carrot which turns in very quickly, and therefore is valuable for the first sowing, either in the frame or in the open air. The early Nantes Horn is a good variety for later sowings, and the Scarlet Horn is valuable for its brilliant colour. The Carentan Scarlet is a rather small delicate-shaped and good-flavoured variety without core. The scarlet Intermediate is an excellent Carrot for general use, and the Altringham is also excellent.

DISEASES AND INSECTS.

The Carrot is exposed to a good many vicissitudes of weather, insects, &c., from its very early beginning till the close of its career. The young, delicate plant, even before its infant shoot emerges from the ground, often falls a prey to devouring slugs and other insects, especially in badly cultivated soil. Frequent stirring of the surface, and an occasional sprinkling of lime and soot when anything of the kind is feared, will be of great advantage. The maggot which attacks the roots towards the end of the season—at least their presence becomes more manifest then—is a great pest in some gardens, and one difficult to deal with effectually. Nothing has hitherto been suggested more effectual than a mixture of salt, soot, and lime—56 pounds of salt, 3 bushels of lime, and 3 bushels of soot, the whole to be laid in a heap in a shed and turned over till well mixed, and then left for a month before being used. This will be enough for a bed four rods or perches in extent. The soot and lime may be increased in bulk if desired, but no more salt should be used. It should be applied to the land in February, and be lightly forked in. Paraffin oil has been recommended at the rate of half a pint of oil to sixteen gallons of water, the plants to be watered with it. The difficulty of mixing the oil with the water may be urged against it, but the thing is worth trying. The water should be frequently stirred when applied, which should be done either through a coarse syringe or a rosed waterpot.

E. HOBDAY.

HARDY PLANTS IN ST. JAMES'S PARK.

WE have been enlightened during the week as regards the mode of treating hardy perennials in St. James's Park. The plants are Oriental Poppies *(fancy planting such plants in June when they ought to be in flower!)* brought apparently from some nursery in pots, and, though large growing plants, they were destined to embellish a ribbon border in company with Calceolarias, Pelargoniums, and similar material. It is scarcely credible, but nevertheless it is a fact, that these Poppies, which ought at least to be a yard apart, were placed three together, triangular fashion, with only about 9 inches of space between them. The way in which they are planted is instructive. A hole in the hard soil is dug out hardly big enough to receive the ball of the plant; the plant is then wedged into the hole without even removing the drainage or separating the roots in any way, though the latter had filled the pots. These Poppies were planted at intervals of about 10 feet with mathematical precision in, as has been said, clumps of three, and in front not 6 inches away were the lines of Calceolarias and other plants. This is the way in which hardy perennials are planted in at least one of the chief London parks. Can it, therefore, be matter for surprise that such flowers do not thrive? If the Oriental Poppies in question had been properly planted, they would have had a specially prepared space in an open spot, where their brilliant flowers this month would have had a telling effect. They should have been planted in rich free soil, and in planting them need it be said that the roots should have been separated and loose fine soil carefully placed round them? Thus treated, striking effect might have been produced, but mismanaged as just described a mere struggle for existence is all that need be looked for. It will be interesting to watch their behaviour under such circumstances. It is to be regretted that the effort of the Commissioners to render the park attractive should be thus frustrated by those who have the immediate superintendence of them. The way in which the tall purple German Irises, now in great beauty in this park, are admired shows how much the public appreciate handsome flowers; and were others of the less common kinds of hardy perennials encouraged, they would make the parks attractive before the ordinary bedding plants came into bloom.—*Garden.*

Curious Anemones.—Dr. Lindley, in his "Physiological Botany," shows conclusively that a flower is a branch with all its parts modified, so as to produce seed. When a flower becomes monstrous, turns green, or sends up a shoot from the centre, the immediate cause is that after it had partly become a flower-bud some change in the circumstances of the plant caused it to attempt to become a branch. When the growing power of a plant and its food are exactly balanced no flowers are produced. These are only made when the growing force exceeds the quantity of sap the plant can make, a flower being composed of far less material than a branch with leaves and stems. Bulbs which have been lifted and are planted in freshly-manured soil, would be likely to produce monstrous flowers, and even the lifting will in some cases derange the flowering for a year. All my newly planted double Anemone fulgens have bloomed more or less green. I have only had one case of doubling in my garden. A Tulip bulb, purchased as Cramoisie, and which bloomed true for two years, came up late one spring with a curious double flower, all the outer petals of which were green bracts; next year it had still some green petals; the third year it became the variety sold as Rex rubrorum, and remained so, all the offshoots coming true. Improper soil or manure is the most probable cause of the Anemones (see page 174) going wrong. Amateurs are not nearly so careful as they ought to be about soil. In hundreds of suburban gardens one sees Grass and flower-beds carried to the extreme limits of the ground, and neither trees nor shrubs. All withered leaves and other refuse are burnt or carried away. No heaps of compost, rotting leaves, or hotbeds are visible anywhere. Good things cannot be grown in such gardens, and the culture is perforce confined to such plants as will stand fresh manure. In every case a part of the garden should be screened off for the manipulation of top-dressings of manure and leaf-mould. Grass mowings, leaves, and every scrap of vegetable matter should be saved, and rotted, and there should always be a heap of manure rotting into a mellow state.—J. D.

POULTRY.

13327.—**Egg-bound hen.**—One of my five hens appears to have some difficulty in moving rapidly, and is rather big in the hind parts. We have occasionally had four eggs in the day, and on the 4th April and also on 21st May there were five. Being all half-bred Spanish I am unable to detect whether she is laying, and do not know how to treat her. Would some of your readers kindly instruct me whether it is probable she is egg-bound, and how to act in the matter?—F. L. P.

13716.—**Rearing ducklings.**—"Iolanthe" requires more information than can possibly be given in a brief answer. The essentials with ducks are vegetables and animal substances, viz., corn or meal and green vegetables, and offal—tallow scratchens will do; winter ducks cannot possibly do so well as spring birds. A knowledge of the yard from which the eggs come, or of the person from whom they are purchased, is the only guarantee of fertility. After the eggs have been sat on a week anyone can tell a fertile egg by its being opaque, and a clear egg transparent, on being held up to a strong artificial light and shaded on the sides; the thumb and fingers will do this, but a hole the size of a crown piece in an old hat answers better.—CLAUDIAN.

13717.—**Fowls dying.**—A "Young Beginner" cannot be answered unless he describes symptoms of the disease, and the condition and food of the fowls. It may be liver disease, which is hereditary. If so, clear the stock out; or it may arise from an excessively fat condition of body, which has produced inflammation of the oviduct on the fowls' commencing to lay. If so, reduce quantity of food, and cease to give either Indian corn or meal.—CLAUDIAN.

GARDENING ILLUSTRATED.

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TREES AND SHRUBS.

THE WEEPING SOPHORA.

We do not as yet know the full value of weeping trees. It is a peculiarity of most of them not to show their full beauty of character until they have attained a considerable age, and few, comparatively speaking, are attractive from an early stage of their existence. One of the most beautiful of all such trees is the weeping form of the Japanese Sophora (S. japonica pendula). When well developed it is attractive in winter or summer; it is more picturesque in outline than the Weeping Willow, while the shoots hang most gracefully. Its only fault is that it is a slow grower; like the normal kind it thrives well on light, loamy, and dry soils.

It appears to be more esteemed on the Continent than in this country; lately we noticed it putting out its pale green buds in one of the public gardens in Paris, whereas about London, where it is pretty hardy, it is seldom seen, and when seen is rarely a large specimen. We remember that there used to be a very good one in Osborn's nursery at Fulham, recently much built over, and of the ordinary form of the tree which does not weep there is a large specimen in the pleasure grounds at Kew. It is a tree to which lovers of garden and lawn trees will willingly give a place if they can get healthy young plants. This is, however, by no means very easy, and we shall probably have many readers asking where they can get it.

Rhododendrons on clay soil.—How frequently do we find people deterred from planting these beautiful flowering shrubs from the idea that, because their soil is not peat, it will be a hopeless task to try to grow Rhododendrons, unless they make the soil, and that is a far more expensive undertaking than buying the plants. Now I do not assert that Rhododendrons will grow in every kind of soil, but I can positively assert that I have quite as frequently seen them in the most luxuriant health in soil that was as nearly as possible a pure clay as I have in the best peat. Only a few days since a gardener assured me that since they had given up making the soil, and had planted their Rhododendrons in the natural soil, without any preparation whatever, they had far healthier specimens, and in the low-lying dells, where the water stood about the roots for months at a time, the most luxuriant specimens were to be seen. When we consider the beautiful effects of the Rhododendron in woodland walks, and its freedom from the attacks of rabbits, the wonder is that it is not more extensively planted in such positions, for it grows freely in deep shade, or full exposure to sun and air, but it is only where the sun's rays reach it that it flowers satisfactorily. The common R. ponticum is now sold so cheaply that the difference between the cost of it and of other common evergreens is hardly the reason why worthless rubbish is substituted, and with a few brilliant coloured varieties at intervals a striking effect might be produced.—J. G., *Hants.*

Rose Acacia (Robinia hispida).—By midsummer flowering trees and shrubs are but sparsely represented; therefore one that blooms in July, and which frequently maintains a succession of flowers for some time later, well deserves a word in its favour. Such is this Acacia, or rather Robinia, which is generally met with grafted standard high, a form in which its racemes of large Pea-shaped rose-coloured blossoms are seen to good advantage, especially when the plants are young. It is generally increased by grafting on the common False Acacia, with which it readily unites.—W. T.

The Weeping Sophora (Japanese Pagoda-tree).

Arum Lilies.—I should like to inform "Dublin Amateur" that I have now (June 15th) had a clump of Arum Lily (Calla æthiopica) in full bloom in the open air for more than a week. The plants have been in the same spot for over ten years. One summer I had sixteen flowers, but the severe frosts of 1880 nearly killed them. However, this year there are five blossoms. As I knew very little about gardening when I got them from co. Kerry, where the climate is warmer than this, I put them in the hottest, and consequently driest, spot in the garden under a south wall. It seems to have agreed with them in spite of all the instructions I see given about planting them beside water.—Another Dublin Amateur.

ROSES.

PROPAGATING ROSES.

The following notes are taken from Ellwanger's book "The Rose":—There are four methods used in propagating Roses—by cuttings, by budding, by grafting, by layering; in importance they rank in the order named, and in this order we will briefly consider them.

Cuttings.—There is no doubt but that plants grown from cuttings are the most useful for general purposes, and the greater number of our choice varieties can be grown in this way without difficulty; but there are some beautiful kinds, like Baroness Rothschild, which root with great difficulty; these sorts can only be profitably grown by budding or grafting. Cuttings can be made at any time of the year. The old ideas that the wood *must* be cut at a joint or with a heel, and that it is *essential* they should be placed in bottom heat, have been thoroughly exploded. The most successful propagation by cuttings, for the largest number of kinds, is made during the late winter months from strong plants one or two years old that have been grown in open ground, potted in the month of November, or from plants which have been grown in pots for one year, or planted out under glass. Cuttings of all kinds which root freely, like General Jacqueminot, Victor Verdier, etc., can be made from one eye only, and cut between the joints just as well as after the old fashion of cutting to a heel, and with three or more eyes—an unnecessary and wasteful process. All of the large commercial establishments in America do most of their Rose propagation in the months of January, February, and March; the cuttings are made to one eye and dibbled in beds of sand, or in some cases are placed in pots of sand and these pots plunged in beds of sand; underneath the staging which supports the cuttings run hot-water pipes or flues; these are commonly boarded-in to secure bottom heat, and this I believe to be the best method. Some Rose-growers make no attempt at confining the pipes or flues, and produce excellent plants without resorting to bottom heat, but it is a slower process, and there is a somewhat great percentage of cuttings that fail to root. Advocates of this system claim that they secure healthier, stronger plants in the end than they would by the use of bottom heat. There is no doubt that plants propagated in a closely confined house in a high temperature are apt to turn out of weak constitution, but we believe the best results follow where plants are propagated in a bed at a temperature of about 70 degs., with the temperature of the house a few degrees less. However, these matters concern nurserymen and florists more than amateurs, for this class does not care to put in operation anything that requires much expense. When but few cuttings are desired they can be placed in pots and will take root in four or five weeks after insertion, grown in any ordinary conservatory or greenhouse. After the cuttings have taken root they should be potted

in pots not exceeding two and a half inches in diameter. Certain kinds of Roses take root without difficulty, others are so stubborn that the amateur would do well not to attempt their propagation until he has proved himself an adept in growing the others. The sorts most difficult to root are the various varieties of Moss, most of the summer Roses, and certain varieties of Hybrid Remontants belonging to the Jules Margottin, Baronne Prevost, and Baroness Rothschild families. All of the Tea and monthly Roses, with very few exceptions, root and grow freely from cuttings.

Besides using green wood, some propagators make cuttings from hard wood—that is, shoots thoroughly ripened, taken in the autumn. Manetti cuttings are always made from wood taken in autumn, and the various varieties of Prairie Roses are often grown in this way. In some establishments large quantities of cuttings are made during the summer months and grown in hotbeds; the plants produced are saleable in the autumn and are largely used by florists. In selecting stock plants from which to propagate, care should he had that only those be chosen which are vigorous and healthy, otherwise a sickly or weak progeny will result.

Budding.—This is an important method, second only to propagation hy cuttings. The chief disadvantages are these: first, it is more expensive. The stocks are to be purchased and cared for, and it will be found that the labour of budding, suckering, cutting hack stocks, etc., will make the operation far more costly than growing plants from cuttings. Budded plants are not desirable for inexperienced amateurs, since novices do not detect the suckers which, not infrequently, come up from the roots, and if not cut away ultimately choke the plant. A third objection is found in the fact that budded plants are more frequently killed by severe winters than plants on own roots. On the other hand, hy budding we are enabled to grow varieties which are so difficult to root from cuttings, that their propagation would he discontinued by all large Rose-growers were it not for this method. Varieties like Baroness Rothschild, Mabel Morrison, Marquise de Castellane, Madame Boll, Marguerite de St. Amande, etc., are as yet almost indispensable, but no nurseryman would long grow them from cuttings. There is another class of Roses often advantageously grown by budding, these are varieties of moderate growth like A. K. Williams, Horace Vernet, Madame Victor Verdier, Mademoiselle Eugénie Verdier, Marie Baumann, Xavier Olibo, etc. All these kinds are invigorated by being worked on some strong stock, like the Manetti. A third advantage of budded Roses is for use as stock plants, and also for forcing. Budded plants of many kinds (not the Jacqueminot type) can be taken up in October or Novemher, and with ordinary treatment will give as fine a crop of flowers as plants of the same varieties which have heen grown all the summer in pots at much more expense and labour. I would not advise any reader to purchase budded Roses who cannot tell, by the wood, the difference between Persian Yellow and General Jacqueminot, hetween Marie Baumann and Salet—indeed amateurs who cannot do this do not deserve to have Roses at all, for they would not be able to distinguish between the shoots of the Manetti suckers and their Louis Van Houtte or Victor Verdier (although the Manetti is most distinct from all other Roses).

Many kinds of stocks have been tried on which to hud Roses, as the Brier, the Grifferaie, etc., hut for general use we very greatly prefer the Manetti. The Stocks are planted in nursery rows, ahout 3 feet between the rows, and 6 or 8 inches apart; in July and August the buds are inserted; the lower the buds can be put in the better, as the liahility to send up suckers is thereby greatly diminished, and opportunity is also afforded the plant of heing ultimately established on its own roots.

Propagation by Grafting.—This is a profitahle mode to pursue when done in winter under glass, using plants of Manetti or Brier grown in pots for the purpose. Grafting Roses on the root cannot be made profitahle, as such a large percentage fail to grow. Stock grafting is carried on in England and elsewhere with great success, and although the plants are not so desirable (owing to the grafts being of necessity some distance above the roots) as those propagated by the other methods, it affords nurserymen an opportunity of more quickly securing a stock of new sorts, and also is advantageous as an aid in producing more vigorous plants of such varieties as Niphetos than can possibly be obtained from cuttings.

Propagation by Layering was once practised to considerahle extent, but it is a slow method, and is now but little used. Good plants can be obtained in this way of Persian Yellow and some other varieties which do not strike from cuttings, and it is the only method hy which certain kinds can he produced on their own roots. Besides the methods spoken of, Roses are also produced from seed, but this is only done where it is purposed to secure Stocks, as seedling Briers, or where it is the aim to obtain new varieties.

REPLIES.

13737.—**Diseased Rose tree.**—The insect on the stem of your Maréchal Niel is, no doubt, the brown scale—a troublesome pest when it has got such a strong hold as in your case. You must rub off as much of the scale as you can with the hack of a knife; then dissolve three ounces of Gishurst compound in one gallon of hoiling water. When cold, paint the stem with the solution and apply a little clay to help it to adhere to the stem. The application should he repeated as often as any scale is visible. To destroy the green fly on the young shoots, dissolve 1 ounce of soft soap in 1 gallon of water; place some of the soapy water in a deep saucer, and dip each shoot separately into the water, repeating the application the next day.—J. C. C.

13726.—**Gloire Rose after blooming.**—Your plant ought not to be repotted now unless the pot is very full of roots, as fresh potting would most likely prevent it from flowering again in the autumn. Take your plant out of the greenhouse now, and plunge the pot to the rim in a sunny border and supply it liberally with water. Early in Novemher take it up, and shift it into a pot one or two sizes larger. The best compost for pot Roses is three parts loam and one part manure. This Rose should not have much pruning; only the strongest shoots should he shortened back to half their length. The pruning in your case should be done in December.—J. C. C.

—— If repotting is necessary that will be a good time to do it. The fresh potting material placed round the roots will cause the plants to make a clean and vigorous autumn growth. Roses potted in the summer are not so liable to be attacked hy mildew as those that are not so potted. Syringe the leaves in hot weather to keep off red spider and green fly.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, June 29th to July 4th.

Taking up early Ash-leaf Kidney Potatoes and spreading them out in the sun to ripen well for early crops next season. Sowing Canadian Wonder and Long-podded Negro French Beans. Stopping and nailing-in shoots of Tomatoes. Mulching Morello Cherries and watering them. Putting out main crop of Celery, Chilies, and Chervil. Putting in cuttings of Poinsettias. Removing superfluous shoots from espalier Pear trees. Sowing Early Horn Carrots and red and white Turnip Radishes. Mulching late Peas with rotten manure, and well watering them. Thinning out Chicory, Dandelion, Salsafy, and Scorzonera. Planting out Lettuce and Endive; also Marjoram and Sweet Basil. Watering all newly-planted Broccoli and Brussels Sprouts.

Taking nets off early Cherries and putting them over Currant bushes to protect them from birds. Turning over gravel walks where covered with Moss to give them a fresh appearance. Planting May-sown Lettuce and Snow's White Broccoli. Putting in Heliotrope cuttings to make plants for winter flowering. Digging land for late Peas and Broccoli. Putting Amaryllises in the sun to ripen their bulbs. Sowing All the Year Round, the Favourite, and Giant White Cos Lettuces; also Green-Curled and Batavian Endive. Potting first batch of Strawberries for forcing. Planting out Celery and Cardoons. Giving Asparagus beds a light dressing of salt. Mulching and watering Peach trees on walls. Planting Autumn Giant Cauliflower and Savoys. Taking up Hyacinth bulbs and drying and storing them. Nailing in Peach, Plum, and Pear tree shoots. Sowing Omega and Ne Plus Ultra Peas. Potting on small plants of Dracænas and Pandanus Veitchi for table use. Planting out Cauliflowers and late Broccoli.

Planting out a four-light pit with Tender and True Cucumbers. Putting Chrysanthemums in their flowering pots. Sowing late crop of Broad Beans; also Mignonette for autumn flowering. Putting in cuttings of choice Pelargoniums. Drawing Drills for Turnips, and well watering them previous to sowing. Nailing in leading shoots on Apricot and Plum trees. Giving Peach trees in early house from which the fruit has been gathered a good washing with soft soap, sulphur, and Quassia-chip water to keep down insects. Planting a border with Ten-week Stocks and Asters. Looking over Gooseberry bushes and destroying caterpillars. Hoeing among Onions, Carrots, and Beetroot. Putting all spring-flowering bulbs that are dried off into hampers and storing them away in a cool place.

Work in the Town Garden.

FRUIT AND VEGETABLES.—As a rule, flowering plants will he found to produce better results in town air than any description of fruit or vegetables, the production of fruit being a point beyond flowering, which is generally as far as town plants can arrive at with any degree of success. There are, however, a few exceptions to this, and a few useful and easily-grown vegetahles and fruit may be produced in almost any town garden, though, of course, the more open to sun and air the little piece of ground is, the more satisfactory will a trial or two in this direction prove.

About the most useful and easily-grown vegetable in a town garden is the dwarf or French Bean, which if sown in the usual manner in pretty good ground the last week in April or early in May, and protected from the ravages of slugs, &c., cannot fail to produce a fairly good crop of nice useful pods. The climhing or Runner Bean is more generally seen in towns, and seldom fails to grow and bloom well, certainly, but in many places very little fruit ever sets, while the dwarf Bean scarcely ever fails to give a crop, however close and smoky the air may be. A bed of spring Onions, or Radishes, or Spinach, again, may be tried with every prospect of success, hut the soil must be rich and good. On the other hand, Cabhages, Parsnips, Carrots, and so forth are usually quite a failure. Of course in these remarks I am referring to a *bonâ fide* "Town Garden," completely surrounded with hricks and mortar, and not to what should he rated as "suhurban" ground, where, though the air may be smoky at times from the countless chimneys stretching away in one direction, the other side is wholly or principally open fields, from which fresh, healthful breezes blow at times, if not always. Rhubarh may be grown well, too, and with care even a few nice Lettuces. Tomatoes, especially under glass, are usually a great success, and, in a properly constructed and heated house or pit, even Cucumbers may be induced to bear a moderate crop, though they will not grow as strongly or fruit as freely as in purer air. Very good Vegetable Marrows may he grown, even in the heart of London, and where there was no other place we have often seen them doing well on a moderately flat roof or house-top, planted in a hox of soil. Such a position as this is much hetter than the cold ground, often in almost constant shade, of one of the little "wells" of garden generally attached to town houses. Marrows should always, if possible, he planted on a raised mound of turf or manure, and the higher and warmer they are placed, so that a proper supply of moisture is afforded, the better they will do.

Strawherries may be successfully grown in pots to fruit under glass, and when well looked after are quite as interesting, and when in fruit as handsome, as most flowers. Grapes also may he done very well, and where plants cannot be looked after a greenhouse may be profitahly planted with some hardy, free-fruiting vine, such as Black Hamburgh. Little or no artificial heat is required, and if attended to as regards ventilation, syringing, stopping, thinning the hunches, &c., with an occasional good soaking of the border when necessary, very nice Grapes may be produced almost anywhere. B. C. R.

Glasshouses.

PLEROMA ELEGANS.—This hears lovely, large, violet-coloured hlossoms, unapproached hy any flower of a like colour. It is easily managed, requiring only to he turned out-of-doors from ahout the middle of July to the end of August, so as to ripen its wood. It attains a considerahle size, but is best for general use when in a small or medium state. It blooms freely, and will flower in 8-inch or 9-inch pots. It succeeds in peat or loam, but I prefer the latter. See that the shoots are frequently stopped from the time the cuttings are well rooted until the plants have attained a hushy condition. By this means half-a-dozen sticks will give all the support which a good-sized plant requires. Cuttings made from the young shoots as soon

after this time as the wood has attained a little solidity will strike in three weeks. It blooms from the young growth in July, August, or September, according to the way in which it is treated as regards warmth in spring. It should be slightly shaded in summer.

PELARGONIUMS. — Zonal Pelargoniums required for winter flowering should have the growth well-matured before autumn. Let all such young stock be at once moved to the pots they are intended to occupy, and let free growth be encouraged, after which they ought to be placed out-of-doors in an open situation under the full influence of the sun, and kept there until there is danger from frost. The earliest flowered portion of the stock, such as the London market growers cultivate, should, as soon as they have bloomed, be fully exposed out-of-doors so as to ripen up the growth previous to heading them back; if this be done in good time they will break into growth, and can be repotted sufficiently early to admit of their gaining the needful strength before autumn.

CAMELLIAS.—Plants grown in pots have this advantage, that they can be moved about as required in order to accelerate or retard their bloom. Any that have already got their buds as far advanced as may be desirable should be placed in cooler quarters, but until in this condition they must not be moved out of warmth, as when once the excitement consequent on their being in heat is stopped they will not bear forcing; therefore it is well to note their condition. All that had their growth retarded by late flowering should have sufficient shade to protect their young tender leaves from sunshine. Syringe freely once a day, and see that the roots are kept well moistened. The growth of

AZALEAS must now be regulated. Those plants that bloomed late should now be encouraged to make growth by being placed where a sufficient temperature can be kept up. Syringe freely every day when the house is closed to keep down thrips, and if these or red spider cannot be kept under by syringing with clean water alone, the plants should be dipped or syringed with Tobacco water, which, although taking more time than fumigating, is nevertheless much preferable, as I have never been able to use as much Tobacco smoke as would destroy the thrips without injuring the leaves. All that have bloomed late and are in want of more root room should now be repotted.

SOLANUMS.—The berry-bearing kinds of these are most useful when so managed as to come on in succession. A portion of the stock should now be furnished with fruit that will have sufficient time to become fully coloured by the end of September, from which time to the close of the year they are most serviceable for associating with the comparatively few flowering plants that can then be had in bloom. Those later in flowering, if well attended to, will colour their berries towards the close of the year. To have these Solanums in presentable condition, their leaves must be in a healthy green state, as if at all deficient in this respect they are uninviting in appearance. As the pots are now full of roots, they must have unremitting attention. Supply water when required, and once a fortnight give liquid manure.

CASSIA CORYMBOSA.—Although this is seen to the best advantage when planted out and covering a wall, such as the back of a greenhouse or conservatory, yet, as generally grown in a pot, it looks well and yields a succession of its bright yellow flowers which come in during the summer and autumn. If kept repeatedly stopped, so as to induce the formation of plenty of shoots near the base, it will need no sticks. Cuttings should be put in about this time if they can be had 3 inches or 4 inches long; they ought to be taken off with a heel and treated in the usual way.

CUTTING BACK HARD-WOODED PLANTS.—Some hard-wooded plants require a free use of the knife every season immediately after they have done flowering, otherwise they soon get into such a loose, straggling state as to be worthless. Among these are Polygalas, Pimeleas, Epacrises, Correas, Acacias, and others possessing a similar habit—plants, in short, that annually make shoots of considerable length. From one-half to two-thirds the length of shoots made last summer should be removed, after which the plants ought to be placed in a house or pit where they can be kept closer than in an ordinary greenhouse. Syringe overhead in the evening.

Flower Garden.

PINKS.—The present is the best time to put in pipings. The smallest growths strike root most freely, and if the weather is dull and showery at the time when they are taken off, they may be put in a shady position quite in the open ground. It is rather more difficult to propagate the Pink in the south than in the north, and in dry, sunny weather it is best to place the pipings in boxes, and to strike them on a very mild hotbed. Until roots are formed they must be shaded from the sun.

Successional plants of Asters and Stocks may be planted out, and by putting in a later batch the bloom may be kept up further in the season. Asters, especially, are so useful for cutting that it is desirable to have them as late as they can be had. If hot, dry weather should set in immediately mulch the Gladioli beds with rotten manure, and apply water freely if thought needful. It is also necessary to place sticks to the plants in the earliest stages of the spikes, as the broad leaves are much acted upon by gales of wind, and if the roots get loosened the plants soon fall over. The roots of Tulips ought to be lifted at once and stored in a dry place until planting time. Regular Tulip growers have drawers fitted with boxes, divided into compartments, into which each variety is placed and numbered. We simply lift the roots and clean them, placing each variety in a small flower-pot, which is stored in a dry loft, and thus managed they keep in good condition until the time of planting arrives.

MIXED FLOWER BORDERS.—The most showy and most useful flowers for cutting in our borders at the present time are Pyrethrums and Columbines, the yellow and bronze-coloured flowers of the latter being most novel and pleasing. The Pyrethrums, both single and double, range in colour from deep crimson to pure white, and in a cut state keep fresh for a longer period than any other flowers I know of; their merits are such as to justify their extended culture. These and many others now need staking and tying, but it should be done as loosely as the safety of the flower-stems and plants will admit of. Weeds should be kept down and the surface-soil broken, particularly about Dahlias, Hollyhocks, and sub-tropical plants lately planted for autumn effect. Many old-established plants thrive best when left for years in an undisturbed state, or with only such attention as to curtailment of growth as shall prevent them from injuring adjoining plants. Asters, Stocks, and Phlox Drummondi suffering from the attacks of aphides should be syringed with soapsuds two or three evenings in succession, and then well washed with clear water. The best bait for slugs is bran, to which they go readily, and they may be caught in the act of feeding any time after dusk or very early in the morning.

SHRUBBERIES.—If time for hoeing or hand-weeding cannot be spared, we may very quickly prevent weeds such as Nettles, Thistles, and Dandelions from seeding by roughly going over them with a rip-hook till such time as proper attention can be devoted to the work; then the plants in the shrubbery should be cleared of all seed vessels and dead branches, irregular growths shortened back, and suckers removed. Clematises and other climbers should be secured to their supports. Ordinary Pea sticks, placed in a slightly leaning triangular form, make excellent supports for shrubbery climbers. Lately moved plants should be re-mulched, and if necessary soaked with water. Turf verges should be closely cut, and any vacant spaces near the front planted with such biennials as Sweet Williams, Snapdragons, and Canterbury Bells.

GENERAL WORK.—Peg down bedding plants and free them from useless flowers, mulch with Cocoa fibre the smaller plants, and keep the ground about the larger kinds open by frequent stirring. Calceolarias, Violas, and Verbenas enjoy a rich mulching of cow manure or horse droppings; such coverings keep them in vigorous growth and bloom during the hottest weather. Clipping edgings and groundwork of Sedums, Herniaria, and Mentha, should also now engage attention.

Fruit.

GRAPES.—When all the Grapes have been cut from the early vines, add a little fresh mulching to the borders if they have suffered, and keep the roots moderately supplied with weak liquid manure to start a flush of laterals, but guard against carrying feeding to an excess that will force a vigorous growth, and so exhaust the vines after the wood is ripe. Keep the strongest laterals pinched to balance the flow of sap, and preserve all the old foliage by good syringing every evening, or as often as the state of the weather may render atmospheric moisture necessary. Vineries in which the Grapes are ripening may have more air by night and by day, with just sufficient fire-heat to keep the minimum temperature at 60 degs., and when the berries have attained their full size, the afternoon closing may be discontinued, particularly where the colouring process is not going on satisfactorily. If this house contains Madresfield Court Muscats, see that the borders are moist, but not wet, mulch well with some loose non-conducting material, and allow all the laterals and leaders to grow until after the Grapes are cut.

MELONS.—About this time a number of pits and frames will be set at liberty by the clearance of forced vegetables and the more tender bedding plants. To make the best use of these, a good stock of the leading kinds of free-setting Melons, including Golden Gem and Victory of Bath, should be ready for turning out in strong, but not over rich, loam, placed in ridges some 18 inches from the glass. As many of the preceding occupants leave a colony of insects behind, the frames and lights should be well cleansed with boiling water, and in order to give the plants a start, a trench may be taken out along the centre of the old bed, and filled in with fermenting leaves or stable manure, which should be made very firm before the soil is introduced. A good external lining along the front will also assist the plants through the early stages of growth. Early crops now swelling or ripening off will well repay steady attention to linings and covering up with mats at night. Reduce the supply of water and atmospheric moisture when the fruit begins to change colour. Ventilate more freely on bright days, and insure flavour by full exposure to sun and air. The cultivation of Melons in houses after this time is a very simple matter, the main points being a bottom heat of 84 degs. to 90 degs., plenty of air on fine days to secure dark green, sturdy foliage, an abundance of water to the roots, and a good syringing to keep them free from insects.

STRAWBERRIES.—Though the forcing of Strawberries is barely over, preparations must forthwith be made for that of another season. We always layer our first Strawberries in 5-inch pots, in which they are allowed to fruit and in which they do much better than those layered at the same time in larger pots; the reason is that the pots get sooner crowded with roots, and this induces earlier ripening of the crowns, which, as a matter of course, must fruit earlier than they otherwise would do. We layer the general stock in 3-inch pots, and as soon as the roots reach the sides of the pot we shift them into 6-inch pots. The best soil is moderately stiff loam without any admixture, except a small proportion of bone-dust or horn shavings. Careful crocking, to admit of free drainage, is imperative, as is also firm potting.

HARDY FRUIT.—Look over Peaches and Nectarines, and if the fruit is still too thick remove more, as also superfluous shoots; but on no account take away too much leaf, for in the season this is worse in its effects upon the trees than the opposite extreme of neglecting to disbud them. Continue to use the garden engine or syringe two or three times a week, wetting the under sides of the leaves. If this is attended to little injury will be done by thrips and red spider, the worst enemies these fruits are affected by, which not only materially injure the present crop, but weaken the trees, thereby seriously affecting them in after years. These fruits will be benefited by mulching the ground with half-rotten manure. This is easily applied where the borders are not cropped with anything over the roots. Keep the hoe at work amongst bush fruits, so as to destroy weeds as they appear. It sometimes

happens that there is negligence in this respect, under the impression that the bushes do not suffer from the presence of weeds as culinary vegetable crops do. Wherever they are allowed to grow, however, they exhaust the soil much more than ordinary cultivated plants do; and to let any part of a garden become foul is simply to waste the manure used, of which even bush fruit stands in need, although not to the same extent as vegetables.

Vegetables.

Where there was at the time when the ground was prepared a scarcity of manure, make up the deficiency now by the timely application of liquid manure. This should be given at the middle stages of growth after the plants have taken a fair hold of the soil and are growing away freely, and strength will be imparted at the time it is most required. It is, however, necessary to be cautious in the use of manure water; it must not be applied too strong, for plants, unlike animals, have not the power of rejecting the food that is given them, which in a liquid state goes direct to the roots, and is of necessity absorbed by them, even if their destruction be the result. If manure of a solid character—such, for instance, as that of fowls in a crude state, or guano that is lumpy and insufficiently broken—be dug into the soil, the case is somewhat different; the roots will not enter it, but will run in other directions to escape, as it were, the dangerous diet set before them. A little reflection upon the nature of the particular plant to which manure water is to be applied, will, in a great measure, be a safe guide as to the strength of the solution it is able to bear. As a rule, rampant-growing subjects will stand a much stronger mixture than weak growers—Rhubarb, for instance, being benefited by it at a strength that would injure Peas. Runner Beans may receive it stronger than the weaker-growing dwarf varieties; but in all cases it is better to be on the safe side, and make the solution rather too weak than too strong. A little Parsley should now be sown on well-prepared rich ground; sow in rows 15 inches apart. This will not be disposed to run to seed so soon in the spring as that which was put in earlier. Thin out the early-sown plants, leaving them 9 inches or 10 inches asunder. If this is attended to in time there will be little to fear from canker at the root, which usually occurs when the plants are overcrowded.

Anemone fulgens.—This time last year I was advised to lift Anemone fulgens, and expose the roots to the sun for a couple of months. The effect was wonderful, the crop of flowers was double as large and, the size considerably increased. This year I am lifting all my roots, coronaria varieties included. I should mention that a week would be long enough for exposure, then storing the roots in boxes, etc.—K.

Sheep in Hyde Park.—There are now about 2 000 sheep in Hyde Park, and on hot and still mornings the result is by no means pleasant to those who cross the park on foot. It may be said that they manure the ground, but they take more from it than they give. They graze down the Grass, it is true; but that could be kept in better order still by the simple strong mowing machines of recent years, some of which are well adapted for cutting rough Grass. Perhaps the best way would be to cut it more frequently, and treat it more like a well-kept lawn; the cuttings might be kept on the ground in some way. The few pounds per week derived by the State from the grazing of such a large number of animals need not be mentioned. The clearing of the walks is made more difficult by the presence of so many animals, and there is quite enough refuse to remove apart from theirs. Whatever may be thought of the present arrangement, it is not likely that we shall always go on covering our public parks and gardens with the ejectæ of many animals. Our public parks are kept up at very great cost and in the most liberal way, and it is not right to make them like the butcher's paddock. The question need not be gone into here, but it is well known that the excretæ of the animals is by no means free from danger to other animals and to men, and certainly it is wrong to allow such material over a beautiful garden in the very heart of London. On the downs or the open sheepwalk, where the creatures get about over wide, airy spaces, one does not notice the nuisance at all in the same degree as in this park.

INDOOR PLANTS.

SOPHRONITIS GRANDIFLORA.

This is one of the very best representatives of a small genus of Orchids. It is generally admired for the neat habit of the plant, and its large and very brilliant scarlet-coloured flowers. We have grown it very successfully for several years, and its culture may be summed up in a few words Many people grow it well on blocks. Perhaps the best plant ever seen was grown in that way by Mr. Heims, in the gardens of Mr. Philbrick, Regent's Park, but I never grow a plant on a block if it will do as well in a pot or basket. Ours are grown in pots, suspended within a foot or 15 inches of the glass roof. The potting soil is turfy peat, Sphagnum, broken charcoal, and potsherds. They grow in the cool house in summer and the Cattleya house in winter. The flowers open in December and last in beauty for three months.—J. Douglas.

GARDENING UNDER DIFFICULTIES.

A greenhouse in the country, with its garden, pure air, and unrestricted light is a treasure, when compared to one in our large towns or cities, where there is little or no garden, a polluted atmosphere, and large buildings as surroundings. In one case, with ordinary care, success is certain; in the other, much depends on the skill and patience of its possessor. I am, unfortunately, the possessor of only a town greenhouse, and perhaps my experience may be of interest to others in a similar position.

A Scarlet Orchid, Sophronitis grandiflora. Drawn for Gardening at Mr. Philbrick's garden, Beckley.

My garden is situated between two rows of houses and a large cotton factory about 30 yards to the south-west, so that I get no sunshine for four months during the winter. In a small piece of ground, 8 yards long by 4 wide, I have constructed a small lean-to greenhouse, 9 feet by 7 feet, and a cold frame, 6 feet by 4. On what little space is left I grow a few hardy flowers, salads, Chrysanthemums in pots, and store my potting soil. This, of course, is my only drying ground, and what with cats and falling line-props, I cannot say that I am satisfied with results outside. Nevertheless, I do not despair, for I believe that that species of genius which has been defined as "an infinite capacity for taking trouble" has more to do with success than one's mere surroundings. In such a position, and so small a house, I attempt only to grow such things as give the best results with a minimum of trouble and expense. And so far I am successful. What I mean by being successful is this—I manage to keep my house nicely filled with flowers during the whole year, the surplus stock of plants and cut flowers I dispose of, and they cover all expenses. My flowering plants consist of the following:—From December to the latter end of February, Primula sinensis, Mignonette, and a plant or two of Christmas Rose (Helleborus niger). Then come Hyacinths, Polyanthus Narcissus, Hybrid Primroses in variety; Dielytra spectabilis, Acacia armata, Deutzia gracilis, Spiræa japonica, with early Tea and China Roses, and early Fuchsias. Before these latter have passed their best come Geraniums (Zonal and Ivyleaf), Pelargoniums, double Tropæolums, and some more Roses. From May I have no difficulty with Begonia weltoniensis, B. insignis, and tuberous-rooted varieties; Heliotropes, Abutilons (Boule de Neige, and some of my own raising), double Petunias, Cactus, Mimuluses, Fuchsias, with Vallota purpurea and Chrysanthemums for the autumn, so that I have plenty of flowers until my Primulas come again.

My foliage plants consist of Grevillea robusta, Acacia lophantha, and foliage Begonias, and I am adding Aralia Sieboldi from seed. I also have a few pots of Isolepis gracilis. Besides my greenhouse and frame I have constructed a small propagating frame 2 feet square, heated by oil lamp and water. With this I raise my seeds and strike my cuttings. This also stands in the garden, as I found the fumes from the lamp injurious to the plants in the greenhouse. This spring, in addition to my Primulas, I sowed about the third of a sixpenny packet of each of the above foliage plants with this result:—Eight Acacia lophantha, and two others that I cannot as yet name; five Grevillea robusta, and eleven Aralia Sieboldi. This is the first time I have grown the Aralia, but of the other two I have previously succeeded in growing very fine plants. As soon as the plants are large enough to handle I pot them into 60's pots, and place them close to the glass in the greenhouse, carefully shading from sunshine. I pot them on as required, using fibrous loam, leaf-mould, sand, and a few small pieces of charcoal. The pots are covered with Selaginella, and by August or September make useful little plants for table or window decoration, and are easily disposed of for that purpose. The Grevillea is the most useful, as a few days in a hot, gas-heated room appear to do it no injury, provided it does not suffer for water at the roots; but for easy culture, quick growth, grace, and beauty the palm must be given to Acacia lophantha. Last year from seed sown in March, I had by September one plant over 4 feet high and 3 feet across its leaves and side branches. I then lent it to help to beautify a chapel at a harvest festival, where it was admired by all.

With the exception of Acacia armata, Fuchsias, Cactuses, Rose trees, and Begonias, I never keep old plants. By raising my seeds, and striking cuttings of Fuchsias, Abutilons, and soft-wooded plants in the spring, and Rose trees, Geraniums, and Pelargoniums in the summer and autumn, I always have plenty of young plants which give the best results. My Roses consist of Gloire de Dijon, Safrano, Isabella Sprunt, Devoniensis, Mrs. Bosanquet, Fairy Rose, White Pet, and a few that are not named. I strike my Rose cuttings as follows:—Well drain a clean pot of sandy peat, rough leaf-mould, and sand. Take cuttings three joints long, remove the bottom leaf only, and insert them round the sides of the pot; then place them in a larger pot or box, and put them on the floor, and cover with a piece of glass. This is removed at night, and on dull, cloudy days, and I seldom have a failure. The reason

Why many amateurs fail with the Pelargonium is to me obvious. I have visited many places in the autumn, and this seems to be the general mode of propagation:—The plants are allowed to flower as long as possible, frequently until September; they are

then cut down, and a lot of these exhausted, hard-wooded pieces packed round the sides of pots to root. Some root, but the majority damp off, and those that do root make long-legged specimens unfit for either window or greenhouse. Consequently fresh plants have to be bought in the spring, which makes it very expensive, and I have known cases where the culture of this plant has been given up on this account. In spite of the entire absence of sunshine during the winter, no plant gives me better results than the Pelargonium. My selection of these is small, but of a free-flowering, short bushy habit, such as Mabel, Digby Grand, Duchess of Edinburgh, Madame Thibaut, Triomphe de St. Maude, Virginium, and one or two others without names. I have tried the regals, such as Prince of Wales and Beauty of Oxon, but their habit is unsatisfactory. My two-year-old plants have generally done flowering by July, and are placed outside to ripen their growth. I select my cuttings from the side shoots that have not flowered, and pot them simply into 60 pots, and place them close to the glass in the greenhouse, where they soon root. By the middle of August they are potted very firmly into 40 pots for the winter. Those struck during August are kept in the 60 pots until the spring. I have a shelf along both ends and front of my house, close to the glass. These are the only shelves on which I can successfully grow these plants, and being about 22 feet in length, I can grow a great many plants in these small pots. I find a ready sale for my surplus plants in the spring. I grow the Zonal Geraniums in the same way, only they are grown on the lower shelves during the winter. By storing away my Fuchsias, and giving or throwing away all old Geraniums in autumn, I find room for my foliage plants—Chrysanthemums, Primulas, &c.—for the winter. As soon as the Chrysanthemums are over, I take my cuttings, and throw away the old plants. I raise my Primulas every year from seed, and mostly have a dozen to sell for window decoration, which are soon disposed of. I buy fresh bulbs and roots of Spiræa japonica, Dielytra spectabilis, and Deutzia gracilis every autumn. With the exception of Deutzia gracilis, they are all potted immediately they arrive, and buried in my cold frame in coal ashes until the spring. Deutzia gracilis is kept in the greenhouse, and never fails to reward me with an abundance of its beautiful white blooms long before the Spiræa japonica.

My greenhouse is heated by a brick flue, running once through and out of the back, so that I have no chimney inside. The size of the fire hole is 18 inches long, 9 inches wide, and 12 inches deep, and it will hold sufficient to keep in from 10 to 13 hours. I regulate the draught outside by placing a brick in front of the draught hole, according to the state of the weather. I burn coke, which is very cheap here—about 6s. 8d. per ton, carted. During the winter I only use fire to keep out frost and damp, but as soon as the sun returns in the early spring I fire every night to keep an even temperature, and to this treatment the plants respond quickly. I find the cost for fuel for the last four winters to be about 4s. per winter. I do not wish to be understood to say that my place pays me so much per hour for labour; only that it covers all expenses, such as pots, seeds, and fuel, and what few plants I buy. All I ask for my trouble is success. Before growing any particular plant, either from seed or cutting, for the first time, I always consult my back numbers of Gardening Illustrated, and, acting on the best advice I can find, I seldom fail in anything I attempt.

Accrington. J. H.

Night-flowering Tobacco plant (Nicotiana affinis).—This is an interesting plant in more points than one. In the first place, the flowers close up in the daytime until two or three days old, and then they remain open until they fade. It has also the singular property of emitting its fragrance only at night, when it is very powerful. It is, moreover, an excellent plant for house decoration, as it does not require as much light as some other plants, and it will last in good condition for six weeks. A plant of it which I had in a sitting-room for several weeks one spring had the stem cut down to within 8 inches of the pot, and then it was placed on the greenhouse stage. After a few weeks' rest it began to grow again, and to push forth three branches from the stem, which very soon came into flower. It was taken again to its place in the sitting-room, where it bloomed even better than at first. I have also had plants in flower raised from seed sown early in the spring, and these, with a little management, may be made to flower again in the autumn, or even later, with the assistance of a little warmth. —J. C. C.

BLUE MARGUERITE (AGATHÆA CŒLESTIS).

A quarter of a century ago this plant was a great favourite, and I dealt with it rather largely. I grew it in the form of specimens, in small pots for vases, and also as a bedding plant. It is not showy, but at the same time it flowers sufficiently freely to enable one to use it for any of the purposes just named. For bedding out we used to strike the cuttings at the same time as we prepared the usual stock for such work in the autumn. Cuttings made of the young growth root as freely as Verbenas, but to be successful with it as a bedder, good-sized plants must be put out. For this purpose they should be potted off into single pots as soon as they are rooted. If put into 3 inch pots in autumn, they should be shifted into pots 2 inches larger early in March; in other respects they may be treated exactly the same as Verbenas. The tops should be taken off about three times before they are bedded out. In habit it is rather neat, but, in order to obtain stocky, well-furnished plants, a little stopping is necessary. A very rich soil in any case is not necessary, or it will make too much growth and produce but few flowers. It is a plant that makes plenty of roots; the soil, therefore, should be light and fine. It is not at all adapted for a cold wet soil or for very cold, exposed positions; a moderate sized circular bed with a centre of this plant, 4 feet or 5 feet in width, with a 9-inch band of Mesembryanthemum cordifolium variegatum and an edging of Alternanthera magnifica, makes a quiet bit of colouring not easily surpassed.

Specimen plants.—It is best to commence the formation of these in spring with plants struck from cuttings in the autumn. The soil may consist of half loam and half leaf-mould, with a fair proportion of sand, sifted through a coarse sieve. Commencing early in March, the first shift should be into 5 inch pots, and the treatment should be the same as that given to an ordinary stock of hard-wooded greenhouse plants. Sufficient stopping of the young growth must be carried out, in order to keep the plants in shape; a neat stick will be required for the centre, and a few pegs may be necessary, as growth advances, to bring the branches down to the rim of the pot. But in the matter of growth it is not a robust-growing subject, and very handsome specimens may be had, with the aid of very few sticks and ties, if the stopping has been attended to in good time. I used to devote one summer's growth to getting the specimens into proper form, and during that time every flower was picked off as soon as it appeared. As a matter of course, the plants were shifted on from time to time into larger pots as they filled those they were in with roots. In 10-inch pots I used to get specimens 3 feet high, and as much through. In these pots they used to be quietly rested during the winter, with a reduced water supply until the middle of February, when more water was given, and without any further attention to the roots, and with only regular supplies of manure-water, the plants would flower continuously all the summer in a well ventilated greenhouse shaded from very bright sun. To have them suitable for the filling of vases, &c, they should be grown in 6-inch pots, and I may here remark that they do not flower freely until the pots get pretty full of roots. Even, however, if the soil is moderately full of roots they may be made to continue flowering pretty freely with the aid of regular supplies of manure water. J. C.

13731.—**Procuring Gloxinia maculata.**—The only nursery where I have ever seen this growing was Messrs. Cannell's, at Swanley. I fancy Messrs. Veitch, of Chelsea, also have it. With good culture, it grows 4 feet or 5 feet high, with a branched flower-stem 3 feet long, and large, bold leaves 6 inches by 4 inches.—J. Douglas.

REPLIES.

13736. — **Single Chrysanthemums.**—These are without doubt a most useful addition to the varieties of Chrysanthemum, and are invaluable for cut bloom and decorative purposes. They are very free bloomers, and can be had in flower from October till January. Their culture is very easy, and it is not too late now to commence growing them. Rooted cuttings should be procured and potted singly into 3-inch pots, and as soon as the roots reach the sides they should be put into 6-inch pots. Stand them on ashes in the full sun and the roots will soon reach the sides of the pots. When the plants are about 6 inches high the tops should be pinched off; they will then throw out side shoots and form a bushy growth. But the plan we have this year adopted is as follows:—When the plants were well rooted in 3-inch pots, and had been stopped once, they were planted out in the ground, and there they will be allowed to grow, and make nice bushy plants, and will not require so much labour as to watering as when grown in pots. At the end of September each plant will be carefully taken up and potted (choosing dull weather for the operation), and be stood in a shady place, and occasionally syringed for a few days to keep them from flagging. From plants grown thus abundance of bloom can be cut. If a few are potted next month into 3-inch pots, and in due course into 4½-inch pots, and stopped twice, nice little plants can be had for window decoration, or for distributing amongst other plants in the conservatory. The plants will require the same attention as the large-flowering varieties as to giving manure water, and looking carefully after insects, &c. Instructions as to these matters have recently been given in Gardening. In the case of plants in the ground, we occasionally sprinkle a little blood and bone manure around the roots, and well water it in; this is all the stimulant they will require. Plants can be had to give a variety of colour, and a few good varieties are as follows:—Alba, white; Bruncette, chestnut; Magenta King, intense magenta (fine); Miss Ellen Terry, magenta, yellow disc (fine); Henry Irving, soft rose, silvery shading (fine); Phyllis, crimson and orange; Dr. Kellock, pink, shaded lilac; Lutea, yellow; Mrs. Langtry, silvery blush; Mr. Toole, clear yellow (fine).—W. E. Boyce, *Holloway.*

13718.—**Propagating Cinerarias.**—We are now busy propagating our Cinerarias by taking off the growths which proceed from the base of the stems of the old plants. We pot a large one in a small sixty, two medium-sized, or three small ones in the same sized pots. At this season of the year they succeed best behind a low wall in hand-glasses; the north side of a wall is best.—J. D. E.

13720.—**Maiden-hair Ferns.**—It is not necessary to grow these so very close to the glass. It does not make any material difference in the size of the fronds whether the plants are 1 foot or 6 feet from the glass. Some seedling forms have the pinnæ much smaller than others. Good cultivation makes all the difference between well-developed and poor-looking fronds.—J. D. E.

13725.—**Maiden-hair Ferns for cool house.**—Three of the best are the common Adiantum cuneatum, the hardy American pedatum, and the easily cultivated A. formosum. Place them on the stage, but in certain positions they will do well under the stage.—J. D. E.

13788.—**Slugs in garden.**—I find that many of the slugs appear after watering or after rain, when a pinch of salt dropped on them will kill them directly. I also should be glad to hear of an effectual mode of easily getting rid of them.—Noella.

13745.—**Making soot-water.**—The reason of the water not taking a dark brown colour is that the soot has not been allowed to remain long enough in it. Leave the bag in for forty-eight hours, and at intervals during that time squeeze the bag well with the hands, and souse it about in the water.—J. D. E.

Tom Thumb Lily.—Mr. Kingsmill brings us some bright blooms of the graceful Tom Thumb Lily (Lilium tenuifolium). We also saw it shown very well indeed by Messrs. Kelway, of Langport, the other day. It used to strike us as a very delicate and uncertain Lily, but now seems to grow freely in different parts of the country.

Clematis not flowering.—I got roots of Clematis coccinea and Clematis crispa two years ago. I planted them in pots and put them in a cold frame, and, like "J. C. T.'s" (query 13473), after making shoots of about 15 inches high, the shoots died off. Last autumn I planted them against a wall in the open border. They are now about 4 feet high, doing well, but show no signs of flower as yet. They seem perfectly hardy. Can any reader tell me how they should be cultivated? I am told they both come from Texas in America. They are cheap enough. The roots on the average did not cost more than eighteenpence each.—South Devon.

OUR READERS' ILLUSTRATIONS.

WILD CROCUSES IN THE ENGADINE.

THIS charming scene we have done our best to engrave, but our engraving, although good, does not do justice to the beautiful photograph sent us by Mrs. Marshall, of Weetwood Hall, Leeds. The enormous prairie of Crocuses, widening away into the far distance, and with the child in the foreground, suggests a beautiful aspect of the flower world. The photograph was taken by Mr. Stephen Marshall in one of the Swiss cantons where wild flowers are most abundant. The following interesting notes are from the sender of the photograph:—They grow most abundantly in the more level places, and become much fewer on the steeper slopes. A few are pure white, the great majority white more or less striped with purple, and a few altogether purple. They are very much smaller than garden Crocuses, but whiten the valley with their great numbers. The main mass of the winter snow melts from the middle to the end of April at St. Moritz, the surface of the earth beneath it being entirely brown, from the covering of short, dead grass—not a speck of green is to be seen. Through this brown mat the Crocuses push up in myriads, the ground being thoroughly wet with the melted snow. They also get repeated heavy wettings from snow falling while they are in flower. The soil about St. Moritz, I think, is a limestone one. The stream that comes down from the hollow above the village is charged with lime, and deposits it on the stones of its bed. Primula farinosa, which I think has a strong preference for limestone, grows in sheets all about St. Moritz.

OUR READERS' ILLUSTRATIONS: Wild Crocuses in the Engadine, April 26 h, 1884. From photograph by Mr. S. Marshall, Weetwood Hall, Leeds.

IMPORTANCE OF SUMMER MULCHING.

MULCHING should never be neglected during dry summers, as not only does it save an immense amount of labour, but it acts most beneficially on the roots and helps the crop. When trees get a check from want of moisture in the soil, the fruit is almost sure to crack after a heavy rainfall, and especially is this the case with Pears and Cherries. In the case of pyramid Pear or Apple trees, it is a good plan to draw the earth away from the stem with a hoe, so as to make a basin-like receptacle for the water or sewage to be poured in, as then, though filled again with the mulching (which should be of half rotten manure), there is no waste, for the liquid cannot escape, but quickly soaks in and down. With regard to Peaches and Nectarines and other wall trees, the way to manage them is to break up the border by pricking through the crust with a fork, when the manure should be spread on and a watering given, but the thing to bear in mind is to see that each plant has a thorough soaking, as that does far more good than the "little and often" system, which entices the roots up near the surface, where, if neglected for only a short time, they are apt to perish. To grow fine Roses without a mulching is quite out of the question, but as fresh manure is objectionable on beds in certain positions, that which is more rotten and less unsightly should be chosen instead. Horse droppings, free from straw, are as good as anything that can be had, as they soon go to pieces and lie light, and if they have been used for a Mushroom bed so much the better, as they become disintegrated, and form a most capital mulch, through which water or sewage passes quickly, and does not again escape in the form of evaporation; Cocoa-nut refuse is also valuable as a mulching. Sifted leaf-mould is useful for the same purpose, and it has this advantage, that it may be mixed with the soil without danger, whereas Cocoa-nut fibre is almost sure to generate fungus, and should never be dug in when done with, but cleaned off and carried away to be burned. Not only may fruit trees and plants in, or coming into, bloom be vastly assisted by mulchings, but vegetables of most kinds are equally benefited by being cared for in the same way; indeed, for Peas and Scarlet Runners mulching is most essential. Without it the latter drop their blooms wholesale without setting, and Peas get mildewed and are unable to go on bearing and filling their pods. With a mulching and a soaking of sewage now and then, it is surprising what vigour may be thrown into them, and how indifferent they seem to heat or drought, which under such conditions do not appear to affect them. S. D.

Flower and garden painting.—There is no vicious system of drawing taught young artists anywhere, except, perhaps, in a few boarding schools. The bad flower painting (see p. 181) is invariably the result of attempts at self-teaching. Whenever a young artist exhibits either publicly or privately drawings which do not infringe the second commandment, inasmuch as they present neither "image nor likeness of anything that is in the heavens above, or in the earth beneath, or in the waters under the earth," it is absolutely certain that the artist has never gone through any proper and systematic course of drawing before attempting to paint, and in ninety-nine cases out of a hundred he or she has attempted to learn painting without any instruction whatever. I know the work of about thirty would-be artists who make part of their income by flower painting, and occasionally exhibit a picture or two, and not one of these ever had a proper lesson in drawing or painting. All the artists I know who painted flowers to perfection at that stage of their study are now prominent figure painters, and some of them members and Associates of the Royal Academy. The public can always obtain good work in any walk of art if they are willing to pay a remunerative price for it; but so long as our best flower painters can only command one-sixth of the price exactly the same amount of talent and labour would bring them if put into a small landscape or a single figure, so long will flower painting be left to those who can only put a few shapeless daubs of pretty colour on canvas or paper.—J. D.

*** Alas! we are among those who do not believe that the Royal Academicians (with a few exceptions) can draw or paint. Some of the flower paintings in the Institute have been by members of the Institute, and were among the worst examples in the exhibition. Surely our correspondent is mistaken when he says that mere money will produce good work, because good pure landscape, as distinguished from the tricky grouping of carts and men before a background of some kind or another, is as rare as a good example of flower painting, or of other kinds of painting. Instead of want of money being the cause of this trouble there is some reason to believe that the excessive prices given for pictures encourages "pot-boiling" on the part of those who have a little talent, and does harm rather than good to painting.—ED.

13747.—**Gnat bites.**—Mrs. Nevell does not believe there is any preventive of gnat bites; but as she always finds that the following lotion instantly allays the irritation caused by them, it may be worth knowing:—One teaspoonful carbonate soda dissolved in one wineglassful of water. It can be carried in a scent-bottle in pocket and applied when needed.

13727.—**Garden labels.**—Half-a-teaspoon of sal-ammoniac, same quantity of acetate of copper (poison), both pulverised, three teaspoonsful of water, put in a small bottle, shake it well, and if too thick add a little more water. Brighten the zinc label by rubbing it with the finest glass paper or emery cloth and write with an ordinary steel pen. It will dry nearly black and cannot wash off.—M. D.

—— Buy a piece of bluestone about the size of a Walnut, put it in a bottle with half a pint of water, and let it remain several days till deeply coloured. Write with a quill pen upon zinc labels well rubbed with emery paper. This will last for years. Be sure to write "Poison" on the bottle.—J. E. H.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

13828.—**Propagating Aucubas and Privet.**—Will any reader please state how the Aucuba and the variegated Privet can be raised from cuttings or otherwise?—E. G., *Lancashire.*

13829.—**Heating greenhouse without hot water.**—Will any practical reader kindly tell me the best and simplest way to heat a greenhouse, 16 feet by 12 feet, without using hot-water apparatus?—COL. H.

13830.—**Black Hamburgh Grapes.**—Will any Grape grower tell me whether the house should be damped down three or four times a-day in sunny weather while the Grapes (Black Hamburgh) are colouring?—J. C., *Norwich.*

13831.—**Strawberry mats.**—I desire to obtain some mats to place under my Strawberries. Can anyone refer me to the manufacturers or vendors of these? They were spoken of in GARDENING about twelve months ago as an excellent substitute for straw.—W. S., *Stroud.*

13832.—**The Orange Ball tree (Buddlea globosa).**—Will anyone who grows this plant tell me how it is propagated—whether by cuttings or layers, and at what season of the year? I have one, now seven years old, in full bloom, but have never been able to raise any from it.—E. G., *Lancashire.*

13833.—**Grubs destroying flowers.**—I have planted about sixty dozen Dahlias, Asters, Stocks, Dianthus, Scabious, &c. All were doing well until a little black grub that buries itself in the leaves attacked and destroyed several of them. Will any kind reader tell me of a remedy?—YORKSHIRE.

13834.—**Keeping Roses clean in greenhouse.**—Will any Rose grower tell me whether there is really any way of keeping Roses clean in a greenhouse? I have a fine Maréchal Niel which has been terribly infested. One day it is brushed clean or syringed with an insect killer; the next the fly comes back like a strong man armed.—IMOGEN.

13835.—**Roses for photographic studio.**—I want to grow about three pot Roses in a photographic studio. I should have to train them to wire fixed to the pots. There is plenty of glass facing south, with skylights in the north roof. I should like a flesh colour and dark red. Will any growsr of the Rose tell me what kinds would suit best?—K. B., *South Devon.*

13836.—**Getting rid of snakes.**—Will someone who has been troubled with snakes kindly tell me how to get rid of them? We have them above a yard long. There is a walk at the end of the garden covered with Grass, and there are about forty holes there. The snakes lie with their heads just peeping out; they come through the hedge from the meadows.—MIDDLESEX.

13837.—**Monstrous Geraniums.**—I have never before seen the head of one following defect in the blooming of Geraniums. This season a large proportion of my zonals produced an irregular compound umbel, many of the flower-stalks bearing an umbel instead of a single flower. This makes the blooms unsightly. Will any Geranium grower tell me the cause and the remedy?—IMOGEN.

13838.—**Raising hardy plants.**—I should like to be informed what seeds I can sow now or next month to prick out and grow on in a cold greenhouse during the winter for planting out next spring. I may say frost does not enter, as the house is open and gets a little warmth from the scullery and kitchen in winter. I do not want delicate seeds but hardy plants, such as Pinks, Pansies, and the like.—CLERICUS, *London, N.*

13839.—**Varieties of Musk.**—Will any kind readers tell me where I can get the variegated Musk, and say whether they are acquainted with any variety of Musk other than the common and Harrison's? I am anxious to get all the varieties possible, and therefore shall feel obliged by any assistance from lovers of this plant.—A. G. N. L.

*** *A good many species of Mimulus have the Musk scent, including the handsome, showy old spotted kinds.*—ED.

13840.—**Training Pompone Chrysanthemums for show.**—I wish to grow Pompone Chrysanthemums for show in umbrella shape. I have pots d them into flowering pots, and have got a bottom of about fifteen heads. I want them 15 inches high from the mould to the centre of trellis. Should I pinch any more, or should I let them come through the wire and begin to tie down? A little help on the subject from a Chrysanthemum exhibitor would be greatly appreciated.—CORPS.

13841.—**Treatment of Anemone fulgens.**—I should feel very grateful if anyone could give me advice respecting the treatment of Anemone fulgens. I planted some tubers several years ago, and have never had more than one blossom the first year after planting. Am I doing right in keeping them in the ground all the year, or should the tubers be taken up and dried? Is the climate of Warwickshire too cold for them? They are planted in a shady place in light, sandy soil.—S. C. S.

13842.—**Pulling Rhubarb in autumn.**—Will Mr. Gilbert or Mr. Hobday kindly say whether it injures Rhubarb to pull a little occasionally during August and September?—MRS. R.

13843.—**Culture of Day Lilies.**—Will any one inform me how I should proceed in the culture of Day Lilies (Hemerocallis)? Few, if any, of my plants succeed.—Q.

13844.—**Chionodoxa Luciliæ.**—I saved seeds last year of Chionodoxa Luciliæ, and sowed in a pot; seven came up, and they have now died down. Shall I let them remain in the pot, or what shall I do with them? They seeded this year also. Unfortunately my man (not a gardener) destroyed them in weeding the beds.—S. D.

*** *Yes; leave them as they are, keep them moderately moist until winter, and then a little drier. When they show signs of growth in the spring saturate the soil by putting the pot in a pail of water.*—ED.

13845.—**Treatment of Black Hamburgh Grapes when colouring.**—Some correspondents recommend that while Hamburgh Grapes are colouring the house should be shut up and kept moist from four to six p.m., and then that air should be given all night; others say do not close the house entirely while Grapes are colouring. As both these plans cannot be right, will some good Grape grower kindly help me out of the difficulty by saying which should be adopted?—J. CANNELL, *Norwich.*

13846.—**Grapes withering.**—My Black Hamburgh Grapes get soft, and on one or two branches the pith turns of a dark colour, and the berries wither. They have just been thinned, and have had two good waterings. They are planted inside the house, trained on the single rod system, and stopped one joint beyond the bunch, and the laterals stopped at one leaf. The lowest bunches are the worst. Will anyone who grows Black Hamburghs successfully tell me the cause of this, and what remedy I should make use of?—ANXIOUS.

13847.—**Vines in pots.**—I have some vines in pots now seventeen months old. I raised them from buds last year, and started them in 12-inch pots early in January this year; the wood is now ripening. My object is to fruit them in pots from next November to the April following. I intend when the canes are ripe to force them to rest by cutting one-third of the leaves off each week for three successive weeks, leaving the stalk of the leaf untouched on the stem, and after ten weeks' rest starting them off for fruiting with a gentle heat. I should like to be informed whether this treatment is correct, and, if not, what the treatment should be?—J. CANNELL.

13848.—**Exhibiting cut blooms.**—Will any reader kindly give me information as to the best and cheapest method of showing cut blooms at exhibitions? Tin biscuit boxes cut down to, say, 4 inches, filled with water, and with holes punched into the lids to admit the stems, would, I think, form useful stands. If other readers think so will they advise as to the distance apart of the holes? Should there be a large margin to each bloom? Again, what ground colour is best—white, green, or black? Flowers shown with circular white paper collars surrounding them ought, in my opinion, to be disqualified. Any hints will be welcomed.—S. D. B.

13849.—**Cucumber culture.**—I have built a span-roofed Cucumber house 20 feet by 10 feet. There are two ventilators a foot square each, one top and one at the end. I syringe the plants night and morning, and the plants are now in full bearing. I find a great many of the insect, when about 3 inches long, turn yellow at the end near the flower, and then decay. I should feel obliged if any grower of the Cucumber would kindly let me know the reason. Is the ventilation sufficient, and am I doing right by syringing?—LARGE HOUSE.

*** *An article on Cucumber culture, published this week, will aid you, and we have no doubt that some of our readers will reply to your query.*—ED.

13850.—**Gooseberry culture.**—Some six years since I bought a small piece of land, and applied to a noted firm at a distance for a few of their best Gooseberries, purchasing others also in my own neighbourhood. This former furnished me with a dozen of Companion and some other show kinds, the latter mostly Warrington Reds and other common kinds. The show Gooseberries cost 6s. per dozen, the carriage being about as much as was paid for the trees locally supplied. Mark the result! This year the common trees have each as much fruit on them as six of the show kinds, and there is also this further difference, that whilst the Warrington Reds are now fine, large, healthy trees, the companions are smaller than last year—look as if they had been scorched by a fire, have little or no fruit, and consist of long naked branches, with a little tuft of leaves at the extremities—a disgrace to any garden. As they must be removed this autumn, will any obliging correspondent state what kinds he would recommend in their places, there being no desire to grow for exhibition, but only to have fruit for puddings and eating, which were the directions given when the present unfortunate trees were ordered. The garden is 600 feet above the sea, with a southern aspect, exposed to east and west winds, and is in Staffordshire. Dosh'ow Gooseberries commonly act in this way?—A DISCONSOLATE AMATEUR.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13851.—**Grapes not stoning** (*E. C.*).—The Grapes do not appear to have been properly fertilised.

13852.—**Pinching off terminal shoots of Apple trees** (*Elizabeth*).—You cannot do better than pinch them back now.

13853.—**Alpine Strawberries** (*Elizabeth*).—Let them be exposed to the sun, but we have seen excellent fruit produced in partial shade.

13854.—**Obtaining Strawberry punnets** (*H. P. and Fruit Grower*).—They are made at Brignell's, 26, Kemble Street, Drury Lane, London, W.C.

13855.—**Name of plant from description** (*St. John's, Jersey*).—We cannot name the plant from your description. Send us a specimen.

13856.—**Procuring Sea Pink** (*St John's, Jersey*).—This is a common plant, and you should be able to get it at any nursery. Ask for Statice Armeria.

13857.—**Sowing seeds of Ixiolirion Pallasi** (*P. H.*).—Seeds of this beautiful, hardy, blue-flowering bulb may be sown at once, or as soon as ripe.

13858.—**Holes in leaves of Peach trees** (*W. E. Perrett*).—The leaves appear to be scorched, and the cause of the fruit dropping is probably dryness at the roots.

13859.—**Orange trees raised from pips** (*C. L. Clifton*).—Orange trees grown from the pips will flower, but they will take a long time to do so, as they are slow of growth.

13860.—**Is the American Cowslip hardy?** (*South Devon*).—The American Cowslip (Dodecatheon) is a perfectly hardy plant, thriving best in sandy loam. It is a beautiful plant.

13861.—**Lime-washing fruit trees** (*Elizabeth*).—They may be lime-washed at any time during winter, the most suitable being the early months of the new year. Make the lime into a thin paste.

13862.—**Perennial Phloxes dying** (*Hackney*).—We suppose there is something in the soil distasteful to the Phloxes—probably the excess of lime rubbish. Phloxes above all garden flowers like a good soil.

13863.—**Propagating Meconopsis Wallichii** (*K.*)—Propagate by seed, which should be sown in spring, as it is difficult to keep the very young seedlings through the winter if the seed is sown in autumn.

13864.—**Tecoma jasminoides not flowering** (*H. C. Fitzpatrick*).—Probably your plant is too young or too small to flower. Have patience, and no doubt you will be rewarded with bloom when the plant is in a flowering state.

13865.—**German Irises** (*Messrs* ——).—The Irises you send us are neither well chosen nor well grown. Among the German Irises there are really fine kinds if you take the trouble to look for them, and growing second-rate ones is a mistake.

13866.—**Rhopala corcovadensis** (*J. H., Sunnyside*).—This plant is best grown to a single stem, as thereby its foliage, in which its beauty consists, is better developed; therefore your plant, in not breaking into side shoots, is doing what it ought to do.

13867.—**Double Dahlias from seeds** (*Dahlia*).—If you raise garden Dahlias from seed you must take your chance. If you want any particular double Dahlia, or any particular single Dahlia, you can only get it from tubers. Seeds will sometimes give you single and sometimes double flowers.

13868.—**Sowing the Great Scarlet Poppy** (*K.*).—Seeds of the Scarlet Poppy (Papaver orientale) may be sown as soon as they are ripe, or at any time in spring or early summer. This plant, however, is not uncommon, and you may easily get plants by division, either from your own stock or from a nursery.

13869.—**Treatment of Pyrethrums after blooming** (*St. John's, Jersey*).—Cut off the dead flower spikes, put a little mulching round the plants, and leave it on the surface during winter. Pyrethrums do damp off in cold localities, but in the Channel Islands they ought to succeed well—dryness and heat would there be the principal enemies to be dealt with.

13870.—**Stove for greenhouse** (*P. H. Hunt*).—The question of the best stove to heat a greenhouse has been discussed over and over again in GARDENING, and many excellent ways have been described. We should say that, as you object to hot-water apparatus, a well-constructed flue would be the best. Some old greenhouses are very comfortably heated by flues. Perhaps the article on "An Amateur's Greenhouse," on page 141, May 23rd, will give you some hints that may be useful.

13871.—**Roses diseased** (*C. M.*).—The orange spots on the Rose leaves belong to a parasitic fungus named Coleosporium pingue. The microscopic spawn of the fungus lives inside the plant, and causes ill-health, hence the unsatisfactory condition of the leaves and buds you send. Every spotted leaf and twig should be carefully removed and burnt; this may tend to a non-repetition of the disease next year.—W. G. S.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers by post.—*Correspondents are requested to note that we do not answer questions by post; we shall be obliged, therefore, if they will refrain from sending us post cards and stamped envelopes for replies.*

MISSING PARCEL.—The upper and lower portions of a small round box, addressed to Mr. Robinson, and bearing an old address, "Cross Lanes, Cornwall," have been delivered here with the post-office stamp, "Found in the Eastern Central without contents"——ADDRESS (*L.*).—You must refer us to the number in which the communication was inserted. The description "Gentleman from Leamington" is hardly enough to show us whom you mean.——SMALL FARM AND LABOURERS' HOLDING COMPANY (*Graham*).—The secretary of the company is Mr. S. Insull, Palace Chambers, Westminster, S.W. Write to him, and he will doubtless give you all the information you require.——PYRUS JAPONICA (*Mrs. R.*).—You will find your question dealt with in last week's number.——THE RULES FOR CORRESPONDENTS (*A. E. Sinclair*).—We shall be glad if correspondents will oblige us by reading the rules framed

for their guidance. Many of those who write to us mix up matters relating to the publishing department, queries on horticultural questions, and queries as to names of plants, with a total disregard of the simple directions that we give each week.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*Beta*—1, Tiarella cordifolia; 2, Species of Geranium (flowers fallen); 3, Double Ranunculus aconitifolius; 4, Heuchera americana.——*Billytrack.*—1, Eurybia Gunni; 2, Helichrysum rosmarinifolium.——*Bessie Dale.*—Appears to be the Bog Bean (Menyanthes trifoliata).——*A. B. R.*—Astrantia major.——*Mrs. Foster.*—Species of Hieracium (Hawkweed); Ranunculus parviflorus (small yellow).——*W. F. H.*—Variety of Gladiolus ramosus.——*G. C. S.*—Apparently a variety of what are called Ghent Azaleas, but is very distinct from the common kinds; most likely quite hardy.——*J. G. K.*—1, Seems to be a species of Melianthus; 2, Scilla peruviana.——*Tomset, Captain Macklon, and others.*—Next week.

GARDEN USES OF SEWAGE.

IF it were possible to estimate the value of all the sewage water which in many cases could at trifling outlay be made available for the garden, but which now runs to waste, polluting streams and carrying pestilence in their course, there is no doubt that the aggregate amount in figures would prove astounding. I do not include in this consideration large cities, or even towns, but attached to these are suburban districts and many country seats where the proprietors have to provide a proper system of drainage, and it is to these that my remarks apply. In many cases sewage might be brought to the garden by gravitation, and where such is the case all must admit that it is throwing money away to allow it to run to waste in any other direction. Whether it would pay to bring it to the garden where mechanical means would have to be employed will in a great measure depend upon circumstances. In the case of large mansions where difficulties are not great, I have no hesitation in saying that sewage would repay any reasonable outlay. As to its value for garden crops, my experience was gained some years ago in a large villa garden in a south-west suburb of London, where the owner had to provide his own drainage for his house and stables. In this case there were no serious obstacles in the way of bringing it to the garden by gravitation. The main drain which received the sewage and also the rain water from the roof of the house and other buildings was taken to a convenient spot in the kitchen garden where a large tank was constructed, into which the drain was led, an overflow drain being of course provided. A neat iron pump was fixed, with a length of pipe attached to reach the sewage. This offered a convenient means of getting up the sewage; once in two years the liquid was pumped clean out, and then all the solid matter was taken out, mixed with soil, and used as a dressing for various crops.

The kitchen garden received most of this manure, both solid and liquid, especially such crops as Cauliflowers and Kidney Beans. In dry weather in April and May, Cauliflowers are immensely benefited by a few soakings of sewage. Kidney Beans are much benefited by it towards the end of the summer when somewhat exhausted through carrying heavy crops. Peas in full bearing can hardly have too much of such a stimulant in dry weather. Where practicable, it is always desirable before applying the liquid to loosen the surface 2 inches or 3 inches deep, as that prevents the water from flowing away from where it is wanted. We never neglected to use sewage freely on Onion beds from the middle of June to the end of July, and the result was always an addition to the weight of the crop. Vegetable Marrows we began to water with sewage twice a-week after they got well into bearing, and the produce was something surprising. Globe Artichokes being much in request, we always made it a point to thoroughly soak the soil round them for a considerable distance once a-week with sewage, the result of which was that the plants kept throwing up a regular supply of large heads quite to the end of the season.

In the fruit garden we derived much benefit from the frequent application of sewage, especially in the case of Strawberries. Having a deep soil naturally well drained, sewage was used for these in the most liberal manner, and the crops secured quite made amends for the outlay. I have never before nor since known beds of Strawberries continue so long in bearing as those to which sewage was applied. As soon as the plants commenced to flower we began to apply sewage water, giving them twice a-week sufficient to penetrate down to the lowest roots, and this treatment was continued until the first fruits began to show colour. To Peach and Nectarine trees on open walls it was annually given as soon as the fruit began to swell. That the trees were benefited by it was proved by the large and highly-coloured fruit which they produced. It was also given freely to Peach and Nectarine trees in pots as soon as the fruit began to swell, and for some time after the fruit was gathered; consequently our trees continued to possess the most vigorous health. The best crops of Grapes I ever grew in pots I grew in the garden in question. I never could grow, as some say they can, the same weight of Grapes in a pot as the soil in which they were grown, but I believe I am quite within the mark when I say that I grew half the quantity, and all concerned were well satisfied. Since I have been minus the sewage pump in the garden I have never grown so great a weight of Grapes in pots as I did with it. The quantity of water which pot vines require when carrying a full crop is known to many, but few would credit the quantity that these vines received. It was my practice to fill a large water-barrow, take it into the vinery, and let it remain there at least twelve hours before I used the liquid. It was then given to the vines as they required it, which was sometimes twice a day in bright weather in April, as I only used 12-inch pots, and they soon got dry under a powerful sun, and the constant strain made upon the roots for moisture.

For impoverished lawns it is, considering its cost, the best and surest fertiliser with which I am acquainted. The Grass at the end of the lawn farthest from the house was thin and poor, caused by the soil being poor, the subsoil for a considerable depth being nothing but gravel. Every year in March we began to put sewage water freely on this part, and by continuing the applications once or twice a week all through the summer we could maintain a nice green sward equal to that of the best part of the lawn where the soil was rich and deep. For Camellias in pots sewage water is a capital stimulant; in fact, there is hardly anything grown in a garden that would not be benefited by it if judiciously applied. J. C. C.

Red, white, and blue flowers.—Three of the very prettiest, best flowering, hardiest, and altogether showiest flowers of the hardy border about midsummer are the bright rosy red summer Pink, the white variety of the same plant, and the Myosotis sylvatica—really the best, taken all in all, of the Forget-me-nots. Those who are fond of pleasing colour in their beds in early summer cannot do better than plant plenty of these three. We have all the best hardy plants, but I must say that the borders and rockery are never so bright and gay as when these are in flower. None of the colours are glaring, but to a garden they impart a sunnybrightness that pleases the eye. There are several varieties of the rosy-coloured fringed Pink, and all are good. Both it and the white have the same free habit of growth, and both literally produce sheets of bloom. The plants grow fast too. Cuttings of the young tops, inserted under a handlight or a cloche in June, will be ready for planting out in autumn, will flower the following summer, and the second year will produce a mass nearly a yard across. Afterwards they will require to be shorn in to keep them within bounds, but they will live for many years. There are numerous, varieties of the summer Pink, but it is the common type that is here meant, of which one of the best is Highland Queen. There is only one really excellent white, the common, old-fashioned variety; the blotched variety is also good. The Forget-me-not mentioned (M. sylvatica) is a strong growing variety of the common Forget-me-not, and is well adapted for garden culture. It grows about a foot high, comes in flower in May, and with us, at least, is not over till August. It thrives in a dry or moist soil, and produces an astonishing quantity of flowers of a beautiful turquoise-blue, and when associated with the Pinks abovementioned, the general effect is rich and pleasing in the highest degree. For this reason we grow more of these three plants than of any other species.—J. S.

OUTDOOR PLANTS.

PHLOX DRUMMONDI.

THIS well-known annual still remains a favourite with all true gardeners. We meet with it in large gardens, where, on emerging from the winding paths between shrubbery borders, we alight upon its handsome trusses of varied colours in beds, of fantastic designs, wholly devoted to its cultivation with other choice subjects of the parterre. We also find it amongst small collections in villa gardens, and indeed in most places where bright flowers are appreciated. When we make its acquaintance we are attracted by its refined beauty, and place it in the front rank amongst half-hardy annuals, regarding it henceforth as an indispensable little gem.

Inexpensive packets of seed yield flowers of various colours, including pure white, lilac, purple, deep crimson and white, violet, scarlet, pink, rose, &c. Where seedlings have not been raised early in April in a frame or in slight bottom heat, plants for immediate effect can be purchased so cheaply that amateurs need be no longer handicapped by the possible ravages of slug pests and bad seasons, combined with the constant attention which half-hardy annuals require from the time of sowing the seed. The bed should be well watered in dry weather, and the seedlings placed about 5 inches apart. Any slight shading, if at hand, will benefit the plants, which will soon commence to grow. When established, a little good soil can with advantage be drawn round the base of the stem, and the lead nipped out, thus inducing a more robust and branching growth than will generally be found in annuals, which are sometimes only carelessly raked in. There are, perhaps, few annuals that will better repay a little care in cultivation than the one here dealt with. Clay soil will suit them, but they prefer good loam, and in such a soil can be very successfully grown in well crocked pots. These flowers have a very showy appearance on the dining-table if temporarily placed in suitable dark-coloured pots to contrast with the brightness of the colours. The mention of this exquisite little flower for the purpose indicated may serve to picture to the matter-of-fact mind one of the common features of adornment in every gardener's home. A. E. A., *Stamford Hill.*

White Everlasting Pea.—In the garden of a neighbour there are some large clumps of this. They are more than 6 feet high, and are smothered with ivory-white flowers, affording a charming contrast to equally large specimens of the pink-flowered kind. How is it that this beautiful white Pea is so little grown? One often sees the type in the form of large effective bushes, but its white variety appears to be but little known. It is, however, quite as hardy and almost as vigorous as the pink-flowered variety. Its value for cutting is great, and all that is necessary is to plant it well and leave it alone, as the longer it is established the more freely it flowers. Of the many hardy white flowers in cultivation I do not know of a finer one than this Everlasting Pea.—J. C. B.

Hardy flowers from Dublin.—Mr. Burbidge, curator of the Trinity College Botanic Gardens, Dublin, sends us a charming bunch of hardy flowers, which are in such abundance and in such good condition in his very interesting botanic garden—one of the most interesting gardens of the kind in Europe, full of fine things in trees, and shrubs, and flowers. Among the flowers sent are the Peruvian Lily, black and variegated Iris, large garden Anemones, Day Lilies (Hemerocallis), white Gladiolus, Snowdrop Anemone, Thunderbolt Iris, yellow common British Corn Marigold,—perhaps the handsomest of all, really very well grown and very rich in texture and colour. We are not sure it is not the handsomest of all the yellow Daisies, and it is well worth garden culture. The little white Gladiolus (Colvillei alba—the Bride) is very beautiful.

A MIXED BORDER OF HARDY FLOWERS.

How agreeable and picturesque as a substitute for the geometric masses of Geraniums or Calceolarias would be the effect of a slightly inclining border such as is represented in the accompanying illustration—a border from which spring forth fair flowers of many kinds, just as in some highly favoured natural valley. In the rage for uniformity not only are flowers planted in set ovals, circles, squares, or other figures, with no variety in colour to break the monotony of masses of red, blue, or yellow, but the very Grass of our lawns is often equally monotonous, and even the sparkling blossom of a Daisy would in some cases be deemed a blemish. And yet, what is the smoothest lawn in comparison with the old-fashioned lawns, softly specked, ere the snows were well off the ground, with masses and isolated flowers of the Snowdrop, and a little later with a gay sheet of Daisy bloom, while late flowering Crocus in twos and threes struggled up among the blades of green, and expanded their delicate lilac petals to the autumn sun. In suitable situations many portions of our lawns may with advantage be allowed to run wild, and we shall be charmed with the delightful variety they will afford. If the landscape depicted above please us as an illustration, what must be its charm in reality, invested with all the beauties of colour of the ever-changing fascinations of sunlight and shadow? Most of the flowers introduced to produce the effect are perfectly hardy—some even are called weeds. How grandly the spikes of the Foxglove tell out against a mass of dark green foliage in our picture, and how happily the character of the drooping flowers contrast with the aspiring boldness of the great white Lily blossoms. A great mass of Dielytra spectabilis, with its gracefully bending racemes of flowers, is nearly as hardy as the Lily or the Foxglove, and close at hand are the elegant Dog's-tooth Violet, the red Oxalis, and a deep purple Pansy, plants that positively enjoy our cold uncertain climate; while masses of Hemerocallis, Yuccas, and Irises are obstinately hardy even in our northern counties; the perfectly hardy Lady's Slipper is also very beautiful The chief difficulty in producing a lovely floral landscape, such as the one represented, would be the careful selection of such a series of plants as would produce a succession of bloom during the whole of the spring, summer, and autumn; but this might be got over with a little consideration. Another impediment would be the under-treatment as regards soils specially suitable to each individual plant, but even in this respect there should be little difficulty if the ground is thoroughly prepared at first. N. H.

A mixed border of hardy flowers.

Lilium longiflorum.—The flowers of this lovely Lily are invaluable in a cut state, and the plant is a useful successor to L. candidum. I lift and divide the roots just after the plants have done flowering, say some time in August; our soil is a light sandy loam, and suits Lilies of this class admirably without any addition whatever in the shape of artificial mixtures. The position in which I have found them to do best is between rows of bush fruits in a cultivated orchard, where they get both shelter and partial shade. Here heads of L. candidum have often from twenty to thirty magnificent flowers expanded at one time, and even thus sheltered they need careful support lest their weight should overbalance them, and they break short off at the root. L longiflorum is certainly one of the most magnificent of Lilies; its long trumpet-like flowers are of ivory whiteness. In places where this Lily does not thrive well planted out permanently it should be grown in pots in a cool house, but where the soil is light and well drained it will succeed. After repeated trials I find that bulbs of all kinds, and Lilies in particular, should not be kept out of the ground at any time longer than is absolutely necessary for replanting.—J. G., *Hants.*

Shrubs for rockeries.—Rockeries have often two or three grave faults. First, they are built of stones too small; secondly, the stones are of too even a size; and lastly, too few shrubs are used to fill up spaces among the smaller herbaceous subjects, so that the rockery has a monotonous and flat appearance. The stones should be of good size, all of the same kind, and belonging to the strata of the district, and, however irregularly placed, they should all lie in the line of the strata—that is to say, they should lie the same way as they are found in the quarry, especially if large. This gives the rockery a much more natural look, and it matters little how the stones are flung down if this rule is observed. If it is not, an artificial aspect is produced, and is easily discerned. It will greatly help to give the place a picturesque appearance if good patches of Blackberry bushes, Heath, common Junipers, or other low native or other shrubs are placed at the top or back and here and there between the stones. The Bilberry (Vaccinium) is a beautiful rockwork plant. It may be torn from the rocks or ground in large masses and planted at any time in leafy soil, and it will not fail to grow. By the judicious use of this plant I have seen rockeries look as if they had been made and furnished for years, though just newly planted. There are few neater and prettier dwarf shrubbery plants than the Bilberry, with its fresh green foliage and pretty bell-like flowers. It helps to fill up, too, while the stock of plants is being increased, but a large portion of the rockery should be covered by it at all times, to give diversity of outline as well as shade. It thrives best on bare rocks and hard surfaces, provided some leaf soil is shaken in among it now and then. The double Furze is another good shrub for the purpose, and so are Pernettyas, Andromedas, Daphnes, hardy Azaleas, Kalmias, Menziesias, the evergreen Rhododendron hirsutum, and any other dwarf and hardy shrubs. All such should be planted before anything else. Much of the beauty of many of the Derbyshire and Yorkshire cliffs is due to the verdant masses of Bilberry bushes growing knee-deep in the fissures of the rocks, filling up every nook and cranny, and subsisting on their own debris for no one can say how long.—W. S. J.

Pink, Mrs. Sinkins.—Mr. Kingsmill brings us some of this delightful double white Pink, which is a large and fragrant variety, so sturdy that it does without stakes. It is a Pink that all growers of herbaceous and pretty plants should have a stock of. It takes a long time to open the eyes of the trade to some of these things, and we seldom refer to any beautiful hardy plant without being told by our readers that they find it almost impossible to get it.

REPLIES.

13735.—**Chimonanthes fragrans.**—This plant should be pruned in the month of February; if it is pruned after young growth has commenced the flowering wood is cut away. It should never be pruned in the summer or autumn except to cut away any long strong shoots. It is the shoots a foot or less in length that produce the flowers. Perhaps the growth on your tree is so much crowded that it does not get light and air enough to ripen the wood in the autumn. Examine your specimen and see if it is so, and, if necessary, cut away the longest shoots where they are not wanted to cover space. It may be that the climate of the west of Ireland is too moist for the ripening of the wood. If so it would not flower.—J. C. C.

13721.—**Clearing walks.**—There is no more simple remedy for killing weeds on walks than salt strewn on the surface in dry weather; but it should not come nearer than 6 inches of the box-edging. Choose a time to put on the

salt when the barometer is high, and there is a prospect of dry weather for two or three days. The salt will then gradually dissolve and kill every weed it comes in contact with. Hand weeding must be resorted to to clear the sides of the walks. This is how we deal with long lengths of walks every spring, and we are not troubled with weeds, except at the sides.—J. C. C.

13748.—**Raising alpine Auriculas.**—The treatment of the seeds was quite right. They may be sown in boxes or in pots. The ants may be destroyed by placing some sugar on a small tray close to the box in which the seeds are sown. They will swarm on to the sugar, and they can all be destroyed by dipping the tray, when it is covered with the ants, in boiling water. The seeds vegetate best at this time of the year in rather a shady position. I generally place the seed pots in a hand-light or frame on the north side of a low wall.—J. D. E.

13733.—**Gladioli from seed.**—To obtain seed that would be likely to produce good varieties of Gladioli you must first purchase good-named sorts, and plant them early in March in a good, deep, and rich soil, where they can get plenty of sun, and if you are careful to support the flower spikes with sticks you will get plenty of seed. The seed does not, as a rule, ripen until September and October; but it is necessary to watch it, as the proper time to pick the seed is just as the pod begins to burst. I find it gives less trouble to sow the seed in the open. Select a warm border, and thoroughly prepare the soil. If it contains many hard lumps it must be sifted, for the young plants require a depth of 6 inches of rich, fine soil. The seed may be sown early in April in drills half an inch deep and 4 inches apart, and lightly covered with fine soil. If the weather should remain dry after the beginning of May the surface should be kept regularly moist by gentle waterings. If they are kept clear of weeds, that is the only attention they will require all the summer. The young bulbs ought not to be taken up before the leaves begin to turn yellow, but they must not be exposed to severe frost. Keep the corms through the winter in dry silver sand, out of the reach of frost. The following March plant out the corms 12 inches apart in a warm border where the soil is rich, and if they do not flower the second year they will the third. The corms should not be left in the ground all the winter unless the position is well drained. As a rule, it is not wise to leave them out at all.—J. C. C.

—— The seeds ought to be saved from the very best flowers, and they ought to be fertilised by the pollen from other flowers allied to them in form and colour. I like to group the colours, white varieties by themselves, and the different shades of rose together; the same with the crimson and purple tints. The anthers must be removed from the seed-bearing flowers before they open. In two or three days the stigmatic portion of the flower will be ready to receive the foreign pollen. When the seed pods burst open they may be gathered and laid on paper to dry. The seeds may be sown out-of-doors in April on fine sandy soil, or, as I do myself, in pots, and the plants raised on a hot-bed. If three or four dozen seeds are sown in a 6 or 7-inch pot, and the plants raised in a frame and grown on freely during the summer, they will produce strong flowering plants the next season, if the small seedling bulbs are planted out in the open ground early in March. I have grown spikes for exhibition from such bulbs, and taken first prizes with them in London.—J. Douglas.

13723.—**Double Narcissus becoming single.**—I advise "T. V. B." to take up his bulbs of double Narcissus in the month of August, and to replant them at once in a position where the soil is fairly rich and where they can have some sun. We are in just the same position as "T. V. B." We have many large clumps of the Poet's Narcissus growing in a poor soil in a shaded position, and many of the double ones now come with single flowers. I never saw a single flower among them before I put them where they now are. No doubt it is caused by an impoverished soil.—J. C. C.

13754.—**Sowing East Lothian Stocks.**—The end of June is the best time to sow all biennial Stocks, the above included. In the open air the slugs will destroy many of the seedlings. I prefer to sow in pots or boxes in a shady part of greenhouse; when they have about six leaves I plant them out about 4 inches apart in nursery rows, and in October and November they are lifted with ball, and planted where they are to bloom. Mine were sown last year in the middle of June, 70 miles east of London; on the 15th of May they were a mass of bloom, completely covering the leaves. Soil for pots: Garden soil, leaf-mould, sand—one part of each.—H. D.

13741.—**Growing Lily of the Valley.**—All that is usually required to get a bed of Lily of the Valley to give plenty of flowers, is to cover it with a thin coating of manure after the last year's leaves have died down and been raked off, and to riddle sufficient soil on the top of this to cover all the protruding root fibres which have come to the surface. I have tried this plan for a number of years and it has never failed; but on one occasion, when I neglected the bed, the flowers were few and small. A good flower stalk should have not less than fifteen bells on it.—P. R., *Pollokshaw.*

13746.—**Poisoning birds.**—It is illegal to destroy pigeons, or birds of any kind, by laying down poison. It is an inhuman practice; no one can tell where the poison may be carried or what mischief may be done by it.—J. Douglas.

13789.—**Bright and large Pansies.**—The largest I know of are the French Pansies, which are enormous in size and very varied in colour, though, from the point of view of the English florist, not quite so pure and fine in colour as the smaller older kinds. They are, however, very showy, and the best of them are well worth a place.—W. R.

FRUIT.

APPLE CULTURE.

Very often the instructions given on this, as on many other cultural subjects, are of far too special a character to suit the circumstances and situations of growers. The first thing to be realised is, that scarcely anywhere in the British Islands does the Apple refuse to thrive on the natural stock, which, after all, must carry the trees that are to bear our future main crops, as it has done in the past. What can be done by growing Apples from cuttings has yet to be proved; but, as a large raiser of young trees pointed out to us lately, Apple trees from cuttings cannot—at least in all cases, if in many—be depended upon like those that are grafted, and as grafting forms the readiest way of propagating young trees, he failed to see the advantage of cuttings. The Crab stock raised from seed can be procured with facility, and as soon as an Apple shoot or two is grafted upon it it is a tree ready for planting, and soon is in bearing.

Soil.—Although, as has been said, the Apple grows anywhere, all soils are not alike suitable to it; but almost any ordinarily healthy soil can be rendered suitable. Marly or calcareous soils are best, and soils not naturally of that character should have lime and marl added to them. A natural loam answers best generally, but old garden soils may be rendered suitable by the application of lime in considerable quantity, and potash and soda may be added in the form of wood ashes, either dug in or sprinkled frequently on the surface of the borders. For nearly all fruit crops wood ashes are of great value, and hence the ashes of rubbish heaps, dead branches, burnt soil, &c., should always be collected and used when such manures are needed. Probably there would be fewer Apple failures if it were not for the roots of the trees getting out of the good soil prepared for them and going down into the subsoil, into which, whether hard or soft, it is not desirable they should enter. If rocky, poor, or dry and bad, the consequences will probably be canker, blight, and other evils; and, if soft and moist, late and ill-ripened wood which is never productive. In removing some old and healthy trees here once, I found they had all been originally planted in as good a way as any that could be devised to give the roots a lateral direction and keep them out of the subsoil. Under each tree had been placed a broad flag, about 2½ feet from the surface, and all round this projected smaller flags, arranged like the slates on the roof of a house, the central flag forming the crown. The roots, of course, were compelled to spread out, and could not penetrate the subsoil until they had reached the outermost edge of the stones, by which time they were disposed to keep the lateral positions, being sub-divided, small, and spreading. In cold and late districts infinite trouble and disappointment would be prevented if the roots of fruit trees could only be confined to the surface soil prepared for them, for in that case they would not grow over luxuriantly, would need little or no root pruning, and would not become unhealthy.

The most favourable situation that I can conceive for an Apple or Pear tree in a cool climate is one in which the roots could not penetrate deeper than 18 inches from the surface, with nothing but suitable soil above that for the roots to run in. The plan of planting Apple trees on raised grounds, on the surface of the soil, the roots being little more than covered, has been tried, and the writer was familiar with many examples so planted on a heavy soil in Dumfriesshire, where the climate is cool and dripping, and they did wonderfully well so long as the trees were young; but as soon as they got their roots down deep, then troubles began, the growths becoming rank, and crops more precarious in consequence. Practically, then, what any cultivator has to do to secure crops of Apples or Pears, whether he resides in the north or south, is first to ascertain whether his soil is a naturally suitable one or not, and if not, to make it so by the simple means described above; and, next, to take whatever means he finds readiest and most efficient to confine the roots to the soil allowed them, and so keep them under control. Market growers cannot be expected to incur much expense in forming fruit-tree borders; but in private gardens, where a few good trees would provide a supply, the same objections do not exist. Suitable sorts for the climate and locality come next. We can suggest no better plan to the intending planter than to apply at the nearest respectable nursery where fruit trees are kept in stock, or at any large garden, where he will surely learn what varieties do best, and these he should plant for crops till his own experience teaches him how he may extend his collection.

Pruning.—It is acknowledged that the best and most productive form of tree is the common standard, with the round natural top for orchards, and the natural bush form for dwarfs. Neither requires much, if any, pruning if the roots are rightly managed and kept in check, and absolutely no training is necessary. It is of the utmost consequence that the labour of culture should be reduced in the case of the market grower to add to his profits, and, in the case of the private grower, to make it worth his while to grow his own fruit; for he can always buy better than he can grow—and cheaper as well, we fear. Probably, however, the number of fruit trees in gardens might be reduced by one-half if better and more reliable sorts were selected, and fewer of them, thus reducing the labour of culture and increasing the crop at the same time. I am certain, for example, that it would pay anyone better to plant two trees of Lord Suffield or Warner's King than it would half-a-dozen of other and less certain varieties; and the same may be said of all the really good Apples, whether of general or local repute. Plant few varieties, plant those that bear surely, and plant large-sized sorts. As might be expected, the different varieties of Apple vary greatly in size, the largest attaining a diameter of nearly 6 inches, while the smaller kinds are hardly larger than Crabs. Some of the small kinds are of excellent quality, though not better than the good-sized sorts, and there is now a tendency to discard small kinds, at least in culture for profit, as the fair-sized fruit is preferred by the dealer, and fetches the best price.

Time of planting.—The end of summer is the time to prepare soil and materials for planting in autumn; it should not be delayed long after the leaves have fallen; and it may be done before that, provided the wood is hardened. All manures and other materials should be brought to the place, and the ground should be trenched regularly over from 2 feet to 3 feet deep, the lesser depth in late and cold localities, and the greater in those that are warmer and drier. In trenching, the common practice of simply turning the ground upside down, and burying the manure in the bottom of the trench, should be avoided, and, instead thereof, the soil, lime, ashes, and manure should be turned over, so as to mix all thoroughly from top to bottom, levelling the

surface of the subsoil as the work proceeds. If flags are used to place below the roots, as suggested, they may be laid on the subsoil at the same time where the trees are to stand. What are called Yorkshire greystone slates, or strong blue slate, are cheapest and best. They should be laid flat, even, and close, over-lapping, as we have said, from the centre or crown; and if it is convenient to bed them roughly in lime, all the better. This is an excellent and simple plan where the subsoil is bad, as it effectually prevents subsoil-rooting, if care is taken to pack each slate solid beneath with earth, so as not to let the whole weight rest on the lap, in which case the slate may crack through the weight of the superincumbent earth. The refuse of stone quarries will answer well enough, and these may be got for the loading, or little more, in some places. J. S. W.

13729.—**Growing Grapes on the spur system.**—There are two spur systems of growing Grapes—one is the long and the other the short spur. The latter method is usually practised. The first season after planting the vines, train one or two growths up from near the base of the plants. The second season cut the canes back to about 6 feet or 8 feet from the base; when the lateral growths are produced, rub off each alternate one, and train the others out to the wires right and left of the main stem. When that season's growth is completed, and the leaves have fallen, cut the lateral growths back to two buds from the base, and the main leader to 4 feet or 5 feet from where it started. The same process is repeated at the next time of pruning, always cutting back the young wood to a good bud an inch or two from the base. The rods should be from 2 feet 6 inches to 3 feet apart. The long spur system is generally practised upon out-of-door vines. This demands the constant production of young rods the whole length of the wall or house; and the young wood, instead of being cut close back, is left from 2 feet to 6 feet or more in length.—J. D. E.

Destruction of white scale.—Those who have had this formidable enemy to deal with know something of its voraciousness and its tendency to rapid multiplication. Lately it appeared among our stock of Pines, probably introduced with two or three suckers which we obtained, and in a very short time it got established on the greater portion of the stock. This being during the short winter days when the syringe could not be applied safely, we puffed a quantity of dry lime and soot among the plants and over the surface of the beds. This kept the scale in check, and when blinks of sun came out we dewed the plants by means of a fine syringe with soot water, made with lime, the colour of sherry. Under this treatment the whole stock is now clear of scale and in perfect health. Many years ago I had to deal with a larger stock of Pines completely coated with mealy bug. After trying numerous cures no improvement was made till I adopted the lime and soot cure. I syringed it copiously among the stock, and all became clean and healthy.—Experimento.

Questions for exhibition committees.—I am a member of a suburban amateur floral society, which has recently decided that members who sell for profit should be allowed to compete in the forthcoming annual show as amateurs. I opposed this decision, and now should be glad to receive information on the following points:—1. What constitutes an amateur? 2. Is a man who sells plants for profit, either on his own premises or on a truck in the street, an amateur? 3. Will it be competent for me to place the whole facts before the presidents and patrons, and, if necessary, the judges of the next show, for their decision? 4. Can I, at the forthcoming show, lodge my objections with the judges, taking exception to others than true amateurs receiving prizes, and should this be done before the judging or after?—E. B. *** "E. B." does not give any information as to the rules framed for the guidance of exhibitors in this particular instance. Perhaps some of our readers who have been connected with such shows, either in an official capacity or as exhibitors, will kindly assist him.—Ed.

HOUSE & WINDOW GARDENING.

PLANT STANDS FOR HALLS.

In outer halls stands of growing plants form very effective ornaments, but the plants selected for this purpose should be such as would not feel the effects of cold currents of air; for, during the winter months in an outer hall, they would, of course, be subject to sudden changes of temperature; while, during the summer, almost any plant may be placed under such circumstances with the greatest safety. The size of plants used for this purpose must bear some kind of proportion to the size of the hall in which they are placed, and as to the shape and the material of which the stands are made, that must depend on the taste of the purchaser; but the dearest and most ornamental, when fitted up, often do not look so well as those of a less decorative character. The plant selected for the centre should always be the tallest, a Dracæna, Cocoa-nut Palm, or India-rubber plant, being best adapted for this purpose. Round this should be grouped other plants, either remarkable for flowers or foliage, which will be set off to advantage by that selected for the centre. Round the centre should be placed something of a drooping character, which will hang down gracefully and produce a good effect. For a stand in a hall which is not heated in any way there are no plants better suited than hardy British Ferns, which withstand cold draughts well, and preserve their foliage fresh and green all the year round. For town houses nothing is so suitable as Ferns, as they grow well where other plants would droop and fade in a few days. A handsome stand of British Ferns could be arranged as follows:—In the centre should be set a tall plant of Lastrea filix-mas, then, grouped round it, a few plants of Scolopendrium vulgare, and again, outside of these, such varieties as Asplenium Adiantum-nigrum, A. marinum, A. Trichomanes, Blechnum Spicant, and Polypodium vulgare. The Parsley Fern (Allosorus crispus), too, should not be forgotten. Ferns succeed best when each is set in a separate pot, and, when planting them in this way, care should be taken not to crush any of the fronds, as, if bruised, they fade at once. The size of the pots should be regulated by the stand in which they are to be placed; if a large one is employed the pot in which the centre Fern is to be planted should be a 24-sized one; for those outside of it 48-sized pots will be large enough; and for those round the outer edge 60-sized ones will suffice. In the bottom of each pot should be placed some broken crocks for drainage—not, as is too often the case, thrown in any way, but placed so that the moisture will drain down through them, without the soil choking them up. Over the crocks a little Cocoa-nut fibre, or Moss, should be placed, and over that, again, a little of the soil in which the plants are to be potted. If Ferns, they should be planted in a mixture of leaf-mould, rotten turf, and peat, a good dish of silver-sand being thrown in to keep the whole porous. On the surface of the pots, and between them, should be put wood Moss, as in the case of stands for sitting-rooms. A common seed-pan filled with Selaginella denticulata dropped into a small vase has a fine appearance; long sprays grow out over the sides of the vase, and droop down 8 or 10 inches, producing a charming effect. During the summer time a few Roses, or similar flowers, might be placed, if desired, amongst the Selaginella.—A. H.

Bark-bound or hide-bound.—This condition sometimes happens in the case of young trees that have been checked and stunted early in life. It may also happen to old trees, which have been over-cropped, or from the roots having got into poor soil, or any other cause sufficiently powerful to bring on debility. In the case of a young tree the bark-bound condition will probably be confined to the main stem, and more generous treatment, such as mulching and liquid manure, will enable the roots to overcome the resistance offered by the bark. Sometimes, in extreme cases, the point of a sharp knife is drawn up the stem, just through the outer bark only, in about two or three places in the circumference of the stem of the tree to give more liberty. But in a general way more liberal treatment to the roots will be sufficient. Old trees will not always yield so readily to this treatment, and when this is the case the best plan is to head them down—*i.e.*, saw off the hide-bound branches within a short distance of the trunk, and the new growth which will break away will infuse so much vigour into the tree as to bring back quite a youthful condition. The heading back should be done towards the end of March when the sap is in motion.

Baking of land.—When the surface of soil becomes hard through the action of heavy rains, followed by bright sunshine in spring and summer, it is said to be "baked." The same conditions occur when land is artificially watered in hot weather. When this takes place, if the dry weather continues, the surface cracks and the moisture rapidly escapes by evaporation, doing a twofold injury—carrying off the much needed moisture, and at the same time lowering the temperature. Heavy soils should never be trampled on more than is absolutely necessary when the surface is wet. An unhealthy condition may be given to land in spring, by walking upon or treading it carelessly when the surface is wet, that will remain all the season. Clay land that has a tendency to bake should be frequently stirred with the hoe or fork; and it should be remembered that it is impossible for plants to flourish with their roots beneath a hard baked soil.—E. H.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—X.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Spinach.

The wholesome vegetable falling under this name has many varieties, and when well and carefully prepared and cooked furnishes an excellent green vegetable, and is sometimes served as a sweet. Spinach being a dwarf plant, and growing so close to the earth, requires the greatest care and attention in washing thoroughly free from dirt and grit; it also needs great patience in dressing it with many minute additional flavourings in the form of condiments, fatty matter, &c.

Spinach boiled and served as a plain vegetable.—Take a large pailful of Spinach, remove all the stalks, and, if old, the tips of the leaves, as they are apt to cause a bitter and unpleasant taste; reject any discoloured or decayed leaves, and wash the remainder in several waters until they are quite free from grit; drain away the water and place the Spinach in a large iron saucepan, with one table-spoonful of salt and only the water that adheres to the leaves. Cover with a tightly-fitting lid, and place over the fire for about fifteen or twenty minutes; give the pan a shake occasionally without removing the lid. At the expiration of that time pour the Spinach into a colander, and let plenty of cold water rush over it; then press gently, to squeeze out all the water, or after the cold water has passed over it turn the Spinach into a cloth and wring it; this will be found a simple and easy method of draining the Spinach, which is too frequently spoilt in consequence of bad handling; next turn the Spinach on to a chopping-board, and chop it very finely until it can easily be passed through a fine colander or sieve; when this is accomplished put one ounce of butter into a saucepan, with salt and pepper to taste; then add the Spinach, and beat with a fork over the fire until quite hot; turn on to a deep hot dish, and serve with sippets of toasted bread round it. Vinegar should be served with Spinach for those who like it, but when eaten with meat and gravy many prefer the plain full flavour of the Spinach.

Spinach a la francaise.—Prepare and cook a large pailful of Spinach as directed in the previous recipe, and after it has been pressed through a sieve add to it one gill of whipped cream, two ounces of fresh butter, one tea-spoonful of powdered sugar, pepper and salt to taste; put these all into a saucepan, and with a large wooden fork beat as briskly as possible until the mixture is quite hot and frothy; then draw to the side of the fire, and lightly stir in one tea-spoonful of Lemon juice; turn on to a very hot dish, raise the Spinach high in the centre, and garnish with strips of freshly-baked pastry or fried bread.

Spinach greening. — Take a good-sized basketful of fresh and young Spinach leaves, set aside any that may be yellow, eaten, or in the least discoloured; wash the good Spinach in several fresh waters, always lifting it from one

to the other with the hands, so that the grit may fall to the bottom; when perfectly clean take away as much water as possible and pound the leaves in a mortar until they are quite pulpy; place the contents of the mortar in a firm and strong cloth, then, with one person at each end, wring over a basin until no more moisture can be extracted; put all the liquid that has been squeezed from the Spinach into a jam pot, and stand this in a saucepan with enough hot water to reach half way up the outside of the pot; place the pan over the fire and let the water boil around the pot until the contents curdle, but on no account allow the Spinach water to boil; when it has curdled pour all from the jam pot on to a hair or tammy sieve to drain away the liquid, and the curdled mass may be preserved for future use by putting it into a bottle and keeping it well corked and air-tight. When to be used for soups or savoury purposes take a small portion of the curd and work it to a smooth consistency with a little salt, and good stock or broth; and when for sweets proceed in the same manner, substituting sugar for the salt and cream for stock.

SPINACH CRUSTS, OR HOW TO UTILISE THE REMAINS OF COOKED SPINACH.—To one large cupful of cooked Spinach allowed six slices of thin bread and butter, three eggs, some bread crumbs, seasoning, and fat for frying. Remove the crust from the bread and butter, and cut each slice in halves; beat two yolks with the Spinach, and, if necessary, add pepper, salt, and Lemon juice as seasoning; spread a thick layer of this mixture upon the buttered side of half the bread and butter, and cover with the remaining half slices so as to form sandwiches; beat the remaining egg with the two whites until they are frothy; dip each sandwich into this, and then toss in plenty of bread crumbs; when they are all prepared fry them in boiling fat for about three minutes until they are of a golden brown colour; drain upon porous paper, and dry for a few minutes in the oven or before the fire; serve upon a hot folded napkin, and garnish with curled Parsley.

A SPINACH TARTLET.—Line a shallow tin with short crust, made in the same manner as described for Rhubarb tart (p. 150, May 23); mark round the edges, and lay a piece of greased paper in the centre with a few dry Beans or crusts upon it to prevent the paste from rising up; place the tin in a moderately hot oven and cook for about twenty minutes, and then remove the paper and Beans, which may be put aside and used for the same purpose again. Have ready prepared one small cupful of Spinach, measured after it has been boiled, chopped and passed through a sieve, two eggs, two table-spoonfuls of cream, two ounces of sweet Almonds, two ounces of powdered sugar, half a tea-spoonful of Lemon juice; break the eggs and separate the yolks from the whites, put the yolks in a basin with the sugar and beat them to the consistency of thick cream; next mix in the Spinach, blanch and chop the Almonds very small, and add with them the Lemon juice and cream; put the whites upon a clean plate with a pinch of salt, and beat them with a broad knife to a very stiff froth, stir these lightly into the Spinach mixture, which pour into the pastry-lined tin, and return it to the oven for about seven or ten minutes until the Spinach mixture becomes slightly coloured and firm. Immediately the tart is taken from the oven sprinkle some powdered sugar over and serve hot. Nutmeg, Lemon juice, Cinnamon, Ratafia, Orange-flower water, and Vanilla, may each be used in turn with Spinach, and with each a small portion of acid, either Lemon juice or white wine vinegar, will considerably assist in bringing out the flavour.

Nourishing properties of Rhubarb.—Is "Annie M. Griggs" quite correct in stating that Rhubarb is not very nourishing (page 150)? Every summer my wife and myself make use of it daily, stewed, and, we think, with considerable benefit. There is no very reliable account as to the amount of nourishment contained in Rhubarb and fruits, and as there are so many who, without making enquiry, believe everything they see in print, an unjust prejudice may be excited.—W. W.

Using German yeast.—"A Young Wife" (p. 190), must use a small quantity of lukewarm water (about the heat of milk from the cow); break the yeast in small pieces; let it stand a few minutes, and then beat it with a fork until it is all dissolved; mix it with more water, which must also be lukewarm. If "Young Wife" would get a recipe for bread-making from the School of Cookery, South Kensington, cost 1½d., and follow its directions implicitly, she will have beautiful bread.—ONE WHO HAS MUCH TO THANK "GARDENING" FOR.

13669—**Siberian crab jelly.**—Take off the stalks, weigh and wash the crabs, then to each pound and a half add a pint of water, and boil them gently until they are broken, but do not allow them to fall to a pulp; pour the whole into a jelly-bag, and when the juice is quite transparent weigh it, put it into a clean preserving pan, and boil it quickly for 10 minutes; take it from the fire and stir into it, until dissolved, 10 ounces of fine sugar, roughly powdered, to each pound of the juice; boil the jelly from 10 to 15 minutes, skim it very clean, and pour into moulds. Should the quantity be large a few additional minutes' boiling must be given to the juice before the sugar is added.—S. P. W., *York*.

THE KITCHEN GARDEN.

CULTURE OF EGG PLANTS.

IN some gardens a few Egg plants may be grown in summer, but in the majority of them they are not cultivated; and altogether the Egg plant may be regarded as a little-known vegetable, especially as many of those who do grow it do not use it as a vegetable, but simply as an ornamental plant. It certainly is this, and more too, as the best purple-fruited variety is one of our choicest vegetables, and one which should be widely and generally grown as such. Those who grow Tomatoes need not be afraid to take Egg plants in hand, as both succeed under similar conditions, and the eggs may be cooked and used in much the same way as the Tomato. Of all kinds the purple-fruited one—the Aubergine noir de Pekin of the French—is the best for culinary work. Being annuals, Egg plants are easily raised from seed, which may be sown at any time. When wanted in summer sow in March, and if only wanted for autumn and winter, later sowing will suit best. The plants grow quickly, fruit early, and soon mature their crop. In beginning their culture the best way is to procure a packet of good seed from a respectable dealer. Let the one or more kinds purchased be distinct, not mixed. Some dozens of plants may be raised in a 6 inch pot. This should be well drained, and filled up with a light sandy mixture. On the surface of this the seed should be sown and covered lightly. The pot should then be placed in a frame or house in which the temperature is about 60 degs. Here the young plants will soon appear, and afterwards they should be kept close to the glass and light to prevent them from being drawn up too straggly. As soon as the two first rough leaves have been formed, they should all be turned out of the seed pot and placed singly in small pots. At this time the potting mixture should consist of two parts loam, one of sand, and one of leaf soil. At all subsequent pottings the loam and sand may remain the same, but half-decayed manure should take the place of the leaf soil. During the period when they are in the smallest pots they should be kept in a nice growing atmosphere, and when the roots are plentiful, and the top growth has developed in proportion, they should be shifted into larger pots. Good plants may be had in 6 inch pots, and large ones, capable of bearing a great number of fine fruits, may be grown in 8 inch and 9-inch pots. These are the sizes we prefer. When the seed is sown in March they will be ready for their fruiting pots by May, and from then onwards for the following six months they will continue to supply fruit. In spring it may be necessary to grow them in a place artificially heated, but throughout the summer and autumn they will succeed, in any part of the country, in an ordinary frame, and in some parts they will do very well out-of-doors. They are sometimes planted out at the bottom of warm, well-sheltered walls, to be trained up like Tomatoes; but, as a rule, they are best kept in the pots, as, if a bad season occurs, they can be taken in again without re-potting. A few well-grown plants will keep up a constant supply throughout the season. In exceptionably favourable weather they have done well in open quarters in the kitchen garden, but plants in the open cannot be depended upon.

J. M. M.

*** Generally Egg plants do very little good in this country. We have very rarely seen them grown well here, and doubt whether they are worth cultivating. In America and hot countries they grow wonderfully. One is astonished in America on turning aside a nice little tufty plant, about 15 inches high, to find beneath its by no means large leaves a fine fruit as big as a child's head. Grown under favourable conditions it is a capital vegetable when properly cooked.—ED.

Earthing-up Potatoes.—I frequently see Potatoes being earthed up very much too late in the season, so that a deal of injury is done to the crop, for they should be earthed up directly the tops are high enough to admit of that operation being performed. If from any unavoidable cause it is impossible to get the work completed I would much prefer letting the crop go unearthed, as, except that of keeping the tubers from getting discoloured by exposure, it is questionable if any purpose is served by moulding up In this locality the Potato is grown as a field crop in very large quantities, and the growers are very careful to get the moulding up, which is performed by the plough, done directly the rows can be seen distinctly, for when the tops get advanced in growth it is simply impossible to mould them up without injury to the foliage and to the young tubers that are just forming as well, for some kinds send out thread-like roots, and form the tuber at the end at a considerable distance from the main stem, and if these are disturbed a serious loss of crop follows. Although Potatoes have been very plentiful and cheap during the past year, there is no diminution in the extent of land under Potato again this year, and at present they look most promising for a good crop. The prevalence of fine, dry, warm weather is now needed, as they are making so much top growth, owing to wet, sunless days in May.—J. G., *Hants*.

When should a Vegetable Marrow be used?—With respect to the time at which a Vegetable Marrow should be used (see query 13764), surely the younger they are eaten the better, after they are fairly formed. The Italians, who cook these and similar things so well, use them very young, and so do most people who have the chance. In the market one is obliged to take what one can get. For my own part I should never let a Vegetable Marrow grow old under any circumstances. Other kinds of gourds are very good for winter use when ripe, but, so far as we know Vegetable Marrows, it is a great mistake to let them get hard. No doubt they can be used firm or half ripe.—W. R.

13739.—**Tomatoes not setting.**—The treatment cannot be right. The plants ought to be as near as possible to the glass, and when in bloom should have a rather dry atmosphere, with a night temperature of 60 degs to 65 degs. We have now a capital crop of Hackwood Park Prolific grown under vines. This sort I consider one of the very best to force.—J. DOUGLAS.

TOO MANY FLOWER BEDS.

How seldom does one find a good spread of velvety turf undisturbed by flower beds that are more or less intricate in pattern, and in many cases suggest the idea that the object in view has been to find how many beds can be crowded into a given space. I have lately seen some examples worthy of imitation in both large and small gardens. In the former, what above all else arrested attention was a charming expanse of green turf from which majestic trees rose in stately grandeur, their lower branches resting on the Grass; yet there was no lack of flowers, for around the mansion large masses of gay flowers charmed the eye, and the contrast helped to heighten the effect of both the flower and flowerless portions. One cannot have too many flowers, but we certainly do not want them dotted over the whole place; and the worst of it is that the owners of small gardens copy, implicitly, examples, good or bad, that they find in larger ones. Happily, the latter are becoming improved. In villa gardens, if the Grass be cut up into fragments, the most enjoy-

able portion of them is practically lost, and their apparent size considerably reduced. I lately came upon quite a small town garden in which the owner had wisely massed his flowers by the margin of the one walk that surrounded it; the centre was an unbroken Grass plot, green through copious waterings during dry weather. An ancient Apple tree gave shelter and shade in summer, a wealth of rosy blossoms in spring, and useful fruit in autumn. The turf formed the most enjoyable resort both for the young and old; and the enclosing walls, a necessity in town gardens, were aglow with various flowering climbers, while at their base was a wide border for hardy flowering plants. This was a garden which, though small, was enjoyable. As a rule, we get too much gravel, bare earth, and edging tiles. What we want are flowers concentrated, and the Grass as much unbroken as the space at disposal will permit.

J. G. H.

DEGRADATION OF WATER.

This sketch faithfully represents one of the "ornamental" waters with which our French neighbours too frequently deface their pretty little town and suburban gardens. If there be only a mere napkin of a lawn there is sure to be a cemented tub placed in it; the Yuccas and the Grass, the Thujas and the Cannas, all look happy as one expects them to be, but the whole is generally marred by the most ridiculous of

The degradation of water.

fountain basins. The writer has seen, as near as he can calculate, between 7,000 and 8,000 of such saucers disfiguring as many pretty gardens in the neighbourhood of Paris. It is another evidence of the futility of forming artificial water in any form in the small garden; those who find gratification in surveying a tub full of dirty water should enjoy it in a more convenient place.

THE VILLA GARDEN.

(Continued from page 204.)

The Cucumber under glass.

The cheapening of glass has, during the last thirty years, given an immense impetus to the cultivation of Cucumbers. Those not much past the meridian of life can remember the time when Cucumbers were chiefly grown in the dung-pit or frame, and Cucumbers in winter were almost unknown. Now a Cucumber-house forms a necessary structure in even moderate-sized private gardens, and immense establishments, from which fortunes have been made, have sprung up, not only in the neighbourhood of London, but in many other places about the country; and I have been told that some of our large Cucumber growers have found openings for their produce on the Continent, and that, at least so far as regards forced produce, the English grower can do something more than hold his own in competition with the foreigner.

Raising the Plants.

In a suitable place Cucumbers are very easily rooted from cuttings, and when many plants are required of a kind, such as the Telegraph, which does not seed freely, this is a good way of raising them; but strong healthy cuttings are a necessity, for weakly plants are not of much use and never attain to a long, healthy, vigorous life. The cuttings may be laid in a bed of warm, moist, light soil, and as soon as the roots are half an inch long, take them carefully out of the soil and pot them. Grow them on till well established or till the house is ready to receive them. If raised from seeds they should be sown or planted in small pots, one seed in each, in light soil, the pots being plunged in a hotbed near the glass. When the seeds have germinated and the plants advanced to the rough leaf stage, they may either be potted on, or, if the house is ready, planted out. In all cases it is important that the plants should never experience any check in their early life.

Time to Plant.

In a well-constructed Cucumber house, whether it be a lean-to or a span roof structure (the latter is the best), a start may be made at any time that suits the convenience of the cultivator, he being governed by his necessities as regards demand. To have Cucumbers in winter, the seeds or cuttings should be planted early in September, and taken on steadily. But if we do not require to cut, say, before Easter, we need not begin before December. The treatment of

Winter Cucumbers

Is somewhat different from that required by Cucumbers in summer, and more care and skill is requisite to bring them to a successful issue. When the plants are intended for winter bearing, to begin, say, in November or earlier, they should be taken on steadily without any stopping till the end of the rafter or the top of the trellis is reached, when the leader is pinched out. This extension without stopping adds much to the strength of the plants, and this reserve force is of great value before the winter is out. As much of the pruning as is possible should be done with the finger and thumb, and the knife used only to cut the fruits. Something may be done to keep the growth thin by rubbing off those buds not required to form shoots. Other shoots should have the centre bud nipped out as soon as the fruit is shown. Thin training should be followed out, and only a limited number of fruit should be left on the plants in the short days of winter.

Temperature.

The bottom-heat should range from 65 degs. to 70 degs., but should not exceed the last-named figure. The night temperature of the house should be about 65 degs. A few degrees higher in mild weather and a few lower when sharp frost sets in will do no harm. The day temperature may vary from 70 degs. in the morning to 85 degs. or 90 degs. or more in the afternoon when the house is saturated with water. The questions of ventilation and moisture are very closely linked together. It is certain that no house is altogether air-tight, and that very often Cucumbers get more air than they need if the water supply is abundant. To forward the crop rapidly, and Cucumbers should be grown quickly, keep the house close and use plenty of moisture. Shade will not be necessary in winter, nor much in summer, if the condition as to moisture is suitable. Not only must the border be kept moist, but the atmosphere of the house must be charged with moisture also, and, with a house full of vapour, the leaves will not scorch or burn. In private gardens Cucumber houses are usually small, but of late years very large houses have been built by market gardeners, and near to large towns, where stable manure is plentiful, the bottom-heat is frequently supplied from that source. Small houses are, except in one particular, a disadvantage. The plants in them are more subject to insect attacks, and there is more difficulty in keeping the atmospheric moisture at the right point, and the ventilation is, consequently, more difficult to manage. In small low houses fruit may be cut a little earlier at a less cost for fuel; but in large houses, with abundant light and abundant moisture, very little ventilation will be needed beyond what is obtained by filtration through the laps or other permanent openings. As regards

Soil,

Simple things are best. Turfy loam, two-thirds, with one-third old manure, will do well. I have found an advantage in giving a pound of Amie's manure to each barrowful of soil, mixing all together thoroughly. Whatever the arrangements for bottom-heat may be, if it be supplied by pipes laid in rubble it will be an advantage to have a foot or so of fermenting materials on the top of the rubble, if there is room enough. I don't know if I need enter into the why or wherefore of this, but I have proved its efficacy often, and must recommend it. Cucumbers do not require a great bulk of soil to grow in at first, but they must have frequent light top-dressings after they get fairly into work, and the soil used for this purpose should have the chill taken off before coming in contact with the roots.

Liquid and Artifical Manures.

These must always play an important part in Cucumber growing, and the two may mean one and the same thing. If a good supply of liquid manure should be at hand in any wholesome form, whether drainage from a farm-yard, or house sewage, artificial manure may, perhaps, not be needed; still, plants like a change of diet sometimes, and I have used artificials with advantage even when I had plenty of liquid manure in the tank.

In the Frame

The Cucumber has long been grown, and though a considerable amount of skill is brought to bear upon its culture early in the season, I never remember to have cut Cucumbers out of a frame before March; and it used to be thought very good work to cut any time in March with nothing beyond a dung bed for top and bottom-heat. Unless there is a warm house to raise the plants in, a hotbed for the purpose should be made up early in the year. This may be of smaller dimensions than will be required to plant in later on. A one-light frame will be large enough for a seed-bed. The blending and mixing of the materials in the formation of the hotbed is a work requiring some judgment and experience, for, unless this be properly done, the bed will either be too hot or too cold, and the whole thing, for the time being at least, involved in ruin. To make a bed for Cucumbers in January a considerable bulk of materials will be required. The bed when built should not be less than 5 feet high at back and 4 feet at front, and should be at least a foot wider on all sides than the frames. The best materials for hotbeds are about equal parts of Oak leaves and stable manure. With these the heat will be steady and lasting, both of which qualities are essential to success. The materials should be wheeled or carted to the site of the bed, which should occupy a sheltered position, as the wind is very detrimental to steady heating. The whole should be shaken and mixed together, and when warm in the course of a week or so it should be turned over, throwing the outsides into the middle, and watering any dry spot which may show itself. In the course of another week the bed may be made up, applying just the requisite amount of pressure as the bed is built up to insure regular, steady warmth. Without air there can, of course, be no fermentation, and consequently no warmth, but unless sufficient pressure is applied to drive out some of the air the heat will be more than is required, and the heat-giving properties of the materials will be unduly and prematurely exhausted. There is a given amount of heat in a given bulk of material, and it is in so regulating this by pressure as to produce the requisite warmth in the bed that the skill of the operator shows itself. Linings can be added when necessary to keep up the temperature. As regards raising the plants, the same treatment as recommended for raising plants for house planting will be necessary. Plant in light soil, one seed in each small pot, and plunge the pots in the bed, guarding them from mice and insect attacks. As soon as the young plants appear above ground the beds should be built up to receive them, and as soon as the heat is regular and steady plant out in hills of warm soil placed in the middle of each light. Everything about the frames should be clean and sweet. If the frames have not been painted they should be washed with soap and water, and the lights also should be cleaned, so that a maximum of light may be admitted. It is comparatively easy to tell when the bed is fit to receive the plants. Some people who desire to be exact insert a thermometer just

within the bed, inside the frame, and when the temperature drops to 80 or so the hills are placed within, and in a day or two the plants are turned out. When the moisture which condenses upon the glass and hangs in drops from the sash-bars of the lights is clear and colourless, the bed is sweet and free from noxious gases, and generally the plants will be safe. Practical gardeners do not often use thermometers to denote the temperature of a hotbed; most of them thrust in a stick a considerable depth, drawing it out occasionally to test its warmth by holding the warm end in the hand for a few seconds, and as soon as the heat declines to a nice comfortable warmth the bed is safe for the plants. The longer the building of the bed is delayed the less care will be needed, as beds made up in February or March will not run so many risks as will those early in the year. The application of

Top Dressings

Will be as necessary in frame as in house culture, and liquid manure, after bearing commences, is also quite as necessary. The pinching at the first leaf beyond the fruit must be observed, as a thicket of growth is an evil, though in the summer culture of Cucumbers the knife inspires less dread in the mind of the observant cultivators. Some growers go through their Cucumber frames once a-week to regulate the growth, and pinch and prune when needful, scattering at the same time a little rich compost over the white roots which come to the surface to look for more food. Atmospheric moisture will be supplied by sprinklings on sunny days with the syringe or the rosed water-pot, always using water of the temperature of the frame, and shutting up immediately the sprinkling is done, to bottle up, as it were, the sun's rays, which are far superior to any other kind of warmth.

Insects, Diseases, &c.

The red spider is the most troublesome pest. Green fly can be easily got rid of by two or three gentle fumigations; but if the red spider only gets a footing he will be difficult to deal with. It is much easier to keep the red spider out of the house or frame than to turn him out when he has become established. He dislikes moisture, and delights in dry warmth. Hence, knowing the conditions under which the spiders live and increase so marvellously, it is the cultivator's own fault if he does not checkmate his enemy. If sufficient moisture be employed in the atmosphere, and enough water in some form be given to the roots, the red spider does not give much trouble. If the atmosphere be charged with ammonia, by using a little guano or some such stimulant in the water used for sprinkling the borders and floors of the houses or pits, it will be beneficial in more ways than one. Thrips are sometimes troublesome to Cucumbers, especially early in the season, but these may easily be destroyed by fumigating with Tobacco. These are the chief insect pests which attack Cucumbers seriously, and the red spider is the worst of the three. I have cleared plants of them by shutting the house up close night and day, for three or four days, and thoroughly saturating the atmosphere with moisture, shading a little during the hottest part of the day. The insects also dislike the fumes of sulphur; but in all cases of attack promptitude is everything. When the leaves are destroyed it may be a satisfaction to destroy the enemy who has done the mischief, but it will not bring back the dead to life. The chief disease which gives trouble to Cucumber growers is gumming or gangrene, its chief seat being in the fruit, which it quite spoils. This is so difficult to cure that on its first appearance most cultivators try to stamp it out by destroying the plants and clearing out everything from the house, and starting again with everything fresh and clean. It often attacks plants which have been checked and starved by injudicious treatment, though occasionally well-managed plants fall a prey to it. Increase of temperature, accompanied by abundant moisture in the atmosphere, has been known to banish the disease or to keep it at bay for a time till a new set of plants could be started.

Varieties.—Telegraph is the best all-round Cucumber. Carter's Model and Tender and True are also both excellent, and there is nothing gained by growing more than three good kinds.

The Cucumber in the Open Air.

In warm sheltered situations, where the soil is rich and light, Cucumbers, if the right variety is obtained, will succeed very well in the open air in the summer months. A site open to the south, but sheltered from the north and east, is the most suitable. The seeds should be sown in small pots, three seeds in each, and lightly covered with light rich soil about the 10th of April, and be placed in a frame near the glass, where there is a gentle hotbed. In due course the plants must be moved to a cold frame to harden off to be ready to plant out about the 20th of May, if there are handlights to shelter them, or the end of the month if they have to take their chance. But it is always easy enough to improvise some shelter for a few nights if the weather should become unsettled after the plants are out. Flower pots inverted, put over them at night, will keep them safe, and evergreen branches will afford a good deal of protection. I have used frames made of wire in the shape of handlights, and covered with oiled calico, and they are very effective, and if taken care of will last a long time. The hills should be got ready a week or so before the plants are ready to go out. Set them out in rows 5 feet apart and 4 feet apart in the rows. A little more space may be allowed when the position is a very favourable one, but for the most part the distance named will suffice. In preparing the hills dig out a hole that will hold a barrowful of stable manure, and on the manure in each hill place half a barrowful of turfy loam and old manure in about equal parts to set the plants in. If the natural soil is very good this trouble need not be taken. Still, anything that gives encouragement in the early stages of the plant's existence will not be labour lost.

Mulching and Watering.

As soon as the plants begin to run freely the spaces between the hills must be mulched with rather long manure, turning the shoots back on each side to allow the stuff to be placed close up to the plants. If hand-glasses are used, as the season advances the glasses will be set upon bricks, until they can be removed with safety, and the plants encouraged to run out, the shoots being pegged down to keep them steady and preventing the winds injuring them. Watering will be a necessity, and must receive careful attention, and, as soon as the plants begin to bear, liquid manure should be given. The plants should be gone over twice a-week, and all fruit fit for use should be cut. To leave them longer would lead to exhaustion and, perhaps, premature death.

Gherkins for Pickling

Should be cut when small or they will be useless. In other respects the treatment they require is the same as is given to Ridge Cucumbers generally.

Varieties.—It is rather difficult to get seeds of a really good Ridge Cucumber. Those who have really good varieties (and they are in the hands of market growers chiefly) do not care to part with seeds. There is no difficulty in obtaining seeds of the usual short, prickly varieties, but these are not what I mean. A Ridge Cucumber that will produce in the open air, in August and September, fruit from 10 inches to 12 inches long, fit for table use, will be valuable.

Saving seeds.

When a good variety has been secured it will be advisable to save seeds, and one or more hills should be set apart for that purpose, leaving four or five of the handsomest fruit early in the season of bearing, and before the plants have become exhausted. When the fruits are ripe and are changing colour cut them from the plants, and place them on a shelf in a cool airy room to complete their ripening, when the seeds should be taken out, washed from the pulp, dried thoroughly, and packed away in a drawer. When kept in a dry place Cucumber seeds retain their vitality a long time. How long I am not prepared to say, but certainly more than twenty years. E. Hobday.

13791—**Site for a greenhouse.**—The amount of success you will obtain will depend a good deal upon what kind of plants you grow in your house. For the general run of greenhouse plants the intended house would be too much shaded. Such subjects as Ferns, Camellias, Clematis, herbaceous Calceolarias, and Cinerarias would do very well in it.—J. C. C.

USEFUL HINTS TO AMATEURS.

The readers of Gardening seem to be always willing to help each other in all the difficulties and troubles which beset the beginner, and even the practised gardener. It would be a great advantage to all, however, if beginners would consider their plans and write for advice before purchasing their plants. It is far too much the habit of amateurs to purchase and plant a lot of things of the culture of which they know nothing, get themselves into a hopeless muddle, and then write to the gardening papers for advice as to how to get out of the difficulties they themselves have created.

An amateur plants Roses in a garden four miles nearer the heart of London than they can exist, and wonders why they don't grow. Another plants a hardy climber in a greenhouse, and finds it produce plenty of leaves but no flowers, the plant being one which makes almost a solid sheet of bloom in the open air. A third covers the roof of his greenhouse with Vines, and expects sun-loving subjects to grow under their shadow, &c., &c., *ad libitum* almost. There are certain errors which beginners seem always to perpetrate. In new suburban neighbourhoods one sees the same errors committed over and over again. When a new garden is being laid out, a beginner who knows nothing of gardening seems always to fall into one of three main errors. He tries to lay out the garden according to his own ideas, the result being a perfect muddle of blunders; he gets a jobbing gardener to lay out the plot; or he gets a small nurseryman to lay out and plant the garden—the result being, in too many cases, that the nurseryman fills the garden with common things in great quantity, which are scarcely worth growing, and keeps an eye to having the owner of the garden come back annually for fresh relays of plants. It is quite amusing to notice the rubbish which some nurserymen have planted in new gardens during the last few years as hardy plants. It seems almost as if they wished their customers to be disgusted with the effect of hardy flowers at the first trial. I have seen whole beds and borders filled with weedy, poorly coloured, and fast-spreading things, which no good nurseryman thinks of giving a place to in his catalogue. A beginner who wishes to progress, on taking possession of a garden for the first time in his life, should learn to dig, to grow vegetables, annuals, and biennials well, and should write for advice before investing in expensive or permanent plants, trees, or shrubs. Too often one has to leave queries unanswered because the only possible answer would be to quote the proverb about a fool and his money. Gardening is the only paper which contains any information suitable to the circumstances of suburban gardens. One can scarcely open any other paper without finding things recommended which are perfectly suited to small gardens in the country, but which would produce certain failure in the smoky atmosphere of large towns and their immediate suburbs. More especially is this the case about Roses. Anyone who recommends Roses as town, or even suburban, plants, or gives the slightest encouragement to an amateur to try and grow the Rose, except under glass, anywhere within the reach of London fog, has no practical experience of the matter.

As a first principle for the guidance of the beginner: Form no preconceived idea as to how you would like your garden to look; learn to grow things well before laying out anything permanent. A lawn will do no harm, because well-grown turf can be moved about, and any surplus quantity is good to dig into the bottom spit of beds, but in a good garden the beds should be planned to suit the plants which are to be grown in them. Half the vexations of garden planting are owing to following the reverse order—namely, laying out a lot of beds, and having to fetter the planting by the shape and style of them. A perfect garden should in every case seem designed by the hand of Nature, and not of Art; in all arts that is the highest in which the designer's hand is most completely hidden.

It is especially necessary to be guided by the circumstances with which a garden is surrounded. A bare, sandy, or chalky slope will not do for Roses, or for any plants that require

much moisture in earth and air; but such a position will do admirably for Carnations, Antirrhinums, Wallflowers, and all the multitude of rock plants and bulbs which dislike moisture in winter, and which do badly in damp gardens. The beginner should take violent fancies to nothing, but leave his likes and dislikes to be guided by experience. He will lose nothing by so doing, as his tastes are certain to change with time, and, in the meantime, he will escape many disappointments. The beginner in gardening too often falls into some extremely artificial style, necessitating any amount of mere mechanical and routine labour in clipping and dressing a multitude of edgings, rolling and weeding walks, and mowing turf.

All that sort of thing is not an intellectual pastime any more than sweeping streets is, and should be avoided as much as possible by amateurs. Few things are more ridiculous than a garden of well-kept turf and clean gravel, with trim edgings surrounding beds filled with plants that are standing evidence that the owner does not understand the rudiments of cultivation. Even a garden in which the grass was long, and the walks were a little weedy, would not be anything like such a glaring inconsistency.

Two special disfigurements of the beginner's garden are the Standard Rose and the flower border in fronts of banks of Evergreens. The ideal of the Standard Rose is not so objectionable, but it cannot be carried out. No one who has seen a real Standard Rose can do anything but laugh derisively at the wretched, starving, mop-headed abortion of the small suburban garden, which neither grows nor can grow. Plant strong, healthy young Briers in a sheltered but open place, give them a rich soil and plenty of fat manure, bud them well and skilfully, and allow them to remain where they were budded; and, provided the climate is not too dry and parching, and that the stems of the Standards are sheltered by Bush Roses, or in some other way, these Standards will grow luxuriantly and flower profusely, producing shoots four and five feet long in a single season, and carrying in some varieties hundreds of splendid flowers. But plant the Standard Rose, as the beginner does, in holes round the edges of a lawn, or in flower beds; let each stick stand by itself to be parched by the sun and bitten by the frost, withhold manure and liquid manure, and fill the ground over the roots with bedding and other plants, and the poor Rose trees get small by degrees, and beautifully less, till the first severe winter makes an end of them. It is a very pretty idea—that of having a richly coloured border of flowers telling against a dark bank of Evergreens—but that also won't do. The roots of the shrubs rob and parch the fringe of soil, so that even wall plants refuse to grow.

Beginners, in writing for advice, should describe their course of culture in the minutest detail. For instance, a greenhouse plant in a pot becomes infested with green fly, or drops its leaves and buds. Ever so many things may be the cause, and it is almost impossible for anyone to guess where the fault has been without detailed information. It is the same with plants in the open ground. In some cases a good gardener of long experience would not even guess the cause of failure. A case in point occurred a few weeks since. A correspondent sent a query to a contemporary asking whether the clay round the roots of newly-purchased plants should be removed before planting, and if so, how to remove it without injury. To which the Editor of the journal replied that if the plants were doing well in the clay it need not be removed—wholly ignorant of the fact that many small amateurs, instead of ordering their plants from a good nursery, and receiving them either in small pots, or properly packed, buy their plants in dribblets from small dealers, whose plants have their roots crushed into a solid ball of stiff clay, which retains moisture and keeps some freshness in them until they are disposed of. It is extremely likely that the amateur mentioned above represents many who never took the trouble to inquire, but placed their plants in the ground just as purchased, the result being, of course, failure. All plants should be ordered from good nurseries, where things are packed in a proper manner, and should be planted as soon as received. J. D.

POULTRY.

13716.—**Rearing ducklings.**—I hardly think the plan proposed by "Iolanthe" will answer. It may be possible to have ducks ready for the table all the year round, but some of them will have to be kept several weeks after they are fit to kill, and thus all profit will be lost. The reason is, eggs cannot be got at all seasons. The number laid by a duck during the year ranges from fifty to sixty, but it is only in rare cases that ducks' eggs are obtainable except in the spring months. By careful breeding there is no reason why the egg-producing powers of ducks may not be increased, and if this end could be achieved the period during which ducklings could be got would also be extended. The best way to secure fertile eggs is to keep one's own stock birds. No pool is required for ducklings which are intended for market; the less water they have the better.—Doulting.

13778.—**Poultry keeping for profit.**—I do not think "Albion's" prospects of success are at all encouraging. On a farm where there is unlimited range profits may be made by keeping poultry; but when the birds are confined they require considerable attention if they are to be kept healthy. They also cost more to keep under such circumstances. The ground, too, soon gets tainted, and with these surroundings no animals can be expected to thrive. Leghorns, Minorcas, Houdans, Hamburghs, and Brahmas are all good layers. The last-named variety will sit well, and if crossed with the Dorking will make good table birds.—Doulting.

13717.—**Fowls dying.**—Fowls with a good Grass run and carefully looked after should certainly not die off in the manner described by "A Young Beginner." If possible it would be well to show them to some fancier in the neighbourhood, and get his advice on the matter. If by "mixed corn" the querist refers to hard grain of various kinds, this is bad feeding. One meal per day should always consist of soft food—that is, meal either with or without kitchen scraps, &c. The fowls should receive no more food than they will clear up at once, and must also be supplied with a good dust bath and plenty of pure water.—Doulting.

THE USE OF GARDENING POTS.

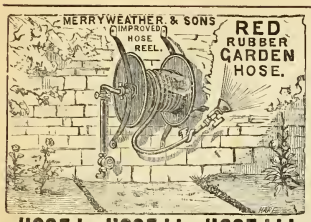
It may be useful to consider how far in certain branches of gardening pots may be dispensed with or how best employed. We remember the time when all bedding plants of whatever description used to be potted off annually, and a long time it took in large establishments, and the barrow work necessitated by the use of pots for so many plants was very great. Things are now altered, however, a good deal, although I see pots are still used more extensively in some places than they need be, even such things as Stocks and Asters being potted. We raise many thousands of Lobelias, Calceolarias, Dianthus, and tender annuals every year, but except for Pelargoniums and a few succulents we do not use a pot for one of them. I have long been convinced that nearly all plants which have to be transferred to beds in May and June transplant more successfully from beds than from pots. Take Lobelias, for example. From the cutting pans or boxes, after being hardened off a little, the plants are with us transferred temporarily to a thin bed of fine soil in cold frames. From here the plants are moved to the beds, and the bricks and lights are stowed away for another year. Plants thus treated lift with a mass of free and not pot-bound roots ready to run at once, and the plants never even flag. Of course, boxes will do as well, but frames are better. Sometimes the protection is only a frigi domo sheet instead of lights. Again, pot Strawberry plants bear well, but they would do much better if grown in a bed of soil in frames, as we have seen crops in pots so grown before this time. When this practice comes to be more generally adopted a crop of Strawberries in spring and early summer, and another in October or November from the same plants, will not be regarded as anything remarkable. At present pot culture, with all its necessary drawbacks and inconveniences, is a hindrance to the more extended culture of forced crops. The use of the flower-pot, in short, may be said to be confined mostly to the culture of greenhouse and stove plants, principally one branch of horticulture only, and even there its use might be often dispensed with. There are many things which are more successfully grown out of pots than in them at certain stages—for example, Bouvardias, Azaleas, and the like, even when they are intended necessarily for pots in the end. They make a better growth when planted out, and will endure lifting and potting at the end of the season without showing any signs of injury. It may be asserted also that the less pots are used for any subjects that have to be planted in beds or borders the better, and hence the objection to the use of pots for raising Vines that have afterwards to be planted out permanently. It has long been the conviction of many gardeners that the present

Shape of the flower pot is exactly the reverse of what it ought to be. The ordinary flower-pot is wide at the top and disproportionately narrow at the bottom, and the consequence is that the roots of the plant always congregate in the greatest number where there is least room as well as least food for them, resulting in that pot-bound condition which none of us like to see. It would be much better for the plant if the bottom were where the top is now. This would be inconvenient in potting and shifting, but there is no objection that one can see to having all pots at least as wide at the bottom as at the top. A pot could easily be devised of this shape that would have the same capacity as the common pot, and yet allow much more of the compost to be put where the roots would find it. Pelargoniums, Fuchsias, Caladiums, Dracænas, and stove and greenhouse plants would thrive better in such pots, which would also obviate the need of shifting the plants so often. Growers of prize Hyacinths used to grow their plants in pots of this shape, and I have often wondered why they have not been extended to other subjects. J. S.

13788.—**Destroying slugs.**—Any attempt to clear a garden of slugs by the application of soot and lime so frequently recommended will only end in failure. The only satisfactory way to get rid of them is to catch them and kill them, but a good deal may be done in preventative measures. Nothing will prove so efficacious as a preventive than a clean garden; by this I mean that no refuse of any kind must be left about the garden to harbour them. The leaves of Cabbage, Cauliflower, Lettuce, &c., should be cleared off the ground as soon as the hearts have been cut for use; and the Dutch hoe must be kept constantly at work among the crops. Something has lately been said in Gardening against the use of the rake in gardens, but where slugs abound the rake is a very useful tool, if it is used often enough between the crops, for slugs do not like to be frequently disturbed, and where the rake is not used they find congenial quarters under any hard lumps or stones. If the rake is kept pretty constantly at work it will be found that there is much less refuse about the garden, and a smaller number of slugs as well, for large numbers will be carried away with the rubbish. Weeds, and also dead and decaying leaves of fruit, or other trees, offer favourite haunts for slugs. There ought, therefore, to be a general clearing up in all parts of the garden, and in a few months it will be found that the number has been considerably reduced. To further assist in their destruction about a quart of fresh brewers' grains should be laid on the ground at different points about the garden, and the clumps of grains examined every morning, and the slugs destroyed, securing a fresh supply of grain once a week. When we find we are getting more than the usual number of slugs we send a lad round the garden walks every morning with a sharp knife, and every slug seen is cut into two parts.—J. C. C.

BIRDS.

13872.—**White starlings.**—Two white starlings have been caught in my garden, and as I believe they are uncommon, and wish to keep them, they have been put in a cage. They are quite young birds just out of the nest. Will some reader kindly tell me what is the best food for young starlings when kept in a cage, and if it is not rare for them to be white? Is it likely they will become the usual colour of starlings as they get older?—E. M. A.



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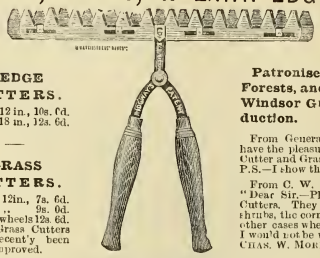

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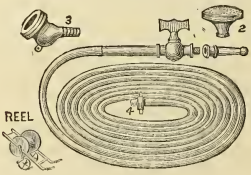

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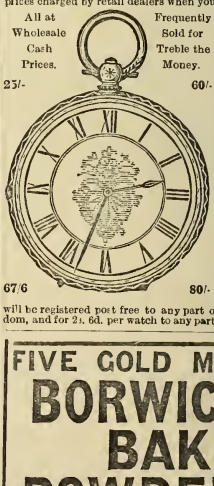

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GARDENING ILLUSTRATED.

Vol. VII. JULY 4, 1885. No. 330.

OUTDOOR PLANTS.

THE MIMULUS AND ASTER IN TOWN AIR.

Anything that will yield good flowers in quantity with a minimum of care under adverse conditions of atmosphere is welcome to amateurs. In situations where Geraniums make little else but leaf-growth, where the favourite ten-week Stock buds but never blooms, and Sweet Peas push only a few inches of bine through the ground, the Mimulus, or Monkey Musk—of the same family as the well-known fragrant Musk to be seen in nearly every cottager's window—will bloom freely, sending up large numbers of its pretty trumpet-shaped flowers, of late years so vastly improved in size and variety of colours. The Mimulus moschatus, or common Musk, already mentioned, is also a free bloomer in situations amid miles of houses; as is also the large-flowered kind, M. moschatus Harrisoni. Within the last few months the Monkey Musk and large-flowered varieties have been recommended in Gardening for shaded positions, and there is, doubtless, nothing to excel these flowers as shade-loving subjects. Small plants of Mimulus planted in the borders at any time during the month of June in shaded, or partially shaded, situations will soon yield a good display of bloom, and, being of a spreading habit, very soon cover the ground with a network of leaves and flowers. In planting out they should, therefore, be put a foot apart, watering the beds well a few hours before planting, keeping moist and shaded with a flower-pot until established. They also do well put between shrubs where quick-growing flowers are required, and in such a situation a little old manure may, with advantage, be forked in previous to planting. Though hardy in many places this perennial cannot be wintered in the open ground in town air, but after flowering should be lifted with a good ball of soil, and grown in a 5-inch or 6-inch pot. The plants can thus be wintered in a greenhouse or warm window till the following spring, giving a little tepid water only, when necessary, during the season of rest. In sandy soil cuttings strike readily in August under a bell-glass. In April seed may be sown. Being very small great care should be exercised in sowing, and watering, if possible, avoided until germination commences. If covered with a mere dusting of very fine soil in pots previously well watered, the seed, if good, will soon germinate over slight bottom-heat; or the pots may be placed in a warm window, or the warmest part of the greenhouse. They require the usual thinning out and potting off when about 1½ inches high into 60-size pots; use fine soil, and place near the glass in a cold frame, giving air on fine days. A stock can thus be easily raised for summer bedding. This is also an excellent window plant.

The Aster, though not so free a bloomer as the above, is perhaps too good a flower for the town gardener to lose sight of. The plants offered by seedsmen just now under the name of Victoria and Truffaut's, if planted now in the open ground in richly-manured soil, will throw up a number of bright flowers, of many very lovely shades of colour. In dry weather the plants should be shaded for a day or two until established, and during the growing season will be much improved by manure watering at the roots twice or thrice a-week till the flower buds appear, at which time a few might be lifted with a good ball of soil, placing three in a 6-inch pot for the balcony or window-sill. Both of the flowers here dealt with require protection from slugs when young, or, indeed, at any time should these pests be found troublesome. I would add that a few dozen of these gay autumn flowers, if treated as advised, will lend a charm to the town garden at a season when so little remains to brighten it. Stamford Hill.

THE BOG GARDEN.

Even those acquainted with the beauty of the plants of our own bogs have, as a rule, but a feeble notion of the multitude of charming plants, natives of northern and temperate countries, whose home is in the open marsh or boggy wood. In our own country we have been so long encroaching upon the bogs and wastes that some of us come to regard them as exceptional tracts all over the world. But when one travels in new countries in northern climes, one soon learns what a vast extent of the world's surface was at one time covered with bogs. In North America day after day, even by the margins of the railroads, one sees the vivid blooms of the Cardinal Flower spring erect from the wet peaty hollows. Far under the shady woods stretch the black bog-pools, the ground between so shaky that you move a few steps with difficulty. One wonders how the trees exist with their roots in such a bath. And where the forest vegetation disappears, the American Pitcher plant (Sarracenia), Golden Club (Orontium), Water Arum (Calla palustris), and a host of other handsome and interesting bog-plants, cover the ground for hundreds of acres with perhaps an occasional slender bush of Laurel Magnolia (Magnolia glauca) among them. In some parts of Canada, where the painfully long and straight roads are often made through woody swamps, and where the few scattered and poor habitations offer little to cheer the traveller, if a lover of plants he will find conservatories of beauty in the ditches and pools of black water beside the road, fringed with the sweet-scented Button Bush, with a profusion of royal and other stately Ferns, and often filled with masses of pretty Sagittarias. Southwards and seawards the bog-flowers become tropical in size and brilliancy, as in the splendid kinds of herbaceous Hibiscus, while far north, and west, and south along the mountains, the beautiful Showy Mocassin flower (Cypripedium spectabile) grows the queen of the peat bog and queen of hardy orchids. Then in California, all along the Sierras, you see a number of most delicate little annual plants growing in small mountain bogs long after the plains have become quite parched, and annual vegetation quite disappeared from them.

One thing we may gather from our small experiences—that many plants commonly termed "Alpine," and found on high mountains, are true bog-plants. This must be clear to any one who has seen our pretty Bird's-eye Primrose in the wet mountain-side bogs of Westmoreland, or the Bavarian Gentian in the spongy soil by Alpine rivulets, or the Gentianella (Gentiana acaulis) in the snow ooze. We enjoy at our doors the plants of hottest tropical isles, but many wrongly think the rare bog plants, like the minute Alpine plants, cannot be grown well in gardens. Like the rock garden, the bog garden is rarely or never seen properly made and embellished with its most suitable ornaments. Indeed, bog gardens of any kind are rare, and only attempted by an individual here and there, who usually confines them to the accommodation of a few plants found in the neighbouring bogs. I will now proceed to point out how these may be made with a certainty of success. In some places naturally boggy spots may be found which may be readily converted into a home for some of the subjects to be named hereafter. But in most places

The Bog Garden—Showing Lady's Slippers, Wood Lilies (Trillium), Side Saddle Flowers (Sarracenias), Gentians, &c.

An artificial bog is the only possible one. It should be made only in a picturesque part of the grounds. It may be associated with a rock garden with good effect, or it may be in a moist hollow, or may touch upon the margins of a pond or lake. By the margins of streamlets, too, little bogs may be made with excellent taste. A tiny streamlet may be diverted from the main one to flow over the adjacent Grass—irrigation on a small scale. No better bog than this can be devised, and none so easily made. Another very good kind could be made at the outlet of a small spring. It was in such little bogs I found the Californian Pitcher plant in dry parts of California, were there were no real bogs. In some of these positions the ground will often be so moist that little trouble beyond digging out a hole to give a different soil to some favourite plant will be needed. Where the bog has to be made in ordinary ground, and with none of the above aids, a hollow must be dug to a depth of at least two feet, and filled in with any kind of peat or vegetable soil that may be obtainable. If no peat is at hand, turfy loam with plenty of leaf-mould, &c., must do for the general body of the soil; but as there are some plants for

which peat is indispensable, a small portion of the bog-bed should be composed entirely of that soil. The bed should be slightly below the surface of the ground, so that no rain or moisture may be lost to it. There should be no puddling of the bottom, and there must be a constant supply of water. This can be supplied by means of a pipe in most places—a pipe allowed to flow forth over some firmly-tufted plant that would prevent the water from tearing up the soil. As to the

Planting of the select artificial bog, all that is needed is to put as many of the undermentioned subjects in it as can be obtained, and to avoid planting in it any rapid-running Sedge or other plant. When this is done, all satisfaction with the bog is at an end. Numbers of Carexes and like plants grow so rapidly and densely that they soon exterminate all the beautiful bog-plants. If any roots of Sedges, &c., are brought in with the peat, every blade they send up should be cut off with the knife just below the surface; that is, if the weed cannot be pulled up, being near some precious subject one does not like to disturb. All who wish to grow the tall Sedges, and other coarse bog-plants, should do so by the pondside, or in one or more moist watery places set apart for the purpose. Given the necessary conditions as to soil and water, I can testify that the success of the bog garden will depend on the continuous care bestowed in preventing rapidly-growing or coarse plants from exterminating others, or from taking such a hold in the soil that it becomes impossible to grow any delicate or minute plant in it. Couch and all weeds should be exterminated when very young and small. The following are the bog and marsh plants most worthy of culture.

A SELECTION OF CHOICE BOG-PLANTS.

Anagallis tenella; Butomus umbellatus; Calla palustris; Caltha in var.; Campanula hederacea; Chrysobactron Hookeri; Coptis trifoliata; Cornus canadensis; Crinum capense; Cypripedium spectabile; Drosera in var.; Epipactis palustris; Galax aphylla; Gentiana Pneumonanthe; Helonias bullatus; Hydrocotyle bonariensis; Iris graminea, Monnieri, ochroleuca, sibirica; Leucojum æstivum, Hernandezii; Linnæa borealis; Lobelia syphilitica; Lycopodium in var.; Menyanthes trifoliata; Myosotis disitiflora, palustris; Nierembergia rivularis; Orchis latifolia and vars.; laxiflora, maculata; Orontium aquaticum; Pinguicula in var.; Primula Munroi, sikkimensis; Rhexia virginica; Sagittaria in var.; Sarracenia purpurea; Saxifraga Hirculus; Spigella marilandica; Swertia perennis; Tofieldia in var.; Tradescantia virginica; Trillium.

The above are the most suitable for the select bog-bed kept for the most beautiful, rare, and delicate plants; and among these, as has been stated, should be planted nothing which cannot be readily kept within bounds. To them lovers of British plants might like to add such native plants as Malaxis paludosa; but it is better, as a rule, to select the finest, no matter whence they come. Some may doubt if the American Pitcher plant, Sarracenia purpurea, would prove hardy in the open air in this country. It certainly is so, as one might expect from its high northern range in America. It will thrive in the wettest part of the bog garden. In America I usually observed the Pitchers half buried in the water and Sphagnum, the roots being in water. In British gardens it usually perishes from want of water. CONDUCTOR.

The rock garden at Paul's Broxbourne nurseries.—We paid a visit to these nurseries the other day, and were charmed with the rock garden and the brilliant way in which many of the plants were flowering. It is a great credit to Mr. Paul to have made so good a home for the dwarfer kinds of hardy flowers, and he must have sacrificed a good deal of time and means to do it. Many rare Alpines do very well on it. We would only suggest bolder grouping, carpets and colonies of the good things, and some simple and effective, but not showy, label, written horizontally. Notwithstanding the many people who have invented labels, the very essential principles of labelling that ought to guide in the matter are ignored for the most part. Most labels are written so that no one can see them without bending the back and twisting the neck. We look to the rock garden at Broxbourne as likely to form one of the most charming sights in the great hardy plant nurseries about London, and our readers who are near should see it.

HOW TO MAKE A TENNIS LAWN.

I VENTURE to offer the following practical hints for the guidance of those about to make a lawn who have not the assistance of skilled labour: Never trust to the eye alone as to levels or squares or dimensions; rely only upon the spirit level, the square and the measure. If you have no practical experience in the use of the level and the square, send for a carpenter or skilled man to start you in handling them, and do not imagine that you can do so by instinct without paying heavily for your experience. Remember that to lay down your lawn level and even and true at first will cost little in comparison with the expense and vexation of correcting errors after the turf is laid down.

First procure the necessary instruments, including a spirit level, a 6 foot wooden square, a tape or chain measure, two strong garden lines, a wooden 8-foot straight-edge, from forty to sixty wooden pegs cut smooth and true upon the top, and varying in length, according to whether the land is more or less out of level; three wooden levelling crosses, though not necessary, are very desirable for testing and correcting the level over a long line; turf cutters and ordinary tools.

Secondly, select your spot, free from the neighbourhood of shrubs and overhanging trees, where you can make a dead level of somewhere about 100 feet long by 50 feet wide (less, of course, will do). In order to determine your exact spot, begin by running and fixing your garden line for about 110 feet or 112 feet lengthwise down the middle of the supposed lawn, and then measure your 100 feet on this line and mark it with a peg at each end, leaving the garden line still fixed and tight; then at each end of the middle line of 100 feet, measure off with a line and square 25 feet on each side of the middle line, and at right angles to it, and mark each corner thus arrived at with a peg. You can now with the spirit-level and straight-edge and a few more pegs—or, still better with the levelling crosses—take the levels of your ground and judge of the fitness of the spot.

Thirdly, having selected your spot, lift the turf by the aid of the line and turf cutters in strips of a foot wide, 3 feet long, and 2 inches thick; roll these up and remove them to a distance quite clear of your ground and stack them.

Fourthly, the treatment of the ground at this stage will vary according to its nature, the object being to obtain a solid, level, even surface, fit for the growth of fine grasses and resting upon a uniform foundation. If drainage is required, the drains should now be made. The next thing is to level and make the surface even and ready for turfing; this is the most important and difficult part of the whole operation. You should proceed thus: collect and place on one side sufficient fine mould ready for use for dressing the surface and laying the turf; next, in order to obtain your levels, run out once more and fix your garden line for 112 feet along an arbitrary middle line of your lawn, then measure 100 feet on this line and mark it with a peg at each end; then place pegs along this line about 6 or 7 feet apart, and reduce all the pegs to a level by means of the spirit level and straight-edge, and, when level, re-measure the 100 feet at the level line, and, if necessary, refix the two end pegs; you have now a level line 100 feet long, the garden line still remaining where it was. Next measure 25 feet each way at right angles to the middle line, as before, at each end of the true 100 feet; peg the corners out, and by the use of a line run pegs all along the sides and ends, and then level them as before, and when you have obtained the true end levels, you can re-adjust the situation of the corner pegs so as to correct the distances of 25 feet to the level line. You ought to have now a right-angled parallelogram, measuring at your level line 100 feet long and 50 feet wide.

Fifthly, you now work all the ground to the level of the pegs, placing all rough and inferior stuff below and the best earth above; when fairly levelled in this way, the whole surface should be well rammed and trampled, and the levels again adjusted. It should then be well rolled with a heavy roller if dry enough, and all inequalities reduced. It is now ready for turfing, and the fine mould should be placed in heaps on the ground, and the rolls of turf should also be laid on the ground in heaps. The mould is now lightly laid over the surface by the hand, and the turf laid on with great care, the straight-edge and spirit-level being constantly applied, to see that the surface of the turf is level and even. In this operation, the strips of turf should be fitted close together, using a knife to make the edges true, and filling in with fine mould. The turves should also be flattened with a large, flat, wooden stamper, with a handle fixed at an angle of forty-five degrees. At this stage it is more important than at any other to constantly test the truth and level of the surface, because errors allowed to pass now can be corrected only with extreme difficulty afterwards.

Sixthly, the laying of the lawn being now complete, if the turf is poor or coarse, it will be best to sprinkle over it half a bushel of fine Grass seeds and a little stable manure, the sower traversing the lawn upon planks. On no account should clover seed be used (clover is very unsuitable for a tennis lawn), nor should anyone be allowed to set foot upon the newly-laid turf, still less should a roller be placed upon it, until it has had ample time to consolidate; a roller causes the edges of newly-laid turf to curl up, and ruins the lawn. The worms are not at this stage enemies to the new lawn; they assist in consolidating and unifying the turf. The proper time to sow the seed is spring or autumn.—*Field.*

Mocassin flower (Cypripedium spectabile).—Mr. Woodall brings us a specimen of this, which is unusual as it has three flowers on one stem—no doubt owing to good cultivation. The plant is growing in the open air in his garden at Scarborough. It is the most showy of the hardy North American Orchids, and thrives admirably in rich boggy, peaty, or leafy soil.

The double white Pinks.—Besides the old double white of cottage gardens, one of the sweetest and most welcome of summer flowers, and probably the only white Pink of former years, we have now some desirable varieties. There is the large double white, richly jagged and fringed, a fine flower 2¼ inches to 2½ inches across, but less robust of constitution, wearing out sooner than the smaller one. Mrs. Sinkins is a grand white clove Pink, handsome and heavily-scented, all the more beautiful for the delicately-shaded, sulphur-coloured space at the base of the petals, which ends abruptly where the colour, shading upwards, comes to its fullest development. Another variety, less known but desirable, is what may be described as a small white Carnation Pink. It has a stiff, carnation-like habit of stalk, clove-scented, semi-double flowers of great substance, rather smaller as to the individual flowers than the old white, but spreading into wide, well-furnished tufts in the same manner. Besides these border kinds there is the double Dianthus fragrans, a choice rockery plant, with remarkably neat, full-double flowers, and an extremely powerful, Jasmine-like fragrance—without doubt the most strongly-scented of all the tribe.—G. J.

REPLIES.

13783.—**Difference between Pansies and Violas.**—True Violas are hardier plants, and flower more freely than Pansies. They have been selected during the last quarter of a century from Viola cornuta. The Pansies have been selected during a period of sixty years or more from V. tricolor. They are now divided into two sections; one of them comprises the show varieties—white, yellow grounds, and selfs; the other Belgians or fancies.—J. D. E.

13784.—**Hyacinths from seed.**—Doubtless the seed would vegetate freely enough if sown on light and fine soil out-of-doors when they are ripe. I have had no experience with them. Scarcely anybody would care to cultivate Hyacinths from seed in this country, except for amusement, or as a scientific experiment.—J. DOUGLAS.

13569.—**Lily of the Valley** prefers light or medium to heavy loam, moderately rich and deep soil, a partially shaded to an open, sunny position. It is found naturally growing on the outskirts of woods.—J. D. E.

13789.—**Bright and large Pansies.**—Write to any grower of Pansies who advertises in GARDENING for a collection of named varieties of the fancy or Belgian section.—J. D. E.

13574.—**Slimy Moss on fish-pond.**—The only way is to get the fish out and kill the green slime with quicklime. It will make the water quite clear, and the fish may be replaced in a few days. Lime would kill them immediately if they were not removed.—J. D. E.

13508.—**Sweet Sultan.**—They flower very freely, producing white, purple, and yellow flowers. The foliage is rather broader than, but has some resemblance to, that of the ordinary Cornflower. Planted out in May, they would flower in the end of summer and continue to produce flowers for many weeks. The plants branch out to a large size in good soil.—J. D. E.

13794.—**Double Rockets.**—In answering the query put on behalf of several readers, "A. Y. D., Aberdeen," expresses the opinion that readers who applied to any nursery in Scotland or England for a catalogue of herbaceous and alpine plants would there find the Double Rockets quoted.

WATERFALL FRINGED WITH YUCCAS AND TRAILING PLANTS.

As water is often introduced in connection with rockwork, and high cascades may be frequently attempted, and as the supply often flows from a woody knoll, it is well to take advantage of this position for the arrangement of Yuccas, large Grasses, and herbaceous plants of noble port, that cannot well be arranged among the dwarf inhabitants of the rock garden proper. The accompanying cut shows the effect of such an arrangement. Among the many plants suited for this position some of the Clematises are most magnificent, and planted high on the rocks, in a deep bed or vein of rich light soil, they will fall over the faces of the sunny crags, robing them as with imperial purple.

Iris pallida.—This is certainly one of the finest of the bearded section of Iris, and on light, well-drained soils thrive as well as the well-known German kinds. The flowers are of a delicate pale lavender, inclining to blue, with a conspicuous white beard. They are a third larger than those of the German Iris, and both standards and falls are more circular in outline. It is altogether a very handsome and ornamental plant. The flower stem is more zigzag than that of the German Iris, and both taller and stouter; each stem carries about ten flowers, only one or two being expanded at once. The leaves are broader, shorter, and slightly more glaucous than those of the German Iris, so that the flower stems rise conspicuously above the leaves. Plants can be had from the principal hardy plant nurseries. —J. D.

Pæonies.—Pæonies are now in splendid condition in Messrs. Paul's nursery, at Broxbourne. Some people who feared that the plants would not attain the same perfection in our country as in France would doubt no more if they saw these. The fragrance and size and beauty of the flowers are marvellous. Mr. Paul tells us that this great size is, to some extent, gained by thinning the flower buds, and generally leaving only one or two on a stem. The practice is worth carrying out, if only for variety's sake. Those of our readers who have several plants might well try this on one or two. Happily we do not all care for very large flowers, but these are so fine in form, with pretty guard petals, mostly of a colour different from that of the centre, that they are charming at any size.

Beautiful Pansies.—At all times the Pansy has shown so much beauty, variety, and richness of colour that it seems almost impossible that it should exhibit any new and distinct charms in these respects. And yet there actually seem to be some new races that surpass as regards charm of colour and form the older kinds. We particularly refer to a rich dark race, with fringed petals exquisite in form. The beautiful wallflower-coloured forms are very fine in colour, and some delicate mauves and edged forms are also remarkable. We have seen some very beautiful ones sent by Mr. Poë, of Riverston, in Ireland—kinds, we believe, of German origin.

Are there any scarlet Stocks?—Has any one ever seen a scarlet Stock? It has often struck me that there is great inaccuracy in describing the colour of any Stock as scarlet, as is so often done. In to-day's number of GARDENING, "J. C. C.," in his article on East Lothian Stocks (page 192), which seems to me a very instructive one, falls into this error, saying "there are three distinct colours—viz., white, purple, and scarlet—the last being very bright." Surely for scarlet we should have crimson (or something of that sort), for there is no tinge of yellow in any Stocks, I think. If so, then there are four colours.—BORDERER. *** *If we add our own personal evidence to the above, we must say that we have never seen a scarlet Stock.*

The New Zealand Flax.—There was a woodcut of the Phormium tenax in GARDENING ILLUSTRATED a short time since, and I send a photograph of a plant in my garden which fully corroborates the account there given. The length of the longest leaf is rather over 6 feet 7 inches; it was planted in its present position, exposed to every wind, except from north to east, not quite seven years since, being then a small plant with a few leaves. The height is 235 feet above sea; soil, common light garden soil. Neither this plant nor the Pæonia Moutan has the slightest protection in winter. I took the photo on May 15th last.—G. W. O., *Teignmouth.* *** *The photograph shows a beautiful border with a handsome Pæony beside the New Zealand Flax. The photo is not taken in a pro er light, or it would have been a very appropriate one for engraving.*—ED.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, July 6th to July 11th.

Sowing Bath Cos Lettuce, Digswell Prize, and dwarf green Curled Endive and Spinach; sowing Cucumbers for late crops; potting Primulas and herbaceous Calceolarias, also a batch of Roses in good strong loam; planting out a pit with Tender and True Cucumbers; training out and pegging down bedding plants; staking and tying in plants on borders, and clearing away decayed leaves and flowers; taking the nets off Strawberries and putting them on Currants; weeding among Leeks and giving them a little earthing up; sowing Nonpareil Peas, Cabbages, and Early

Waterfall fringed with Yuccas, Dwarf Pines, Climbing and Trailing Plants.

Horn Carrots; putting in Pelargonium cuttings; clipping shrubs, and giving Peach trees in pots a top-dressing of manure; hoeing among fruit bushes. Putting Epacrises in cold pits; digging up a large piece of Kidney Potatoes and placing them out thinly in the sun to ripen well for seed; watering Celery and Cardoons; also Lettuce and Endive beds; drawing drills for Spinach and well watering them previous to sowing.

Nailing and tying in all the leading shoots of fruit trees on walls and pinching back all the breast wood; sowing Six-week Turnips, Long-podded Negro, and Sir Joseph Paxton French Beans; also a late crop of Broad Beans; putting in cuttings of Crassula coccinea; watering and mulching Peach trees, and training conservatory creepers. Sowing Ne Plus Ultra Peas; planting Ten-week Stocks; salting Asparagus and Carrot beds; nailing up Tomatoes and outdoor Figs and Vines, and watering Scarlet Runners with guano water; sowing Sweet Basil and Chervil; taking up Shallots and Potato Onions, and laying them out in the sun to ripen; gathering Camomile flowers, also Sweet Basil, Horehound, and other herbs for drying; weeding and cleaning all Box edgings; nailing and tying in Roses on walls, and picking off all dead flowers; watering all newly-planted Broccoli, Cauliflowers, and Tomatoes; sowing a box of Intermediate Stocks; clearing land of early Peas, and digging it for late Cauliflowers.

Leaving night air on vineries and Peach houses in which fruit is ripening; sowing Lettuces and Endive; potting up Strawberry runners for forcing; tying up Dahlias and thinning them out where growing too thickly; earthing up Celery, when the soil is dry and in workable condition; layering Carnations; cutting up turf and putting it in water to soak for layering Strawberries on; sowing Mignonette in pots for autumn flowering, also sowing Prickly Spinach and Radishes; planting Cauliflowers for late supply, digging land for late French Beans, and pricking out Wallflowers; clipping hedges and cutting Laurels; sowing Turnips, having previously watered the drills, into which a little guano has been placed; planting Neapolitan Cabbage Lettuce, Sweet Basil, and Marjoram.

Work in the Town Garden.

ALL KINDS OF BEDDING PLANTS should now be growing away fast, and if the ground contains sufficient nutriment, and a proper supply of moisture is afforded, they cannot fail to fill up the beds, and make a goodly show by about the present time. Fill up any gaps that may occur with reserve plants, of which a sufficient number should have been placed in 48-sized pots when the main portion was planted out, or a little before, so that they might keep pace with the others, and be sufficiently large not to mar the equality of the rows or beds. Keep any over-luxuriant shoots well pinched back, and every plant in its line and place; also pick off every dead leaf and bloom as soon as seen, so as to preserve a neat appearance. If the weather sets in very dry it is a good plan to give the beds a good soaking, and then mulch with rotten manure, decayed hops, or tan, or Cocoa-nut fibre refuse. The appearance of the last named is very pleasing to many people, and it is certainly very suitable for the purpose, though, unlike the other materials, it must be carefully removed in autumn instead of being dug into the ground, it having a by no means beneficial effect, especially upon light soils. Keep everything requiring support, as Dahlias, Hollyhocks, &c., carefully staked and tied, and place strings or twiggy Pea-sticks for Convolvulus, Canary Creeper, and other climbers, to run upon.

Where there is sufficient space, a piece, if only a small one, of well kept turf greatly enhances the general appearance of a garden. This should be regularly, but not too closely, cut with either a scythe or a machine, and in hot weather it is as well to allow the cuttings, if not too heavy, to remain on the turf as scattered by the machine. If the Grass gets at all scorched or burnt up by drought and heat, water it two or three times with a solution of nitrate of soda, from half an ounce to one ounce to the gallon of water (it is better not to use it too strong at first); this will speedily produce a fresh green appearance again. All

GREENHOUSE PLANTS should now have abundance of air by night as well as by day, with shade from hot sun, and plenty of water morning and evening in hot weather. Gloxinias coming on for bloom should be kept close and moist; they do best in a gentle bottom-heat, or on a shelf on a close house. Never let the sun act more than very moderately on these.—B. C. R.

Glasshouses.

As Hydrangeas pass out of flower they should be placed in sunny positions outside, and should receive treatment similar to that given to Pelargoniums, except that a more liberal supply of water at the roots will be necessary. All the cuttings that can be got from Hydrangeas should now be inserted singly in 2½-inch pots placed in a brisk bottom-heat, and removed to cooler quarters the moment they are rooted. These, if grown on in cool structures close to the glass, and kept to one stem, will develop fine heads of bloom early next season.

At this time the successional batches of tuberous Begonias, Coleus, Balsams, &c., should be nearly ready to replace those that are past their best. The placing out-of-doors of the tenderer kinds of greenhouse plants may now be proceeded with, but really valuable plants will be better left under glass for some time. Keep all newly-exposed plants well syringed and dewed over.

PERPETUAL FLOWERING CARNATIONS.—Plants that have been forced early should have their old flowering shoots well shortened back, so as to encourage the young shoots, which in free-growing varieties are always making their appearance; they should then be turned out of the pots without disturbing the balls of roots more than is unavoidable in removing the drainage, and be planted out in prepared soil, not too light, but with sand enough in it to admit of their being taken up and potted in the autumn without much breakage of their roots; they must have an open situation fully exposed to the sun, and not be allowed to suffer from want of water. If well managed they will produce many more flowers than younger plants, and will not be so leggy or unsightly as where the old stems are allowed to grow up without cutting back. The later flowering stock should be assisted with manure water once a week. Young plants struck from cuttings in the winter or spring should be moved as soon as necessary out of the small pots they occupy to others a couple of sizes larger, using good strong new loam, to which has been added a little leaf-

mould with some sand; the soil, however, must not be too light.

DOUBLE PRIMULAS.—The advantages which these possess over the single kinds where flowers for bouquets are much in demand are their greater duration when so used and their continuous habit of blooming. Every attention should now be given them in the way of pot room and plenty of light, with no more shade than is required to break the sun's rays and prevent the foliage from assuming a sickly hue. If seeds of the single varieties were sown at intervals of about two months, there will be a good prospect of a continuous succession from autumn up to spring, and to have the stock in such order as will enable it to produce a full crop of flowers there must be no want of attention, especially in giving more root room as required. Plants of the last sowing should be encouraged to make growth, so as to admit of their being got into their blooming pots before the season is too far advanced. On no account allow the stock of either double or single kinds to stand too close together from the first, for where this occurs the leaf stalks get drawn out weakly. The best place for Primulas in summer is in ordinary frames facing northwards at the north side of a low north wall with their heads close up to the glass. The lights should be well tilted up back and front in the daytime, and a piece of garden netting should be put on the glass in bright weather in the middle of the day.

During this month climbers grow very luxuriantly, and frequent attention is necessary to keep them in order. Plants of Stephanotis that have flowered should receive a thorough cleansing from insects and dust. Young stock of Gardenias should be growing freely, and may be gradually inured to cooler treatment under lighter shadings. This change will induce them to form flower-buds, which will get well advanced by the autumn, when the plants will be in proper condition for supplying cut blooms during the early winter months.

Poinsettias now fairly started must be placed in positions close to the glass in warm frames, in order to keep them dwarf and stocky. Every gleam of sunshine must be allowed to fall on them, combined with very free ventilation. See that they do not suffer from want of water at the roots from this time till their flowering is over, otherwise they will cast their bottom leaves, and very much of their beauty will be lost. Epiphyllums will now enjoy a hot, sunny position, but they must not be allowed to suffer from lack of water to the roots, otherwise the growths shrivel, and it will take some time to restore them to plumpness.

Flower Garden.

BEDDING PLANTS.—The flowers of Echeverias and other groundwork plants associated with them, such as Sedums and Saxifrages, should now be picked off, but the small flowers of Mesembryanthemum cordifolium variegatum harmonise so well with succulents that they should be left. It will, however, be necessary to occasionally pick off the seed pods in order to keep the plants in free growth. The most pleasing bed we have at the present time is an arrangement of large succulents, consisting of Yuccas, Agaves, and large growing Echeverias and Sempervivums, the whole being in a setting of the large mauve-flowered Mesembryanthemum conspicuum, and the only attention it has ever had or needed since planting has been the keeping of the Mesembryanthemum pegged under the taller plants. Keep the undergrowths of sub-tropical plants neatly pegged down, and in cases in which such undergrowths have been deemed unnecessary the beds should be kept mulched with Cocoa-fibre or leaf-soil. For the present the flowers should be kept picked off. Cannas, Castor Oils, and the like, and all that need tying or staking, should receive that attention.

CLEARING OUT WEEDS.—It is almost impossible to keep borders free from weeds during wet weather. When they are much overrun the best plan will be to lightly dig them over, taking care not to injure the roots of the trees, shrubs, or herbaceous plants. If this cannot be done the weeds must be hoed up and raked off or hand-picked.

Overgrown shrubs may be pruned back to within proper limits, and all herbaceous plants requiring it should have supports. Annuals must be thinned out, and such things as Asters, Stocks, Helichrysums, &c., still in store should be planted out in favourable weather without delay. Seeds of perennials may also be freely sown for next spring bedding or for next year's stock.

Roses need washing for the destruction of blight. Bad flowers should be picked off once a week, and the growths of any that have done flowering should be shortened. Daisies, Pansies, Primroses, Polyanthuses, Violas, Pinks, and other spring flowers may be propagated by division, cuttings, or seeds. They all do best in partial shade; a border having a north or east aspect is in every way suitable.

Fruit.

PEACH HOUSE.—When all the fruit has been taken from the early house, go over the trees and remove the shoots which have performed their office and can now be spared with advantage to the young growths intended for next year's fruiting. Tie in and regulate the latter, allowing plenty of room for free development of foliage and the free admission of light and air. Syringe regularly with pure water where the foliage is clean, and add soft soap on dull evenings to keep it clear of spider. Keep the inside borders regularly supplied with water, and renovate the mulching where the trees show signs of weakness or exhaustion from heavy cropping, but carefully guard against forcing them into a vigorous growth when they should be going to rest. The ventilators may now be left open by night and day, and when the buds are well made up, the roof lights, if possible, may be taken off, painted, and stored away ready for use early in the autumn. If time is an object, trees in houses in which the fruit is approaching its full size may now be subjected to a higher temperature than would have been safe before the fruit commenced its last swelling, but it must be borne in mind that nothing in the way of quality is gained by it, increased size, colour, and flavour being the true tests of merit. I prefer a temperature ranging from 60 degs. at night to 75 degs. by day, with plenty of air and full exposure by drawing the lights off when the weather is very fine after the end of June. Where good soft water can be obtained the trees may be syringed every morning until the fruit has attained its full size and shows signs of changing for ripening, but on no account should the afternoon syringing be performed when there is danger of the foliage remaining wet after nightfall.

See that the wood is thinly and evenly laid in in late houses and wall-cases, particularly where no heating apparatus has been provided for ripening it up in the autumn; pinch the points out of gross shoots where they are likely to rob the fruit or weaker parts of the trees, and elevate all that can be raised to the influence of sun and light as the work proceeds. Syringe well twice a-day, leave the ventilators constantly open, and mulch the roots with some non-conducting material to counteract the drying influence of constant currents of air; but guard against the use of over rich manure.

HARDY FRUIT.—Pears are now sufficiently advanced to have all the breast-wood cut away at about, say, four joints from the main stem. Currant and Gooseberry bushes having made much growth, thinning it out will be a matter of necessity. Summer pruning of these has many advantages, not the least being that the trees can be trimmed into any shape desired, and the fruit at the same time be exposed to the influences of the atmosphere. Currants and Cherries changing colour will require protection from birds; any that are to be reserved for a considerable time should be cleared of aphides and be closely covered up with hexagon netting. Ripe Strawberries often suffer more from mice and slugs than from birds, and it will be desirable to at once adopt precautionary measures against these; trap the former with the common figure of 4 trap, and the latter by means of baits of bran. Raspberry stools, if not already thinned, should at once be reduced to four shoots each, or if thickly together three will be ample. Mulch the ground about them with good rotten manure.

Vegetables.

Prick out Broccoli, Savoys, and winter greens. If ground for them is not likely to be early at liberty I always sow as late as possible, so that the plants do not get drawn while they stand in the seed beds. Early Potatoes now occupy the ground where I intend to plant my spring Broccoli; therefore, with me, pricking out the plants will be a necessity, otherwise I prefer planting from the seed bed. All Celery for late spring use should now be pricked out. Keep early Celery in the trenches growing by giving it daily a slight damping. It should be kept constantly growing. Shallots and Garlic, in many instances, will be ready to be taken up; they should not be allowed to remain after the tops have dried off, but pulled up and left on the ground a day or two to dry, and afterwards tied up in convenient bundles for use, and hung up in a shed or other airy, cool, dry room. The ground where they have been grown, if well dressed when they were planted, will not now require digging, but simply levelling and weeding, drawing drills afterwards for the sowing of Endive or black-seeded Bath Cos Lettuce for early winter use.

No two kinds of Cabbages, Brussels Sprouts, or Cauliflowers should ever be seeded together if the stock be desired pure, for bees are wonderful hybridists, and are not particular as to how or on what they operate. Keep the hoe now going constantly among growing crops generally.

Tomatoes are now growing freely, and will require to have their growths trained or tied in; if there be a tendency to strong growth, repress it by severe pinching of the lateral growth. If the fruit set too quickly, thin it out and remove all the large leaves that keep the light off it. As a rule, high feeding is not necessary for Tomatoes; they may be assisted by an occasional watering with weak liquid manure if they are bearing freely.

G.

Double White Rockets.—A hint to advertisers.—During the last few weeks we have received so many letters from readers who wish to know where they can procure the double Rockets that it would be well for advertisers who have good stocks of them to let the public know it. We can hardly believe that plants so good cannot be obtained, and have no doubt that at the proper season nurserymen who grow hardy plants will be able to supply them.

13795.—**Amateur's greenhouse.**—If your fireplace is near to the woodwork, which it ought to be to save waste of heat, you ought to have a brick flue leading from the fire into the house, which should extend quite 4 feet from the fire. To prevent risk of the woodwork catching fire, why not have a 4-foot space built with bricks and mortar, through which the flue could pass? If you must use earthen pipes, keep them 12 inches clear from the woodwork. Are you aware that earthen pipes are liable to crack with a strong fire, and to let out injurious fumes?—J. C. C.

— If "An Amateur" digs a trench a foot wide by 6 inches deep, and lays the pipes in it, so that they will be a foot away from the boards of his greenhouse, he will find his house perfectly safe from fire. If he wishes to have a small hotbed for striking cuttings, &c., he can put slates across the trench over the pipes.—E. C. W., *Tottenham.*

13788.—**Destroying slugs.**—The only way of diminishing the ravages of slugs and snails is to be constantly hunting for and trapping them. Where they have been allowed to increase for some years, especially where thrushes and blackbirds are scarce, they breed to such an enormous extent as to render the work of exterminating them of some difficulty. If the garden is not a large one, a good plan is to go out about nine o'clock at night after a rainy day with a lantern, as then they are travelling about and can be easily collected. I have gathered up half a gallon in this way in the course of half an hour. Bran forms an excellent bait, and if laid about in small heaps the vermin will come to it, but the heaps must be visited early in the morning before they return to their hiding-places.—J. C. B.

— At eventide, when they come out to feed, strew soot over the ground before they crawl on to the plants. After dark take a lamp into the garden, and pick them off the plants by hand. Every owner of a garden has to deal with the plague of slugs. We hunt and kill them almost every day in the year from November to October; it is the price one has to pay for the luxury of possessing perfect flowers.—J. D. E.

13564.—**Making firm footpath.**—The stones and engine ash mixed together will make a bad path. Sift out the stones place them in the bottom and the ashes on the top, beat it firm, and a good path will result. It ought to be slightly higher in the centre.—J. D. E.

HOUSE & WINDOW GARDENING.

CACTI AS WINDOW PLANTS.

We have been greatly pleased recently at seeing certain Cactus in good condition in windows, among others the Rat's-tail Cactus (C. flagelliformis) and the large Epiphyllum. From what we see in many parts of the country, and especially in the sunny parts, we believe many Cacti could be better grown in windows than in greenhouses. We have seen hundreds of flowers on the Rat's-tail Cactus, and once, walking through Berkshire, we were astonished at the beauty of the large summer-flowering Epiphyllum in the sunny windows of cottages. The Toothpick Cactus, here engraved, has yellow flowers 1½ inches in width. They do not require much heat, and if not kept well away from fire-heated substances during winter become overrun with red spider, and die; otherwise they are easily grown. They flower from July to November in the open air, as alpines do, and, in fact, do very well if treated as alpines, except that they must be kept dry during winter. Offsets will flower the second season if treated liberally.

WINDOW GARDENING IN TOWN AND COUNTRY.

It is not everyone who has a greenhouse or even a garden, but everyone who occupies a dwelling has that amount of convenience which will allow him to grow plants of some kind to a considerable degree of perfection. There is such variety among cultivated plants, they differ so greatly in their nature, and, consequently, requirements, that one is almost justified in asserting that there is no position where some kind of plant cannot be made to thrive. Some plants love shade, others revel in the fiercest rays of a summer sun; and this is true not only of plants remarkable for beauty of foliage, but also of such as delight by the brightness of their flowers. Let no one despair of attaining success in window gardening because of the supposed unfavourable aspect of the windows, for whether they face north, south, east or west, something can be found which will be quite at home in them. Where no flowering plant can be made to thrive a Fern will luxuriate, rejoicing in the very conditions so inimical to plants generally, and for the most arid and sunburnt place we can also find some suitable subject. It is certain, however, that those who have the greatest amount of light at command stand the best chance of succeeding, and while some, by reason of being exceptionally favoured in this respect, will experience comparatively little trouble in growing and flowering their plants well, others will need to take much pains to obtain a like result. But the gratification experienced is generally in proportion to the labour and trouble bestowed, and the greater the difficulties to be encountered the richer will be the reward of ultimate success.

Soils.—The very first thing that we have to think of in connection with the culture of plants is the soil, which to them is what food is to the human being, and on its nature and preparation must largely depend their health and vigour. Every professional gardener has his soil yard, from which he draws the materials necessary to the wants of the plants he grows, either using the different kinds alone or in various combinations such as he knows or judges best fitted to their respective natures. Without the ability to do this his operations would come to a standstill, and the would-be window gardener must follow his professional brother in this respect, for without suitable compost there is not the faintest prospect of success. The most indispensable soils are loam and leaf-mould, for with these the great majority of plants suitable for window culture can be grown. Loam, indeed, forms the basis of composts best calculated to give enduring life and vigour to most soft-wooded flowering plants, such as Geraniums, Fuchsias, Lobelias, Petunias, Paris Daisies, &c., leaf-soil being added to it in more or less quantity, according to the natural strength of root action which they variously possess. Loam is the top-spit of an old pasture laid up until the Grass decays, when, if broken in lumps, it is seen to be largely composed of the fibrous roots of the herbage, and is, therefore, possessed of great life-sustaining properties; the abundance of fibre causes it to remain in a sufficiently porous condition for roots to travel freely in, even when used for such things as require to be firmly potted. Leaf-mould, which is leaves in a more or less decayed state, is indispensable for raising seeds; it stimulates root action, and renders the compost lighter and more open, so that roots of a tender description can more easily work among it. As a rule these two soils, with some silver sand, are all that the window gardener requires to begin with, for such things as require peat are of more difficult culture. No harm can be done, however, by keeping a little of this material at hand, as a little of it is useful sometimes in seed sowing, and does good in the compost used for tender-rooted plants by keeping it sweet and open.

Those who live in towns will experience no great difficulty in procuring these potting materials, as they can always be obtained from the florists. In country places there are generally means of obtaining the small quantities that a window gardener needs without purchase, for, although the top-spit of a pasture may not be had, a good substitute for it may be found in old hedgerows or roadside parings, or, if you have a friend engaged in agricultural pursuits, you will find in the clearings out of the meadow "gripes" one of the best composts it is possible to have, as it is composed mainly of decayed herbage and roots. We have used it, and found it of much value for all kinds of plants which require

The Toothpick Cactus (Mammillaria sulcolanata).

a loamy soil, as it is light and full of nutritive properties. The parings from the roadside which are taken off in winter are also excellent, being rich in manurial matter washed from the roadside. Those who live near heathy commons can always get as much peat as they need, and a few leaves collected now and then, and stored away where they can decay, will give the leaf-soil required. A friend of mine who grew plants remarkably well in his dwelling, and who had, in addition, a small frame, never went for a walk without taking a small, coarse canvas bag with him, so that when he came across a choice morsel he could bring it home. In this way he always had the means of preparing the compost best fitted for any kind of plant he wished to grow. With respect to manure, I think that window gardeners in a general way do best to leave dung out of the question. There are so many ways of feeding plants in pots by means of liquid and concentrated manures, that their vigour can be easily and safely maintained without using dung, which, even in the hands of experienced gardeners, is apt to do more harm than good. If you do employ any, however, take care that it is quite two years old, and has been turned over a few times to sweeten.

Byfleet.

PLANTS FOR SHADY WINDOWS.

Having a north window from which the outlook was not very pleasant, I determined to fill it with plants. For this purpose I selected such kinds as I thought most likely to do well in almost complete shade. These were Aspidistra variegata, Curculigo recurvata, Dracæna indivisa, and Seaforthia elegans, of the Palm family, with an Ivy to clamber up and about the window frame. I purposely omitted all flowering plants. My selection has been very satisfactory during the winter. The plants have grown well, and though there was no bright colour to relieve the green of the foliage, the effect was cheerful and suggestive of summer.

Aspidistra variegata has leaves like the Lily of the Valley in shape, only a great deal larger. They are striped with light and dark green, and occasionally with clear white. Each leaf is thrown up from the roots. The leaves are very thick and firm in texture, and seem to be everlasting. They are very easily kept clean by the use of a cloth or a sponge. There is little danger of doing any damage to them by handling them. This is my second experience with this plant in shade, and I am convinced that it is one of the best ones we have for north windows, or any other location deprived of sunshine. On account of the thick texture of the leaves it is able to withstand the dry air and dust of our living rooms better than almost any other plant I am acquainted with. The leaves of

Curculigo recurvata are deeply ribbed or plaited their whole length, with a pure white stripe in the centre. These leaves have a graceful curve, and as they are quite freely produced, a well-grown plant is very ornamental. Like the Aspidistra, it is firm in texture and little affected by heat or dust.

The Seaforthia made a fine centre for the group, its long, much-divided leaves curving outward gracefully over the others. This is one of the best Palms for house culture. It is not only more attractive in its habit of growth than Latania borbonica, which is more frequently seen, but it is more effective when young, because of the length of its leaves with their fine curve. It is entirely devoid of the stiff appearance peculiar to the other variety. A good show of greenery is much more satisfactory than a window full of sickly plants, from which we vainly try to coax flowers under circumstances which are unfavourable to such results. I would confine my selection of plants for shady windows entirely to such kinds as have good foliage for whose development sunshine is not at all necessary. If this is done, and no flowers are expected, there will be no disappointment. Lycopodium planted in each pot grew vigorously, and in a short time the soil was covered with its pretty green. A frequent sprinkling kept it fresh and healthy. —*American Garden.*

13786. — **Value of garden land.**—"Graham" would probably have no difficulty in obtaining land at almost his own price, but whether it would be a financial success for market gardens is quite another matter. That land in some parts of Berkshire is at a discount is tolerably clear from what has transpired recently with regard to the Lambourne Farm, the freehold of 400 acres being disposed of for £4,000. From my knowledge of the climate and soil of Berks, say at seventy miles from London on the Great Western main line, I should strongly advise "Graham" not to attempt market gardening there. To be successful at such a distance from market it would be necessary to raise early crops, and this could not be well done in the district indicated.—D. J. Y.

13513.—**Plants for virgin soil.**—If it is intended to crop the ground with vegetables, Celery may be planted at once in trenches. There is yet time to sow early Peas for a late crop. Cabbages of the small kind, termed London Coleworts, may be planted; also late Cauliflowers. Sow Endive if it is required. About the end of July sow Onion seeds to produce plants to stand over the winter. Plant out Leeks. It is also a good time to sow Turnip seeds for winter produce. Broccoli ought to be planted out for winter and spring use. Small salading may be sown. If flowers are wanted all kinds of bedding plants may be put out; also Asters, Stocks, &c. Seedling Carnations are now being planted out. Many kinds of herbaceous plants may be put out, although this is not exactly the best time to plant them. It is not a good time to sow flower seeds to bloom this season, but any florist can supply small seedlings at a cheap rate.—J. D. E.

THE VILLA GARDEN.

(Continued from page 218.)

SALAD PLANTS.

The Lettuce.

A POORLY-GROWN Lettuce, no matter how manipulated, cannot make a good salad, for its thin, leathery leaves cannot have the crispness and succulency of the plant grown on deep rich soil; very good Lettuces are generally obtained from the crowns of the ridges between the rows of Celery. They are planted one row on each ridge 13 inches apart for the large kinds, and 10 inches for the small Cabbage varieties such as Tom Thumb. The land for Lettuce should be loose and friable, for unless grown quickly they are likely to be tough and bitter; therefore, no matter where planted or sown, the land should have been recently stirred either by fork or spade, and the manure should not be stinted. West or north borders may with advantage be used for Lettuces during hot weather in summer; and some at least of the plants should remain where sown without transplanting, as the fewer checks given during the last half of June and the whole of July the better. In planting Lettuces a board should be laid across the bed or border for the planter to walk upon. We generally transplant a few of the thinnings even in the hottest weather—for we keep a cool border in reserve for such work, and by well watering it the evening before, and shading the plants with a few branches immediately after planting, they start away directly and grow very fast, and quick growth in summer is essential to crispness.

TO OBTAIN A SUCCESSION

Frequent sowings are necessary from March till the middle of July. As soon as the last-sown plants are fairly up sow again; the amount of space to be occupied will be in proportion to the demand likely to arise, and a liberal allowance should be made. The seeds are very often sown broadcast, but I prefer to sow in drills, as it is so easy to stir and clean the surface soil when the plants are in rows. The seeds are small, and the drills need not be more than half an inch deep; a well-pulverised soil is necessary. Where the soil is heavy and steely when dry, some leaf-mould worked into the surface with the rake just before the seeds are sown will be a great help, and as it is important that the successional sowings should be made in due order, the seed-bed should in dry weather be thoroughly soaked three or four hours before sowing the seeds, and well worked with fork or rake to get it thoroughly intermixed. Shade with branches or Rhubarb leaves, or mats laid on the ground till the seeds germinate. A covering 3 inches thick of manure between the rows of Lettuce will do more good than watering, even if it be given daily. The mulch should be placed on early in the life of the plants if the summer is hot and dry, so that it may settle down and some of the nutriment be extracted from it for the use of the crop just at the time it is needed. All Lettuces are the better for being tied up for a few days. The work of even those which naturally fold their hearts up closely is done all the better by having the leaves drawn up a little round the heart. Cabbage Lettuces should form no exception to this rule.

SOWING FOR AUTUMN AND WINTER.

This should take place about the middle of July, and again in the first and third weeks of August. The plants raised in July should be planted in any nice open situation that has been well cultivated. If slugs or snails have been troublesome to previous crops, the ground should have a dressing of soot and lime. The first August sowing should be on a ridge with a southern exposure or else on a warm south border. A portion of the plants raised at the last sowing should remain in the seed bed all the winter. A part should be planted out in a sheltered corner, and another part should be planted in a frame; and if there is an orchard house, some may be planted in a light position there, or else be potted in 5 inch pots and grown on a shelf near the glass. As regards their culture in frames, where Melons are grown on dung beds they will all be cleared out by September, as a rule; and, if the soil is turned over and a little fresh loam and leaf-mould added, the young Lettuces may be planted out in the bed towards the end of October. The best Lettuces for winter are Tom Thumb Cabbage, Black-seeded Bath Cos, and Hicks' Hardy White Cos. They are hardy in constitution and not so liable to suffer from damp and mildew as others are. If the soil is not near enough to the glass—say, within a foot—it should be raised. As the space is valuable the most should be made of it, and I find that the best way to do this is to plant the Brown Cos and Tom Thumb Cabbage alternately, the former 12 inches apart, and the Tom Thumb in the centre of the spaces between the Cos; the Tom Thumb will turn in, and be used before the Cos requires all the space. The soil should be in a nice moist condition when the plants are set out, and water should be given when required, which will not be often in winter, as the frames will be kept nearly closed. But all needful ventilation must be given by tilting the lights up a couple of inches at the back. The object of growing Lettuces in frames is to secure a better climate and get them in early, and if the atmosphere is sweet and buoyant, whatever warmth the sun creates in winter should be kept in the frame so long as a circulation is kept up. In very severe weather a little Fern or dry litter should be scattered over the glass, as much to keep out the sun as to keep out frost, as the alternate freezing and thawing may do injury.

FORCING LETTUCES.

Some of the best and finest Lettuces I have ever had were sown in a box in January and pricked out in a frame on a slight hotbed of leaves and dung in February. The best kinds for this work are the Paris Market Cabbage and Paris White Cos. The former is rather larger than Tom Thumb, and is not so hardy in constitution, but is quicker in growth where the conditions are suitable, and better adapted for forcing than that variety. The Paris Cos is also an excellent early kind, of good size and substance. The two varieties just named are also very suitable for summer culture.

Saving seeds is a very easy matter. We have only to leave a few plants of the kind we wish to save seeds from. Some time during summer, when there is time for the seeds to ripen, cut the pods as they ripen, and lay them in a box or on a tray in an airy building, and when the ripening process is completed, dress out the seeds and pack them away in a dry, cool place. As for varieties, besides those already named, I would add Carter's Giant White Cos, Kingsholm Cos, Lee's Hardy Green Cabbage, and All the Year Round Cabbage.

Endive.

For autumn and winter salads Endive is indispensable, and, like Lettuces, may also be cooked as a vegetable. But in the average English household this is seldom done. The

FIRST SOWINGS

Should take place about the first and the middle of June. If sown earlier it is very apt to bolt, and even in June it will be better to sow in drills, ½ inch deep and 15 inches apart, and thin the plants to a foot, leaving them on the ground where sown, without transplanting. Though in many instances and on most soils transplanting may be a benefit, yet, in a dry time, plants which have experienced no check generally stand the best. The soil should be in good condition and of good depth, but immediate contact with a large quantity of manure is not desirable. In the early time it is best to sow often, as, if the earliest sowing fails, the crop raised a week later may be all right. Sow twice in July, and from these sowings the autumn supply will be obtained, and in the case of plants raised after the middle of July transplanting will be an advantage; as the roots being more at home, and perhaps nearer the surface, the growth will be more curled, shorter, more compact, and better. Sow twice in August. The last lot of plants will come in useful in spring if the winter is not too severe, but Endive when unblanched will stand a good deal of frost without injury, and where frames can be spared protection should be given after November. In

SETTING OUT THE PLANTS

From the seed-bed those intended for summer and autumn use should occupy a nice open position. A piece of ground running through one of the quarters of the garden will suit them better than positions under walls, or near fruit or other trees. The ground should have been forked up deeply, and have received a sufficient dressing of manure or manurial compost, and I confess that for Endive I like dressing the land with a sort of omnium gatherum compost in preference to manure pure and simple. To get a quick growth for Endive the soil should be well broken and pulverised through all the stages of growth from the seed onwards. A bed 8 or 10 feet wide running across the quarter of the garden will furnish a supply that will last some time—it is not advisable to plant so much land at one time till we are sure the plants will stand, but I think if treated properly all plants raised after the middle of June may be relied on. When the bed is ready take a light board or plank that will just reach across the bed, make a couple of sticks 15 inches long, and keep one at each end to measure with. The board will do as a straight-edge to plant by, and a couple of men will put out a large number of plants in a little time, and the ground remains in a nice open condition.

For winter a well-drained situation should be selected—a border sloping to the south being the best. It is a good plan to nip off the ends of the leaves when transplanting, especially if they are long or straggling; it induces compactness of growth, which is very desirable. The plants for late autumn and early winter use will come from the last July and first August sowing. The cleanly culture, which is included in a frequent stirring of the surface among the growing plants, must at all times be insisted on, and though where the land has been thoroughly prepared water is less necessary, there are times and seasons when a good soaking of water, including some liquid manure, may be of great benefit, the surface being stirred up with the Dutch hoe early the next morning, before the sun has dissipated all the moisture.

THE BLANCHING

Is a very necessary operation, and should be done as soon as the plants are large enough. There are several ways of doing this, but no matter how done, whether by covering or by tying up, the plants must be dry before the light and air are excluded. If covered up when damp the hearts or the leaves will decay. The common way of blanching in summer is to tie up the plants when quite dry and place an inverted flower-pot over each plant, with a bit of slate over the hole to keep out damp. Another plan is to lay a broad thin board over the plants in each row without any tying up at all. In the autumn the plants may after tying up be covered with dry Fern or Oak leaves, and they will keep good in this condition a long time. As a rule in summer and autumn they are tied up or covered up in batches in succession, as after a time the growth will under any circumstances begin to decay. At the approach of the season when sharp frost may reasonably be expected, a part of the stock should be lifted and planted in turf pits or frames, or in some place where shelter can be afforded. If tied up when dry, and a ridge of dry ashes formed over them, they will keep in good condition a long time. Sometimes the plants are lifted with balls, and moved to the mushroom-house for a week or two, as they blanch quickly in such a situation, though they do not keep long. On the whole I do not think there is a much better plan than tying up a lot of plants in November when quite dry, and covering deeply, as they stand on the bed, with dry Fern or dry Oak leaves. I have had them keep sound and fresh under such conditions for a couple of months. The atmospheric conditions are not always quite suitable when the plants are taken to frames or the Mushroom house. They are either too dry and get tough, or too damp, and decay sets in. Some of the last sown plants should be planted in a turf pit where shelter can be given, and a part should be planted on a ridge or bank to come on in the open air in spring.

FORCING.

Though this is not commonly done, there may be places where it is desirable to have it in spring as well as forced Lettuces. A bed made of two-thirds leaves and one-third manure will be best to raise the plants on. As soon as the heat has risen nicely—and with a bed made of such materials it won't get too hot—place on a layer 6 inches thick of nice light rich soil, and sow the seeds thinly broadcast. Thin first of

all to 3 inches apart, planting the thinnings to other frames if possible. Later on, as required, thin the plants to 9 inches apart, mulch with some short rich compost, and keep moist.

VARIETIES.—There are two distinct classes of Endive—one has curled leaves, and the other more resembles Lettuces in growth and foliage. Some people think the broad-leaved (Batavian) more crisp and of better flavour than the curled-leaved kinds, but the latter are the most cultivated :—*Green-curled varieties:* Digswell Prize and Large Green Curled. *Batavian varieties:* Fraser's Improved and White Lettuce-Leaved.
E. HOBDAY.

FRUIT.

Strawberry, "Pauline."—This is a really valuable as well as new Strawberry, a distinct advance on anything before noticed. We saw a very interesting comparative trial of it the other day in Messrs. Pauls' old nurseries at Cheshunt. Mr. George Paul, believing in the variety, had it placed in various positions, lying side by side with the Black Prince and the other earlier varieties. It is by far the best of all, and a general gain of a fortnight on Strawberries, which is, we scarcely need say, a very great recommendation. It is a vigorous grower, and has a very pretty and peculiar habit, placing its large deep red fruit as neatly as if arranged for a show. In ordinary seasons it is ripe about the 6th of June. This year it is later, as most things are, but at Cheshunt on the 21st it was in capital condition when none of the other kinds were eatable. It is a long, large fruit, occasionally broken into the cockscomb form.

The Gooseberry caterpillar. — Your correspondent, "T. M. C." (page 201), is mistaken in supposing that this caterpillar is hatched in the ground. The true history is this: When the caterpillar is full grown it changes into a chrysalis, which becomes buried in the soil, and in due time develops into a small fly, and the fly lays its eggs on the ribs underneath the young leaves, and the tiny caterpillars begin feeding on the leaf close by their eggs. We have been so free this spring that I have had difficulty in finding the leaf I enclose, on which at present the little insects are busily at work, but which, when you get it, will only show the holes they make and the remains of the eggs. The true way of checking the pest is to hunt for these leaves, which are found generally in the interior of the bushes. "T. M. C." may have been misled by noticing that when full grown caterpillars are shaken off the trees they will, if not killed, creep back. A little oil or tar on the stems will prevent this better than hellebore, which loses much of its power when moistened. —W. M. C., *Clapton.*

Early Strawberries.—Kindly name the enclosed Strawberry. They have been ripe in the open ground for the last week, and no others are yet coloured. They came originally from an old garden in Crewkerne, where, close under a south wall, a dish was picked on the 24th May two years ago; they continued bearing all through the autumn, and a dish was gathered in November. They bear profusely. —LYMPSTONE, *Devon.* *** *The fruit was much bruised in transit, but it is apparently Cuthill's Black Prince.*—ED.

American blight.—Persons who object to the smell of paraffin on their hands or clothes may like to know that for many years I have kept the pest under by means of a dry brush—not to brush the insects away, but to crush them. For this purpose the brush must be hard, though the bristles must be long enough to penetrate into the holes which they frequent; a common painter's brush, cut down to a pointed stump, does very well, but I use a small brush with a handle, used by housemaids in cleaning rooms, and known, I think, in the trade as a corner brush. The advantage of the plan is that it is cleanly, needs no preparation, and consumes little time, and may be repeated as often as needful. At this time of year my brush is seldom out of the pocket of my gardening coat, and every white spot is obliterated as soon as it becomes visible.—W. M. C., *Clapton.*

Grapes cracking.—In a recent number I notice an answer, signed "J. D. E.," about Grapes cracking, in which he leads your readers to understand that Mr. Thomson, of Clovenfords, is the gentleman who introduced the gimlet idea to prevent Grapes cracking. Now, that is not the case; it was Mr. Alexander Kirk, gardener to Mr. J. Thomson Paton, of Norwood, Alloa, who advised Mr. Thomson, of Clovenfords, to do so in order to prevent his Dukes cracking. Mr. Thomson took the advice, and he has saved hundredweights of Grapes. — W. T.

REPLIES.

13847.—**Vines in pots.**—I greatly doubt whether the method intended to be pursued by "J. Cannell," in stripping his pot Vines of their leaves, will have the desired effect. It may force the plants to rest, but I am afraid the fruiting buds will suffer from the treatment proposed. The following is the practice, when fruit is desired at the same season as "J. Cannell" wishes to have it, as described by John Mearns, F.H.S., in a treatise "On the Pot-culture of the Vine," published in 1843. Vines intended for early forcing should, after having had their rods shortened to from 4 to 6 feet, be removed to an airy, but warm and sheltered, situation in the open air, to give them a season of rest, where they may mature their wood *till the leaves drop*, when they should be headed down one, two, or three joints, according to the state of the Vine, and placed against a northern aspect till the cold weather sets in. They should then be again removed to a more sheltered situation, and plunged, so as to protect their roots from frost, which is a point that must be insisted on; and in severe weather the tops of the pots must be carefully mulched to protect the surface roots, and the rods covered also to protect them from the power of the frost. The buds will become excited much more readily by being some time in gloom previous to being brought into the forcing department. Plants so treated, when exposed again to a strong solar light, can be very successfully excited in December of the same year, and even in the beginning of November, and will soon show abundance of fruit; and as perfect Grapes can be produced in March as at any other period of the year, if there is a tolerable duration of bright weather and plenty of air given." The commencement of forcing before November is not recommended by Mearns, because of the want of sunlight in the dead of winter to ripen the fruit.—J. M., *South Hants.*

13584.—**Difference in yield of fruit trees.**—The want of success with the fruit trees is doubtless owing to some sort of mismanagement. Probably over pruning is the cause. This will promote the production of young wood instead of fruit buds. I have now before me a wall tree of the Victoria Nectarine, which had not a blossom on it this year, owing to bad management. The trees should be pruned and trained in June and July, and no young wood should be allowed on the trees after that time except what is required for next season. The most frequent mistake is made in leaving too much young wood in summer, which has to be cut out in winter. Plums, Pears, and Apples produce the blossoms on spurs, and these fruit spurs should be developed the previous autumn; and in order to obtain perfect development the wood must be well thinned out to allow of free exposure to the sun.—J. D. E.

13501.—**Alpine Strawberries** should be raised from seeds sown when the fruit is ripe in July. Sow in the open ground in a small bed of fine soil, from which the plants may be put out where they are to produce their fruit. The plants should appear in four weeks from the time of sowing, and may be planted out when they have made about six leaves. Most large dealers could supply either seedlings or plants from runners. They produce fruit abundantly the following season when raised from seeds. The seeds can be purchased from the trade. They will succeed in most soils.—J. D. E.

13790.—**Figs dropping off.**—It is not at all unusual for young Figs which have remained on the tree all the winter to fall off in the spring. As a rule all such that are larger than a small Hazel Nut do so.—J. C. C.

—— On out-of-doors trees the fruit that was formed the previous autumn frequently drops off; that formed in the spring will swell and ripen if the season is favourable. Nothing can prevent the autumn-formed fruit from dropping, except an exceptionally favourable winter.—J. D. E.

HOW TO PACK FRUIT.

THE fairly cheap light goods rates and quick delivery have naturally brought about a great increase in the transmission of perishable commodities, such as fruit, by rail. Beyond supplying family wants when away from the home establishment where the fruit is grown, many gardeners have now to send their spare fruit to market, and on good packing in both cases depends much of its worth when it reaches its destination. Yet, notwithstanding that much has been said and written on this subject of late years, and details given about the best means of packing soft fruits, such as Grapes, Peaches, Strawberries, and others that must be ripe before they are gathered, it frequently happens that the condition of these after reaching their destination is anything but satisfactory. I have often thought that everyone who has this sort of work to do should, once at least, see his fruit unpacked after it had travelled far enough to test the packing. These remarks do not apply to the packing of Peaches, Nectarines, Apricots, Strawberries, and others that are gathered the greater part of a week before they are ripe, but to ripe fruit when gathered. No one will need to be told that such fruits as Apricots, Peaches, Figs, and Strawberries, when ripe, require much more care in packing than when forwarded in a less susceptible state.

THE PRIZES now given yearly by Messrs. Webber, at South Kensington, for packing soft fruits, have done something to show the right lines upon which to proceed. For Grapes, moderately deep boxes that will hold say not more than from 20 lbs. to 25 lbs. are best. A good thick layer of Moss should be put at the bottom to act as a bed, and the sides should be similarly well padded with Moss pressed firmly together; the whole should be lined with soft tissue paper, leaving a cavity for the bunches in the centre, in which they should be placed so as to fill the space full enough to prevent the berries rubbing against each other. Many packers put nothing on the top of the bunches, as whatever is laid on them removes more or less of the bloom, and unless there is a layer of Moss or other material put between the paper and the lid, so as to keep them close down, the paper is useless. If the box, however, happened to be turned on one side, or upside down, the covering over the top would prevent the injury that otherwise would be sure to occur. Peaches and Figs if ripe are most liable to injury in transit. Shallow boxes that will hold one layer of Peaches or Nectarines are evidently the best, and there should be a sufficient bed of Moss in the bottom and round the sides, and a lining of thin paper; each fruit, too, should be enveloped in tissue paper, and, if as ripe as it should be, a piece of wadding should be put round each outside the paper. Without this latter, if the box happens to get on its side or end, the weight of the two or two and a half-dozen fruits which it contains will so press on those that are undermost that they will be much bruised. A thin piece of paper over the fruit and a layer of Moss between it and the lid finish the packing.

CARE SHOULD BE TAKEN that the boxes are not too shallow to admit of enough Moss in the bottom and over the top to prevent the jolting in transit doing mischief. In packing Strawberries lay each fruit on a leaf of the plant, which keeps it from touching those next it; a good layer of leaves on the top under the lid keeps the whole cool. I have found Figs to travel best in a shallow box that will take one layer of fruit, each wrapped in a vine leaf, and the box lined bottom and ends as for Peaches, with Strawberry leaves in moderate thickness over them; the shape of the leaves is such that they do not lie closely together, and thus they allow air to circulate among them, and so help to prevent the fruit moulding—an evil to which ripe Figs are liable; the lid, too, should not fit too tightly. T. B.

The Tree Lupine.—This is really a charming bush, with its myriads of deliciously-scented, pale lemon-yellow flowers. We saw some fine bushes in Messrs. Pauls' nursery, at Cheshunt, the other day. It is a quite free and hardy bush, growing from 3 to 4 feet high, and there can be no trouble in getting it from seed and cuttings. It sometimes has a purple form, which is not worth growing.

The old Mule Pink.—This good old plant, so full of cheery flowers, comes to us from the College Gardens, Dublin, where it is grown freely, as it is in many other gardens. However, a good thing cannot be too well known, so we give it a place, and thank Mr. Burbidge for reminding us of an old friend.

OUR READERS' ILLUSTRATIONS.

CRIMEAN SILVER FIR.

THIS Fir (Picea Nordmanniana) is one of the most beautiful lawn trees among the Pines that has ever been introduced; it is graceful, vigorous, and distinct. Among the Pines sent to our garden many have really no particular merit at all. Several are tender, and some, such as the Wellingtonias, never form pretty trees as they grow in this country; in fact, a great deal of harm has been done to plants by indiscriminate praise of trees not hardy enough for our country. If given deep artificial soils which retain more moisture than is usual on our natural soils generally, and given other attention, they will grow for a number of years; but that is no proof of their fitness for this country. We think the Nordmann's Silver Fir, which is a native of Southern Russia, is an exception, and a really good garden tree, splendid singly or in a small group on the lawn. Our engraving is from a photograph taken and sent by Mr. Alfred Taylor, of Starston, Harleston, Norfolk. The tree here figured stands in Mr. Taylor's garden, was planted in 1864, and is now about 35 feet in height.

OUR READERS' ILLUSTRATIONS: Crimean Silver Fir (Picea Nordmanniana), from photograph sent by Mr. A. Taylor, Starston, Norfolk.

13848.—**Exhibiting cut blooms.**—I would advise "S. D. B." to have all his exhibiting stands made of half-inch deal, very smoothly planed, and painted dark green, after which they should be well varnished. Tin biscuit-boxes filled with water would be heavy and clumsy. It would be much better to have holes bored in the deal stands, to admit of a neat tin tube, which could be made by a tinman at a cheap rate. There should be a space of 2 inches between the blooms. It will be necessary to have the holes in a Dahlia-stand much further apart than in one for Pansies. I should be very sorry to see the white paper collars or cards dispensed with. In my opinion all flowers, except Dahlias and Roses, look much nicer with than without them.—R. MANN, *Shadwell.*

"The sparrow curse."—I don't like such language to be used about my lively and useful under-gardeners, so I take the liberty of telling you my experience of them. I have a good-sized refuse heap, into which everything from both house and garden which will rot is thrown. This is the great feeding-place of my sparrows, which are not very numerous winter and summer. When, however, the young begin to appear, young and old resort to a hedge of China roses, as well as the standards, &c., and it is interesting to watch them searching out and devouring the aphides with great diligence. I never see a blank in my rows of Peas, Beans, &c., but this is owing principally to my putting a good pinch of powdered resin into the seed-bag when about to sow. I use resin for many large seeds, having great faith in it as a protection from birds and mice. I have three varieties of mice, but they rarely touch even the Crocuses, which I grow rather largely. I hope that some of your readers may profit by these hints.—AN AMATEUR OF NEARLY FIFTY YEARS' STANDING.

13510.—**Heating greenhouse from kitchen boiler.**—This can be done very well, and but a small quantity of water is required; there is scarcely any waste. A gallon or two would last a week. Someone must do the work who has sufficient knowledge of a heating apparatus, else it is easy to make a muddle of it.—J. D. E.

FRUIT AND VEGETABLES IN SUBURBAN GARDENS.

"B. P." (page 157) seemingly lives in a house of the good old-fashioned style, with plenty of garden ground, so that a good kitchen garden can be bad as well as a flower garden. One of the many follies of our day is the allowing of a class of houses to be built in the suburbs of towns which are neither town houses with a general garden or square, nor suburban villas with an acre or so of ground, but abortions from the points of view both of sanitation and gardening. The result of this foolish want of regulation is that towns have no true suburbs. No zone of suburban villas now surrounds them, each with its pretty entrance court, large garden and paddock; but the veritable heart of the town, with its paved streets, be it terrace or slum, stretches out until it shakes hands with the open country. Even people who ought to know better, like the managers of workmen's dwellings companies, perpetrate the same absurdity. Set down a dozen or two pretty cottages along a country lane a mile or two away from a town, and allow no crowding of dwellings near, and the dwellers in these cottages have the advantage of pure air; but build a region of streets in the open fields close to houses in thousands already built or building, and the dwellers in these houses might as well live in Clare Market and save their railway fares. Nemesis comes slowly but surely at last, and the Nemesis of this indiscriminate extension of town is disposal of sewage. Had a law been passed that each house or group of houses must dispose of its own sewage in its own garden ground the present difficulty could never have occurred. The true, natural, and divinely authorised place for house refuse is the earth, and each dwelling outside the crowded parts of a town should have, by legal regulation, sufficient garden ground to allow of such refuse being disposed of harmlessly in that way. The earth can only use up a certain quantity, and now suburban London has to carry its sewage in pipes for many miles to effect what each householder ought to have done in his own ground. In ninety-nine out of every hundred suburban gardens of the usual type, it is waste of time and money to attempt the growth of vegetables. Scarlet Runners and French Beans, and, if the garden is very close to the fields, a few Peas may be profitably grown; but all the Cabbage tribe and all fruits which have not a hard skin which will bear a thorough washing before use, contract a vile flavour of soot. Where manure has to be purchased vegetables cannot be grown in a small garden at the price at which they can be bought. London is the worst and most expensively supplied place with vegetables in the country, yet even there the retail price at which a family supply can be bought is less than the sum for which it can be grown by an amateur who has to purchase everything. And in country towns where a proper system of vegetable supply obtains—the grower selling his own growing from door to door or in a shop—this is still more the case.

A great many changes must take place before the occupier of a small garden can grow his own vegetables satisfactorily. First and foremost he must be able to purchase small quantities of artificial manures of guaranteed quality at a reasonable advance on the wholesale price. Next, he must be able to purchase a dozen or two of plants of all the choice new kinds of Cabbage, Broccoli, Savoys, Cauliflowers, and Celery, ready to plant out at the proper season to secure a successional supply, instead of being able to purchase plants only at one or two periods, and then only of coarse, common kinds, and all lumped together as Cabbage, Cauliflower, &c. At present choice kinds can only be had by purchasing seed. With country gardens, or those in the suburbs of towns uninvaded by the speculative builder, all this is different, and one can do anything. Fruit trees and bushes, and even vegetables, can be brought up quite to the house without incongruity, provided the house itself is built in a proper style. Build a house like a small section of some great building, in a pretentious style, two or three stories high, with attics and tower, and anything but a minute section of a large ornate garden will be out of keeping with it; but build a pretty picturesque house rambling over a lot of ground, and only one story high, with a great steep roof forming hoods over some attic windows while others appear as dormers, and the garden may be a thorough garden of all work, with flower borders enclosing quarters of fruits and vegetables. Few things are more beautiful than one of these large rambling gardens with things in them at all unexpected places. A Grass plot, with a few old bush Roses and evergreens, near the house; flower borders next the house walls; then flowers and vegetables; then an arbour covered with scrambling Roses, backed by a wall on which are trained Currants and Roses, Peaches and Magnolia, Nectarines and Wistaria, Plums and Rosemary. In an out-of-the-way walk under a thatched pent-house, or in recesses

in an old wall, a row of Beehives surrounded by old-fashioned flowers. On a large lawn plant Apple and Pear, Cherry and Medlar—nothing could be better. Several of the Pippin tribe of Apples droop their lower branches till they sweep the turf, and are decorative both in flower and fruit. How pleasant is a quiet seat on such a lawn in the warm afternoon of an autumn day, the stillness only broken by a rustle among the branches now and then, and then a thud on the turf as a Golden or a Ribstone Pippin comes down, while occasionally a bigger crash and a heavier thud announces the fall of a Beauty of Wilts, as big as a fair-sized Turnip.
J. D.

SECOND ILLUSTRATION COMPETITION.

IT is now time to proceed with our second Illustration Competition, and we accordingly invite our readers to send us any pretty garden views that they have in their possession. We think it well to confine the present competition chiefly to views of tastefully-arranged porches, verandahs, and arbours, Pergolas,* climbers round windows or on walls or trees, garlanded walks, and to illustrations of any way of growing climbing and rambling plants; but, at the same time, any beautiful illustrations of gardening interest will be heartily welcomed. The selected photos will be engraved and published in GARDENING. That is, perhaps, the best honorarium we can bestow upon the winners, but the senders of the chosen pictures will also be entitled to receive not less than one guinea's worth of books, useful for garden reference or practice.

In addition to the above, however, we propose to give to the persons who during the year 1885 send us the most choice series of illustrations three prizes of honour, as follow:—

First.—A water-colour drawing of the Wild Field Rose, by the late Mrs. Coleman; purchased at Christie's for Twelve Guineas.

Second.—A water-colour drawing, by Madame Vonga, of Zurich, of one of the first plants of the rose-coloured Water-Lily flowered in Europe; purchased for Five Guineas.

Third.—An original drawing of a group of Pæonies, by Mrs. Duffield, value Three Guineas.

In awarding these prizes we shall deal only with those photographs which have been selected and engraved in each competition, and the number and beauty of the contributions of each competitor will be taken into consideration. The recent competition is included in these special prizes.

The following rules must be observed by competitors:—

First.—The photos may be of objects in one's own possession or cultivation, but the source whence they are obtained must be stated, and none sent the copyright of which is open to question.

Second.—The photographs chosen are to become the property of the Proprietor of GARDENING.

Third.—The name and address of the sender, together with the name and description of the object shown, should be plainly written on the back of each photo.

Fourth.—All letters relating to the Competition must be addressed to the Editor, and marked Illustration Competition.

We reprint the instructions given during the first competition:—

Figures of men or women, barrows, vases, and all similar objects had better, as a general rule, be omitted from photographs. Photographs may be mounted or unmounted; they should be clear, and the subject intended to be shown in good focus, and so as to be distinctly seen.

All photographs for this competition must reach us by Friday, the 31st of July.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

13873.—**Weeds on garden paths.**—Will any one kindly tell me what is the best way of preventing the growth of Grass and small weeds on garden paths?—D. J., *Swansea.*

13874.—**Tallow greaves as manure.**—I should like to know how to treat waste tallow greaves so as to make them useful as manure. Will any reader who has used them inform me?—A. S.

13875.—**Mildew on Roses.**—Will any Rose lover tell me how to prevent mildew and how to get rid of it when it has appeared?—G STOTT. *** *Dust the affected parts with flowers of sulphur.*—ED.

13876.—**Plantains on lawns.**—"J. S. A." would be glad to know how to get rid of Plantains on Grass, and, after digging them up, what acid should be used to exterminate them. Will any reader who has overcome the difficulty tell her how to proceed?

13877.—**Floral cement.**—Will some reader of GARDENING be so good as to tell where I can get some floral cement, and how I must apply it? *** *Do you mean gum for fixing the petals of flowers?*—ED.

13878.—**Quince trees shedding bark.**—Is this usual, and, if not, what should be done to stop it? The tree is an old one, and began to shed its bark last year, and now has recommenced. It grows in a sandy soil near a wide ditch.—A. B. T., *East Anglia.*

13879.—**Procuring Locust Beans.**—I should be glad to know where I could purchase a few pounds of Carob or Locust Beans. I want to send them to Natal, where ten years ago I planted two or three, which are doing well, though they have not fruited yet.—H. B.

13880.—**Treatment of Chrysanthemums.**—My Chrysanthemums are about 7 inches high, and are in about 6-inch pots, and I have got them out-of-doors. Will any grower tell me whether they want repotting, and what I should do to have a good show this year?—H. W., *Dudley.*

13881.—**Red spots on stove plants.**—I should be glad to know the cause of red spots on the underside of scarlet Plumbago leaves. The plant is growing and is kept syringed. The same thing occurs in the case of a Croton.—NORWOOD. *** *A few leaves showing the spots might have helped us to answer you.*—ED.

13882.—**Caterpillars on Cabbages.**—Every year my Cabbage plants are eaten up by the caterpillar. Will Mr. Hobday, or any good grower of vegetables, say if there is any way of preventing its ravages? In the garden are tall Laurels, shutting out the air from the plot; can this have anything to do with it?—POOLE, *Dorset.*

13883.—**Geranium not flowering.**—Will any reader kindly inform me why my Geranium buds do not open? They get to an advanced stage and then wither.—AN AMATEUR. *** *You do not state whether the plants are growing in the greenhouse, near a window, or in the open air. Repeat your question, and tell us how you treat them.*—ED.

13884.—**Earwigs in Apples.**—I have in my garden an old Apple tree of great growth, producing delicious fruit of large size, but every year more than half of it is devoured by earwigs, several live ones often being found in one Apple. I should be greatly obliged if any of your fruit-growing readers could suggest a preventive.—J. K., *Poole.*

13885.—**Treatment of Chrysanthemums.**—I have recently commenced the cultivation of Chrysanthemums. I find some writers recommend plunging the pots in a bed of ashes, others standing them upon it, or on boards or pans. Will some experienced grower of Chrysanthemums inform me which is best?—W. PHILLIPS, *Devon.*

13886.—**Nitrate of soda and Cucumbers.**—I am told that nitrate of soda is used to push Cucumber plants. Will any good grower tell me whether he has tried it, and, if successfully, what quantity should be used and how applied? Any hints on the culture of Cucumbers will be thankfully received.—AMATEUR, *Hull.* *** *Articles on the Cucumber will be found in last week's issue.*—ED.

13887.—**Begonia blooms dropping off.**—My double Begonia blooms drop off, and some of the flowers are single on the same plant; the plants look healthy, and are covered with bloom, but they all drop off before they open. The single Begonias in the same house are covered with bloom, and do not drop off like the doubles. I should be glad of information as to the cause and remedy.—H. S., *Portsmouth.*

13888.—**Using "Lawn Sand."**—I shall feel much obliged if any of your readers who have successfully applied "Lawn Sand" to kill Daisies and weeds generally on Grass lawns will give me instructions how to use it. My lawn is very much covered with weeds. I lately tried a tin, following the instructions given, but with me the result is that the Grass has got very much browned, and the weeds are as lively as ever.—GANG FORWARD.

13889.—**Market measures.**—In market reports I often see the following measures mentioned:—"Flat" (Gooseberries, Cherries, &c.); "Tally" (Cabbages, Radishes, &c.); "Box" (Tomatoes, Cherries, Strawberries, &c.). Will someone state the dimensions of these measures, or the average weight of their contents, or give any particulars that will enable one to form a definite idea of the quantity referred to?—TYRO.

13890.—**How to force Rhubarb.**—I have a frame 8 feet by 5 feet, 3 feet 6 inches high, and a flue under it for fire, I have got some Rhubarb that I bought late this spring. It seems to be an early sort. Would any reader tell me when would be the best time to move it into the frame, and what its after treatment should be?—A WORKING-MAN. *** *You will find an article on Rhubarb culture on page 163; but perhaps some of our readers who use simpler means than are employed in large gardens will help you.*—ED.

13891.—**Insects on young Strawberry plants.**—Early in September last I planted out one hundred young plants (Oscar) in ground well trenched and manured some weeks before. About three weeks after planting they were attacked by a small dark brown beetle, not unlike a flea. Eventually nearly all the plants were destroyed, though soot was applied. I shall be glad of any information regarding this pest, and particularly as to the best method of clearing the ground for replanting this autumn.—BRAMBLE, *Hants.*

13892.—**Calceolarias failing.**—I shall feel obliged if any grower of Calceolarias can assign a cause for the failure of my plants. I saved in a cold frame, from autumn-struck cuttings, about twenty dozen, which in due course were planted out, and for five or six weeks did remarkably well. About a fortnight since, however, a large number began to droop, though not requiring water, and in the course of a few days they were entirely withered. I am unable to trace any insect either on the foliage or at the root.—MALVERN, *Dalston, E.*

13893.—**Market Hydrangeas.**—In the market I see Hydrangeas with only one stem and a large head of flower upon them: they are grown in 5 inch pots. Probably some London readers understand the system adopted and could tell me how such are grown, when the cuttings should be taken, and how they are managed. I have tried it but failed. I have at present some large plants just coming into flower; is it possible for me to try this season to get them to flower as desired? There are plenty of cuttings to be had from the plants.—STEWARTON.

13894.—**Erecting Mushroom house.**—I intend erecting a Mushroom house, and to put it up of wood boarding, sides about 3 feet or 4 feet high, and sloping roof, area about 100 square yards. Would Mr. Hobday, or any other practical reader, please answer the following queries?—(1) Can I successfully heat this in cold weather by slow combustion stoves? (2) Will two such stoves be enough? (3) Will the Mushroom beds do on the ground, or will it be too cold for them thus; and would they be better raised on boarding or brick rubbish?—K. F. K.

13895.—**Abutilon becoming double.**—Can any contributor to GARDENING kindly explain why a white Abutilon in a conservatory, which last year flowered with graceful abundance, this year forms double flowers, their stems no longer slender and long, but short and crowded with leaves? The plant, some 6 feet high, is in a central bed, and was lightly manured and rather severely pruned after last flowering in December. Is there any way of correcting this grosser tendency of the plant, the character of which is entirely lost?—E. M. A., *Millfield.*

13896.—**Insects on Gooseberries.**—A gardener is very much troubled with an insect on his Gooseberry trees, known here by the common name of "borer;" it is somewhat like a caterpillar, but lighter in colour. They do not eat the leaves as do the caterpillar, but they bore a hole into the berries, and then the berries very soon drop off. This gardener has some hundreds of quarts lost every year in this way. Can anyone who has dealt with the pest say what should be done to get rid of them?—H. F., *Bury.* *** *Personally we are very fond of the Gooseberry, and hope our readers will tell "H. F." how to protect it.*—ED.

13897.—**Creeper for covering roof of greenhouse.**—What quick-growing evergreen creeper is suitable for covering roof of a straggling, picturesque, old greenhouse, which is neither frost nor rain proof? I have a few semi-hardy Ferns in it among rocks. What Ferns are suitable, and would Chrysanthemums live in the driest and sunniest corner of such a house? I have Tropæolums and Hops planted.—J. H. *** *The best climber is Clematis indivisa, and any of the hardy or half-hardy Ferns will be suitable. Chrysanthemums will do in the driest part in a sunny position.*—ED.

13898.—**Clearing a Cucumber house of green fly.**—I am growing Cucumbers, but am so much troubled with green fly that I purpose clearing out all the houses, and growing Tomatoes. Probably I have not kept the houses sufficiently damp, and I was troubled last year also. Before the season commenced, however, I had all the woodwork washed with soft soap and then lime-whited. Will some one who has dealt with this nuisance tell me the best way of clearing the houses of the fly? I purpose using petroleum oil and water—one to one hundred or so—and with this to syringe the walls and glass. Will this be sufficient, or had I better burn sulphur in the houses? I shall feel much obliged for information.—K. F. K.

* PERGOLAS.—Not half enough is made in English gardens of the pretty Italian fashion of the shaded walks and spaces known as pergolas. In Italy they consist of piers of masonry, either square or round in section, roughly plastered, some 12 feet apart along the walk; rough timber logs cross the path overhead from pier to pier, and slighter woodwork is laid lengthwise again upon these. Upon this foundation grow vines and other climbing plants. A pergola for an English garden is best constructed of rough pieces of oak. The top pieces that are left over when oak is felled are the best possible material; the larger and straighter pieces are chosen for the uprights, and the smaller crooked branches for the top. By planting with vines, rambling Roses, Clematis, Aristolochia, and like climbing plants, a beautiful and delightful covered way may be made, or a highly enjoyable open air breakfast and dining-room.

13899.—**Begonia Rex leaves dying.**—I find if the leaves of Begonia Rex get spotted with water they decay, and it is next to impossible to help it. Will some correspondent please tell me the best place to keep them?—ENQUIRER. *** *It will be observed that "Enquirer" does not state where or how she grows them, and whether it is the young leaves or the old ones that die. The old leaves, we need scarcely say, must die like other things.*

13900.—**Day Lilies not flowering.**—In consequence of an article in GARDENING on Hemerocallis, I bought two years ago the varieties recommended as far as possible. Of these H. fulva alone has flowered freely; distichia, though growing strongly, does not flower, nor does Thunbergi, graminea, flava or Kwanso. Our natural soil here is cold clay, but the soil was specially prepared for the Hemerocallis. Can anyone tell me what to do?—HARBORNE.

13901.—**Culture of Orange trees.**—On page 186 a "Liverpool Cottager" speaks of an Orange tree which, he says, he has had both in flower and fruit. I also have an Orange about eleven years old, but it has not as yet borne flowers. The size of the house is 10 feet by 7 feet, 8 feet 6 inches high, is in a cottage yard, and is heated from a boiler in the kitchen range. The Orange tree I have grown from a pippin, and should like to know "H. J. C.'s" mode of treatment. Will he kindly tell me?—W. R. T. *** *You must send separate questions about the other plants you mention.*—ED.

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13902.—**Cabbages eaten by caterpillars** (*J. K.*)—Hand-picking is the surest remedy.

13903.—**Obtaining Strawberry plants** (*H. B.*).—You can obtain them from any of the nurserymen who advertise in GARDENING.

13904.—**Growing Stephanotis in ordinary room** (*J. P. Ferris*).—No; you cannot grow Stephanotis in an ordinary living-room.

13905.—**Moving Pyrus japonica** (*C. W. B.*).—It may be moved with safety any time in autumn, winter, or early spring; October is, perhaps, the best time.

13906.—**Spotted Vine leaves** (*J. S.*).—The Vine leaves appear to be scorched. There are also traces of mildew, and if you are troubled with this dust with flowers of sulphur.

13907.—**Obtaining Roses** (*J. L. Gill*).—The Roses you name can, we think, be obtained from or through any of the great London or provincial Rose growers, with whose names you are no doubt familiar.

13908.—**Vegetables under fruit trees** (*Ignorant*).—As the number of trees you have is so small, almost any vegetables would grow under them; but if you care much for the trees you must be careful of their roots.

13909.—**Sowing double Dahlias** (*Amateur*).—You will probably get from the seed a number of single kinds, but you may also have the loveliest doubles. It is impossible to know what time may bring to the raisers of seedlings.

13910.—**Climbing Rose buds dropping off** (*Alfreda, Huntingdon*).—You do not mention the kind. It may be that you have one for which your climate is not good enough. Roses of various classes do not open well in bad seasons and in cold places.

13911.—**Buds of Lilium croceum falling off** (*E. D. Owen*).—We cannot assist you when you do not tell us the conditions under which the flowers are grown. The buds look as if they have been scorched by the sun shining on them when they were wet.

13912.—**Planting Portugal Laurels** (*H. H.*).—You say you planted them in March and they are now dying. The reason is that you did the work in the wrong season. Portugal Laurels are most difficult things to transplant at any time, and should be moved in April or May, or in September.

13913.—**Abnormal growth of Foxglove** (*John V. Sarth*).—What you send is a monstrous flower with all the parts distorted. The tube is flattened, and enlarged, 4 inches across. The flower is, in our opinion, extremely ugly, and there is nothing to be gained from monstrosities of this kind.

13914.—**Hydrangea losing its leaves** (*Anxious*).—You may notice that Hydrangeas in many districts are perfectly hardy, and your plant is not most happily placed in a greenhouse at this season. If your climate and garden will permit of it, we should advise you to plant the Hydrangea out in the open air.

13915.—**Christmas Roses in pots** (*Miss H. Simpson*).—Both Lilies of the Valley and Christmas Roses, being perfectly hardy, and thriving generally out-of-doors, are best at home in the open garden, unless you wish to grow them in pots for the sake of forcing them. Plant them out on a dull day, having previously steeped the roots well in water.

13916.—**How to strike cuttings** (*B. P.*).—Some cuttings should be kept moist and others dry. The way cuttings should be treated depends on the kind. Some will strike if merely stuck in a border and left alone, others require care and skill. You do not mention what kind of cuttings you are interested in, and therefore we cannot help you further.

13917.—**Plants for miniature greenhouse** (*J. P. Ferris*).—We know nothing that you could get into your greenhouse (3 feet long and 2 feet wide) in sufficient variety, except the little Cacti that are sold in pots in the London markets. These, set in a carpet of Moss, or on a little stage, would look pretty, and, with care, might be induced to flower. You might also try the Ice Plants.

13918.—**Excrescences on vine leaves** (*S. Johnson*).—Your vines are not affected with the Phylloxera. The excrescences on the leaves contain the eggs of the vine mite, a little insect that does not do much mischief. Similar excrescences are sometimes the result of too close and damp an atmosphere. The leaves seem also affected with mildew, for which the only remedy is sulphur.

13919.—**Amaryllis Belladonna** (*James Law, Manchester*).—The plant you mention grows with the greatest freedom in the open air in warm, loamy soils, planted at the foot of a south wall or in a border in front of a stove or glass house. In Madeira the plant is quite wild. We do not know how far north it may do, but it is not uncommon in the southern and midland counties to see it in brilliant bloom in the autumn.

13920.—**Insects on Roses** (*Chas. Woolston*).—Your Rose leaves are attacked by an Insect nearly allied to the aphides, or green flies. They are difficult to deal with, as they are very active and jump away when alarmed. Syringe with a solution of soft soap and Tobacco water. As far as I know they do not really injure the Rose trees.—G. S. S.

13921.—**Caterpillars on Sycamore trees** (*Miss M. Wilson*).—Your Sycamore trees are attacked by the caterpillars of a small moth (one of the Geometridæ). You might shake a good many from the trees, or they might be got rid of by thoroughly drenching the leaves with soft soap and water, with a little paraffin oil added.—G. S. S.

13922.—**Insect on Pansies** (*J. M.*).—The Pansy flowers have evidently been eaten by some insect, but of what kind I cannot say. One of the weevils is probably the offender. If you cannot find any insects during the day look after dark; many are night-feeders. If a beetle is the culprit I am afraid no watering with any insecticide will be of any use.—G. S. S.

13923.—**Grubs on Strawberry** (*John*).—Your Strawberries are infested by the caterpillars of the common ghost moth, Hepialus humuli. As soon as your plants show signs of flagging examine their roots. Your liquid manure could do no harm; but from the position of the caterpillars in the roots I am afraid no insecticide would reach them, as they feed on the roots of various strong-growing weeds. Destroy all Nettles, Burdocks, &c. If the moths (which are largish, with long, narrow, white, or yellowish wings) are abundant, as they are at times in June, catch them in a butterfly net. They fly generally as it is getting dusk.—G. S. S.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers by post.—*Correspondents are requested to note that we do not answer questions by post; we shall be obliged, therefore, if they will refrain from sending us post cards and stamped envelopes for replies.*

SELLING PLANTS (*Thomas Rowse*).—You must advertise the plants. Your letter can be inserted only as an advertisement.——ADVERTISEMENTS IN GARDENING (*W. B., Seaton*).—In future GARDENING ILLUSTRATED will be printed so that it can be bound, when required, without the advertisements.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

*** *Correspondents who during the week ending June 20th sent us plants which have not yet been named, are requested kindly to forward fresh specimens.*

Names of plants.—*C. H. Britt.*—Kalmia latifolia.——*Anxious.*—1, Choisya ternata; 3, Species of Aloe; 4, Apparently Triphasia trifoliata.——*G. Woodman.*—1, Vanda striata; 2, Dendrobium chrysanthum; 3 and 4, Next week.——*C. P.*—Epidium angustifolium (root it out).——*C. W. Bell.*—We do not name Roses.——*F. A. W.*—Cannot possibly name by leaf only.——*Bagot.*—1, Ourisia coccinea; 2, Polemonium cœruleum; 3, Lychnis dioica; 4, Centaurea montana (not Scotch Blue Bonnet, which is a Thistle).——*H. Wingrove.*—Chrysanthemum coronarium. Sow in August or September; it will stand the winter in light soil.——*W. Dacre.*—Aristolochia Sipho.——*Tomsett.*—4, Alonsoa incisa.——*J. M. Chretien.*—Much withered, but appears to be the Common Medlar.——*W. M. F.*—1, Saxifraga Andrewsi; 2, S. ceratophylla; 3, S. Aizoon minor; 4, Linnæa borealis.——*Brecon.*—1, Cotoneaster microphylla; 2, Pyracantha (Cratægus Pyracantha).——*S. G. Glenam.*—A kind of Sisyrnbrium (a weed).——*J. Dugan.*—Specimen insufficient for naming, probably a dwarf Pyrethrum.——*A. B. T., East Anglia.*—Next week.——*R. S. D.*—1, Panoratium illyricum.——*A. M Appleton and E. A. K.*—Double Barbarea vulgaris.—*Miss Frances Welby.*—Oblige us by sending another specimen of the plant.——*Pansy, Windsor.*—Not new, common.——*Wm. Stamper.*—1, Boronia elatior; 2, Gaultheria Shallon.——*Admiral of the Fleet.*—Scilla peruviana.——*E. C. W., Tottenham.*—1, Common Tansy (Tanacetum vulgare); 2, Woodruff (Asperula odorata); 3, Sedum spectabile.——*South Devon.*—Benthamia fragifera (Strawberry tree)—we have never tried the fruit; Species of Viburnum, probably V. lucidum.——*H. C. F.*—1, Stanhopea tigrina; 2, Viburnum Opulus (Guelder Rose); 3, Cupressus Lawsoniana; 4, Thuja Lobbi (gigantea).——*E. A. K.*—Scilla peruviana (blue); Fabiana imbricata (Heath-like); Asphodelus albus (white). Please number specimens next time.——*Miss Denison.*—Polygala vulgaris (blue); Pinguicula vulgaris (rosetted).——*A. H.*—Kindly send us another specimen of your plant.

Names of fruits.—*Lymystone, Devon.*—The Strawberry is apparently Cuthill's Black Prince.

ROSES.

13782.—**Tea Roses.**—I give the names of six Tea-scented Roses that have full flowers—or, perhaps, in view of your question, I ought to say they are as double as Mrs. Bosanquet. Their names are: Etoile de Lyon, Homère, Madame Hippolyte Jamain, Madame Lambard, Marie Van Houtte, and President.—J. C. C.

13813.—**Blight on Rose Trees.**—The cheapest and most effective remedy I have ever found for green fly on open air plants is a solution of soft soap. Dissolve 2 ounces of soap in a pint of boiling water, and add as much cold water as will make up the gallon; with this syringe the trees in the evening. One application is seldom enough, and generally three are required, at an interval of a day or two. A few days ago we syringed a Honeysuckle, which was completely smothered with blight, with soft soap solution of the strength here given. The tree is now quite clean and growing again. For all kinds of hardy plants which are liable to the attack of aphides, a solution of soap may be used at a strength of from 2 ounces to 4 ounces to the gallon.—J. C. B.

13800.—**Copper Austrian Brier.**—I am glad to see that "H. B. T. S." cultivates this fine old Rose. The best way of increasing it is to bud it either on the Brier or Manetti Stock. If a branch can be got down to the ground and a portion of it buried 3 inches under the surface, with the point left out of the ground, the part which is buried will in time emit roots and form a separate plant; but it is a slow process with these weak-growing Briers. I advise your correspondent to add to his collection of old Roses the Persian Yellow and Harrisoni; they will be found very interesting early-flowering yellows—Roses not often seen, which thrive remarkably well in Somerset.—J. C. C., *Somerset.*

Bedding out.—I am sorry to see "J. D." again beginning this controversy in the same intemperate spirit which drew down such just rebukes on him two years ago. An anonymous writer has no business to call people "silly" and "foolish" because they happen to differ from him in a matter of taste. "H. H. H., Darlington," is perfectly right when he says that many so-called hardy plants will not flourish in town gardens, and that they cost quite as much to buy as bedding plants I know very well, while the immediate results are by no means certain. "J. D." gives a long list of plants, everyone of which is growing in my garden, except Iris pumila and olbiensis, which are far too expensive for me, and plenty of others besides, yet their existence does not in the least interfere with my spring and summer bed; and I may add that people often stop at my gate to admire the blaze of colours, which does not cease from April to November, and, except in deep snow or hard black frosts, I am never without flowers; therefore the assumption that, because one chooses to have spring and summer bedding one cannot have flowers at other seasons, is simply ridiculous. If monotony is not to be cultivated, then most decidedly each gardener should follow his own inclination, and if the effect is occasionally eccentric, as in the case of the Dahlia fancier, so much the better, but if people's taste is to be improved it will not be done by calling them foolish.—A. B. T., *East Anglia.*

Questions for exhibition committees.—Having been an exhibitor nearly all my life, and having attended scores of shows, I feel myself competent to answer the questions asked by "E. B." (p. 215). 1. I have invariably found than an amateur is defined as "one who does not obtain a livelihood by selling plants, &c., or who does not employ labour in the cultivation thereof." A man might sell a limited number of plants ever year, viz., his surplus stock, even if he had only twenty square yards of ground. 2. I answer in the affirmative, provided the man does not depend on it for a living. 3. If "E. B." has sufficient reasons for raising an objection, let him lodge with the committee on the morning of the show a written protest, and no doubt the committee will consider it; and, should the protest be sustained, the persons objected to should be disqualified, and the prizes awarded to them withheld. 4. It would be useless to submit an objection to the judges, as their sole duty is to judge the exhibits, all else being beyond their jurisdiction.—R. MANN, *Shadwell.*

INDOOR PLANTS.

SPANISH MOSS (TILLANDSIA USNEOIDES).

This graceful and pretty species is most interesting to all plant lovers, though comparatively few perhaps have had the pleasure of seeing it grow in its habitat. I was so much impressed with its beauty during a visit to the Southern States and the World's Exposition at New Orleans, last winter, as to regard it as one of the most charming features of the Gulf coast landscape, if not indeed of the great crescent city itself. It certainly was a most conspicuous object of admiration to all distant visitors to the Exposition; and the beautiful live Oak avenue in those grounds, with its immense trees, overhung, festooned, and decorated with this curious plant as no man can decorate, is not surpassed by any other thing found in any of those vast buildings surrounding it on every side. This Tillandsia belongs to the Bromeliads, of which about 170 species are known to botanists, all being natives of semi-tropical America, though a few have been naturalised in parts of Asia and Africa. The best known of the family is the Pine-apple, so much valued for its fruit. But Tillandsia belongs to the epiphytic group, which grow upon trees and in the air, without being in any sense parasitic, although in the case of T. usneoides it requires careful observation to demonstrate that it does not derive its sustenance, at least in part, from the tree to which it clings so closely. The plant is known here as New Orleans Moss, Spanish Moss, also Long Beard or Old Man's Beard. It grows in the greatest abundance in all the States bordering upon the Gulf of Mexico and along the lower Mississippi River. It may be found to some extent even a hundred miles inland at times, but disappears after that. The Cypress, Live Oak, Magnolia, and other forest trees of the South are covered from top to bottom, branch and twig, with this pretty epiphyte. In colour the plant is of a drab, ashy hue, quite distinct from most other vegetation, though, upon closer examination, the leaves of thrifty specimens are found to present a dull olive-green shade beneath the soft velvety ashy pile which forms the outward covering. Older and unthrifty plants are darker in colour, and almost black in some cases.

This plant is often used in decorating rooms in the North, where it is regarded with much curiosity as well as admiration. When thus used it remains fresh and beautiful for months, and often continues to grow for some time after it is festooned upon the walls. The vast Cypress swamps and other forests peculiar to the Gulf States are everywhere completely shrouded with this beautiful Moss.

Like most other things in this practical and matter-of-fact country, Tillandsia usneoides has been found to possess distinct economic value, the importance of which is increasing annually. The Moss is gathered in piles near the swamps, and allowed to rot for ten or twelve months; 90 per cent. in weight is thus lost. It is then taken to New Orleans, where it is cleaned, dried, and ginned, losing in this last operation 35 per cent. of its weight. It is then ready for market, a prepared Moss used by upholsterers either alone or mixed with curled hair, which it greatly resembles, except that it is darker in colour. It is very much cheaper than hair, though not so good. New Orleans is the centre of this industry, there being six Moss factories located there, though there are small establishments of the kind at other points in Louisiana and at Pensacola, Florida. The amount of Moss gathered varies from year to year. It can be most profitably collected during seasons of high water and floods when the swamps are navigable for boats. It is estimated, however, that Louisiana is now producing over £100,000 worth of this prepared Moss annually. Of late it is being shipped to Europe to some extent. Tillandsia usneoides, while averse to immersion in water, must have a moist atmosphere in which to grow, or it will not thrive for any length of time. It also grows in the West Indies in abundance, as well as in the southern portion of the United States.

Kingston, N.Y. H. Hendricks.

Spanish Moss in the Southern States of America.

Propagating Dahlias without bottom-heat.—Having many times seen it stated in Gardening and in works on floriculture that to propagate Dahlias a brisk bottom-heat is essential, and that the cuttings of young shoots should be taken off with a portion of old tuber attached, I think my experience this year may be of service to some who, like myself, are entirely dependent on solar heat, and have been hitherto deterred from attempting the task. I last year purchased a number of Dahlias, double and single, and after flowering I stowed the tubers away, in accordance with instructions given in Gardening, and having wintered them without injury or loss I set about propagation; but although I took some pains to construct a hot-bed, through some cause or other the material refused to heat. However, I determined to try, and, having put about 4 inches or 6 inches of open soil on the manure in the frame, I planted my tubers, which soon, to my surprise, began to throw up a number of healthy, clean shoots. These I cut off, some with a portion of tuber attached and others without, and, putting each one in a small pot filled with sandy soil, placed them in a cool greenhouse, shading them from the direct rays of the sun. The result is that I have at the present time some of the most forward healthy Dahlias in the neighbourhood, which is a gardening one. The plants have had no artificial heat whatever, and only one cutting has failed to root. The contrast between my plants and the weakly, drawn, sickly-looking things grown in heat is great.—J. G., *S.*

AN AMATEUR'S GREENHOUSE.

Having given some idea of the aspect of my small house during the first three months of the year, I now proceed to show the alterations which are made in it for spring and summer. Let us suppose, then, that the beginning of April has arrived. By this time the Camellias will have done flowering, and will have been removed to the annexe, to make fresh growth for another year. Of course they would be better off if they could be put into a place where there was some heat, and where they could be well syringed; but I have not this, and am obliged to be content with what I have. I may here say that I never turn them out-of-doors. They are apt to get overlooked in the matter of watering, and if this is once the case the buds are sure to drop off, and if they are left exposed to the drenching rains of autumn they get soddened, and the same result takes place. I therefore keep them under the shade of the vine, and they are not likely then to be neglected. As soon as their growth is made I repot them when necessary, although I do not think that they need to be repotted every year, as some people teach us. It can easily be seen by turning them out whether they require it or not. If not, when returning them to the pot be sure to press the soil carefully round the edges of the pot, because, if not, when watering is done the water is apt to run down between the earth and the pot, leaving the ball quite dry. It is also well if the pots are standing in any case on the ground to place a tile under each, so as to prevent the ingress of worms, which derange the drainage, and so tend to injure the plants; in fact, there is hardly any plant that is more susceptible of injury from defects in watering than the Camellia. These having been removed, a considerable space is left in the house which must now be rearranged. More room is now given to the Azaleas which are already beginning to open their buds; and here let me say that, if any one intends to grow a few, select by all means the new Belgian varieties. Nice plants can be had for 2s. 6d. to 3s. 6d. each, and their flowers are much larger and the plants more floriferous than the English varieties. Let me name as desirable sorts: Empress of India, rosy salmon, with deep carmine spot on upper petals edged with white, semi-double; Apollon, large white; Charles Leirens, dark salmon, with black blotch, semi-double; Comtesse de Beaufort, bright rose; Deutsche Perle, large semi-double, white, blooms early; Flamheau, glowing crimson, the darkest Azalea grown; George Loddige, orange, red-dark blotch; Jean Vervaene, deep rich salmon, sometimes edged and striped with white; Madame Ambroise Verschaffelt, violet-rose, shaded with white; Madame Louise de Kerchove, salmon, edged with white, semi-double; Mademoiselle Marie Van Houtte, white, flaked with salmon, semi-double; Mrs. Turner, ground colour, bright pink, edge of petals white, fine spot of purplish-crimson on top petals; Reine des Pay-bas, white, spotted with amaranth; Sigismund Rucker, rosy pink edged with white; Souvenir de Prince Albert, bright rose, with white margin, double. To these I have added that very curious but somewhat miffy variety Imbricata, so double that it might very well be taken for a double Balsam, certainly

more curious than handsome. The early flowering bulbs, such as Lachenalias, Alliums, Cyclamens (many of them), Roman Hyacinths, and Narcissus, will soon be over. The Roman Hyacinths and Narcissus had better be thrown away, as they never do much the second year, and if tried are only a source of vexation; and now comes the turn of the Hyacinths and Tulips. They have previous to this been taken out of their covering of leaves, and have been gradually exposed to the light. Being, of course, thoroughly blanched when first taken out, I generally place them in the annexe, and put a few newspapers lightly over them during the day, taking them off at night. By this means they become gradually inured to the light, and come out much better coloured in foliage than if at once exposed to full sunlight. Their spikes are now showing colour, and, therefore, before they are placed on the stage they should have sticks placed to them to support the flower-stem, as, being heavy, they soon droop their heads, and indeed often break off altogether. When these are in bloom, and the Azaleas are also in flower,

The house is probably at its gayest period; the Hyacinths are so varied in colour and the Tulips so bright that, when there is a fair number, they cannot fail to give a gay appearance. During this time the show and decorative Pelargoniums have been repotted, and are given more room on the shelf near the glass, where, however, they are still kept; the Abutilons are also potted up, and so are the Fuchsias, and kept in the lower house for a while longer. As the Hyacinths and Tulips go out of flower they are removed; few flowers look worse in decay than they do, and therefore they are removed when they show any signs of it. As they are removed there are a few other things which take their place from, let us say, April to the beginning of June. Amongst them I would mention the Freesias, charming flowers of recent introduction, and most desirable both for their appearance and perfume; they bear forcing well, and can even in my case be brought into flower earlier, but I prefer to have them about this time. I was afraid when I first began their growth that, like Ixias, one would have to get a fresh supply every year, but I have been agreeably disappointed, and find that they not only do well when kept on, but they are readily raised from seed, and that the seedlings flower the second year. There are said to be varieties of them, and one, F. Leichtlinii major, has a good dash of yellow on the throat, but otherwise I see no difference; their delicious fragrance makes them a most welcome addition. Ixias I despair of keeping. I get a few bulbs, about one dozen each of viridiflora, a most quaint coloured flower, and crateroides, a lovely cerise sort; but although I have tried every method I could devise to keep them for a second year, and have, indeed, kept and grown them, I could never induce them to flower a second time. The fine stands of them shown at many of our London shows come from the Channel Islands, where they can grow them to perfection. At this time comes in that most useful, although sadly fleeting, flower

The Bride Gladiolus, or more properly Colvillei alba; these had been potted up with the other bulbs in the autumn, and had been kept in a cold frame brought into the house during the winter, and are now at this time rewarding one for the care of them by their singularly pure white flowers; they are also excellent for cutting, but unfortunately they soon go off. Another bulb, a very old one, has given me great pleasure this year, the old Ornithogalum arabicum, with beautiful pure solid white flowers and a little back boss in the centre, so beautiful that I wonder very much why it is not more grown; it is cheap enough, presents no difficulty of cultivation, and lasts a long time. During this time, also, the Tropæolums have had their day. I have had my bulbs now for many years, and they have increased in number, so that I have been enabled to part with a goodly number. During this time—*i.e.*, in the month of May—I have had the Aquilegias and Primulas in flower. The Aquilegias are very pretty, and there is no end to the variety you may have if you have space for them, for no flower more freely crosses, and insects manage it so that there is no difficulty about hybridising, and, indeed, the real difficulty is to keep any of the Aquilegias true, they are so susceptible of hybridising. Of the Primulas, Sieboldi is the most useful, and there are now some very beautiful varieties of it, so that you may have any colour from pure white, through lilac, to deep rose and even crimson. A collection exhibited at the Manchester Exhibition was most striking. Primula obconica is a charming addition, and a good plant of this is a valuable addition, as it is nearly always in bloom. Through these various little changes the aspect of the house begins to alter. The Pelargoniums have been brought down to the stages, and are beginning to show for flower, and now I come to what I may call the last page of this eventful history—the summer aspect of the house; but this must be reserved for a future paper. Delta.

REPLIES.

13497 and 13577.—**Camellias from seeds and cuttings.**—It is usual to propagate the single red variety from cuttings, which are used as Stocks to graft upon. The old double white and the variety Imbricata may also be propagated by cuttings. The young wood should be taken off with a heel before it becomes too hard. They will form roots in about six weeks, in a little bottom-heat and a close propagating frame. The soil used should be sandy peat. Seedlings can be raised easily by sowing in the same soil, and giving the pots a little bottom-heat. It is best to graft them, and it can easily be done in the spring. Keep the plants in a close house, and maintain a moist atmosphere until they start.—J. D. E.

13787.—**Culture of Clianthus Dampieri.**—This is reckoned a rather difficult plant to grow, and many good professional gardeners fail to manage it satisfactorily. The roots seem to be highly sensitive, and if the shifting-on out of a small pot is not done with extreme care they come into an inactive state, and the plant soon dies. I have no doubt that the best way would be to sow the seeds several together in a well-drained border of turfy peat and fibrous peat, and allow the young plants to grow without check or interference. This Glory Pea is sometimes grown remarkably well planted out in a greenhouse border. The only fault in this method is that the plants do not get so long a season of growth as if raised earlier in the year in warmth. A French firm succeeds admirably with this plant, flowering it well in 6-inch pots, some of which were exhibited last year at a meeting of the French National Horticultural Society. The seed was sown singly in small pots early in February, in light, sandy soil, the pots being plunged in a hotbed. Before they became root-bound they were shifted into 6-inch pots, and again plunged in a bed of fermenting material, which brought them along to the fine weather, when they completed their growth in a cool house. In this instance the elements of success would seem to consist in the stimulus given to the roots by bottom-heat, shifting before the plants get root-bound and into their blooming pots at once, thereby avoiding the danger from the check which frequent repotting causes. I have also known this Clianthus to do well when the seeds were sown in the pots in which they were to bloom. They were sown in 8-inch pots, thoroughly drained, the compost consisting of fibrous sandy loam, two parts, leaf-mould one part, with a little peat in it. The drawback to this method is the care and skill needful in watering such a body of soil before the roots get possession of it. If attempted to be grown in this way I should counsel the use of pots not larger than 6 inches in diameter.—Byfleet.

13781.—**Increasing the Genista.**—The Genista, or Cytisus, to which we suppose you refer, is not one of the easiest plants to propagate. The method found most successful is to take cuttings about the beginning of August of the partly-ripened wood. These should be cut to three joints and firmly inserted in sandy peat in 4½-inch or 6-inch pots, placed in a cold frame, and shaded from hot sun. The common practice is to remove them to a warm house about the end of September, as, having callused, the extra heat causes them to make roots, so that they are ready to pot off in spring. If kept in a cool house they should be protected by a handlight; and, if kept just moist, some will generally strike.—J. C. B.

13799.—**Young Acacias not growing.**—Your Acacias may be in bad health from either of the following causes: want of more root room, too much water at the roots, or, which is most probable, they are infested with some sort of insect. Acacias are specially liable to get infested with red spider and thrip, which would cause the leaves to fall off. As regards other matters attend to your plants according to the instructions given by the Editor to "T. Y.," June 20th, page 197.—J. C. C.

13785.—**Cyclamens after flowering.**—There is no simpler way, and none more likely to give good results, than planting the bulbs out in a frame, in light sandy soil, for a couple of months or so. Shake away all the old soil; indeed, it is as well to wash the roots, as this ensures the getting rid of a small grub which breeds in the soil, and which, if allowed to remain, eats the roots completely away in the winter. Keep the soil moist but not too wet, and sprinkle overhead twice a day in fine weather; give plenty of air, and leave some on at night when they begin to grow. If they are well attended to they will make good growth, and will be ready for potting by the beginning of October. Drain the pots well, and use a nice free compost of loam and leaf-soil in equal parts with plenty of white sand. Do not use pots too large—as long as there is room for the roots comfortably they will do very well, better than if they have more soil. Keep rather close for a week or so, and then accustom to plenty of air and the full sun. In this way they will get no check and will bloom in a cool house from December onwards. Water carefully—do not allow the soil to become very dry, but do not saturate it, as the roots are tender, and soon suffer from an overdose of water.—Byfleet.

—— They require a period of rest after the flowering is over. They require but little water, and should be kept in a greenhouse until the end of May; afterwards place them in a cold frame; shade slightly from sun by day, and remove the lights altogether at night. The night dews serve to invigorate the plants.—J. D. E.

13583.—**Winter-flowering plants for towns.**—Chrysanthemums are among the best winter-flowering plants for a town greenhouse. Cinerarias, Chinese Primulas, and Tree Carnations are also valuable. Erica hyemalis, E melanthera, E. caffra, and E. gracilis, also Epacris in variety, and winter-flowering Rhododendrons are useful.—J. D. E.

13573.—**Greenhouse Rhododendrons.**—When the flowering period is over they proceed to make their growth, and should be encouraged with a rather moist atmosphere, and the house in which they are growing should be shut up to retain the heat after five p m. If repotting is required let it be done. When growth is completed and the flower buds formed, a drier, airy atmosphere is best.—J. D. E.

13502.—**Oxalis hirta.**—This Cape species should be grown in a frame, and when at rest ought to receive but little water. The reason it is best grown in frames is that it can receive plenty of air and sunlight. It will not flower if boxed up in a greenhouse under other plants, shaded from the sun. Protection from frost in winter is essential.—J. D. E.

Fairy Rings.—A correspondent asks what is the cause of the "Fairy Rings" so often met with in old pastures. The following explanation will probably be satisfactory:—These are caused by the growth of fungi, notably by an edible species known as the Fairy Ring Champignon. The underground spawn from which the fungi arise at first starts from a centre, so that by the radial growth of the spawn the rings increase in size every year. The growth of the thick black Grass mentioned is caused by the decay of the previous year's growth of fungi on the margin of the ring. These fungi form a highly nitrogenous manure. The new crop of fungi (generally to be seen in the autumn) is outside the dark, rank Grass; this crop causes the growth of the dark-coloured Grass in the following year. The ring of black Grass is sometimes stated to be sweet; Shakespeare says it is sour—

> The nimble elves
> That do, by moonshine green, sour ringlets make,
> Whereof the ewe bites not.

Shakespeare was quite right; herds and flocks do not relish the rank, sour Grasses of Fairy Rings, and will not eat them.—W. G. S.

White Iceland Poppy.—Of the various forms of Papaver nudicaule, some of which are fine in colour, this white form is, perhaps, the most beautiful. It comes very freely from seed, and is of easy culture. We think the finest kind was raised by Mrs. Davidson, of Ashmore Rectory, and we hope our seedsmen generally will some day secure a good strain of this, particularly of the white single variety, which is a very beautiful flower.

THE BORNEAN JASMINE (JASMINUM GRACILLIMUM).

MR. WOODALL shows us some beautiful blooms of this Jasmine, which blooms profusely with him in wreaths 3 feet long, with side sprays all the way down. It is quite distinct from the other Jasmines, gives forth a most delicious odour, and the flowers, which are in axillary bunches, appear for eleven months out of the twelve. It is planted out in the hottest corner of a warm stove, on the back wall, and the growth is very free—freer than that of any other Jasmine. Mr. Woodall states that the blooms are of a very pure ivy white, and the foliage soft and beautifully green, and the plant is most valuable for cutting, rivalling even the Stephanotis. One of its best points is that it is most free in flowering during the winter when flowers are scarce, but it is good every month of the year.

THE KITCHEN GARDEN.

REPLIES.

13793.—**Crop to follow Potatoes.**—One of the best, if not the very best, crops to follow Potatoes would be Peas. Onions would also do, or Parsnips. Perhaps it would be as well to grow all three. When it is intended to sell the produce from a piece of ground of this size, it is better to grow various kinds of vegetables, as it is difficult to say beforehand what will pay best. Cabbages are sometimes a paying crop; but one market grower told me that he obtained only six shillings for 200 dozen of Cabbages early in May. Another carted them home again, and emptied the load on the dunghill. Instead of growing Potatoes on the same ground for five years, I would have planted, the first year, one half with Potatoes, and the other half with Peas; and changed sides the following season with the same produce.—J. D. E.

—— You must be guided in this by what is likely to sell best in your district, and by the nature of the soil. If as you say you have grown Potatoes successively for five years the soil cannot be very bad or of a very heavy nature. As Onions grow well, why not try, say, a quarter of the area to this crop? If properly managed they pay as well as many things. If the soil and subsoil are suitable, would not Parsnips or Carrots answer your purpose? The area is too small to speak of corn crops as a change in the rotation, but perhaps Beans would do.—D. J. Y.

13518.—**Growing Onions.**—The maggot can only be destroyed by a united system of planting out. Everyone in the neighbourhood must do so. As soon as the plants are seen to be attacked they must be pulled out, and lime-water poured into the holes. Watering freely with strong soapsuds will help to keep them free from the pest. Soot dug into the ground before sowing is a deterrent, and an excellent manure. For Carrots it has been recommended to apply a dressing of sand, saturated with spirits of tar, previous to digging the ground for the crop; a dressing of quicklime is a preventive. All the attacked plants should be destroyed as soon as they are observed. In this way it may in time be stamped out.—J. D. E.

13578.—**Insects in Cucumber frame.**—They breed in the fermenting manure, and when the heat subsides they will disappear. They do not harm any plants.—J. D. E.

A hint to plant buyers.—*To the Editor.*—In GARDENING ILLUSTRATED you devote a few lines of your advertising space to instructing your correspondents to mention the paper when answering advertisements. You would also confer a great favour on your advertisers if you would add the words "And all correspondents should be careful to write their name and address plainly." It not unfrequently happens that people write a letter plainly, and then write their name and address, so that it is almost impossible to make it out. Buyers, too, sometimes omit their names and addresses altogether, and florists have to suffer in reputation on account of this carelessness.—S. S.

HOUSEHOLD.

Cooking Mercury, or Good King Henry.—I should be glad if someone will kindly tell me the right way to cook the above vegetable, which I procured some months since, and which is now in leaf, with a show of spiral blossom?—E. M. P.

Tomato Figs.—Procure a quantity of small ripe Tomatoes, peel and slightly cook them, spread on dishes and flatten a little, and sprinkle with white or light brown sugar. When dry enough to keep well, but not hard and dry, pack in small boxes with sugar between each layer. They are said to be very nice, and to be undistinguishable from real Figs.—*Country Gentleman.*

VEGETABLE & FRUIT COOKERY.—XI.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

PEAS.

THERE are numerous varieties of this favourite vegetable, and it is used as food in many different forms. Sometimes Peas are eaten unripe or green, and sometimes fully ripe or matured, in the form of dried or split Peas and Pea meal. When Peas are intended to be served as a fresh vegetable and eaten green they should be gathered quite young, so as to be tender and sweet. In that condition they are also more digestible, though they contain less nutriment than dried or fully matured Peas. It is quite impossible to render old Peas palatable and digestible as a fresh vegetable; for the long boiling will only make them still harder than they were when first introduced to the pot. If not gathered and used while quite young it will be found far more economical to let them grow to their full size, and then to dry them for winter use. The Sugar Pea is not eatable unless it be gathered quite young, for the pods are cooked with the seeds still inside. Forced or early Peas have not nearly such a good flavour as those which have been brought to perfection in due season by the rays and heat of the summer sun.

The Bornean Jasmine (Jasminum gracillimum).

GREEN PEAS BOILED.—The perfection of this dish will much depend upon the age and freshness of the vegetable. Place a saucepan over the fire containing two quarts of water and one ounce of salt when you commence to shell the Peas, for if the Peas be kept after they are shelled to wait for the boiling of the water, their sweetness will depart and the colour be spoilt. When the Peas are all shelled throw them into a basin of cold, fresh water and stir them up; remove all imperfect or worm-eaten ones, which will float on the surface of the water; drain off the water, and throw the Peas into boiling salt and water, and let them boil with the lid off the pan for twenty or thirty minutes, taking care to remove the scum as it rises, otherwise both the flavour and appearance of the vegetable will be injured. To test whether the Peas are sufficiently cooked, lift a few from the pan with a perforated spoon. No exact time can be specified, since it depends upon the age and freshness of the vegetable, and while two minutes too long will cause the Peas to present a mashed and mangled appearance, two minutes short in the cooking will give them a raw, unpleasant taste. As soon as they are cooked, drain them and put them into a hot vegetable dish, cover, and send to table at once. When the Peas are to be eaten with cold meat, or when butter is approved, divide a 2 ounce pat of butter into four pieces, and after the Peas are in the vegetable dish dive the butter amongst the Peas, cover and let stand close to the fire for three minutes, remove the cover, stir with a fork, cover again, and send quickly to table. When green Peas are to be served with lamb, calf's head, or veal, a delicate and pleasant flavour is imparted by cooking a small bunch of fresh Spearmint with the Peas, but taking it away before serving them. The water in which the Peas have been cooked should on no account be thrown away, but reserved as a foundation for soups or sauces.

The pods, when fresh and young, may also be utilised; in the first instance, after rejecting all dry or discoloured ones, wash and dry them well, chop them very small with a large handful of Chives; reboil the water in which the Peas were cooked, and then boil the shells and Chives, with the lid off the pan, until they are sufficiently soft to be passed through a hair sieve; return the pulp thus obtained to a saucepan with a small pat of butter, pepper and salt to taste, and heat over the fire until thoroughly hot, but not quite boiling. Mint may be substituted for the Chives, and a squeeze of Lemon juice added at will. This will be found an excellent vegetable to be served with lamb chops, veal cutlets, or dressed lamb's head. Another way to utilise the young fresh Pea pods is to thoroughly wash and dry them well, and then gradually to roast and brown them in a Dutch oven before the fire or in a slow oven; or they may be placed upon a baking-sheet and left all night in a moderately hot oven with the door left open; when quite cold put them into a tin with a tight-fitting lid, and preserve for winter use in a dry warm place. A few dried shells thrown into any soup, stew, or sauce in its preliminary stage will impart to it not only a pretty brown colour, but a pleasant flavour.

GREEN PEAS COOKED WITHOUT WATER.—Only very young and fresh Peas can be well cooked in this manner. As they are shelled drop the loose Peas on to a plate so that you may readily see and reject any that may be decayed, worm-eaten, or overgrown, and on no account wash the Peas. To one pint of Peas (immediately after they are shelled) melt 2 ounces of fresh butter in a saucepan; add the Peas with a bunch of Parsley and two small Onions; mix well together, cover with a tight fitting lid, and let the Peas cook in their own juice until quite tender, but not broken. Shake the pan now and again to prevent the Peas from sticking to the pan or the butter from becoming brown; add half a teaspoonful of powdered sugar and the same amount of salt, shake well to mix thoroughly; take out the Parsley and Onions and serve hot. The Onions may be omitted, and the hearts of two young Lettuces substituted; chop them very small and cook with the Peas, and these need not be removed.

GREEN PEA SOUP.—Take one peck of fresh full-grown Peas (reject any old Peas, as they spoil the flavour of the soup), six spring Onions, two small Lettuces, three ounces of butter, two quarts of broth, a white stock, a slice of lean ham, a small pinch of sugar, and salt to taste; shell the Peas and put aside one large cupful to use as hereafter directed; melt the butter, add the Peas, a handful of shells, the Lettuce and Onions cut in pieces, put the lid on the saucepan, and let them steam for fifteen minutes, stirring occasionally; then pour over the stock, and ham cut in pieces; boil for one hour, and pass

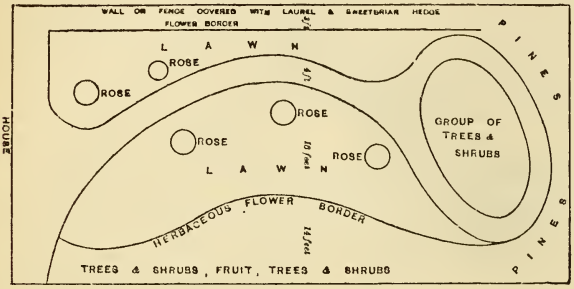
through a sieve or fine colander, return to the saucepan with the sugar and salt, and continue to stir until boiling, during which time boil the cupful of Peas that were put aside, in just enough boiling water to cover them, and a very little salt; when they are quite tender pour them and the water that may remain with them into a hot soup tureen, and add the boiling soup to them; mix all and serve with small dice of toasted or fried bread.

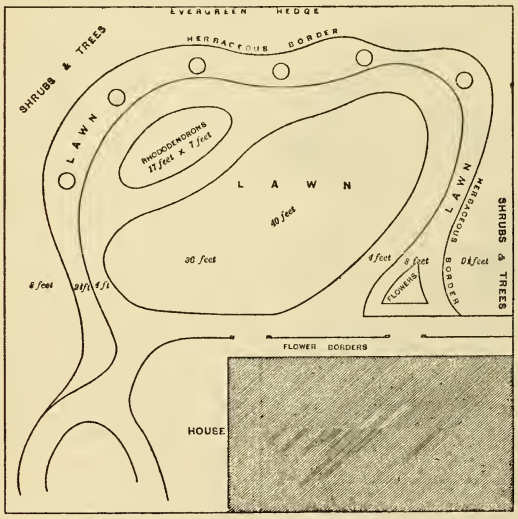
SHALLOTS AND GARLIC FOR WINTER USE.

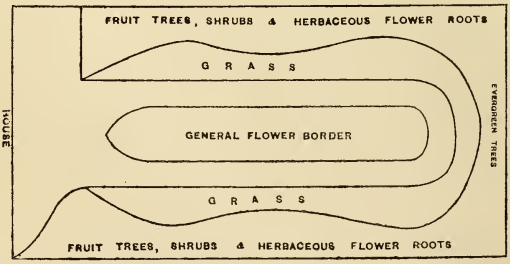
Towards the end of the month of June is the best time for preparing Shallots and Garlic for winter use. As soon as the top leaves begin to decay take the roots from the earth and spread them on boards or nets in some airy situation until they are quite dry; then tie them in small bunches and hang them up in a cold, dark, dry place, and they will keep good for at least a year.

GARDENS OF LIGHT AND SHADE.

THE following are additional designs for laying out pieces of garden ground of various sizes, such as are commonly found attached to modern suburban houses (see p. 93). In all there is a similar effort to suggest a garden secluded amid masses of greenery, originating in the obviously reasonable notion that suburban surroundings usually supply much which may be hidden with advantage. Where more fortunate conditions prevail no great exercise of ingenuity is needed so to modify the arrangement that the eyes are secured access to the landscape beyond.







Gardens of Light and Shade: additional designs.

A SOUTHAMPTON AMATEUR ON GARDEN PESTS.

AMONG the many virtues promoted by gardening, early rising is one of the first—first in the day, anyhow. The charm of the garden is greatest when the shadows of the shrubs are long and the dew is still sparkling on the Grass; the multitudinous details of gardening can only be accomplished in this work-a-day world by seizing the precious hour before we are claimed by the counter or the desk; many of the gardener's pets can be fed and some of his foes can be fought only before the sun is strong. . . . . The ingenious author of "Gates Ajar" has imagined a future state where everyone enjoys his or her favourite taste or hobby. She tells even of pianos there, though pianos in an abode of bliss amount pretty nearly to a contradiction in terms, unless deafness defends the rest of the inhabitants. But a slugless, catless, blightless paradise! that were an Elysium indeed. But, after all, if there were no slugs, probably there would be less early rising, less watchfulness, less patience. In this reflection lies as much as we can grasp of the great mystery of Evil; for true philosophy go to the garden. . . . . The most formidable pests of the garden are the cat, the small boy, the slug and the snail, the aphis or fly, the earwig, and the sparrow.

The cat is the most diabolical quadruped in creation. He (or she) nourishes a fiendish hatred of horticulture. He revels in rending trailers, and in breaking brittle plants. He delights in disturbing seed beds. Many's the time my appetite for breakfast has "shuddered, sank, and died," on my discovery of the ruin wrought in the feline Walpurgisnacht, or witches' Sabbath, as I, all unconscious, slept. The omission of a tax on cats forms, to my mind, a most crushing indictment of the financial policy of the Government. I could welcome a war with Russia, yea, with all the Great Powers at once, if it did but cause the Chancellor of the Exchequer to include in his next Budget a tax on cats. In the meantime I have had recourse to devices which have been at least partially successful. Dwarf-growing or trailing plants, such as Pansies, Pinks, or Stonecrops, may be protected by an arrangement of short, pointed sticks, thrust firmly into the ground, about 5 or 6 inches apart; seed patches may be fenced in the same way. Strong pepper liberally dusted over the parts affected—as the doctors' books say—will act as a deterrent for some time. Finally, serve every feline intruder, as soon as seen, as the hospitable miner is reported to propose to serve the stranger—"'eave 'arf a brick at 'im."

The small boy is frequently a great nuisance, especially in front gardens. He may be a shade less active in iniquity than his cogener the cat, and generally his depredations are limited to the daytime. But then he is not so easily dealt with in some respects. Magistrates are not apt to take an encouraging view of the 'arf brick treatment, though you plead broken glass and rifled flower beds. I padlocked and chained my gate for many months, which baffled the enemy pretty well, but also excluded visitors — though whether this last may not be considered an additional advantage rather than a drawback, I leave each of my readers to decide in his own mind. The police are of assistance—sometimes. If ostentatiously trotted round the premises, the dreaded bobby will occasionally act as a "scare-boy." When stone-throwing is bad, a guard may be made of small meshed wire-netting, stretched over pit-lights and greenhouses, 6 inches from the glass.

The slug—*can* I control myself sufficiently to write of him in language "fit for publication?" I am not in favour of oaths, judicial or otherwise. Mr. Hopwood's Affirmation Bill has my decided approbation. But when I think of the slimy mollusc within whose voracious maw so many of my dearest hopes have been entombed, I feel within me a capacity of oath-taking adequate to admit a hundred members for Northampton. O the weary hours I have spent, with aching back and straining eyeballs, searching for the slippery limax! But at length I have thinned his legions, if not quite annihilated them. And this is how. To protect a patch of pricked-out seedlings, or small plants of any sort, I find

the best way is to go out at night—a damp, warm night is best—with some powdered (air-slaked) lime in a muslin bag tied to a stick, and dust the plants and ground with it. This lime-simoon will destroy the soft-skinned enemy by hundreds. Trailing plants, which afford slugs a cover, where they are sure to be thickly found, are best treated with lime-water. This munition of war is made by dropping a lump of quicklime into a cask of water and waiting till it clears. Traps may be made by putting Cabbage or Lettuce leaves, slices of Carrot or Potato, pieces of Orange-peel or small heaps of bran, under an inverted pot. Look over these each morning, and spike the captives on a knitting-needle or some similar weapon, and pickle them in a pot of brine. This will cure them of their nefarious appetites for garden growth. All these tactics must be supplemented by a late or early patrol with scissors, or pen-knife, or brine and spike. The many varieties of

Aphis, or fly, or blight, are sometimes a terrible plague, especially in dry seasons. I have lost through them a whole bed of choice Primroses and Polyanthuses, and a batch of Forget-me-nots, and rows of Peas, too. They are difficult to deal with when they attack plants in the open air; those in pots are easier to cure; they can be syringed with Quassia water, dipped in Tobacco water, or dusted with Tobacco powder, at will, or simply brushed off in small numbers. But in the open air about all that can be done is copious syringing with some cheap insecticide—paraffin is as good as any; a wineglassful to a pail of water, kept mixed by driving every alternate syringeful back into the pail. It should, however, be borne in mind that plants which are doing well are the last to be attacked, so let good culture be the order of the day. Chrysanthemums and Broad Beans are nevertheless certain to be attacked in any case; the former with fly of a yellowish colour, and the latter with black ones. Both are easily conquered. A pinch of Tobacco powder on the tips of the Chrysanthemums, and pinching off the tops of the Beans altogether, is the way to do the trick. Dahlia growers have long hated

The earwig, but I never knew, till cruel experience taught me, that the little brown insect with the pair of pincers for a tail, could be equally injurious to the Chysanthemum. For two seasons I had my stock spoiled—never a perfect bloom among them. All this time I had no idea what it was that caused the stunted and wretched appearance of the plants, and made such few flowers as opened at all come lop-sided and deformed. The miles of gardening literature that I read gave me no hint, though I have noticed several since I found it out for myself, which I did eventually by examining the plants at night, when I saw the wretches at their nefarious repast. The next day I brought to bear a fearful array of traps—hollow Bean stalks, pieces of crumpled newspaper, and small pots, half full of hay, inverted on the stake. Each morning these are inspected and the earwigs disposed of by shaking them into a basin of hot water, or if this is not available so early—and is it not blasphemy or treason combined to expect it?—"squashing" them on the path does as well. In this way last season I accounted for 3,756 earwigs, and my Chrysanthemums gave me thousands of fine blooms.

The sparrow is universally recognised as the type and exemplar of impudence, and he fully merits this "bad eminence." I have seen gardens so thick with tin cats and owls that they looked like enormous "happy families," inasmuch as the sparrows seemed on perfectly easy terms with the counterfeit presentments of their natural enemies. I have observed gardens so festooned with strings of coloured rags that I thought a royal procession was expected; but the sparrows, unquailing, merrily pulled up the young Peas, and pecked the opening flowers. I once manufactured a set of scarecrow of a greatly improved kind, in which I placed great reliance. I erected several little gallows, to each of which I suspended by a foot or so of twine a Potato stuck round with feathers. These jerked and bobbed about with such supernatural activity, that I felt quite scared at them myself. Now, thought I, my Peas are safe. But my confidence was short-lived. Next day, looking out of the stair-case window, I espied a fine cock-sparrow perched on one of the feathers, and making a hearty meal off the Potato. But I have since learnt a really infallible protector. A row of young Peas can be guarded as securely as a pasha's harem by simply stretching along it a line or two of black thread about five inches from the ground, attached at intervals to sticks thrust into the ground. The sparrows cannot see the thread, catch their feet or feathers in it, give a squeak of affright, and make off, and return no more. They think it's witchcraft. A fine edging of Primroses was hardly beginning to bloom when the sulphur-tinted corollas were snapped off as fast as they appeared. I just stretched along it a single thread, and thereafter not a petal was touched. Currant and Gooseberry bushes can be protected in the same way. As soon as their leaves begin to fall in autumn, prune them, and then wind the thread round and about them. It need not be at all close.—*Southampton Times.*

POULTRY.

QUESTIONS.

13924.—**Sickly chickens.**—Will "Doulting," or any other correspondent, inform me of the cause of my chickens dying? They are about two months old, and I have never lost any in the same manner before, although I have reared hundreds. They are treated as usual, brought up on Grass, and at two months old turned into an orchard. Ten or fifteen of them have drooped their wings and died a lingering death.—CLARA, *Nottingham.*

13925.—**At what age do pullets begin to lay?**—Having read much of interest at various times in your space devoted to poultry, I should be glad if some of your poultry readers would give their experience as to the average age at which pullets commence to lay. I have one, a black Hamburgh, which was hatched February 5th, and to my great surprise it laid its first egg yesterday, and has again laid this morning (June 23rd). The pullet being only nineteen weeks four days old, I think the fact is worth recording. The first egg was of fair size; the egg laid to-day is no bigger than a bantam's. I may say that I have two black Hamburgh cockerels from the same strain, hatched respectively on April 1st and 8th, both of which crowed at nine to ten weeks old.—PRECOCIOUS, *Ripon.*

13926.—**Best egg-producing fowls.**—Will any reader kindly tell me what race of fowls would answer best as egg-producers to run with "La Flèche?" I have one cock and two hens of this kind, and do not wish to introduce another cock. Would Minorcas, Houdans, Langshaws, or silver-pencilled Hamburghs be a good cross? It should be a hardy bird, as Winchester is both cold and damp nine months of the year.—MRS. H., *Winchester.*

REPLIES.

13827.—**Egg-bound Hen.**—An egg-bound hen usually goes to the nest frequently, and remains there some little time. She then comes off without having laid, and walks slowly about, apparently in pain. To remove the obstruction, a well-known authority on poultry matters advises a table-spoonful of warm treacle, mixed with chopped groundsel, to be given a few times at intervals of an hour, and a small flexible syringe passed up the oviduct until it meets the egg, and an ounce of olive oil injected. Some use an oiled feather for the latter purpose, and foment the vent with hot water before applying the oil, so as to relax the tissues. Care must be taken not to handle the bird too roughly, or the egg may be broken, and then serious results may be expected.—DOULTING.

13927.—**Management of fowls in small yard** (*Novice, Taunton*).—As "Novice" only requires four fowls at the most, I advise him to get some pullets hatched in March or April last. These, if properly treated, ought to commence laying in October, and continue throughout the winter. Eggs at this season of the year can be bought as cheaply as they can be produced at home, and thus I do not recommend the purchase of last season's hens, for, although they may be laying now, they will cease to do so before the winter arrives and not recommence until next spring. As regards breed, I should be content, under the circumstances, to buy ordinary fowls of the district. Minorcas ought to be readily got in West Somerset, and are very good. Brahmas would be very suitable, and are good winter layers. Neither would cost much if purchased at once. Your shed as it stands is not warm enough for the winter. Part of it should therefore be enclosed, so as to form a sleeping and laying house. This need not be an expensive affair, a few boards being all that would be required to make a comfortable pen. With regard to the size of this compartment 6 feet each way or less would be ample. The perch on which the fowls will roost should be about 30 inches from the floor. High perches should be avoided especially with heavy birds. Nothing is more suitable for fowls to roost upon than a Larch pole about 4 inches in diameter split in two, fastened the flat side downwards and the bark left on, as the birds can hold on so much better than when the perch is very small and smooth. Narrow perches, too, produce crooked breasts, and this no poultry keeper should care to have in his yard. About 6 inches below the perch should be fixed a board about 18 inches wide, to receive the droppings, and underneath this the space may be divided into three or four compartments to serve as nests. With so small a stock, however, a box or basket placed in one corner underneath the board would be sufficient. The remainder of the shed would be used during the day as a shelter from the sun or rain. In one corner should be kept a heap of dry dust or sifted ashes for the fowls to clean themselves in, and this should be occasionally changed. The sleeping house must also be frequently cleaned. With reference to the question of feeding, as the birds can pick up nothing in their runs they must be supplied with three meals a day. The breakfast should consist entirely of soft food—that is, meal mixed with water into a hard paste. Many persons mix their meal too soft, so that it adheres to the beaks of the fowls, which is neither pleasant nor economical. It should be so dry that when thrown on the ground it should break, but not sufficiently dry to crumble or blow away. At midday scraps from the kitchen, such as a few Potatoes or bits of meat, may be given, and for the evening meal some whole grain, such as Wheat, Barley, or Maize, is the best. A change in the diet is advisable from time to time, therefore neither of the grains mentioned should be used continuously. Whatever food is given it should be cleaned up at once, and not be allowed to remain from one meal to the next. A piece of turf with the Grass upon it should be placed in the yard occasionally for the birds to pick at; they also like to peck away at the heart of a Cabbage. Water must also be always at hand.—DOULTING.

13928.—**Unhealthy fowls** (*Constant Reader*).—The fowls are probably crop-bound, the cause of which is generally feeding wholly or in great measure on hard grain. The following remedy is from Wright's "Illustrated Book of Poultry":—"Some warm water should be poured down the throat, after which the distended viscus is to be gently and patiently kneaded with the hands for an hour, or more if needful. However hard at first, it will generally yield and become soft after a time, and when relaxed a half-teaspoonful of Epsom salts should be given, and the bird left in an empty pen. Usually there will be no further difficulty, but the fowl so affected must be fed sparingly for several days to allow the organ to contract, otherwise a permanent distension may result, which, indeed, is sometimes the case after the greatest care, but beyond being unsightly causes little injury to the bird." In extreme cases the crop itself must be opened, and the offending matter removed. As to feeding, I advise "Constant Reader" to note my remarks in reply to "Novice." Mixtures sold by corn dealers should be avoided, whether of corn or meal, for in the latter case there is sure to be much dirt in the sweepings, if not something worse; and a mixture of hard grain does not admit of variety, for the fowls may be expected to pick only those kinds which they prefer. For soft foods to use in the morning, barley meal and sharps are best, while Wheat, Barley, Oats, Buckwheat, or Maize may be given at night. The last-named is more of a winter food, but should always be used sparingly, or the fowls will become too fat for laying purposes.—DOULTING.

13929.—**To prevent hens sitting** (*C. H. S.*).—Whatever be the treatment adopted, the desire to sit will not disappear for some little time, especially with Cochins or Brahmas. The best way is therefore to allow the hens to remain on their nests (if that be possible) for a few days, taking care that no eggs are under them. They may then be placed in a coop—in some place where they can see their fellows, and kept rather short of food, but well supplied with water. At this season of the year we may expect most hens of the sitting

varieties to be broody, and if they are very good layers, and it is intended to keep them round for another year, it is a good plan to allow them to sit for some time on nest eggs (if no chickens are wanted) so as to give them a rest. They will moult earlier for it, and also lay earlier as well when eggs are more valuable than at present.—DOULTING.

13930.—**Egg-eating hens** (*Novice*).—For egg-eating hens there is no remedy which can be depended upon to effect a cure. Some fanciers fill an egg-shell with mustard, so as to check the taste of the hen in the future. Others have invented an ingenious contrivance by means of which the egg, as soon as laid, drops beneath beyond the reach of the hen. But unless the birds are really very valuable specimens, and can be kept apart, it is far bstter to kill them as soon as they have adopted the habit, or their example will be followed by every bird in the yard.—DOULTING.

Gapes in chicks.—The following directions are given by a writer for the prevention and cure of this fatal ailment. By way of prevention he recommends, two days after the chicks are hatched, the rubbing of a little carbolic acid on the feathers inside the wings of the hen; while for curing chicks affected with the gapes he describes two ways of using carbolic acid, both of which are said to be equally effectual. First, put a teaspoonful of the acid into a tin pot, such as a salmon tin, and heat over a lamp. As soon as the fumes are seen to rise, hold each chick in turn so that it shall inhale the fumes. If not quite cured, repeat the operation after the interval of a day. Two such doses are generally sufficient. Secondly, mix the acid with six times its volume of soap-suds, and pass a little into the inside of the throat of each chicken with the tip of a feather. The above plans are said to have very rarely failed.

Lice on fowls.—Summer is the time when these parasites multiply, and as "a stitch in time saves nine," it would be well for poultry keepsrs to examine their fowls now. Look under their wings, about the head and neck, below the vent, and at the root of the tail for them; if any are found, dust thoroughly with insect powder. Examine the roosting places, remove the roost and look on the underside of them when they come in contact with the house or resting-places, and if any small red mites are to bs seen, thorougbly clean the entire house, whitewash with hot lime and carbolic acid, rubbing or brushing it into every nook and crevice of the chicken-house where it is possible for them to find a hiding-place. Examine your sitting hens. Often hens are compelled to leave their nests for no other cause than lice, and many a poor hen has been simply murdered by these marauders while performing her maternal duty.—ORION.

AQUARIA.

Water plants.—With reference to the article "Water Plants" (p. 191), the following may be of use to some:—To plant Frogbit, Water Soldier, &c., take a piece of sod one foot square, more or less, and bore a hole in it with a piece of pointed wood; let this point be square in section. Pass the leaves or roots through the hole in the sod, and place the sod with the plant thus fixed in it on the end of a long, light piece of board, and gently lower it to the bottom. I have found the following convenient in the case of Water Lilies:—Having put the plant as usual into an old bag or basket of some kind in good soil, and some of the roots sticking through holes in the bottom, I fasten a length of stout string to the receptacle, and wind (not tie) it round the end of a light pole. I then place the bag, basket, or whatnot just in the water, and, before it can absorb much, by means of the pole, and with little effort, guide it half under water to the exact spot required. I then let it sink as it likes, turn round the pole till the string is free, and the trick is done. Water plants increase so fast that I have found it necessary to make a pathway of wood across my pond. It is carried on pairs of piles, 3 inches by 2½ inches, with cross-pieces of the same section put in 6 feet apart, and carrying two planks, 12 feet by 7 inches by 2½ inches; each cross-piece takes the ends of two planks and middle of one plank. This footway is about 6 inches above the water, and runs to within 5 feet of the sides, and can be made in circles or almost any shape. I keep a piece of loose plank near to use as a drawbridge when I want to attend to my water garden. To reduce the mass of Water Violet skim off the Blanket weed with a hay-rake, &c. I have planted an avenue of Bulrushes along the sides of my wooden pathway. Plants do well on the sides of this pond, although the soil is stiff clay. The overflow feeds a hollow formed into a fernery.—WRINKLES, *West Cheshire*.

BEES.

13931.—**Swarm deserting hive, &c.** ("R. H.")—It was probably the great heat of the sun upon the hive that caused the swarm to leave it. Many swarms have this season deserted their hives in the same way. Newly-hived bees should always be shaded during at least the hottest part of the day. New combs, being so tender, are easily melted, and will sometimes, in consequence of the full rays of the midday sun striking upon the hive, give way and fall to the bottom, smothering the bees in their honey. A green bough placed over the hive forms a good shade, that from the Fir tree being the best and most durable. As a shade and covering for straw hives nothing equals the old-fashioned straw hackle; it is easily constructed and very durable. There can be no other way of accounting for bees being found working in a hive in which the stock has died out than that an unnoticed swarm has taken possession of it. It is a common occurrence for a swarm to enter a hive containing old comb. It is not at all possible that a queen grub could have hatched after the colony died. It would certainly be advisable to join a swarm to the small number of bees that are now in possession. —S. S. G., *Boxworth*.

13932.—**Humble bee** (*Timidity*).—The humble bee (Bombus apis), commonly called bumble bee, collects honey and pollen, and makes wax, but its combs and cells are of a much more rough and rustic nature than those of the hive bee. The honey and pollen gathered are used for raising brood, but not stored for the winter. The large females, or queens, are hatched in the autumn, pass the winter underground, in a hole in a bank, made snug by a carpeting of Moss, and with the return of spring fly abroad, when each queen lays the foundation of a new colony unassisted. The workers, or neuters, never survive the winter, but are hatched before the other members of the colony to carry on the work commenced by the queen. The population of the humble bee's nest is very small compared with a colony of hive bees, ranging from fifty or sixty to two or three hundred only. There need be no fear as to any chance of the humble bees attacking your hive bees—they are very harmless and peaceable.—S. S. G., *Boxworth*.

BIRDS.

13933.—**Diseased pigeons.**—I have a number of pigeons, several of which have been affected with a complaint when about a month or five weeks old. The symptoms are indisposition to eat and inability to swallow, followed in a day or two by difficulty of breathing and inside of beak turning yellow. The birds eventually die. Can any reader inform me what the disease is and whether there is any remedy for it?—ZETA.

13934.—**Parrot keeping.**—I have had six grey parrots, and all of them have died from one complaint. I have given them Indian corn and bread just dipped in milk, and they seem to do well the first and second weeks, then they have sickened and died from diarrhœa. I am going to have two more, and should be obliged if any parrot keeper would tell me how to treat them.—J. E., *Wigan*.

Plant washes and insecticides.—I have often been struck with the number of insecticides and plant washes that have been introduced of late years to the horticultural public, and "still they come"—nostrum upon nostrum—all and each to supersede the others. To go into some gardens, as I did not long since, was amusing to me, as an old plant grower, and companion and worker with and under such veterans as there were forty years since. Here, it seems, was a general yearly washing-day of plants; the place seemed to be a hybrid between a laundry wash-house and a chemical manufactory. Really one could but imagine such men as the three Barnes, W. P. Ayres, Green, Faulkner, Hunt, and others coming in upon the scene. What would they have said? I could in imagination hear Barnes, of Becton, shout, and Ayres and Green storm at their utmost. They had none of these chemical nostrums, and their plants, both on the exhibition table and at home, were equal to plants shown in this age for cleanliness, and many of them far more difficult to grow. The simplest thing I have met with for cleaning a plant which has become dirty is a fresh kind of soap, which has a great name in this district for its cleansing powers. I thought I would try it by dissolving some in water—about an ounce to a gallon of water, then wetting the plants and letting this soap remain on for a short time, not allowing it to become dry, then syringing with clean water. The result satisfied me that it is far more effective than half these so much-belauded nostrums. I would advise those who wish to try a simple remedy to send some six stamps to Messrs. Lever and Co., wholesale grocers, Bolton, Lancashire, and ask them to send a packet of their "Sunlight" soap, then try it on their plants, and report their experiences in the pages of this journal. The expense is not great, and I think they will come to the same decision as myself to continue to use the "Sunlight" soap as a plant wash My Roses, which were very bad, are now quite clean and free from aphis after one washing, which is the cause of this paper being sent.—N. J. D., *Swinton*.

My rock garden.—Some years ago I came into possession of a small suburban backyard or "garden," as it was euphemistically styled in the landlord's agreement. For a season or two I was content to mow my Grass, and in due course to order in the ten dozen of regulation "bedders," and I produced thereby a something which was certainly unlike anything in nature, bearing rather a suspicious resemblance to a billiard-table with chintz cushions. I had, in fact, created at a considerable outlay a "respectable" garden which would pass muster for about three months in the year, leaving a nine months' interregnum of faded and shabby gentility. Then I came across Mr. Robinson's book on "Alpine Flowers," which set me to think, then to plan, then to set to work with the energy and, I will own, sometimes with the bungling, of a convert. Anyhow, the rock garden has proved since then a source of perennial interest and occupation, remaining green and bright throughout the year, involving no bedding-out or digging over, and maintained at a smaller cost than on the old system. A few hints to those disposed to attempt this kind of natural gardening may be acceptable:—Do not want to have or to do everything at once. Every season will suggest alterations, additions, or improvement of some kind. Lay out your plan before you begin, and lay it out at first in the rough. Begin in September the structural work. Use burrs, not vitrified clinkers. The former are absorbent and easily united with Portland cement. One part of cement to five of sand is strong enough. Make your mounds and fill in the rockwork with good loamy soil, and let it settle during the winter months. Avoid inclines, but build rather in irregular terraces. In making or leaving holes or pockets be careful that they communicate with the body of soil behind or below the rock. If the appearance of stone is desired, wash the burrs with a thin mixture of Portland cement and sifted coal ashes. If any part of the plantation is not easily accessible, place blocks of brick to act as stepping-stones. These need not be many if conveniently placed, and can be masked by dwarf shrubs planted in front of them. Place all large shrubs well back to hide the boundaries of the garden. All in front should be of diminutive size. The whole arrangement should be made to have the best effect from the one point of view, be it bench or bower, where the designer takes his well merited ease after his pleasant labours. In the selection of plants and shrubs give preference to those that are evergreen; their name is legion.—M, *Forest Hill*.

The common Guelder Rose.—We have been amazed at the size to which this grows when well treated—that is, nourished and pruned a little, as shrubs on walls must be generally. Some we have seen lately at Munstead, Surrey, were really as large as the great Japanese kinds which are thought so much of.

GARDENING ILLUSTRATED.

Vol. VII. JULY 11, 1885. No. 331.

TREES AND SHRUBS.

THE STARRY BUSH ASTER (EURYBIA STELLULATA).

This is a most compact and free-growing hardy shrub that does not require even the shelter of a wall—indeed, its sturdiness and stiffness of growth adapt it for culture beneath walls. Mr. E. Woodall brings us some charming specimens of it from Yorkshire. It is easily propagated, but our readers will probably have some difficulty in procuring it at present. No doubt, however, good nurserymen might be able to procure it from their correspondents if they have not it in stock, and the trade generally want to be roused up to its value. The accompanying wood cut is a representation of another Eurybia (E. Gunni), a shrub which is well worth trying in any favourable locality, or as a cool greenhouse subject.

The Guelder Rose.—This tree (Viburnum Opulus), common enough in many gardens and shrubberies, is now in full bloom. It has many points to recommend it, but, on the whole, I am inclined to prefer the wild variety, which is now making a splendid show in the hedges by the roadside. The garden variety is such a complete mass of white that it entirely destroys the effect of the foliage, but this is not the case of the tree in the hedgerows. The blossom is not so dense as to entirely cover the beautiful green of the leaves, and it is, consequently, much more pleasing to the eye.—D. J. Y.

The Burning Bush.—May I state that I have now proved by experiment that Dictamnus Fraxinella really does "flare up" under suitable circumstances? A match applied to the leaves of the flowering stalk results in a rapid succession of "sputtering" flame until the top is reached.—W. B., *Eghan.*

Rose Acacia (Robinia hispida).—Mr. Stevens, of Byfleet, who so often refreshes us with a sight of pleasant flowers, sends a noble specimen of the Rose Acacia, about twice the size that one usually sees it. We suppose it is a question of grafting on some stronger stock. The Rose Acacia is always a beautiful shrub, but it evidently may be grown much larger and more vigorous than is usually the case.

13823.—**Propagating Aucubas and Privet.**—Take the cuttings off the plants with heels attached to them late in October or in November. Plant them in fine soil to a depth of about 4 inches in the ground, press the soil firmly round them, and they will form roots readily during the winter.—J. D. E.

Yellow Rock Indian Cress (Tropæolum polyphyllum).—This lovely plant comes to us from Mr. Stevens, of Grasmere. It is now beginning to be pretty well-known, and seems to thrive on most soils, very vigorously on those of a light nature. Its small sea-green leaves and numerous yellow flowers give it a distinct and charming effect, especially when it grows freely and covers the ground. The best use we have seen made of it was as a carpet on a border or bank, and a very beautiful carpet it forms, untrained and unstaked, of course. It might indeed be called the Snake Nasturtium from the way it runs about. On ground so occupied a very charming effect is obtained when Lilies or Delphiniums, or any other tall and handsome plant, spring up sparsely through the groundwork.

ROSES.

RAISING ROSES FROM SEED.

It is not surprising that but few have entered on this undertaking, seeing that the results to be obtained from it are not of a very enthusiasm-inspiring character. It has already, however, been shown by the large number of new Roses raised in this country that there is a rich reward for those who can work on well-defined lines. Now is the time to help the plants to produce good well-ripened seed; select the largest hips on the strongest branches, and remove all other buds that are showing. It is useless to depend on any particular flowers to form seed. There should be several of each sort or colour set apart for that purpose, nor must the trees on which they are growing be allowed to exhaust themselves too much by maturing too many. It is not necessary to remove all the flowers that are not intended to produce seed, but it is essential to husband a little of the strength of the plant for seed bearing. It is also desirable to place a conspicuous mark on the flowers selected, to prevent their being removed with other dead ones. It will be found that dark flowers, as a rule, produce more hips than light-coloured ones, and very double flowers comparatively few. Amongst dark Roses that produce hips rather freely I may mention Marechal Vaillant, Madame Charles Wood, and General Jacqueminot, but such very full flowers as Madame Lacharme, Captain Christy, La Reine, and Anne de Diesbach are poor seeders. The most prolific seed bearer with which I am acquainted is Baronne Prévost, and among kinds with white flowers Boule de Neige. Having marked the flowers from which it is hoped to obtain seed, there is nothing else to be done but patiently to watch their progress towards maturity. In a general way, if the hips show signs of ripening before the beginning of November, they do not contain good seeds, but there is nothing gained by leaving them on the plants after that time. They may therefore be cut off with a few inches of the stem attached to them; the stems may then be stuck into a pot of moist soil, and the pot set in the greenhouse, where they may remain until the hips get the colour of a well-matured Orange, when the seed is ripe. It should then be taken out of the hips and kept in a saucer under a thin covering of dry sand. Disappointment must not be felt if every hip does not yield good seed. I have never known all of them to do so. One half of the hips may be full and the other half empty, and some may furnish none at all.

The seedlings, too, will, in all probability, be as various as the contents of the hips. So far as my experience goes, semi-double flowers will be the greatest in number. I have not succeeded in raising varieties superior to those which we already possess, but Baronne Prévost and General Jacqueminot have reproduced themselves so nearly that they could not be distinguished except by experts. Out of a batch of seedlings, too, there are sure to be some with single flowers of more or less value, and the fortunate raiser of a deep crimson, a pure white, or a delicate pink will be certain to meet with reward. When a distinct variety in each colour is obtained we may hope for still greater departures in both form and colour, as there is less difficulty, according to my experience, in manipulating single flowers for the purpose of fertilisation than double ones. There is not a large percentage of vigorous growers obtained from a single batch of seedlings. Many of them come very weakly, and the dark-coloured sorts more so than the light ones. In such a case it is impossible to decide on the merits of the flowers produced.

Gunn's Bush Aster (Eurybia Gunni).

Time of sowing.—I have always sown the seed in deep pans in February, and kept the pans in a temperature of about 55 degs. until the weather made it warmer naturally, and I have always found that the plants came up very irregularly, some appearing at the end of six weeks, while of others nothing was seen for from ten weeks to twelve weeks longer. There is, therefore, some difficulty in dealing with the young plants, but to let them remain in the seed-pan until all are ready for removal entails a loss of time; so I recommend that when any of them have grown to a height of 4 inches they should be carefully lifted, potted singly, and placed in a cool warm house for two or three weeks to get them established; then afford them a cold frame. If, however, I were desirous of securing the earliest and best results, I would have a hotbed made of a good body of leaves ready to sow the seed on at the end of March. On this I would put a two-light frame and 9 inches of good soil on the leaves to receive the seed, which should be in lines 4 inches apart each way. In five or six weeks the first plants would

be peeping through the soil, and as the season would be advancing warmer weather would enable the cultivator to increase the quantity of air and moisture afforded them, but the frame should be kept closed at night up to the end of June, and the young plants should be shaded from very bright sunshine. To encourage a quick growth both plants and the inside of the frame should be syringed at closing time. After the end of June more air should be admitted both night and day for a month, and the lights may then be removed altogether, but the roots must be attended to as regards moisture. During winter the lights should be put on the frame, and a lining of leaves or litter should be put round the sides and ends to keep out severe frost. The lights, too, should be covered in frosty weather. The plants ought not, however, to be coddled, but, on the contrary, should have plenty of air in mild weather. The weather must decide when they are fit to bear removal in spring. Generally speaking, it will be safe to move them by the middle of February, but if it should be very cold it will be better to wait a fortnight longer; then lift them carefully, put them in 3-inch and 5-inch pots, according to the sizes of the plants, and replace them in the frame, keeping them close for a fortnight and the lights covered at night. Another way is to prepare a place for the frame on a south border where the soil is moderately rich, and after placing the frame on it take up the plants and put them in the frame in lines 8 inches or 10 inches apart, according to their numbers. For the next few weeks keep the frame rather close, and only give air in mild weather. In April, as the sun increases in power, more air may be admitted, and this treatment should be continued in suitable weather until they can bear the lights off during the daytime, which will be about the middle of May, and at the end of that month the frame should be taken quite away. At that time many of the plants should be making good progress, and the strongest may be expected to flower during the summer. Those put in pots may remain in the frame, but it is desirable that they should all be shifted into 6-inch or 7-inch pots as they fill the others with roots, for it is impossible to judge of the merits of the flowers if the plants are confined to small pots. The most satisfactory way, however, is to plant them out and let them flower at their own time.

J. C. C.

ROSES AND THE WEATHER.

It is four years ago since we had such a glorious Rose harvest. The flowers are not only abundant but they are excellent in form, and the colours more clear and deep than we have seen them of late. The plants are also making good growth and are free from insects, and there are much fewer badly formed flowers. Although the month of May was so cold, the rainfall was sufficient to reach the lowest roots, and, coming as it did, just as they were in active growth, benefited them immensely; whether growing as bushes or in beds pegged down, or on newly worked standards, there is a perfect wealth of flowers on all the plants, with only a minimum amount of trouble as compared with the labour in other years devoted to watering and to the destruction of insect pests. The weather, too, has been very favourable—no heavy storms of rain and no sudden outburst of strong sunshine to burn out the colours in the flowers—in a word, there has been just enough sun to keep up the temperature. Under these happy conditions the Roses have opened fresh and lovely, and have retained their freshness in the case of individual flowers for three or four days. If there has been one feature more noteworthy than another it is that the dark-coloured flowers have equalled the light ones in all points. This is not our regular experience, for we find the light-coloured flowers are generally several points ahead of the dark ones, but it is not so this year, for they are equal both in numbers and in quality. The following amongst these have been very fine:—Exposition de Brie, Duke of Teck (this has been the most dazzling red), Empress of India (this variety always opens well with us, and is remarkable for its great depth of maroon and crimson colour). Souvenir de Spa and Sultan of Zanzibar are very fine; as are also Ferdinand de Lesseps and A. K. Williams. Madame Victor Verdier, never a free bloomer, has given us some fine full flowers, with its dark maroon petals, overlaid with a satiny gloss quite striking. Prince Camille de Rohan, which may be set down as the best grower among the darkest coloured Roses, is this year in fine condition. Besides these I have specially marked the following in different colours as the best garden Roses of the year:—Madame Marie Finger (bright flesh), Boule de Neige (white), Jules Margottin (bright pink), Paul Neron (dark rose), Magna Charta (pink, shaded carmine), Annie Wood (rich crimson), Charles Lefebvre (bright crimson), Caroline de Sansal, Mademoiselle Catherine Soupert (white, shaded with rose, very lovely), Violette Bowyer (white, slightly shaded with lilac, a fine globular flower), Countess of Oxford (carmine red), Duchesse de Vallambrosa (rose, fine), John Hopper (fine bright rose). I have never seen this old Rose so fine in colour as it is this year. If the present favourable weather, of moderate warmth and freedom from heavy storms of rain, continues for another fortnight, I feel sure that the Rose season of 1885 will prove to have been a brilliant one for all classes of Roses.—J. C. C.

REPLIES.

13834.—**Keeping Roses clean in greenhouse.**—Green fly persistently attacks the Rose in all the stages of its growth. The pest clusters about the ends of the growing shoots, sadly crippling them. If the house can be fumigated with Tobacco smoke, that is by far the best way to destroy green fly. If the pest is very numerous three fumigations will be necessary. Strong soft-soapy water applied to the leaves will destroy it.—J. D. E.

—— If you cannot kill the fly by syringing you must fumigate with Tobacco paper. Fumigate the house every other evening for a week, and if you fill the house full of smoke, so that you cannot see across it, the fly will disappear. It is not often that one application of either liquid or smoke kills all the fly.—J. C. C.

13835.—**Roses for photographic studio.**—The best Roses for your purpose are Reine Marie Henriette (red), Maréchal Niel (yellow), and climbing Captain Christy (flesh colour). It will be necessary to put them in large pots if you want to cover much of the glass with the growth of the Rose.—J. C. C.

15730.—**Ants and Rose buds.**—It is a mistake to suppose that ants eat Rose buds. If the ants are found there they are probably after the excretæ of the green fly. The bud worm, or some other caterpillar, is doubtless the culprit.—J. D. E.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—II.

How to pot plants.—In the first place take care that you always have the necessary materials at hand, so that you can pot off your cuttings or seedlings or repot as soon as needful. These consist of clean pots, varying in size from the smaller, commonly called thumbs, to those 8 inches in diameter. Larger than this should not be used: in a general way a 6-inch pot will be found quite big enough for any plant grown in a window, and I would advise that 4½ inches be not exceeded, if possible. Plants grown in pots of this size are more manageable as regards watering, and the soil they contain will suffice to grow a specimen large enough for most windows, especially if liquid manure be applied as will be directed further on. I have just been looking at a plant of the yellow Paris Daisy, which has been in full bloom all the winter through; it is now 18 inches across, and carries upwards of two dozen expanded blooms. It is in a pot only 4½ inches in diameter, and the roots seem to have eaten up the soil; indeed, it was in this root-bound condition by the end of last summer. I mention this merely to show what may be done by timely dressings of concentrated manure, and to show that large pots are by no means indispensable to the production of effective specimens. Broken potsherds, commonly called crocks, are generally used for draining the pots, and for 4½-inch and 6-inch pots one piece large enough to cover the hole, and a thin layer of small pieces on that, will be enough for the generality of plants grown in pots; in many instances one piece to cover the hole, and a little Moss or fibrous material on it, will be ample drainage. The object in draining a flower-pot is to prevent the water given remaining stagnant around the roots; if it moves away, however slowly, that is all that is necessary. One fact which should be borne in mind is, that the greater the amount of fresh soil employed in potting or shifting from one pot to the other the more effective must the drainage be. Thus in pricking off seedlings into pans or 6-inch pots quite an inch of crocks must be used; in shifting a plant from a 2-inch to a 4½-inch pot good drainage must be given, because some time must elapse before the new compost becomes filled with roots, and until that takes place there is much danger of its becoming sour and close if there is not a ready exit for superfluous moisture. Taking, on the contrary, a plant which has become root-bound in a 2½-inch pot, and which is naturally of a robust strong-rooted nature, it is evident that the extra inch of new soil will soon become filled with fibres, and in such a case a single crock to cover the outlet is ample.

In repotting two important points are to be kept in view—*i.e.*, never to use dry compost and never to allow the old ball of soil to become dry before placing it in another pot. The compost should be nicely moist, a good test being to compress some in the hand, when, if not too wet, it will open and fall to pieces as soon as released. If a plant that you wish to repot is dry, give it a good watering some hours before shifting; a good plan being to do this in the evening and pot the following morning. Even the drainage and fibrous material placed thereon, when such is used, should be moist. When these precautions are taken a gentle watering suffices to moisten the soil through after potting, and nothing is worse than watering newly-potted plants heavily—it makes the soil close, and the roots cannot take quick possession of it. Good gardeners never fail to observe the above rules, and the difference in the progress of plants to which they have been applied, and such as have been potted in a hasty, haphazard fashion is very striking. Another most important point is not to expose the roots to the influence of a drying atmosphere. The small delicate fibres are quickly deprived of their powers of absorption, and as repotting in itself always checks growth, how much greater must be that check when the activity of the roots, or of many of them, is destroyed? In potting off seedlings lift them out of the soil carefully with a broad-pointed label so as not to lose any of the roots, and do not take out many at a time. Give them a light watering and a sprinkling overhead, preserve them from draughts and hot sun, and in the summer-time they will grasp the soil in forty-eight hours.

Many amateurs fail in growing plants from seed and cuttings because they in a measure cripple them when in a young state. It is of no use saying "it will soon get over it." A young seedling or tender cutting never does thoroughly recover from a chill or loss of rooting power. The tissues become set and hardened, and a great portion of the season passes before it starts into growth again. Cuttings when inserted several together in a pot should never be taken out one by one, as some of the roots are sure to be injured in this way. Lay the pot on its side, pressing against the crock which covers the hole, easing the ball out with the left hand. This should be done when the soil is not very wet, as then by gently pressing the soil around the outside of the ball it will open sufficiently to allow the plant to be separated without damage to the roots. In potting cuttings and seedlings fill the pot two-thirds full of soil and spread the roots carefully on it, holding it in place with the left hand, and filling up rather above the level of the rim with compost. Then place the thumbs one on each side of the stem, clasping the pot with the fingers, tapping the edge of the pot smartly on the bench, at the same time giving it a rotary motion. This will settle the soil in the pot without need of pressing it in with the fingers, which should never be done in the case of young and tender succulent-rooted things. In shifting from one pot to the other, the same movements are practised by plant growers, but in all cases care must be taken that the space between the old ball and the new pot be filled, and that it be made as firm, otherwise the water will not enter the old soil. In such cases it is advisable to use a thin lath to work the soil down, especially where the shift is a slight one, and

the soil packed with roots. In shifting from very small pots to 4½-inch ones, the soil can generally be made firm enough by tapping the pot on the bench; indeed this is the only permissible way for tender-rooted plants such as Cyclamens, Fuchsias, Primulas, &c. Strong-rooted things, on the contrary, such as Hydrangeas, Deutzias, Cytisuses, &c., require to have the soil made firm around the roots, and it must be firmly pressed down with the fingers. Make the surface quite firm, and leave sufficient space to admit of giving enough water when dry. In the case of small pots, however, the surface should not be pressed down. After being watered a few times it will become sufficiently firm. BYFLEET.

13638.—**Prepared Moss.**—Ordinary green Moss has no disagreeable smell when kept in water. The smell would arise from the water being kept too long without being changed. Moss could not be prepared and yet remain alive. If dead Moss were placed in water it would be sure to smell sooner than fresh green material.—J. D. E.

CENTRE-PIECE FOR SIDEBOARD OR DINNER TABLE.

A VERY effective centre-piece for a dinner-table may be made by arranging a variety of fruits in Moss around the roots of a plant. Palms, broad-leaved Grasses, and other plants with graceful foliage may be turned out of their pots without injury provided their roots are quickly surrounded with damp Moss, and are not left exposed to the prejudicial influences of light and air. The accompanying engraving shows one out of many ways of carrying out an arrangement of this description. The group here illustrated is dressed to one face for a sideboard, and upon a piece of furniture of a suitable size it has a very noble appearance. Palms such as Geonoma gracilis and Cocos Wedelliana, or such Grasses as Gymnothrix latifolia, together with Dracænas, Cordylines, and other similar graceful plants, are the best forms for this purpose. Any objectionable straight lines in their stems may be broken by sprays of climbing Fern, Myrsiphyllum or Ficus minima. If the decorator is not provided with two semi-circular zinc trays, which, when placed together, form a ring around the base of the plant, substitutes will readily suggest themselves; and when they are filled with Moss and covered with fruit and Fern fronds, no one need know whether tumblers or finger-glasses, Strawberry punnets, or soap-dishes, form the circle at the base of the centre-piece.

Centre-piece for sideboard.

If such a centre-piece be required for the middle of a dinner table such large fruits as Pines and Melons should not be used in it. All other kinds of fruit may take a part in an arrangement of this kind, and it is not necessary to confine the selection to eatable fruit. Thus the sombre hues of Russet Apples, Pears, Filberts, and Figs may be relieved by the showy colours of the fruits of Solanum capsicastrum, Holly, Arbutus, or Berberis, or by the scarlet seeds in the opening pods of the common yellow Iris. Such a group may be placed in the centre of the table on a small revolving dumb waiter, and if it is turned slightly several times during the dinner each guest has an opportunity of seeing different views of it

W. T.

The evergreen Veronica as a house plant.—When we come to examine this evergreen we are at once induced to pronounce it beautiful, and that even without the handsome spikes of blue it will send up so freely during the dull months of the year when few outdoor blooms remain to gladden our eyes. Plants that were cut back in February are now bristling with young growth of velvet-like leaves, borne upon stems of rich chocolate hue. This young growth can be used as cuttings where a few plants are in request, and will soon strike in equal parts of good loam and coarse silver sand, keeping moist and shady from the midday sun. When rooted they should be potted into 3-inch pots, using good loam from a nursery and a little sand. They may be shifted into 48's by about the middle of September without breaking the ball of soil. When growing in the first-named pots the lead should be taken out, and the shoots so induced to form also nipped out. But this necessary stopping must be left to the discretion of the amateur, depending as it does upon the growth attained, the object being to produce sturdy little plants during the growing season; and, to avoid a check, the last shift should not be made later than the time indicated above. They will then continue to grow on if kept in an airy situation in the garden, withholding water gradually as the days shorten. They are well suited to a position in the sitting-room window, or on the window-sill during winter. Many thousands are grown annually for the London market and find ready purchasers. We have known them to do well even in the windows of gas-lighted rooms in towns, and this is saying a vast deal in their favour. Should, however, any signs of ill-health appear—which, by the way, we have never found to be the case in the situation indicated—they should be removed to the most airy position in the dwelling-house, watering only when necessary with tepid water—about once a fortnight—carefully removing any dead or discoloured leaves, and keeping them free from dust. They should be pruned about February, when new growth will follow as the days lengthen. V. Andersonii, another very lovely evergreen, closely allied to the above, has variegated foliage and flowers of a rather brighter or pinkish hue. Each is, however, well worth the amateur's attention, and both are hardy in most situations. Some we have before us have stood the winter in pots without any protection, and were cut back rather severely early in the year. —STAMFORD HILL.

13686.—**Fertilising Moss.**—It is better to grow plants in the usual potting soil, and if a green mossy surface is desired, place some nice green Moss over it and sprinkle daily with water. It is unreasonable to expect any kind of plants to succeed for a length of time in Moss. —J. D. E.

13684.—**Plants for east window.**—As ordinary greenhouse plants fail try more hardy things. Lysimachia Numularia (Creeping Jenny), Musk, Monkey Flower (Mimulus), and a nice Ivy or two in pots would be pretty. Fuchsias are not mentioned, but old Riccartonii and fulgens might succeed. Look round among the neighbours and ascertain what flowers do well in the neighbourhood.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, July 13th to July 18th.

Sowing a row of Mignonette for supplying cut blooms; also another crop of Endive; planting Cauliflowers and Paris Cos Lettuce; clipping hedges and cutting Laurels; sowing Snowball and American Strap-leaf Turnips; putting in cuttings of Carnations and Pinks under hand-lights; potting Tree Carnation in stiff soil; planting out Cabbages for autumn use; layering Strawberry runners, three in a bunch, on pieces of turf 6 inches square, for making new plantations; stopping and nailing in the shoots of Tomatoes; looking over Cucumbers and Melons, stopping the shoots at one joint past the fruit, and earthing them up a little where required; pulling up Shallots and laying them in the sun to ripen; sowing a little Chervil for autumn and winter use; also Mustard and Cress; taking up and dividing a quantity of old Polyanthuses; planting out Celery in trenches; getting up early Potatoes and storing them away for seed. Plunging all pot Roses in open ground, and placing Azaleas out-of-doors to ripen their wood and clear them of thrips; storing away Shallots and Garlic on floor of cool loft, and shading Peaches that are ripe, in order to keep them back.

Sowing Green Curled and Fraser's Broad-leaved Endive; pricking off herbaceous Calceolarias; also Cinerarias and Primulas; picking off the dead flowers and nailing and tying in Roses on walls; cutting herbs and placing them in an open shed to dry; sowing red and white Turnip-Radishes; putting in cuttings of different sorts of Pelargoniums; stopping and nailing in the leading shoots of Peaches, Nectarines, and other wall fruit; sticking Peas and getting them earthed up; potting Roses in a mixture of loam, manure, bones, charcoal, and sand; planting May-sown Autumn Giant Cauliflowers on land lately cleared of Peas; leaving the lights of Peach house open day and night where the fruit has all been gathered; also giving abundance of air to all vines where the Grapes have commenced to colour.

Sowing Canadian Wonder Dwarf French Beans; earthing up early Celery when the soil is dry and in workable condition; stopping and pegging down Vegetable Marrows, and giving them a good soaking of manure water; looking over Vineries, stopping laterals, and giving all late vines a good soaking with guano water; potting Strawberry runners; planting also late Celery; putting in cuttings of Hydrangeas, scarlet Pelargoniums, Cytisus, and Coleus; repotting young Cyclamens in loam, leaf-soil, and sand, afterwards placing them in a cold pit, and shading them until well established; sowing Batavian and Green-curved Endive, Hill's Incomparable and Early Market Cabbage; also Cucumbers for winter supply; digging land in which to plant Wallflowers, and earthing up Cauliflowers and Winter Greens.

Work in the Town Garden.

CHRYSANTHEMUMS FOR EXHIBITION.—Chrysanthemums will now need constant attention up to the time of their coming into bloom, and as they are without doubt about the most satisfactory and profitable flowers that can be produced in the town garden, too much care can hardly be bestowed upon them. Of course all plants are now standing, either free or plunged, in an open and sunny part of the garden. If required to produce large exhibition blooms they should have been already placed in the flowering pots, the best sizes for producing three or four fine large blooms being those from 8 inches to 12 inches in diameter. Still it is not too late yet to shift plants for furnishing show blooms; and if there are good healthy, vigorous examples (those that have been at all stunted or starved are of no use for this purpose) at present in 32's, 48's, or even large 60's, of suitable varieties, lose no time in shifting them into 24's, 16's, or 12's, according to the strength of the plants. The soil should consist of about three parts of sound sweet loam of a turfy or lumpy character, one part of old flaky hotbed manure, one of leaf-mould, and half a part of sand, crushed charcoal, crushed bones, and soot, or some good chemical manure. These last ingredients should be well mixed, and should together (not separately) form the half part required; they are not, it should be clearly understood, absolutely necessary to the production of fine blooms, as we have both seen, and ourselves grown, first-class flowers in a compost consisting only of a suitable loam mixed with a third of old dry manure. Any other principles required can be easily supplied by judicious subsequent waterings, with infusion of stable manure, guano, soot, and sulphate of ammonia, some of which, at least, must be administered in any case. Still, if these materials can be easily procured, it is better to employ them at once, and give the plants a compost affording every principle they are likely to require. The soil should be used in a state neither wet nor dry, and must be firmly packed round the old ball by means of a small wooden rammer. Allow moderate, but by no means excessive drainage. If the soil is properly porous, two or three pieces of crock, with a handful of the rougher part of the soil above, will be quite sufficient, except for very large pots. Water the plants in once, and afterwards be careful of watering for a week or two, until the roots begin to work in the new soil; what is needed should be poured round the stem of the plant, so that the old ball of roots may have the benefit of it, while the fresh soil is kept comparatively dry. Carefully stake and tie each plant, then stand at a moderate distance apart on slates or ashes in the airiest and sunniest place you can find. For some time after potting there is no doubt that the plants will be better standing "free," that is, above ground, but when the roots get to the sides of the pots again, I am sure, in spite of all that is said to the contrary, that they are better plunged—at least to two-thirds of their depth—in ashes, or simply in the ground, making a hole with a trowel just large enough to take the pot, and a little deeper than this will go, so as to keep worms from entering. It stands to reason that a blazing August sun acting on the unprotected pots must injure the tender rootlets coiling round their inner surface; besides, if the pots are plunged, a considerably smaller amount of water will be required, and another advantage is that in this way the plants can scarcely blow over, while, if standing free, the least puff of wind in September, when the heads are heavy, will topple them over in all directions if they are not secured by means of strong stakes outside the pots.

FOR THE PRODUCTION OF FLOWERS FOR CUTTING ONLY, or for conservatory decoration, especially where room is limited, there is still plenty of time for placing plants in the flowering pots. One of the dwarfest and most profuse flowering batches of Incurved Chrysanthemums I ever had were kept in 48's (5-inch pots) till early in August; they were, however, not allowed to want much for water, and a little guano water, very weak, was afforded them occasionally. They just kept moving thus, but the wood got quite hard; early in August I placed them in 24's (8-inch pots), when with plenty of syringing they started into growth at once, branched out all up the stem, and as the buds formed just when the plants were in full growth, only three or four doses of liquid manure were necessary just to finish off the blooms. These were of course not large, but very neat and useful. The sorts were chiefly Mrs. Rundle, Mrs. Dixon, &c., and the plants, being only about 3 feet high, and bearing 15 or 20 blooms each, looked very well. This plan I should strongly recommend to those who have not much time, space, or money at disposal. Early potted plants naturally produce the finest blooms, the growth being longer and stronger, but the amount of feeding such plants take during September and October would frighten most amateurs.

Late-flowering Japanese sorts may be placed in flowering pots either now or a little later; no large flowering varieties must be stopped later than the middle of this month. Pompones, for October blooming, should have their final shift now, though the easiest way is to put the rooted cuttings out in an open border in May or early part of June, and lift and pot when coming into bloom. These little plants must be pinched as often as necessary to make them bushy, and, as a rule, the later they are stopped the later they will bloom; but do not overdo this or there may be no bloom at all.

CHINESE PRIMULAS AND CINERARIAS.—Keep Chinese Primulas and Cinerarias pricked off and potted as required. These will do better for the present in a rather close and shaded frame than in a greenhouse; a north aspect and damp ash bottom suits them best at this season.—B. C. R.

Glasshouses.

GREENHOUSE PLANTS OUT-OF-DOORS. — The plants chosen for turning out-of-doors in summer should be free rooters. Amongst these are autumn-flowering Veronicas, Salvias, white and yellow Paris Daisies, Solanums, Chrysanthemums, and Callas; in all cases the soil ought to be free, open, and not over rich. The former condition is needful to admit of the plants being taken up with a thick mass of roots near home —*i.e.*, well packed together about the collar, as opposed to the long straggling fibres which plants of most kinds have a disposition to make in heavy strong soils. Nor should the material be over-rich, as, if so, growth will be over luxuriant; the plants will attain too great a size, and cannot easily be accommodated. To still further keep them within a reasonable size it is well to cut back the roots with a spade once or twice during the summer. When the roots are thus shortened they break back, and make many more feeding fibres than they otherwise would do. The work should be done with judgment. Where there is a disposition in the plants to get too large or luxuriant, the root severing should be carried out before too much progress has been made, or the leaves will suffer, and if the soil is at all dry enough, water must be given to prevent the leaves flagging, and in all cases where root shortening is thus effected they must be cut back, so as to keep the balls within the size of the pots they are ultimately to occupy. Where Chrysanthemums are grown in this way due attention must be given to tying the shoots up before they get so long as to be in danger of being broken with the wind.

PROPAGATING DRACÆNAS.—The crowns of all the stove varieties, as well as of most of the greenhouse kinds, will strike readily in water in heat, and the leaves attached suffer less when they are struck in this way than when the rooting process is effected in soil or sand. The crowns so dealt with should be taken off in the usual way, but may be left a little longer—that is, so many leaves need not be removed. They may then be put four or six together, keeping the pots supplied with water until the crowns are well rooted, after which they must be potted and kept close for a week or two until they have got established. This will be found a better method of dealing with the tops of these plants than that which is usually followed. The stems composed of the hard wood are best shaken out of the pots, taking off the bottom root pieces already formed and potting them singly. The stems may then have all the roots cut off as well as the leaves, and should be laid flat down on the propagating bed, covering them entirely with about half an inch of soil. Thus managed they will push up a crop of young shoots from the eyes, and these can be taken off when they have made three or four small leaves.

CHRYSANTHEMUMS should now be in their blooming pots, and all that are strong should be stopped for the last time. It is a mistake to stop the shoots so often or so late as is sometimes practised, as where that is done, and the summer happens to be a short one, the flowers set so late that they have not enough time to get fairly formed before it is necessary to take the plants indoors, and stopping interferes with the production of large flowers. As soon as the roots fairly enter the new soil, manure water ought to be used once or twice a week. The idea that Chrysanthemums should not have any stimulants given them until the flowers are set is a mistake, it being impossible to keep the lower leaves on them without it.

BALSAMS are quick-growing plants, and very soon fill their pots with roots. Where it is intended they should grow large they must have proportionately large pots, but it is of little use shifting them when the bloom buds are much advanced; in that case all that can be done is to use manure water. A diligent outlook must be kept for aphides on all such plants, as they are likely to get infested, and their foliage, being tender, does not well bear Tobacco smoke. Quassia water, made by pouring boiling water on Quassia chips and letting them remain in it for a day or so, is a good preventive, its bitter properties being distasteful to most kinds of insects. Aphides rarely make their appearance on plants which once a week or so are syringed with Quassia water.

LANTANAS can easily be made very useful in greenhouses and conservatories during the summer and autumn months, at a season when there is insufficient variety. Their continuous disposition to flower causes the plants to get into an exhausted state, unless they have adequate pot room; this can to some extent be met by the regular use of manure water. Where wanted to bloom freely late in the autumn, a sufficient number should now be stood out-of-doors, with their pots plunged in ashes; in all cases keep them freely syringed daily, and stop any shoots that grow too luxuriantly.

PROPAGATING MYRTLES. — Myrtles strike readily from cuttings, and where the stock is

deficient it is well to put some in, choosing shoots that are about half ripe and not too strong; if these are clipped off with a heel they will root more easily. Put six or eight together in small pots, keeping them moist and close, but not in heat, until the base of the cuttings are callused over, after which they will bear more warmth. Myrtles are naturally erect-growing plants, and to keep them bushy they should be well cut back every year, by which means they may be kept fully furnished with green foliage down to the base. When the plants have attained a moderate size they are better out-of-doors in the summer. The ordinary double-flowered old variety and the small-leaved Jenny Reichenbach are both good kinds; the last especially is very pretty in bouquets, and gives to arrangements of flowers a perfume which the other materials of which they are composed may lack.

Campanulas.—The drooping C. fragilis makes a very pretty basket plant for either a greenhouse or window; it is easily managed, and little subject to the attacks of insects. If a portion of the stock is placed out-of-doors in the spring and the rest kept in a greenhouse, the season of their blooming will be lengthened. This species will succeed in small pots—6-inch or 8-inch are large enough—and they will do two or three years without repotting; but when thus treated they should have manure water in the spring from the time they begin to grow up to their season of flowering. C. pyramidalis will now be coming into bloom, and should have manure water regularly until the flowers open. Young plants raised from seed sown early in the spring ought to be pricked off in the open ground in a bed of ordinary soil to which some leaf-mould and sand have been added; keep them well watered in dry weather.

Rose cuttings.—Tea Roses for pot culture of most varieties are best grown on their own roots, and where a considerable stock is required cuttings should be put in annually. Shoots of medium strength in a half-ripened state taken off now and put five or six together in 4-inch pots, in sandy soil, and stood on a moist bottom in a close, cold frame, kept moist, and shaded when necessary for three weeks, will get callused over at the bottom, after which, if submitted to a humid heat, they will soon root freely; whereas, if placed in heat without first having time to callus, many will damp off. Young stock of the Tea varieties struck in the spring should be kept under glass all the summer, as well as the ensuing winter; in fact, it is a question if this section of the Rose family is not better kept wholly under glass. It is so much their nature to be continuously growing more or less during the greater portion of the year, that they do this out-of-doors, and with a glass covering they are never quite at rest, neither does it seem that rest is necessary for them, as plants so treated go on for an indefinite time increasing in size and retaining their vigour. The great thing is to feed them well by the repeated use of manure water, and to keep them completely free from aphides, red spider, and mildew.

Flower Garden.

Herbaceous plant borders.—As far as gaiety is concerned, these at the present time are in marked contrast to the bedders, and deserve all the labour as to keeping them in order—tying, weeding, and picking over—that can be afforded them. Without such attention it is needless to expect results at all proportionate to those had from bedding plants, and thus they are often, but unjustly, designated weedy and unsatisfactory. Fill up vacancies by planting out seedling biennials for flowering next year, such as Sweet Williams, Canterbury Bells, Geums, Columbines, Delphiniums, and other favourite kinds. Should the weather continue dry they will need watering about twice a week till well established.

Bedding plants.—These should now receive attention as to keeping in neat form. Peg them out to cover the ground at the earliest moment, and water liberally, but not too frequently. Alternantheras and other delicate kinds would be greatly assisted by a syringing at sunset on warm evenings, and a light surface mulching of Cocoa-fibre or leaf-soil. Keep all bad and seeding flowers off Violas, Verbenas, Calceolarias, and Petunias. This attention, combined with a good watering once or twice a week, will suffice to keep these usually quickly exhausted plants in vigorous condition throughout the entire season. Carpeting plants and undergrowths require to be gone over once a week. Sedums and similar kinds should be pressed out with the fingers to prevent a tufty growth, while the creeping kinds should be pegged or pinched, and stronger growers, such as Mentha and Veronica rupestris, clipped.

Fruit.

Vines.—Early houses from which all the Grapes have been cut may now have the ventilators left constantly open, and the syringe must be freely used to keep the foliage clean and healthy until the wood is quite ripe. Keep inside borders in a moist growth-encouraging state by the frequent use of diluted liquid, and add more mulching outside to protect the surface roots now working freely in the top-dressing. If the vines are in a healthy state, lateral growths must soon be abundant and valuable, but they must not be allowed to run wild, otherwise they will do harm by crowding the main foliage now filling up and perfecting the buds from which the next year's crop of fruit is to be obtained. Now all the thinning is finished it will be advisable to go over the bunches in late houses with the scissors for the last time, and remove a few of the smallest berries where they are likely to bind; for if once allowed to become jammed their removal cannot be accomplished without leaving marks which will be visible when the Grapes are ripe. Give the inside borders a heavy watering with warm liquid or guano water, fill the evaporating pans every morning, and damp the borders with the same after closing for the day. Warm weather will enable us to reduce fire heat, but a gentle circulation to admit of air at night and on dull days will be needful a little longer. When Muscats have passed the stoning process and are safe from scalding, the house may be closed early, and the heat may range as high as 90 degs. for a time to swell the berries. The ventilators must, however, be again opened for the night, and then fire-heat will do good service in preventing the temperature from falling below 70 degs. Hamburghs and similar kinds may range a few degrees lower—say, 65 degs. to 68 degs. at night; but instead of trying to maintain these figures in a dull, stagnant atmosphere, it will be much the best to warm the pipes, and, with the exception of the afternoon closing, keep up a constant circulation of air by night and day. When

Newly planted vines have grown to the top of the house the leaders may be stopped, also the laterals, from the base up to the bud to which it is intended to prune in the winter; but above the pruning bud a free rambling growth may be encouraged to cover the whole of the trellis and back wall. Keep the inside borders well mulched and watered with pure water, and carefully preserve all the main leaves by a liberal use of the syringe once or twice a day. Give an abundance of air from the time the temperature begins to rise until it declines in the afternoon, then close for an hour or two, and reopen the ventilators for the night.

Plums and Cherries.—If any of the Bigarreau and other late kinds of Cherries are still hanging on pot trees, they will be the better for removal to a cool, airy place where they can be effectually protected from sun, rain, and birds, and, space being limited, the very early kinds of Plums may be placed out of doors to ripen. The finer varieties, including the Gages, Jefferson's, Coe's Golden Drop, Coe's Late Red, Ickworth Impératrice, and others, which are so much improved by being grown and ripened under glass, may then be re-arranged for the season. If any of the second growths are starting away freely, as they often do after the stoning is complete, let them be stopped at the third or fourth joint, otherwise they will rob the fruit of food, and shade it from bright sunshine, of which these kinds cannot have too much provided they are properly supplied with air and water. Look well to the mulching, add more as it is required; feed well with good liquid, and syringe twice a day with clean soft water until the fruit begins to change for ripening. If any of the early pot Cherries from which the fruit has been gathered require potting, it is a good plan to give them a shift before they are taken out of the house, and as the latter will now be kept like a warm orchard house, the soft humid atmosphere will favour the rapid formation of fresh roots. When new growth has set in no time must be lost in getting them removed, first to a sheltered shady place for a few days, thence to a dry, open situation, where they can be plunged and mulched to save watering. As stone fruit trees of all kinds enjoy a firm, resisting, calcareous soil, the compost in which they are potted should be firmly rammed and the shift should be large enough to admit of good drainage beneath the ball and plenty of room above it for a liberal supply of water.

Orchard houses.—The latest Peaches and Nectarines will now have passed the stoning process, and many of the early and mid-season kinds will have commenced their last swelling. As no more fruit will drop, it will be well to look each tree over and see that it is not carrying more than it is capable of bringing to maturity, and at the same time to stop all sub-laterals to increase the size, and turn aside the foliage to insure the perfect colouring of the fruit. Keep the trees regularly fed with good liquid and guano water. Mulch any that may require it with good rotten manure, and syringe well with tepid soft water about 6.30 every morning and again after the house is closed for the day; mulch, and well water with liquid of a stimulating character or otherwise, according to the strength of the growths and the crop of fruit they are carrying. The insects to which these trees are now subject are spider and brown scale; the first can make little, if any, progress under good culture, and the second must be kept in check by brushing with a short, stumpy brush before it passes from the wood to the leaves. The Apricot is frequently burdened with such heavy loads of fruit that it is no uncommon thing to see them forcing each other off the branches. Where, after repeated thinnings, the trees are still heavily cropped, the surplus fruits should now be taken off and used for tarts; leaders should be nailed in, and laterals pinched back, but not too close on south walls; the borders may then receive a little more good mulching, followed by a heavy watering, and little more will be needed until the fruit begins to ripen.

Strawberries.—Young plants intended for making new plantations should be taken away from the parent stools and removed to a cool shady situation as soon as the small pots are nicely filled with roots. If the ground upon which they are to be planted can be cleared of the spring crop, which generally consists of early Peas or Potatoes, lose no time in getting it well limed, manured, and broken up to a depth of 18 inches or 2 feet, add another dressing of manure, fork it in near the surface, and tread firmly. Set out the lines 2 feet 6 inches apart, see that the balls of the young plants are thoroughly wet when they are turned out, and place them 15 inches from each other in the rows. Where new heavy soil is plentiful and can be spared, give a little, if only a 6-inch potful, to each plant, see that the balls are firmly embedded and covered to protect them from drought. Give a good watering to settle the soil, and mulch with a little short manure.

Vegetables.

July is an important month for the kitchen garden. The latest crop of Peas should now be sown at once; I grow William I. and Unique, both good early and late varieties. I have just finished planting my stock of Celery, excepting a row or two for very late use. Endive and Coleworts should be sown at once. That important crop, winter Lettuces and Cabbages of all varieties, must be sown this month, and the land should be got ready without delay. Our early Pea land is always used for seed purposes, well cultivated, but never dug at all. We put on 2 inches of burnt refuse, which freshens the soil and sweetens it, too. A good space should be planted with the useful Cottagers' Kale, as this is a most excellent vegetable, and so hardy that it will stand even our severest winters. It is much better to have a good breadth of it than to grow several varieties of similar Greens that are not equal to it in any way. Give the plants 20 inches space in the rows, and allow as much between each row. Thin out Vegetable Marrows sufficiently, not allowing them to get too much crowded, and if the situation be at all exposed secure the shoots so that they may not be blown

about by the wind. See that they are well supplied with water, as if they are not supplied with this the plants will not bear to the end of the season. Cucumbers that have been bearing from the commencement of the season, and are now falling off a little, should have some of their shoots thinned out, and a little fresh soil added to the surface of the bed. In this the shoots will strike root from the joints, where required, if pegged down. If the plants be clear from insects thus treated, they will again push out growth and fruit freely. The hoe may now be profitably used among all growing crops.

FRUIT.

CATERPILLARS ON GOOSEBERRY BUSHES.

A GOOD deal has been written of late as to the best way of getting rid of Gooseberry caterpillar, and the last statement I have seen in GARDENING is by "T. M. C.," who gravely tells us that the caterpillars come out of the earth and creep up the stems of the bushes. The plan I adopt is to get some hellebore early in the season, I then watch for the first appearance of caterpillar, and if the weather is dry I infuse about a quarter of pound in a stoneware jar with about a gallon of boiling water, and after it has stood sometime I add two gallons of water; with a syringe I send two or three squirts of this infusion into each bush. If the weather is wet I dust a little of the powder into each bush with a dredger which I have for the purpose; whether used liquid or dry, if done early, it seems to prevent the fly from depositing eggs in the bush. Many years ago I began to notice a fly that I suspected of being the parent of the caterpillar, but in trying to catch one I found that whenever I approached them they dropped and at once disappeared. After watching them minutely I discovered that they invariably fell on their back, and with their legs gathered together on their breast they lay for sometime as if dead. This is a means that insects as well as many animals adopt for their own preservation. Some of the flies, I noticed, had long narrow bodies and others were swollen out. I put one of the former into a tumbler with some leaves, and put a card over it. Before night it began to swell, next morning it was very small, but on looking at the leaves I found ninety eggs on one of them. It soon got big again, and next night it deposited eighty eggs, the third night I found about seventy more eggs. Again it got big, but the fourth morning I found it dead, perhaps owing to the confinement. I put fresh leaves into the tumbler with about half-a-dozen of the eggs, these I watched through all their stages of growth—but it is forty years ago, and I have forgotten the particulars as to time of hatching, &c. However, it is a simple thing for anyone to try. When full grown the caterpillars cast their skin, and a day or two after they begin to roll themselves up for the winter. After they had assumed the chrysalis state I put the tumbler in a safe place for the winter. Next spring I put the tumbler where I could see it daily, and one morning (I think in April) I found several of the chrysalides broken and perfect flies flitting about in the tumbler.—R. W. R.

—— I think "T. M. C.," writing on June 20th on the above subject, may give a wrong impression regarding the Gooseberry caterpillar. I expect to see some able correspondents contradict the theory that the caterpillar comes out of the ground in the form that we see it. He states "as the caterpillars have to crawl up the stem of the bush they will never attempt it while it is covered with hellebore." He also goes on to say—"Of course the painting must be done before the caterpillar comes out of the ground to ascend the bush." In my opinion to paint the stem of the bush with hellebore would be the best means of keeping them in the bush, instead of keeping them out. The caterpillar does not come out of the ground, but is generated from the saw fly. On the approach of spring the fly emerges from its chrysalis form, and immediately begins to lay its eggs on the underside of the leaves nearest the ground. The young caterpillar may be readily perceived on the perforated leaves of the bush. If the caterpillar is arrested at this stage you will confine its depredations to the single leaf, and thereby preserve the crop and the health of the trees. The bushes should be looked over every few days, and there will be no need for other insecticide. I enclose a specimen of the fly.—J. S. H.

—— No one will save Gooseberries who follows "T. M. C.'s" advice (p. 201) of "painting the stems with hellebore to prevent the caterpillar from mounting them." How can this possibly be a remedy when the eggs from which the caterpillar comes are laid by thousands on the underside of the youngest leaves? There is one and only one remedy—*i.e.*, to pull off all young leaves as soon as they are punctured with minute holes; the caterpillars will be found in hundreds underneath all such leaves; to catch the fly that lays them is impossible.—A. P.

REPLIES.

13847.—**Vines in pots.**—Vines in pots cannot be forced to rest by cutting the leaves off. Keep them in the full sun until the leaves begin to show signs of turning yellow. After that do not water very freely, but do not dry them off. Give sufficient water to keep the leaves from flagging. They are better under glass than out-of-doors at that time. When the leaves have decayed naturally, and been removed, place the vines out-of-doors, until the time comes to introduce them to the forcing-house.—J. D. E.

—— So far your treatment has been right. In another month you may remove them from the house and place the pots at the foot of a south wall, and with a few nails and shreds make the canes secure to the wall, and keep the soil about the roots moist. You ought not to commence to remove the leaves until the beginning of September. In the middle of that month you may remove what leaves or leaf-stalks remain, and do what pruning is necessary. If the vines are denuded of all their leaves and pruned two months before you begin to force them, they will have all the rest they require. The middle of November is soon enough to start pot vines that are expected to give ripe Grapes at the end of April.—J. C. C.

13845.—**Treatment of Black Hamburgh Grapes when colouring.**—There is no harm in shutting up the house from 4 to 6 p.m., admitting a little air all night after six; but the better way is not to shut up quite close at all. When the air is reduced in the afternoon, let it be reduced as much as it is intended to do so, until six the next morning. I have tried both ways, and would not like to say that "both plans cannot be right."—J. D. E.

13749.—**Plum tree failing.**—Plum trees, even of that unfailing kind the Victoria, will not last for ever, and when a Plum tree loses all its top branches it looks as if the end were approaching; gumming in the stem may result from an injury, though it is probable, in this case, that the gumming may partly arise from a weakened constitution. The Victoria bears so heavily, and so rarely fails, that we may expect, in some cases, to find exhaustion and debility set in, which is indicated by the top dying. The likeliest course to improve the tree would be to cut out all dead wood neatly with a saw, smooth over the wounds with a sharp knife, and paint them with Stockholm tar, or something to help them to heal. The unsound bark where gum is exuding should also be cut out; remove all the diseased part, fill in the wound with grafting wax, and secure it with a piece of rag bound round to keep out the air till new bark is formed. Then mulch the tree for several feet round the stem with manure 3 inches in thickness, and give a good soaking of liquid manure, which may be repeated.—E. HOBDAY.

13722.—**Growing hardy Melons.**—With stable manure for hotbeds there should be no difficulty in growing Melons, provided there are glazed pits, or lights and frames. I have never seen a good lot of Melons grown in this country without glass; still, I am not going to say it cannot be done. There are warm sunny corners where, if a nice hotbed were made up, and strong well hardened plants, of such hardy kinds as Scarlet Gem, Victory of Bath, and Munro's Little Heath, planted about the end of June, success would occasionally be had—not always, but when the conditions were suitable. Whether they are planted in the open air or under the shelter of glass on a hotbed the bed should be so built up as to supply a steady heat for as long a time as possible. When the bed has had time to settle, or say within a week, the soil should be placed on, 8 inches deep in the centre but shelving off towards the outsides all round. Rather heavy loam is the best material; if poor, mix a little artificial manure with it, from a pound to a pound and half to the bushel will do. Melons like a firm soil. When the plants begin to run, select half-a-dozen shoots nearly equal in strength, and peg them down at equal distances round the centre of their origin, and when they have covered their allotted space pinch out the points and allow no further progress. The laterals should be thinned as soon as we can see which are showing fruit. Pinch all fruiting laterals to one leaf beyond the fruit, and set all fruits as nearly as possible together. It is true that in the warm summers Melons are frequently set by insects, but it is hardly wise to trust to insect agency altogether; more earth should be given as required. The stem of the plants should not be buried deeper than is necessary, and it is a safe plan not to pour much water in the centre of the plant, but elsewhere the soil should be kept moist. As soon as the fruits begin to swell nicely, set them on a flower-pot saucer to keep them off the damp soil. Ventilate freely, especially early in the morning, but do not shade. Sprinkle the foliage with the syringe on warm afternoons at closing time.—E. H.

13846.—**Grapes withering.**—Yours is undoubtedly a case of "shanking," which will, no doubt, extend further up the main rods as the vines get older. The roots are evidently in a very feeble condition, but the reason that causes it can only be discovered by an examination of the border. Your inside management is right so far as the branches are concerned. Make the best of the crop you can for the present season, and in the autumn examine the roots, and write again.—J. C. C.

13744.—**Blight on Gooseberry and Currant bushes.**—I suppose "E. T. D.," by blight, means that the shoots are curled up by insects, and in that case the removal of the points of the shoots, taking care to remove all the insects, does effect a cure. Our red Currant bushes were attacked some weeks ago, and I set a boy to pick off the curled-up discoloured leaves. In some cases the shoots were cut away; in others, where only one or two leaves were attacked, the leaves so affected were picked off and the remainder of the shoot left. In a week or ten days the boy went round the bushes a second time, and they are now perfectly clean and have sustained no injury, and the cost of cleaning them was very trifling.—E. HOBDAY.

13738.—**Apple tree roots eaten away.**—The mischief is perhaps done by the mole cricket, an insect about an inch and a-half long, of a brown colour. To destroy it find its hiding or resting-place, and fill the hole full of strong soapsuds. Sometimes the small black water rat, if it gets into a mole run, will enter gardens and do a lot of mischief, eating round the stems of plants just beneath the ground. I have caught them in mole runs with a common mole trap, but I should think in the present case the mischief is probably done by the mole cricket.—E. HOBDAY.

13884.—**Earwigs in Apples.**—The habit of earwigs is to feed at night and retire into crevices or holes by day. Place hollow Bean stalks, or some other hollow stems, open at both ends, about the tree. The earwigs will crawl into them when they have done feeding at night. Examine them the next morning, and blow the insects out into a pail of hot water, or destroy them in any other way.—J. D. E.

13830.—**Black Hamburgh Grapes.**—When the fruit begins to colour the right thing is to give a thorough good watering to the roots, and the amount of moisture to be evaporated in the house should be kept up by the borders being sprinkled when they become dry on the surface. A very dry atmosphere is most undesirable when Grapes are colouring.—J. D. E.

13622.—**Pear tree for sunless wall.**—A sunless wall is not a good site for Pears, but I have gathered fairly good Jargonelles from a north aspect. Bon Chrétien was not a success, but Fondante d'Automne and Citron des Carmes were good.—E. HOBDAY.

13747.—**Gnat bites.**—Mrs. Stuart Forbes can recommend the following as a preventive: Get a small bottle of oil of Cloves and put a few drops on face, wrists, and wherever the little torments attack you. They will not come near you, and your friends say they enjoy the spicy odour.

OUTDOOR PLANTS.

CULTURE OF THE GUERNSEY LILY.

THE plant called the Guernsey Lily is not a native of that island, for Japan is the country where it grows naturally. Some ship from China happening to touch at Guernsey, and having some roots of this beautiful flower, by accident several of them were dropped on shore; they grew, and so pleased the inhabitants by their flowers, that they have since propagated them all over the island, where they make such amazing increase in their sandy soils, that they are the glory of their country, and we have large quantities sent over every year for the enrichment of ours. There is scarcely any flower in the vegetable world that excels the Guernsey Lily for beauty, though nature has denied it fragrance. The flowers arise from a bulbous root before the leaves appear, and are supported on a naked firm stalk of about a foot high. At the top of this stalk is the spathe, or sheath, and out of this proceed the flowers, which are very beautiful, red, bespangled with gold. The filaments are of a pale and delicate red, with purple anthers, and the style is gracefully terminated by a trifid purple stigma. These flowers will be in their full glory in October, and after they are over the leaves appear. These also are not destitute of beauty; they are of an oblong figure, moderately broad, of a beautiful green colour, and smooth.

The culture of the Guernsey Lily may next be considered. We receive them every year from Guernsey in July or August, therefore, against the time of their arrival let a compost be prepared for their reception, consisting of the soil from a fresh light pasture, intermixed with sand and very rotten dung. This compost should be formed, and the whole turned over at intervals, and well mixed, for at least a year before it is wanted. Strong earth should be avoided, for Guernsey soil is sandy, or inclined thereto, and there they grow and flourish to perfection; this in some respect has taught us their true culture. The bulbs being arrived, and the compost prepared, let a sufficient number of pots, of the size of those common for Auriculas, be in readiness, according to the number of bulbs; fill the pots with compost, and plant a single bulb in each pot. These pots are designed to form a bed, and, having marked out a place, set them in rows of what breadth you please, so that they can conveniently be managed; let the pots be joined close to each other, and fill the cavities between with any common mould; then hoop the beds for the conveniency of covering them when too great a quantity of rain falls; for by thus plunging the pots, the roots will keep so cool and moist as to require little or no watering, which is very injurious to these plants. In October, or earlier, the flower buds will show themselves, though not all; this is a reason why they should be planted in pots, so that the flowering plants may be collected and placed together. For this purpose let a shed be prepared for their reception (an Auricula stage will be very suitable), such shed or stage should be in an open exposure, and guarded from violent winds, but where they can have the benefit of sun and air. Gentle watering should now be frequently bestowed on them, and the shed should be uncovered in fine weather, and constantly covered in wet, otherwise the beauty of the flowers would be diminished. In hot weather, also, they should be screened from the heat of the sun, for this will hasten their decay. With these precautions the flowers will exhibit their beauty for nearly a month, after which they gradually decay. When the flowers are past, the pots should resume their former place, where they may stand all the winter. They should be covered in great rains or hard frosts, and this management will be better than placing them in a greenhouse, or under hotbed frames, where the roots are always weakened and rendered less capable of flowering strongly. The operation must be repeated next year; about the beginning of July the top earth should be taken out of the pots, and fresh compost put in its room. In October more flowers than in the preceding year will probably appear; and this work should be repeated for about four years, when the roots must be entirely taken up and divided and replanted in fresh mould; a particular spot should be assigned for the offsets, which need not be planted in pots, but in beds, made of the same compost, at about 4 inches asunder. These offsets may be expected to flower in about three years; and by this time a very large number of flowering roots will be obtained.

Sussex. A. H. C. WATSON.

BROMPTON STOCKS AND PANSIES FOR SMALL GARDENS.

THE paucity of flowers observable in many small gardens during spring time ought to be the exception if amateurs will take time by the forelock. The usual absence of floral embellishment is doubtless largely due to the system of summer carpet bedding now practised in so many gardens, and so persistently denounced by old-time gardeners as almost entirely excluding several of our highly commendable herbaceous border flowers, which seem, however, in some gardens to be regaining their lost popularity. The well-known Brompton Stock is one of the many flowers which may with very little care in raising be utilized to fill small beds from March (I have had them full of buds in the first week of February) till the end of May, and so not encroaching upon the period for planting the summer bedders. Both these and Pansies, which latter I have used as an edging, can be raised at the present time with the least amount of care in the open ground, a partially shaded border being a suitable position. In showery weather the seed will soon germinate, perhaps requiring protection only from the favourite cat by covering with a few Evergreen or other branches. In dry, hot weather great care should be exercised in keeping the seed bed constantly moist, watering through a fine rose pot, as if the surface is allowed to become dry after germination the whole batch will be sacrificed; too often growers are under the impression that failure is to be attributed to the seed, whereas, especially in the case of young amateurs, the fault lies with themselves. If, therefore, the bed cannot receive proper attention the seed should be sown in pots, covered with glass, and placed in the shade, where watering each evening will suffice. A surface dressing of well-decayed cow or horse manure will facilitate the development of good Pansies. If almost like moist snuff it should be rubbed through the hands, adding an equal part of good free loam with a little coarse silver sand.

Now as to the seed:—The old barn-door fowl is preferred by some people for its breeding qualities, and in like manner certain gardeners have preference for the common strains of seeds, where flowers of no particular character are desired, as being less liable to the mysterious degenerating freaks not uncommonly observable in more expensive kinds. A year or two ago I raised several dozen excellent border Pansies from two packets of seeds of the cheapest strains procurable. These plants still show no dwindling tendencies, and are bearing a profusion of blooms, some of very deep blue, and others of endless markings common to these favourite flowers; and time only will prove their deteriorating qualities, if they have any! Both these and the Stocks should have ample room to flourish well before planting out where they are to flower—3 or 4 inches apart will not be too much, and little thinning out will be necessary if the seed is sown thinly, nor will any check and consequent loss of time be occasioned by pricking out as in the case of thickly-sown seeds. The Stocks should be planted out in the beds a foot apart each way, and the Pansies half that distance, by the middle of September. Being hardy, little protection will be necessary; but in the event of severe frosts a little long stable manure will, if placed round the plants, suffice to prevent injury. I have, however, without this aid, in clay soil, had these flowers in profusion from March till the end of May; and during that time they have yielded a wealth of colour and fragrance. STAMFORD HILL.

East Lothian Stocks.—Lately there have been articles in GARDENING on this fine Stock. At present I have a fine show of scarlet, white, and purple. One plant—a scarlet—has had over 200 heads of bloom, and is three yards in circumference and one yard in diameter. The seeds are sown early on a hotbed and put out to harden, then planted out where they are meant to bloom early in June. A good strain of seed is the secret of fine double plants.—Mrs. L., *North Berwick.*

The Paris Daisy in the Isle of Wight.—I don't know if the Paris Daisy grows elsewhere as finely as it does here, but certainly nothing could be more striking than two clumps now growing in the garden of Mr. Drover, of this town. Each measures 12 feet in diameter and is about 5 feet high, and both are covered with flowers so thickly that the foliage is completely hidden. There are five plants to each clump; they have stood where they are for three years. They present the appearance of a huge snowball sprinkled with gold stars. I have one plant in my own garden measuring 15 feet in circumference, but it has smaller leaves and flowers than those of Mr. Drover.—F. H., *Ventnor.*

Double Rockets.—"A. Y. D., Aberdeen," sends us four excellent examples of the Double Rockets—a very good specimen of the dwarf Old White, and of the French Rocket, lilacina plena, and also a yellow Rocket, Barbarea vulgaris, fl.-pl. We have no doubt that those readers who have lately sent us queries about these plants will be able to procure them from the trade at the proper season. Messrs. Morley and Co., Preston, also send us some well-grown sprays of the Double White Rocket.

—— I send you two branches of the Double White Rocket. I thought I had got the old kind, but now they have bloomed I can see no difference in them; the friend who brought it me said it was the real old dwarf. "A. Y. D.'s" way of growing them is right, but they ought not to be planted on the same ground two years together, and they should be shaded from intense sunshine—they keep a purer white when so grown.—H. W., *North Preston.* *** *The Rocket you send us is the Double French, of the lilac shade.*—ED.

REPLIES.

13862.—**Perennial Phloxes dying.**—The most likely cause of these dying is poverty of soil. The soil should be dug two spits deep, and well manured in the bottom spit before planting. Slugs, snails, and daddy-longlegs grubs may have eaten the bark of the springing shoots. Digging, forking, and hoeing among the plants will also injure the roots and kill the plants, as will also the presence of stronger growing plants near them. I had some die one season through annual Poppies growing close to them.—J. D.

13843 and 13900.—**Culture of Day Lilies.**—Day Lilies can scarcely be said to require any culture, as they are about the most easy to grow and the most indifferent to soil and situation of any hardy plants. Good clumps planted in autumn, or just as the crowns start in spring, are sure to answer if planted properly. They establish themselves at once, even when chopped up with the spade in the most unceremonious manner. All that is necessary is to spread out the roots properly and plant firmly; water to settle the soil, and leave them alone. Possibly, slugs may eat the springing crowns; I have noticed them eat the blooms. Any digging, forking, or hoeing among the roots of these plants has a very bad effect, and checks their growth immediately; they root near the surface.—J. D.

13732.—**Treatment of double Narcissus.**—Why do the flowers die in the bud state? is the question; the answer is—Because the plants are not vigorous enough. Plant the bulbs in rich, deep, and moderately moist soil. They may not flower well the first year; but let them alone for three, four, or six years, and the flowers will open freely enough—that is if the bulbs are not dried up before they are matured. This variety flowers very late, and the buds are not infrequently spoiled by hot, dry weather. Plentiful supplies of water would prevent it.—J. D. E.

13844.—**Chionodoxa Luciliæ.**—I have raised plants of this from seeds in pots, but do not recommend the system. They do much better in the open ground, and they grow as freely as Grass in the meadows. Instead of keeping the small bulbs in pots, where they may be neglected, turn the mould with the

bulbs out of the pot, powder it down with the hand, spreading it with the bulbs thinly over the ground. Cover the whole with 1 inch of fine soil.—J. D. E.

13841.—**Treatment of Anemone fulgens.**—I have grown these in light sandy soil, but not successfully. They have done much better in our new garden of clayey loam. I mixed a little peat with it to make it lighter. It is best not to disturb them, and they form masses of bloom. Where the plants do not succeed in light sandy soil, I would suggest digging a hole, and making it up with some clayey loam; and in this plant the tubers.—J. D. E.

—— The mistake that is made with these and florists' Anemones is in forgetting that plants require food, and cannot live in what is the soil of most gardens. This is evidently the case with "S. C. S.," as his Anemones bloom only the first year after planting, and that poorly. The first bloom comes out of the old tuber, and the leaves and flowers exhaust the substance of that. If no food is provided no new tuber is formed. I planted a number of single Anemone coronaria once in front of a hedge, but the hedge absorbed all the food in the soil, and besides it was an excessively dry season. Next autumn I wished to remove the bulbs, but could only find a few offsets smaller than Peas. These plants cannot be made to thrive in borders treated in the usual way; they require a soil rich in the products of vegetable decay, such as that in which our native wood Anemone will thrive. Some villa gardeners have a perfect mania for tidying up their borders. Everything must be cut down the instant the bloom is over, all the withered leaves must be cut off and burned, and all the products of vegetable decay raked up and destroyed. That is just how not to do it. Borders should be arranged so that plants in a shabby state are hidden by fresh vegetation springing up later; all leaves should be allowed to fall and rot round the plants they belong to, and in the case of woodland plants, like Anemones, the ground should be well enriched with leaf-mould before planting, and top-dressed with the same before the plants start growth in the autumn. If they do not improve every year the cultivation is in fault. Many gardeners have a difficulty in getting even our common wood Anemone to establish itself, and even if it grows it remains stationary. I have several times planted little bits of it, and they always began to run about and make themselves at home at once, but they were planted in a border from which no withered leaf was ever removed, and on which even hand-picked weeds were left to rot if they had not flowered. Another thing that must be kept in mind in dealing with plants coming from a warmer and drier climate is that plants which require the shade of trees in their native country may do better in the open in our cooler and cloudier clime, provided they have their woodland food all the same.—J. D.

13892.—**Calceolarias failing.**—It is not uncommon for Calceolarias to die off after they are planted out; but no valid reason has yet been assigned for it. We have tried changing the plants and a change of soil, but have not been able to quite overcome the annoyance. The variety aurea floribunda is not so bad for dying off as some others; and we do not find that they die off so badly in heavy soil as they did in the light soil, with a gravel subsoil of another garden. The plants like rich soil, but crude manure ought not to be allowed to come into contact with the roots.—J. D. E.

—— I do not believe there is any certain remedy for this. Some years ago I tried every remedy that I could think of. Some went so far as to say that early planting was a safe preventive, but I proved it was not so. I now keep my plants in a cold frame all the winter, and about the middle of March they are planted on a north border where they are always shaded. At the end of May they go out where they are to flower, and for four years under this plan we have hardly lost a plant. I should advise "Malvern" to adopt the same plan another year, for it may suit his case also.—J. C. C.

13885.—**Summer treatment of Chrysanthemums.**—Our practice is to spread a layer of ashes on the ground, and stand the pots in it. A piece of slate, or, better still, three small pots inserted to nearly their full depth into the ground, should be placed under each pot to prevent the roots penetrating into the ground. Plants grown thus and stood in the full sun stand a better chance of getting their wood fully ripened than do those plunged; and it must be borne in mind that without ripe wood fine blooms cannot be expected.—W. E. BOYCE, *Holloway*.

—— If the pots are plunged up nearly to the rim it saves a great deal of labour in watering; the roots are also kept of a more equable temperature. The advantages are all on the side of plunging the pots.—J. D. E.

OUR READERS' ILLUSTRATIONS: The Broad-leaved Evergreen Saxifrage in flower in the open air; photographed (after the largest spikes had been removed) by Mr. W. T. Bashford, Portobello.

13888.—**Using "Lawn Sand."**—After trying this material many years ago, I came to the conclusion that it was of no use whatever in destroying weeds on lawns. It kills some of the leaves of the weeds and a good many blades of Grass. Both recover in time and grow as freely as ever.—J. D. E.

13876.—**Plantains on lawns.**—You need not dig up the plants, but put a few drops of citric acid in the centre of each, this will certainly kill them. The best and safest way of using it is to have a notched stick and dip it in the acid and place the point of the stick on the centre of the plant. Petroleum is quite as destructive if you prefer to use it.—J. C. C.

13676.—**Climbing plants for new red brick house.**—White Roses of the climbing Ayrshire kind are the best, but a plant or two of Ivy would keep the wall green in winter. Ampelopsis Veitchii speedily covers a large space, and is very beautiful in summer and autumn. A plant of Wistaria sinensis forms a beautiful object in May. I would plant the whole of the above and cut away what I did not like after.—J. D. E.

13868.—**Sowing the Great Scarlet Poppy.**—This is very easily multiplied, as every piece of root grows into a plant—even pieces without crowns form plants. Nor is it necessary to diminish the show of the plant for the sake of propagation, as four or five pieces can be planted in a clump and removed when they become crowded.—J. D.

13880.—**Treatment of Chrysanthemums.**—"H. W." does not state for what purpose he is growing his plants, whether for exhibition or decorative purposes. As soon as the roots reach the sides of the pots they are now in (which they should be by this time for exhibition purposes), they should be potted into their blooming pots (8½-inch), in soil consisting of three parts good turfy loam, and one part good rotten manure, to which add enough sharp sand to keep the whole porous. In potting ram the soil down very firm. They should then be stood in the full sun (see answer to W. Phillips, No. 13885), and only enough water given for a few days to keep them from flagging. The roots will then soon work into the new soil. If intended for exhibition blooms, the plants must not be stopped, but if intended for decorative purposes or specimen plants they should have received their final stopping last month. We cannot very well further advise H. W. what to do "to have a good show this year" without knowing for what purpose the plants are required, but if good exhibition blooms are required, the plants should be more than 7 inches high by this time.—W. E. BOYCE, *Holloway*.

—— They ought now to be repotted into 9-inch pots, and be placed in an open position out-of-doors. Use good rich loam, with about a third part decayed stable manure added to it. Tie the shoots out as they increase in growth, and water freely when the pots are filled with roots. It is the nature of the plants to flower freely.—J. D. E.

Double Narcissus becoming single.—As a sample of contraries, will you let me state that the finest double Narcissus I ever had I found in the middle of a dense wood? There were some dozens in flower in the clump, and it had evidently been there for years undisturbed; the soil was an ill-drained clay. Of course I had it dug up and carefully planted in the bulb border of the garden, which is duly attended to in the way of good soil, but I have never succeeded in getting another clump to flower in the same fashion. I rather incline to the opinion that sudden dryness is the cause of single flowers; ours sometimes never get beyond the bud stage, and that it is caused by rapid increase of dry heat I have little doubt.—A. B. T., *East Anglia*.

13839.—**Varieties of Musk.**—I have for some time taken GARDENING ILLUSTRATED, and have gained much valuable help from its pages in managing my little greenhouse and garden, of which occupation I am very fond. "A. G. N. L." asks for a variety of Musk. I have just got one in bloom, raised from seed, which to me is a novelty. It has the leaf and appearance of the scarlet Musk, but instead of a kind of yellow eye mine has a very dark red, almost black, centre. I shall be happy to send a bloom or two if "A. G. N. L" sends me his address.—Mrs. GOSTAGE, 50, *Mount Pleasant, Reading, Berks*.

OUR READERS' ILLUSTRATIONS.

THE BROAD-LEAVED SAXIFRAGE.

THE genus Saxifraga is one of the largest among hardy plants, and embraces an extremely wide variation in habit of growth. The broad-leaved Saxifrage (S. crassifolia), here illustrated, has large, broad leaves, and flowers of a light rosy colour, with the slightest lilac tints. They are produced in March and April, when, in spite of the somewhat coarse appearance of the leaves, they form a very gay and useful accessory to the beauty of the spring garden. There are several varieties, among them one with variegated foliage. The engraving is of a plant grown and photographed by Mr. W. T. Bashford.

CRIMEAN IRISES.

The Iris which we figure this week is a pretty little hardy plant, generally with purplish flowers, but having two or three very pretty varieties, one of which is blue and white. It is a most graceful little object on peaty and light soils. It is very early, and in every way a good plant. Where the soil is not peaty or light it does admirably in Rhododendron beds. It is not difficult to grow anywhere, but our experience is that while it may live on stiff and loamy soils it shows its full beauty only on peaty ones. In our cold northern hill climes it may thrive under different conditions, and perhaps some of our readers have tried it in such positions. Our engraving is from a photograph sent for our first competition by Mr. W. T. Bashford, Argyle House, Portobello, N.B.

OUR READERS' ILLUSTRATIONS: Crimean Iris (I. pumila). From Photograph sent by Mr. Bashford.

The plague of cats.—I think some of your readers inquired some time ago what measures they should adopt to abate the cat nuisance. I never got any peace until I procured a cat trap, made of strong, stout, galvanised wire. In this the animals are caught without injury, and even with comparative comfort to themselves; at any rate, they are often asleep when the trap is examined in the morning, and soon afterwards a few minutes' immersion in water (trap and all!) has disposed them for a deeper and more lasting slumber. This is, I think, the quickest and most painless way of killing cats (for they are not hurt in the least by the trap), and when buried 18 inches deep they serve a useful purpose as manure for fruits and vegetables. I catch most in the winter. If some people say this course is cruel and needless I would point out that those who allow these animals to increase so largely must take the consequences if their pets become a nuisance in the gardens of others. I do not study the legal aspect of the case; I have to decide between giving up gardening and keeping down the cats, and my choice is made.—AN AMATEUR, *Bromley, Kent.*

Wild Crocuses in the Engadine.—Both the illustration shown on page 210 and the description which accompanies it would answer very well for a field near here, which is quite as thickly studded with Colchicums in autumn. Many are pure white, but most are various shades of rosy lilac. Why not stud the outer fringes of lawns with such beautiful flowers for spring and autumn bloom instead of carrying the stereotyped shaven turf up to the line of shrubs? Perhaps, however, I am not competent to give an opinion about Grass turf, as I always fail to see the beauty of it unless it is studded with wild flowers, or waving in the wind, covered with its own soft blooms.—J. D., *Salisbury.*

Flower and garden painting.—I am afraid the Editor (p. 210) has not grasped my meaning about unremunerative prices being the cause of bad flower painting. The prices paid for pictures of flowers are not unremunerative, but the demand for such paintings is almost nil—far too small to induce any artist to devote himself to that branch of art. It would be extremely foolish of any one to take up any special branch of an intellectual profession unless there was a tolerable certainty of a fair remuneration, which is not the case with flower painting. Flowers have to be painted on the scale of life, and require the same thorough and accurate drawing and masterly painting that is required for figure and animal painting on the same scale. It is only in the subtilties of facial expression, and the representation of momentary attitudes, that figure subjects are more difficult than the forms of vegetable life. Landscape art requires an utterly different kind of representation. A good illustration of the difference between the two is one of Mr. Ruskin's. Take a line of large type-letters and place them just so far away that they can be seen to be regular forms of some kind, and yet are unreadable. That is the condition under which nearly all vegetable forms have to be represented in a landscape. They are too far away to be distinctly drawn, and a distinct drawing would be incorrect, yet the effect of foliage has to be given, and so all kinds of brush work that will give that effect has to be brought into play. Then distance and atmosphere have to be rendered, and the difficulty caused by the impossibility of matching the brightness or lightness of the colours has to be hidden, all pigments being much too dark to represent outdoor effects. The kind of painting useful for flowers is of little or no use for landscape, so that an artist cannot combine the two without being master of two totally distinct methods of work and ways of looking at things. The artist who can command £100 for a fair landscape would be very foolish to turn his attention to groups of flowers of which he could not hope to sell more than three or four in the course of a year at not more than £30 each. Then, those who could easily paint flowers have almost always poetical faculty sufficient to succeed as figure painters. Artists cannot be expected to put aside commercial considerations any more than members of any other profession do. To succeed in art requires some twelve or fourteen years of the best part of a man's life to be devoted to it with little or no return, and a considerable outlay of capital as well, and unless the return is at least as good as the same outlay of brains, money, and hard work would produce in ordinary commercial pursuits it is not worth having anything to do with.—J. D.

Large Pansies.—Mr. J. Forbes, of Hawick, who is a great Pansy grower, sends us some beautiful blooms, cut as we think they should be. Some lovers of the Pansy are very unkind to their flowers; they cut them off, and then tie a little bundle tightly with string, so that nobody can undo it, and the little stems are crushed into pulp—having no regard to the fact that the foliage is part of the Pansy, and that, when well grown, it is very beautiful. Mr. Forbes cuts these Pansies with a good free piece of fine foliage, and a stem 4 inches or 5 inches long, and it is surprising how much better the plants carry, and how much better they look, so sent. The foliage seems to have kept the flowers perfectly fresh during their long journey. The kinds are mostly of the large and fancy races, some of them very beautiful, as one would expect from so good a grower. Among those that we like best, from the novelty of their colour and their dissimilarity from the older and better known races, are Donald Sinclair, Mrs. Innis, Mrs. Malcolm, James Gardiner, and Earl of Beaconsfield.

Too many flower beds.—The plan of town garden commended by "J. G. H." (p. 217) is the best in theory, and is the one usually carried out; but it has one fatal fault—the flowers will not thrive in small suburban and town gardens surrounded by walls and fences. The first necessity is to keep all flower beds away from those. The middle of the plot is the proper place for the flowers if they are expected to thrive. If a lawn is required it can be placed in any convenient situation, either nearest the house, in the middle, or at the further end, and can be carried right up to the fences, but any scheme of having the whole centre of the garden Grass, with a border of flowers round, is just how not to do it, and half the failures with flowers in small gardens are owing to adopting that arrangement. Flowers cling to the fences in country cottage gardens and thrive as well there as anywhere else, but in town or suburban gardens they crane their necks out away from the fences. I think it must be the want of fresh air, as I have noticed in a country churchyard, completely enclosed by tall trees, the weeds crane out from the surrounding wall in the same way, leaving some 6 inches of perfectly bare earth next the wall. In very small gardens in towns there is no doubt turf is a mistake. One has to make believe, very much like Dickens's "Marchioness," to imagine the wretched little patch has any resemblance to a lawn; it gets eaten up with daddy-longlegs grubs, and in nearly every case hangs on its owner like a white elephant, absorbing all the attention that ought to be given to better things. I have known a patch of turf a few yards square cost two shillings a week the whole summer; what a nice bed of hardy flowers one might have for that sum!—J. D.

The sparrow curse.—I wish I could get at that man (p. 228) who feeds the sparrows! This morning hundreds of these rats of the air saluted my ears for several hours before I arose from my bed. I wish I could deal with them as summarily as I could with their patron! They have not, like their true congener the rat, the decency to hold their tongues; their chatter is like the noise of many spring traps. To love our beautiful song birds, from the robin to the thrush, which make the woods delightful even in winter, is as natural as to love a wild Rose or a Forget-me-not. But these omnivorous pests are a nuisance throughout the world wherever they have been introduced, as well as in Britain. In America they actually go so far as to destroy or drive away some of the beautiful native song birds. There is abundant reason why they and their nests should be destroyed without mercy both in town and country.—AN AMATEUR, *Bromley.*

Aphis and blight in 1885.—Is this a specially bad season for aphides and blight of various kinds? I had all my walls syringed two or three times during the winter with a weak solution of paraffin, and more recently with soft soap and Gishurst compound, yet the trees and bushes are worse than they have ever been. The American blight has appeared on every Apple tree, and though I at once had them painted with the soft soap, &c., as recommended, it still lingers on the branches. The fruit, however, is plentiful.—Mrs. R., *Dorset.*

SECOND ILLUSTRATION COMPETITION.

THE present competition is confined chiefly to views of tastefully-arranged porches, verandahs, and arbours, Pergolas,* climbers round windows or on walls or trees, garlanded walks, and to illustrations of any way of growing climbing and rambling plants; but any beautiful illustrations of gardening interest sent at the same time will be heartily welcomed. The selected photos will be engraved and published in GARDENING, and senders of the chosen pictures will be entitled to receive useful garden books of the value of not less than One and a-half Guineas. All photographs for this competition must reach us by Saturday, the 8th of August.

In addition to the above, however, we propose to give to the persons who during the year 1885 send us the most choice series of illustrations

THREE PRIZES OF HONOUR,

as follow:—First.—A water-colour drawing of the Wild Field Rose, by the late Mrs. Coleman; purchased at Christie's for Twelve Guineas. Second.—A water-colour drawing, by Madame Vonga, of Zurich, of one of the first plants of the rose-coloured Water-Lily flowered in Europe; purchased for Five Guineas. Third.—An original water-colour drawing of a group of Pæonies, by Mrs. Duffield, value Three Guineas.

In awarding these prizes we shall deal only with those photographs which have been selected and engraved in each competition, and the number and beauty of the contributions of each competitor will be taken into consideration. The recent competition is included in these special prizes.

The following rules must be observed by competitors:—

First.—The photos may be of objects in one's own possession or cultivation, but the source whence they are obtained must be stated, and none sent the copyright of which is open to question; the Editor is to have the right of engraving and publishing the chosen photographs.

Second.—The name and address of the sender, together with the name and description of the object shown, should be plainly written on the back of each photo.

Third.—All letters relating to the Competition must be addressed to the Editor, and marked "Illustration Competition."

Figures of men or women, barrows, vases, rollers, implements, and all similar objects had better, as a general rule, be omitted from these photographs. The object is to show the beauty of the garden, and this cannot be done well when the photographer is confused by other considerations. Photographs may be mounted or unmounted; they should be clear, and the subject intended to be shown in good focus, and so as to be distinctly seen.

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* PERGOLAS.—Not half enough is made in English gardens of the pretty Italian fashion of the shaded walks and spaces known as pergolas. In Italy they consist of piers of masonry, either square or round in section, roughly plastered, some 12 feet apart along the walk; rough timber logs cross the path overhead from pier to pier, and slighter woodwork is laid lengthwise again upon these. Upon this foundation grow vines and other climbing plants. A pergola for an English garden is best constructed of rough pieces of oak. The top pieces that are left over when oak is felled are the best possible material; the larger and straighter pieces are chosen for the uprights, and the smaller crooked branches for the top. By planting with vines, rambling Roses, Clematis, Aristolochia, and like climbing plants, a beautiful and delightful covered way may be made, or a highly enjoyable open air breakfast and dining-room.

13377.—**Floral cement.**—You can purchase gum for fixing the petals of flowers from Messrs. Jackson & Sons, Kingston-on-Thames, or Mr. E. Morse, Epsom. You will find full directions on the bottles.—C. F. DAVIS, *Leatherhead*

—— If you only want the cement for fixing the petals of flowers or for securing on paper botanical specimens, you will find a little gum arabic answer your purpose. It dissolves readily in a few hours in either warm or cold water, but quickest in water of moderate warmth.—J. C. C.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

13935.—**Culture of German Irises.**—Will anyone who is an admirer of German Irises give me a few simple directions as to their culture?—R.

13936.—**Striking and Pruning Banksian Rose.**—Will anyone who grows this Rose tell me the best time to take slips of it for striking, and how it should be done; also the best time to trim the trees?—UNUS.

13937.—**Improving Cherry trees.**—In a Grass field adjoining my house I have a number of Cherry trees, but the fruit is of poor quality. Could I graft them with superior kinds, or how can I best deal with them?—W. L. O.

13938.—**How to build a greenhouse.**—Would any practical readers of GARDENING tell me the simplest and most economical method of constructing an amateur's greenhouse, 30 feet by 16 feet?—V. K., *Manchester.*

13939.—**Ants in houses.**—Will anyone tell me the simplest and most effectual method of banishing ants from plant and fruit houses?—J. B. B.

13940.—**White Foxgloves.**—I should like to know whether it is usual for the seeds of white Foxgloves to produce purple plants; and, if so, how it can be prevented.—MARTHA.

13941.—**Propagating broad-leaved Myrtle.**—Will someone kindly describe the simplest mode of propagating the broad-leaved Myrtle, and tell me when to set about the work?—J. S., *Totnes.*

13942.—**Lawn mower.**—Will anyone who has used it tell me whether a 16-inch "Excelsior" lawn mower requires two men to work it? How often should it be passed over the Grass?—EXCELSIOR.

13943.—**Wiring and gumming Roses.**—Would some of your readers kindly tell me how to wire Roses and other flowers, and also how to set them with gum? I wish to treat market flowers in this way.—KENT.

13944.—**Fuchsia buds dropping.**—I have a Fuchsia which seems a healthy plant, but when the buds are on the eve of opening they drop off from the stem. Can anyone tell me the cause and what I ought to do?—G. W. T., *Dumfries.*

13945.—**Good climbing Roses.**—Will any Rose grower kindly tell me of four good climbing Roses for a shaded, but sunny, position? I should like two light and two dark. Also when is the best time to plant them?—C. B., *Bristol.*

13946.—**Obtaining tree frog.**—Will any of your readers inform me where I can obtain the tree frog, which is so common in Germany? I had one in my vinery for two years, and would like to replace the departed.—LANBFRŒSCH.

13947.—**Grapes shanking.**—Will any experienced Grape grower tell me how to prevent my vines from shanking? They were very bad last season, and I am afraid they will be so again; they will begin colouring shortly.—LANCASHIRE.

13948.—**Roses for pot culture.**—I am desirous of growing Roses in pots in a greenhouse that is kept at a temperature of 45 degs. in winter, and 60 degs. to 70 degs. in summer. Will any lover of the flower tell me three of the most suitable kinds?—C. B., *Bristol.*

13949.—**Roses for pots.**—Will someone state what, in his experience, are the six best Hybrid Perpetual Roses for growing in pots, having regard for distinctness in colour, perpetuity of flowering, and capability of blooming on wood of moderate strength?—Q. R.

13950.—**Treatment of neglected vine.**—I have lately come into possession of a small lean-to greenhouse. It is in a good situation and has a stone floe. There is a vine in it which appears to have been much neglected. I should be obliged if someone will tell me how to treat it.—INEXPERIENCED.

13951.—**Culture of Kalosanthes coccinea.**—"A. J. Y." would be glad of information as to the treatment of Kalosanthes coccinea. He has two fine plants which have not bloomed since they were raised from cuttings, three years ago. In both cases they grow luxuriantly, in fact, are two feet high and bushy in proportion, but there is no sign of blooming.

13952.—**Melons turning yellow.**—Having got two Melon plants, we have tried to treat them in the manner described by "S. W." on page 162; but though the plants are in fine health, with splendid leaves, the fruit after the blossom falls off turns quite yellow. I should like to know the cause. Has the fertilisation not been properly managed? The leaves and blossoms are thriving. Could the fault be in the seed? It was saved last year, and there is very little pollen on the flowers.—A. H. F., *Co. Dublin.* *** *We gather from your letter that none of the fruit has set, and, if so, it is distinctly a case of failure from non-fertilisation, which seldom happens with Melons. We have never found any difficulty in setting Melons, without impregnation even.*

13953.—**Gathering Mushrooms.**—I should be glad if some grower of Mushrooms would inform me whether they should be pulled up or cut off. In pulling them up so many small buttons come up with the roots that it seems like destroying a future crop.—GROWER. *** *Mr. Hobday, in his article (page 151), says "In gathering, draw the Mushroom out of the bed with a thick twist, and after each cutting fill up the holes with some fresh loam."*—ED.

13954.—**Sulphate of ammonia for Chrysanthemums.**—Having seen it stated that sulphate of ammonia is a good manure for Chrysanthemums I shall be glad to be told by some reader who has used it how and when to apply it to the plants in 7, 8, and 10-inch pots. The plants have been put into their flowering pots about one week. I have used some good turfy soil and old rotten manure, with a few broken bones in the pot.—A TWO YEARS' READER.

13955.—**Raising Rhododendrons from seed.**—I have tried for two years in succession to raise Rhododendrons from seed and have failed. Can any grower of these shrubs tell me how to proceed?—A. C. H. D. *** *There can be no real difficulty about this, because one sees Rhododendrons sowing themselves naturally and abundantly in many woods, some of them quite near London. We have no doubt some readers who grow them will tell you the orthodox way of raising them in the American plant nurseries.*—ED.

13956.—**Procuring wattles.**—I was lately in a nursery in Edinburgh, and there saw a quantity of wattles about 6 feet long and 3 wide. They were used there for sheltering Chrysanthemums, and were bought at the Forestry Exhibition last year. I have long wanted some kind of thing for the same purpose, and these seemed admirably suited for many things, being so easily moved from one place to another. No one could give me any information either where they came from or where I was likely to get them. Will anyone kindly tell me where they could be had?—MRS. L., *North Berwick.*

13957.—**Is red-lead injurious to plants?**—Can anyone inform me if red-lead, in a tank of water, would be injurious to plants watered from it? About ten weeks ago I was having pipes put in my greenhouse, and the workmen threw all the superfluous red-lead into the tank, this I have only just discovered. Since the work was done I have had, at three different times, perfectly healthy Geraniums brought in, and within a fortnight all their leaves turned yellow and the blooms went blind; this was the case with Petunias and Tobacco plants, and all other plants looked more or less sickly.—S. J. *** *No doubt the plants have been injured by the red-lead in the water.*—ED.

13958.—**Tecoma jasminoides.**—Having become possessor of a fine plant of the above, I shall feel greatly obliged for information on the following points: Will it grow well in a moderately warm conservatory among ordinary greenhouse plants, or does it require stove heat? Will it do better trained up the roof or on the wall at the back? When and about how long ought it to be in bloom?—J. T. B., *Cheshire.* *** *Tecoma jasminoides grows rampantly, and will probably flower abundantly in a moderately warm conservatory, planted out in a border or bed of good loam. Of the time and duration of flower we never took any notes. A good plan is to grow it up the back wall, or up a pillar, and then across an arch or arches.*—ED.

13959.—**Hardy and alpine plants in pots.**—Will someone who has tried growing hardy and alpine plants under glass in pots kindly give a really good list of what can be well grown in that way? Anything which does better in the open air should be omitted.—X. Y. Z. *** *We have no doubt that "X. Y. Z." means, for the most part, kinds worth growing for earlier bloom than is usual in the open air. There are serious reasons why a number of early flowering kinds, of which the beauty is often destroyed by severe springs, should be grown in pots, and often when the same kinds happen to do well out of-doors there is the advantage of a prolonged blooming season, just as the excellent Continental habit of growing Lilac well in windows and houses makes the Lilac so much more precious than it is with us, where the bloom is often too short lived. Growing hardy plants in pots with any other motive seems to us to be a mistake. We have no doubt our readers will help you with lists of the best.*—ED.

13960.—**Hardy flowers for market.**—I should like to be told the names of a few hardy flowers suitable for growing for market, soil rather stiff, but rich.—KENT. *** *The number of hardy flowers for market is very large and there are some to be found during nine months out of the year. It is impossible to limit the number, as tastes vary, new flowers come in and old plants that people seemed to care nothing for at one time are now in request, and largely cultivated. Such families as Carnations, Narcissus, white Lilies, Lilies of the Valley, Spanish Irises (yellow and white), and German Irises, and, above all things, Christmas Roses, well grown, are suitable. Roses, of course, people never have too much of. Consult lists of hardy flowers, and, as a rule, avoid those flowers that won't carry well, and those that are very strong in scent, such as the Scarlet Lilies. Of course you must choose your market, and if you find that one is not good try another. Some growers near London send things to the large northern and midland markets.*

13961.—**Cucumbers dying.**—I should very much like to know why many of my Cucumbers die off after growing to about 2 inches in length. The plants are very healthy and look well. My house is a span-roof, and faces the west, gets a good deal of sun (I have to shade, or, if I don't, the leaves get scorched), and it is heated by hot water. I have four plants on each side of the house, which is 14 feet long. I enclose some plants.—A. BROWN. *** It may seem anomalous to say that a plant making plenty of growth and seemingly strong should at the same time be inherently weak, but it is so; and in the case of the Cucumber plants under consideration it may arise from two causes. 1. It may arise from planting in soil of too light and rich a character, and the symptoms point in this direction; plenty of growth is made, but it lacks stamina and firmness, and so many of the fruits fail to grow. 2. The cause may be constitutional—inherited from parents, and, judging from specimens sent, the variety does not appear to be of superior quality. I should plant in turfy loam (take care it is free from wireworm), and to every bushel of loam I should add 1½ lb. of Amie's artificial manure, thoroughly blended with the soil before using it. If you top-dress with 2 inches or 3 inches of the loam and artificial manure which I have recommended I am convinced there will be an improvement.—E. HOBDAY.

13962.—**Treatment of Banksian Roses.**—"Poppy" would be glad to know how Banksian Roses should be treated to make them blossom. She has two in her garden which do not show any signs of flowering, although their growth is strong and healthy. *** *We presume they are on walls and that the young wood is not all cut away. If so they ought to flower well every year.*—ED.

13963.—**Failure with plants in greenhouse.**—I should like to know why my plants will not flower. They are in a greenhouse heated to about 70 degs., and get the sun in the morning only. They grow and flourish well, but nothing will flower; they either turn yellow before they open, or only partly open, then wither. Everything is the same—Pelargoniums, Geraniums, Chrysanthemums, and Lilies of the Valley. The temperature of the house is about 50 degs. in winter. I have no means of increasing or diminishing the heat, as it is near the back wall of an oven, but there are no fumes. Will any lover of plants help me?—C. B., *Bristol.*

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

13964.—**Are the bird Cherries of any use?** (*Martha*).—We believe that they are useful only to the birds, but the tree is very beautiful.

13965.—**Best herbaceous plants** (*R., Calton Grove*).—We shall soon publish lists of the best hardy flowers. You may also consult "Hardy Flowers," published by Mr. Murray.

13966.—**Gumming flowers** (*Omeri*)—See query 13877 and replies thereto.

13967.—**Twin Fuchsia** (*A. Hands*).—This is merely a monstrosity, and is no novelty.

13968.—**Libonia floribunda** (*Mrs. B*).—There is only one sort of Libonia floribunda—the orange red.

13969.—**"Ground plaster."** (*T. Combe*).—The ingredient referred to as ground plaster in the article you mention is probably material of the nature of lime rubbish.

13970.—**Propagating frames** (*W. G.*).—Consult recent advertisements in GARDENING, and no doubt you will be able to find what you want.

13971.—**Insects on Chrysanthemums** (*W. H. M., Dalston*).—The insect had escaped before we examined the scrap of leaf you sent. You should enclose a few in a tin box.

13972.—**Oil stove for heating greenhouse** (*M. A. S.*).—The question you ask has been already inserted, and "A. B.," on page 155, states that the stove was made by himself.

13973.—**Double Fuchsia** (*J. C.*).—The flower you send is a very good kind, but, without the means of comparing it with existing double sorts, we cannot tell you whether it has any special merit.

13974.—**A question about Melons** (*H. G.*).—By the word "vines" do you mean Melon stems? Your question is not written clearly and we cannot find out what it is you want to know. Write to us again.

13975.—**Obtaining White Everlasting Pea** (*C. P., Ayrshire*).—Apply to any of the large growers of herbaceous plants in London or the provinces. It is certainly in some Edinburgh nurseries, or, if not, it ought to be.

13976.—**Budding Brier Roses** (*Amateur*).—An article on the propagation of Roses will be found in GARDENING, June 27th. You can procure what you want from any good Rose nurseries, of which there are not a few near London and most provincial centres.

13977.—**Obtaining Michauxia campanuloides** (*Mrs. R.*).—This is a plant mostly of biennial duration, and you must look for it in seed lists. It is a tall and handsome thing, and resembles the Bellflowers. It is called Michaux's Bellflower, but there is no other name.

13978.—**An unsatisfactory Rose** (*Mrs. R.*).—It is impossible for us to say, from the small scrap you send, what is the matter with your Rose. It seems to be all right, and to show nothing more than the character of the variety. Kindly send us a better specimen and repeat the question.

13979.—**Removing Poet's Narcissus** (*J. S.*).—There can scarcely be a better time than the present to remove them. Choose a sunny day and leave the bulbs dry on the surface; then remove the soil and offsets, and you can see whether the bulbs are decayed or troubled by insects; then replant in fresh soil deeply dug.

13980.—**Arum plants in tubs** (*Subscriber, Cork*).—Arum plants grown in tubs require very little drainage and plenty of water. They are best grown planted out during the summer, and lifted in autumn for winter bloom. Keep them thoroughly watered during the time they are planted out. In the warmer parts of the country they do fairly well in water altogether.

13981.—**Propagating double Rockets** (*Mrs. L.*).—We have never seen double Rockets better grown than when transplanted into fresh soil every year after flowering. This is not necessary, and is not practised in all cases, but it is a good way of increasing them. Carefully divide the suckers. Probably Mr. Forbes, of Hawick, or Mr. Gray, of Eglinton, will tell "Mrs. L." how to increase plants which everybody seems to be wanting at present.

13982.—**The culture of Irises** (*Mrs. R.*).—Most Irises are of very easy culture, merely requiring ordinary soil of a rich character and not to be disturbed much after planting. People do not enjoy their beauty fully as they do not allow them to form broad tufts—they are too crowded, in fact. They are a very beautiful race of plants, and new kinds of great value are still being introduced. The leaves of the border kinds are so good in form that even when out of flower the plants give a good effect when grown in broad groups or masses. If you wish to attempt the culture of any kinds that puzzle you we shall be very glad to help you, but the whole of the German races and the taller yellow Irises, now in flower at 4 feet high, ochroleuca and aurea, are quite easily grown in ordinary borders.

13983.—**Mr. Miller's "English Names of Plants"** (*J. R.*).—Mr. Miller's dictionary gives what it pretends to give—a list of all the cultivated plants for which there are English names. In the first part the English names are given in alphabetical order and the Latin names follow; in the second part the process is reversed, the Latin names being arranged alphabetically. Thus it is an easy matter to find either the English name from the Latin or the Latin from the English.

13984.—**Old-fashioned Roses** (*A. M., North Notts.*). The old Roses you send are all beautiful, and should be preserved, but we cannot tell you all their names. No. 1 is Blairii—No. 2 a Rose which we have noticed with much pleasure climbing over trees and up houses, and which has always a charming effect, whether seen in the hand or in the distance—and No. 4 seems to be Felicite Perpetuelle; but the best way to get such things named is to send them to nurseries, where there would be the means of comparing them with others.

13985.—**Difference between Violas and Pansies** (*C. B. J.*).—There really is no distinct point of difference between Pansies and Violas, because all Pansies are Violas. Of late years some kinds have been raised which have some blood of cornuta in them and which have certain marks, but we believe many of the old Pansies had the same characteristics; but who can tell the origin of the common Pansy itself? A similar question was asked some time ago, and you may consult "J. D. E.'s" reply in last week's issue, page 222.

13986.—**Neglected vine** (*A. C. H., Bath*).—As you say nothing of the conditions under which the vine grows, and as you are in a hurry, we think the best thing you can do is to get some good practical gardener or Grape grower in the neighbourhood to see it, and examine the border in which it grows; he will be able to see if anything can be done. As regards the general treatment Mr. Simpson's little book on the vine will suit you, and Mr. Ravensoroft's "Town Garden" will give you hints on the management of a small greenhouse. Both are cheap books. Perhaps some reader will give you some hints about the vine also, and you will find your question printed elsewhere.

13987.—**Pear leaves blistered** (*W. W. S.*).—We cannot offer a satisfactory explanation of the condition of your Pear trees. To the unaided eye they appear as if attacked by fungi, but we can see nothing under the microscope but the blackened tissues of the leaves. The taking-up, tap-rooting, and replanting may have caused the disfigurement, which, probably, will not appear another season.—W. G. S.

13988.—**Fungus on Apple tree** (*R. T., Stroud*).—The shoots have been attacked by a microscopic fungus named Helminthosporium pyrorum, a pest which has been very common this year. If possible the shoots should be removed and destroyed. A similar effect on Apple shoots is sometimes produced by frost and wind. When the fungus attacks the fruit it so injures the skin that it causes it to become cracked.—W. G. S.

13989.—**Grapes turning black** (*Truro*).—The Grapes appear to us to have been injured by mildew when in an early stage of growth. The skin of the young Grape is often injured by mildew. The injury frequently spreads as in your case, and th. Grapes at length become discoloured and decay. You do not say that your Grapes have been attacked by mildew, but, as you have been using sulphur, we presume they have.—W. G. S.

13990.—**Vines diseased** (*An Anxious One*).—The vine leaves sent are badly infested with numerous fungi peculiar to, or said to be peculiar to, vines, as Cladosporium ampelophagum, Phomavitis, &c. The leaves are altogether in a bad condition, and are, as you suggest, "infested with parasites." The mode of culture, as practised by you, may possibly be open to a little improvement. If possible remove and burn the infested leaves, ventilate, use sulphur, and improve on present mode of culture.—W. G. S.

13991.—**Thorn hedge scorched** (*R. Waller*).—Your Thorn hedge is infested with a scale insect very similar in nature to the scale insects of our greenhouses; but these insects have nothing to do with the webs and the scorched appearance. These, from your description, are the work of caterpillars, probably those of the small Ermine moth (Hyponomeuta padellus). They spin webs, in which they live, and feed on the leaves. Pull out as many of the webs as you can, if there are any caterpillars in them, or syringe with soap-suds. The scale may be destroyed by using the following mixture: Eight parts of water one part of soft soap boiled together; while hot add three wineglasses of paraffin oil to every gallon and mix thoroughly; use when cold.—G. S. S.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*F. H.*—1, Common native Iris pseudacorus; 2, Gladiolus segetum; 3, Chrysanthemum Leucanthemum; 4, Limnanthes Douglasi.——*Mrs. Candrol.*—1, Phlomis tuticosa; 2, Lilium Martagon.——*Cottager.*—Double Austrian Brier.——*Tidmar.*—If you will send sufficiently large specimens we will try to name them for you.——*G. F. Batchelor.*—We cannot possibly name Beans by the seed.——*D. E. H.*—1, Pteris cretica albolineata; 2, Adiantum hispidulum; 3, Gymnostachyum Pearcei; 4, Fittonia argyroneura.——*W. E.*—1, Diclytra spectabilis; 2, Santolina incana; 3, Specimen insufficient.——*C. A. H.*—Polygala Dalmarsiana.——*A. H. F.*—1, Echeveria secunda glauca; 2, Philadelphus coronarius; 3, Variety of Pink; 4, Thalictrum flavum.——*B. W.*—Apparently a species of Claytonia; Davallia dissecta.——*Mrs. Maxwell.*—Muscari monstrosum.——*Mrs. Loder.*—1, Species of Cornus; 2, Lychnis Viscaria fl.-pl.; 3, Spiræa Filipendula; 4, Pendescantia virginica.——*Mrs. R.*—Saxifraga sarmentosa (not a hardy plant).——*O. O., Dorking.*—Veronica Teucrium.——*A. H. Largs.*—Hedychium Gardnerianum.——*S. C. O.*—Variety of Gladiolus ramosus; shrub is Escallonia macrantha.——*Rosarian.*—Appears to be the variety Niphetos.——*Mrs. D.*—Pernettya mucronata.——*George Woodman.*—1, Hoya longifolia; 2, Coelogyne elata.——*A. B. T., East Anglia.*—Send a larger specimen with leaves and fully-developed flowers.——*Mr. Kingsmill.*—Hesperoscordium lacteum.——*W. Laddaw.*—Arum orientum.——*H. Tuppen.*—Muscari monstrosum.——*O. W. D.*—2, Scilla peruviana (blue); 3, Heuchera Richardsoni (leaf); 4, Next week. Please pack the specimens better next time, and attach a number to each; send No. 1 again.——*C. M. M.*—Sisymbrium millefolium.——*E. F. C.*—1, Polygala vulgaris; others too small to name.——*W. E.*—1, Species of Geranium, probably lancastriense; 2, Veronica Teucrium var.——*Iolanthe.*—Apparently the old Maiden's Blush.——*Hill.*—1, Begonia Weltoniensis; 2, B. semperflorens; 3, Pteris serrulata; 4, Adiantum hispidulum.——*W. R. T.*—1, Dicentra eximia; 2, Geranium erinostemon; 3, Diplacus glutinosus.——*St. John's, St. Helier's.*—Astrantia major (the English names are Black Hellebore or Great Black Masterwort).——*H. B. P. B.*—1, Gaillardia aristata var.; 2, Lychnis dioica fl.-pl.; 3, Sedum dasyphyllum; 4, Hemerocallis fulva.——*R. Butterworth.*—Kerria japonica.——*Morley, Lancashire.*—Inula glandulosa; Diplacus glutinosus (not a climber).——*H. A. Bowles.*—The tree is Weeping Wych Elm (Ulmus montana pendula); Asphodelus albus.——*E. F. S.*—Astrantia minor, not Snowdrop anemones.——*W. H. B.*—1, Syringa Emodi; 2, Digitalis-gigantea; 3, Spiræa sorbifolia; 4, next week.——*T. B.*—1, Spiræa salicifolia, var.; 2, Syringa Emodi; 3, Libocedrus decurrens; 4, Thuja gigantea.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers by post.—*Correspondents are requested to note that we do not answer questions by post; we shall be obliged, therefore, if they will refrain from sending us post cards and stamped envelopes for replies.*

QUERIES (*J. G. R.*).—Yes; if you send your questions, we will do our best to assist you. Read the rules printed at the head of the query column, and state as clearly as you can the mode of cultivation you have followed, and what your difficulties are.——GARDENING (*T. M.*).—Your question is too general; we cannot give you a treatise on gardening, but will assist you if you ask us about any particular matter that bothers you.

Catalogue received.—*Hardy North American Ferns.* W. and J. Birkenhead, Fern Nursery, Sale, Manchester.

Book received.—*How to Make the Land Pay.* Rev. H. P. Dunster, M.A. Longmans, Green, and Co.

Vague queries.—Readers who send queries should remember that, though it is possible to make them too long, it is better to say too much than too little. We sometimes receive queries to which, on account of their vagueness, it is impossible to give any answer; we cannot, for instance, advise why a plant drops or fruit does not ripen when we are kept in entire ignorance as to the treatment which the querist has followed. Those who write to us are anxious for assistance, and they should take care that their questions are framed so that a practical answer can be given. A fair representative of the vague questions that we continually receive is the following, sent us by someone who writes from the breezy district of Hayward's Heath. We give it verbatim: "Sir,—As I have no greenhouse, but an empty room, with keeping it warm do you think *they* would thrive through the winter?—B. P." Here "B. P." has forgotten to state what it is he refers to, and, of course, no advice can be given him.

Ambury, Anbury, or Fingers and Toes.—This disease in Turnips is akin to clubbing in Cabbages, and is the work of a coleopterous insect, which generally attacks the Turnip plants in the midst of their growth, destroying the regular formation of the bulb and making it break out into a series of distorted roots, resembling the fingers of a clumsy glove, hence its name of "fingers and toes." The best remedy will be found in change of soil and better cultivation. Heavy dressings of soot and lime, with some superphosphate sown in the drill with the seeds, will be beneficial. Salt, in moderate quantities, is also a good dressing for Turnip land exposed to this pest.—E. H.

Bastard trenching is done in this wise. The top spit is removed to the opposite side of the plot trenched, to fill up with at the close. The bottom spit is then dug over deeply, but left in the bottom of the trench. The top spit of the next space is cast on the top of the reversed subsoil, and the bottom broken up deeply, but left as before. Bastard trenching is simply removing the top spit to the next trench, but digging over the bottom in the trench without removal. Where the subsoil is bad this is a good way of improving it without injuring the land for the present cropping. The bottom of the trench, before being turned over, should be manured.—E. H.

TREE FERNS AND PALMS IN THE CONSERVATORY.

IT is impossible for us who think so highly of Tree Ferns in this country to realise their abundance and beauty in countries where they grow wild. A man whom we met the other day, who travelled a great deal in Australia, described to us a scene which well suggests their commonness in some places. It was near a farm in a part where Tree Ferns were very plentiful, and their stems were used to make a "corduroy" road such as one often sees in new countries. At each end, some of the trees, finding themselves none the worse for the shift and the change of position, began to sprout from the tops, and eventually formed a beautiful avenue. With our splendid outdoor garden flora, which is so much better nowadays than the contents of any greenhouse, however expensive, there is no reason for erecting greenhouses or large houses if we cannot embellish them with types of beauty that are not to be enjoyed in the open air. Tree Ferns and Palms are among the things we cannot hope to have in the open air, except in a few places where one or two may grow, and therefore the possession of some of the hardier Palms and Tree Ferns should be desired by those who have large houses.

Tree Ferns vary much both in the height and diameter of their stems; as a rule those from temperate regions produce the greatest number of fronds in a single whorl, and, consequently, have the stoutest stems and are slowest in growth. The tropical kinds have usually slender stems, more or less armed with sharp spines, and grow up somewhat quickly. Among the best may be mentioned Dicksonia antarctica and several others; and different species of Cyathea, Cibotium, and Alsophila—all noble plants.

INDOOR PLANTS.

AN AMATEUR'S GREENHOUSE.

HAVING already given an account of the manner in which my small greenhouse is filled during the winter and spring months, I must now do the same with regard to its summer aspects, beginning, let me say, on the 1st of June. By this time all the bulbs and spring flowering plants have been put away, the former lying on their sides, either under the foot stage or under the stages, the Primulas, Aquilegias, &c., have been turned out-of-doors, and left to ripen and mature for another season. This has left the stages free for the Pelargoniums, and given them more room to grow. One side of the house is filled with Zonal Geraniums, and the other with the show and decorative varieties. Interspersed amongst them are the Fuchsias, Abutilons, and tuberous rooted Begonias, on which I must mainly rely when the show Pelargoniums are gone out of flower. I have also some few of a plant which I feel very useful for culture—Francoa ramosa, its white feathery spray being much admired.

With regard to the show Pelargoniums, as I have said, my plan is to grow them on for a couple of years, and then to have young plants to take their place. Those that I have now are the following, comprising the various shades and tints to be found: Amethyst, Brilliant, Comet, Confessor, Cornet, Despot, Duke of Albany, Adventurer, Mandarin, Doncaster, Fille de l'Air, Morning Pioneer, Red Gauntlet, Seyla, Statesman, Veteran, Virgin Queen, and Zealot. This selection may be depended upon as containing some of the very best of the flowers. The decorative varieties, as they are called, are most useful, not only because of their floriferous qualities, but, as many of them are semi-double, the blooms are much more persistent, and they are especially valuable in this respect for cutting; those which I have are Prince Charles, Triomphe de St. Maude, Madame Thibaut, and Volanté rationale; and here let me add that I hope to have the splendid sport from it exhibited by Mr. R. Perkins, of Leamington, called Volonté rationale alba, pure white, most robust in growth, and flowering most abundantly. This is unquestionably a great addition, and will, I believe, be one of the very best market plants introduced for many years. I have also Marie Lemoine, Maid of Kent, Kingston Beauty, Dr. André, and Prince Charlie; and in addition Madame Thibaut, double Ivy-leaf, a most remarkable flower; Echinatum, one of the old species, thorny, as its name implies, and most excellent for cutting, being an especial favourite with ladies; Rosy Morn, and a few others.

When we come to Zonal Pelargoniums we get into a maze, and are tempted to throw up our hands in despair. I have mainly confined myself to Pearson's varieties, and in one class, at any rate, of the various shades of Pinks he is unsurpassed; but each nurseryman has his own favourite stock, and to look at any catalogue is enough to put one into a state of direst perplexity, only to be equalled by a diligent study of Bradshaw to find out some cross-country line. I have H. H. Craik, Dr. Drury, Rose Unique, Seimen, Kate Farmer, Mrs. Horton, James McIntosh, Dr. Moore, W. H. Williams, Cartain, Madame Hardy, Lady Byron, Snowdrop, and the new white Queen of the Belgians. Of course I do not doubt that there are multitudes of others equally good, and some perhaps better. I only note what I have myself found good. The same remark applies to Fuchsias. There have been so many raisers of these that, taking up the catalogues of various nurserymen, you will find how different each is. I have, as I have said, about a dozen and a half, all pretty, but nothing more remarkable than is to be found in any nurseryman's in any part of the country. The dozen Begonias which I have contain Countess of Kingston, Esther, Pearcei grandiflora; but I think the most valuable for me, and for small greenhouses generally, are the Meteor varieties, of various shades of colour. One great advantage of these I have found in the fact that the flowers are produced from the crown, and are therefore more valuable for cutting. The Reading Beauty, creamy white, is also very good. I cannot give space to the larger varieties, but they are unquestionably very beautiful, and when the Geraniums are finished help to make the house look gay, together with the Abutilons and Fuchsias. As the autumn comes on, of course, one must be prepared for a diminution of show, but even then a few plants of Salvias Bethelli, Pitcheri rutilans, &c., keep up a little show, and the Lapagerias then show their lovely flowers, while a few of the early-flowering Chrysanthemums come on also. The dwarf varieties of spring-flowering Pinks are also very useful. The varieties I have—La Perle, Irma, Alegatière, Peter Barr, &c.—are very pretty and deliciously fragrant, and perhaps for a small house more suitable than the taller winter-flowering varieties. This is one reason why I have discontinued growing Lilies in pots. I found that they ran up so high that it was difficult to see the flowers, while they required more attention than I could very well give them, besides many of them turning out very unsatisfactory; so I have abandoned them in the house, and transferred them to the border.

I have thus gone the round of my doings in my little greenhouse. Let me again disclaim all idea of having done anything remarkable, but I have only attempted to show that with somewhat limited facilities a person may, with a little management, get a good deal of enjoyment out of small resources. DELTA.

GARDENING UNDER DIFFICULTIES.

ANOTHER AMATEUR'S EXPERIENCE.

ALAS! I was compelled to leave my charming rural home, with its lawn, its shrubberies, and sequestered nooks, and my flowers which I loved so well, for life in a gloomy house situated in the midst of a noisy, smoky town—a house completely surrounded by buildings, and the only accommodation outdoors being a paved yard, 5 feet wide by 20 feet long. Imagine this, oh! ye possessors of acres of grounds, with your hothouses, and forcing-pits, your flower gardens, and greenhouses, and everything beside that is beneficial to the well-being of plant life, and think—Is it possible that flowers can be grown and can luxuriate under such conditions and amid such surroundings as those? Yes; it is to be done by anyone who loves the flowers, and knows their requirements. In the first place, I had a greenhouse constructed level with the first floor, immediately over the yard mentioned, and the same size, with a height of about 9 feet, having a door opening into the house at top of staircase. The floor I had tarred and sanded, and immediately under the stagings I have about a foot of potting soil, which I keep surface-watered during hot weather to give off moisture. I also had a tank constructed for rain water from the roof. Owing to the opposition of neighbours I was compelled to use ground glass for all the side lights, to avoid overlooking them, and for the same reason was obliged to do without side lights to open, inasmuch as when open they would project over their premises; so I had extra top lights. However, as the door leading into the house is always open there is a sufficient current of air without a draught. As to heating, I have one of Gillingham's Heat Radiators, which answers very well indeed, if you look after it yourself and do not trust to others; and here I will give a hint. If the flame gets too high it naturally forms soot at the top, which in process of time falls on the flame, and gives off the objectionable smell and smoke which many complain of. See that it is clean inside once a week, and see that the flame is not too high, and I may venture to say no one will find any fault with this useful heater. I consider it the very best substitute for hot-water heating. To continue: My greenhouse being completed, and the plants placed on the stagings, I felt tolerably satisfied until one morning, after opening the lights, I soon found my plants covered with soot. There had been a change in the wind, and the neighbouring factory chimneys were belching their contents in my direction. I began to feel somewhat discouraged, but after covering the open lights with coarse muslin and filling up all crevices I managed to prevent the intrusion of my sable visitor for the future. Well, you will say, after all your trouble and expense what can you get to grow and blossom there? To-day (March 10th) my little greenhouse is one blaze of blossom with Cinerarias, Primulas, Hyacinths, Cyclamen, Narcissi, and other bulbs. Arums are throwing up their flower spikes, and the foliage plants look as well as anyone might wish. The only fault I find is that my winter flowers are late in blooming, owing to the absence of the sun's rays from the middle of November till the end of February; they cannot reach my greenhouse during those months, through its being so surrounded with buildings.

My Cinerarias I am rather proud of, after growing them under such disadvantages. They are fine, large, bushy plants, one mass of bloom; they are not bought plants, but are those that I have raised from seed saved from last year. I raise the seed in small, shallow boxes, and, after pricking them off into small pots, I grow them on on shelves covered with damp Moss, shifting them into larger pots as required. Here I would say that there would not be half the complaints against the seedsmen and their illustrated catalogues if amateurs and some of the so-called professional gardeners would pot on. Pot on, I say, if you want fine plants and blossoms. I had this most forcibly impressed on me last year with Cinerarias. I raised about three dozen plants, but not having sufficient pots, only a small proportion got transferred to the largest size, and it was extremely noticable that in proportion to the size of the pot was that of the plant. Of course those in the smaller pots bloom earlier. I maintain that if you are desirous of having large plants with plenty of bloom you must pot on, whether it be Calceolarias, Fuchsias, Geraniums, Balsams, or anything else. Of course this continuous potting on entails a little extra work, but look at the results! To me the greater part of the pleasure in cultivating flowers is in the watching of their growth, therefore in nearly every case I endeavour to raise from seed. I rarely buy a plant; if I buy at all it is only seedlings, or young plants, or bulbs.

During the past summer and autumn I had a splendid show of Fuchsias, Geraniums, Pelargoniums, Calceolarias, Abutilons, Gloxinias, Kalosanthes, Lilies, Plumbago capensis, Coleus, annuals, &c., besides Ferns and foliage plants. Chrysanthemums I had a fine show of up till Christmas, and was also fairly successful with a few pots of Tomatoes. The only stimulant I have used is weak soot-water, which I find excellent for many pot plants. Now, having given a slight sketch of what can be done under difficulties, I wish to say that my object in writing this is that it may act as a suggestion to others who are similarly situated in pent-up neighbourhoods, and are without garden or outdoor accommodation whatever. There are thousands of houses in London and our large towns—expensive houses too—tenanted by those who would be glad to have such a little place of greenery as I have described. The expense is not great and the boon incalculable. Of course, it is only practicable where one has a long lease, as the greenhouse under such conditions becomes the landlord's property; but as the expense is so small (far less than one would suppose) I think there are very few who would grudge the amount it would cost after they had experienced the benefit and pleasure to be derived from it.

Essex. J. S.

13678.—**Araucaria excelsa.**—When a plant of this kind gets too large for a greenhouse it may be cut down, and would probably sprout again, but it would be better to obtain a small plant. Probably some dealer would make an exchange. The right place to cut it over would be above a tier of branches.—J. D. E.

Spanish Moss (Tillandsia usneoides).—With respect to Mr. Hendricks' interesting account of this curious plant, I send some pieces from a cool vinery where I have grown it on a vine stem. It was brought from South-west Virginia in the spring of 1884, and has grown fairly well since. It is, I believe, a true epiphyte. I have watched it carefully, and cannot discover any parasitic tendency. Mr. Hendricks writes glowingly of its beauty in its native habitats; my own impression is that it gives the landscape rather a dismal aspect, especially in winter. There is a small piece of this Moss growing in the T range at Kew, but being on a block it gives no idea of the plant in its native woods, where the trees are festooned with it to a remarkable extent.—J. W. ODELL, *Pinner.*

*** *With this letter came a perfectly fresh and good specimen of the Moss.*

LARGE-FLOWERING OR SHOW PELARGONIUMS.

THE old practice of placing plants of Pelargoniums out-of-doors when they have done flowering is a good one, because it tends to ripen the wood, and the importance of well-ripened wood for cuttings cannot be over-estimated, especially when the cultivator is put to shifts in the way of striking them. To somewhat lessen lahour, the plants that have done flowering should have some shade during the day, so that attention to watering may be reduced a little. It is not wise to ripen off the wood too rapidly by keeping the plants very dry and fully exposed to the sun, as this tends to wither and attenuate the wood, and indifferent cuttings result. The stouter and fuller the wood, and the more vigorous the cuttings, the better will be the plants obtained from them. For ordinary purposes of house decoration it is not advisable to keep plants after they are three years old. It is desirable to do so when plants are wanted for show purposes, as old bottoms are necessary to get plants of large size. Two-year-old plants—*i.e.*, plants cut back in the previous autumn after flowering for the first time—make very excellent plants for house decoration if properly managed; but, as a rule, those who are not well up in Pelargonium growing will he more likely to succeed best with yearling plants. There is neither difficulty nor mystery in striking cuttings of show Pelargoniums. They can beput into a prepared bed in the open ground, in shallow hoxes or store pots, and placed out-of-doors; they root readily enough and freely. If the cuttings are put into store pots—and this is, perhaps, the easiest method of going to work—they should he well drained and filled with a light sandy soil; let there he sand and leaf-mould in good proportions, and the cuttings pressed hard into the soil. They will not need water for two or threedays, but may be syringed occasionally. The pots can he placed anywhere, hut not too fully exposed to the sun, and in a few weeks the cuttings will he rooting freely. When sufficiently rooted to he potted off, let them he put singly in small 3 inch pots; and, when well established, the strongest can go into large 4-inch pots to winter. I have wintered a great many plants in a cold greenhouse in which there is no fire-heat simply by keeping them in the warmest part of the house and dry at the roots. In the dull months young Pelargoniums will last a long time without water, hut directly a mild sunny day comes, a little water should be given. In the spring, when growth commences, shift into pots a size larger, and grow them on as vigorously as possible. We have yet to deal with the cut-back plants it may be desirable to save. After being deprived of their branches they will soon hegin to break into growth. Then is the time to repot. Make up a soil of good light yellow loam, some decomposed manure that has been reduced to powder by decay, leaf-mould, and sand. This suits Pelargoniums well, as it simply needs to he rich and light. The soil and pots ready, the plants should be turned out, a great deal of the soil crumhled away, and the thick long roots out off, leaving only the fine fibrous roots, and then repot in the smallest pot in which the plants can be put, at least a size smaller than the pots in which they were previously growing. When potted, they should be kept close for a few days till the roots begin to move. A final shift should he given in September or October, according to the progress made; and the plants be kept growing a little all the winter. My greenhouse is very gay with cut-back specimens; and when these have done flowering, the floral service is taken up with fine young plants, in 4-inch and 6-inch pots, ohtained from cuttings struck in October last. These were kept pinched back up to the middle of June, and then allowed to grow freely. D.

Gladiolus, The Bride.—In last week's GARDENING (p. 232), "Delta" terms The Bride Gladiolus (G. Colvillei alhus) a "sadly fleeting" flower. Is this description correct? I had some spikes sent me a long distance by post, and they lasted for fully a week after I received them. No doubt care in ohanging the water in which they are placed has something to do with their duration, but a flower that lasts anything like a week when cut oannot, I think, be called "fleeting."—E.

REPLIES.

13687.—**Camellia buds falling.**—It is difficult to say why the buds dropped, but a sudden change might cause it. Repotting the plant might have something to do with it. The fresh potting soil might be damp enough, but the oentral ball containing the mass of roots might be quite dry underneath; if it were so the buds would certainly drop. A dry, artificially-heated atmosphere will also cause it. The buds that were so closely packed ought to have been thinned out, but neglect would not cause the whole to drop off.—J. D. E.

13840.—**Training Pompone Chrysanthemums for shows.**—It is now too late to pinch the shoots. The last pinching should take place the last week in June. Tie the shoots down now, to get them into their position hefore the growths become hard and difficult to bend down. When the main growths are regulated it is very easy to train the lateral growths into any position desired. —J. D. E.

13724. — **Easily cultivated stove plants.**—Achimenes in variety; Æschynanthus javanicus and splendidus, Allamanda Hendersonii, Amaryllis of sorts, Anthurium Scherzerianum, Bougainvillea glahra, Epiphyllums of sorts, Eucharis amazonica; Gardenia florida, Gloxinias in variety, Stephanotis florihunda, and Hoya hella. Ferns and Palms may be grown among the flowering plants, and a few Orchids, such as Cattleya Mossiæ, Ccelogyne cristata, Dendrohium nobile, and D. Wardianum. Indeed, scores of Orchids should find a place as they are easily grown; minimum temperature 50 degs. to 55 degs.—J. D. E.

13893.—**Market Hydrangeas.**—The cuttings are struck in the spring, planted singly in 60-sized (3-inch) pots, and placed in a gentle hottom heat. They soon form roots, and, when fairly rooted, they are repotted into 5-inch pots —those in which they are sold in the market. When growing give plenty of water, and expose the plants to sun and air to ripen the wood. Cuttings of the young wood, which will be sufficiently ripened in August, may also be put in during that month. It requires a very gentle bottom heat to cause the emission of roots. The central terminal bud will produce a head of hloom, if it does not start into growth at the time of the formation of roots. As soon as roots are formed the plants must be kept cool to prevent the buds starting into growth.—J. D. E.

—— You could not get cuttings to flower this year, but if you take cuttings now, and feed them liberally during the winter, you will be rewarded in the spring by seeing them with "one stem and a large head of flower." Hydrangeas are gross feeding plants, and you can hardly give them too rich soil or too much manure water.—C. F. DAVIS, *Leatherhead.*

13901.—**Culture of Orange trees.**—You will find your Orange tree will not blossom without being grafted. You had better get some friendly gardener who has a hot-house at his command to do this for you, as it is a long and tedious process.—C. F. DAVIS, *Leatherhead.*

—— A plant raised from a pip would not be likely to flower for many years. The plants ought to have been used as a stock to graft upon, the second or third year after it was raised. The plants usually grown in greenhouses are raised on the Continent (in France or Belgium). The Tangerien and St. Michael's varieties flower freely enough, and, if they get a hothouse temperature in summer, will produce good fruit for dessert. It would be better to purchase a small tree of a free flowering variety, such as is sold in most nurseries. The cost would be about half-a-crown. A small leaved variety, called the Otaheite Orange, is very ornamental, hut the fruit is worthless to eat, as most of the French and Belgian kinds are.—J. D. E.

13742.—**Spiders in greenhouse.** — The spider would not effect such a lodgment as is here described if the plants received the attention they ought to have had. Turn the plants frequently; disturb the spiders and kill them. If the syringe were used in the afternoon or evening the sun would not harm the foliage. Cleanly culture is the best destroyer.—E. HOBDAY.

13640.—**Supports for climbing plants.**—Wistaria and the Clematis require railing to keeo the branches in their places. Virginian Creeper and Ivy will require a few nails to fasten any branches that break loose. A trellis work as advised is neat, and saves injuring the walls by frequent nailing; but it is expensive and not really necessary.—J. D. E.

13633.—**Orange trees.**—These are easily-grown plants, and would succeed very well on a balcony during the summer months, but they ought to be kept in a greenhouse during winter. They do fairly well in the atmosphere of a large town. They ought to be carefully potted, using good turfy loam and a small portion of crushed bones mixed with it. The black soil in which they usually arrive from France is not the best to grow them in.—J. D. E.

13734.—**Passion Flower leaves turning yellow.** —The gaslight continually burning might be injurious. The leaves would also turn yellow if the plants were kept in pots that were too small. The Passion Flower is quite a vigorous growing plant, requiring large pots to grow in. The same remark applies to the Honeysuckle.—J. D. E.

13750.—**Geraniums turning yellow.**—That they do not succeed must be owing to the thick ground glass. That being the case, your best plan would be to take out the ground glass and replace it with clear. It is assumed that the house is provided with efficient ventilation. It is not necessary to use the hot-water pipes except to keep out the frost.—J. D. E.

13743.—**Clematis not flowering.**—As the roots continue in a healthy state it is very singular that the plant should die down so mysteriously. It must be owing to the leaves being eaten up by red spider or some other insect pests. One can only guess at the reason without specimens of the leaves. If the same thing happens again send specimens of the leaves as soon as they begin to die off.—J. D. E.

THE KITCHEN GARDEN.

Spinach and its cultivation.—Spinach is an important inmate of gardens. It is wanted almost daily through the year. Our first sowing for the Spinach crop proper is made during the first week in August, and the site occupied is generally a south border, where the early Peas have been cleared off. We simply hoe and rake the border deeply, then draw drills 1 foot apart, sowing the seeds thinly. It is the practice of many to thin the plants in the row, but one which we never practice. I do not approve of the plan of sowing this important vegetable on freshly-dug light land. When sown on firm land the roots soon get well hold of the soil, and damping or dying off (as I have seen it do repeatedly) never occurs. The second sowing is made during the third week in August, in a large open quarter, the previous crop having been Potatoes. The variety of Spinach which we sow for winter work is the prickly-seeded. These two sowings keep us well going from October to the following March. We then use the leaves of what is locally called "Lincolnshire" Spinach, the proper name heing Mereury. This plant is a perennial, and is most useful until the latter part of May, when it is met by the ordinary summer or round-seeded Spinach, which we generally grow between rows of Peas. This crop runs to seed quickly, and should be sown every three weeks during the summer. We have on several occasions tried what is termed tree Spinach, hut our chef does not like it, so that we have discontinued its culture.—R. G., *Stamford.*

REPLIES.

13808.—**Clearing a Cucumber house of green fly.**—There is no better way to destroy this pest than that of fumigating with Tobacco smoke If sulphur is burned in the house it will kill the plants. A judicious use of Tobacco paper or cut Tobacco will clear any house or any kinds of plants of the pest. The young fronds of Ferns, a few very tender plants, and some Orchids may be injured by the smoke, but most plants do not suffer in the least. —J. D E.

13632.—**Growing Cucumbers.**—It will be a comparatively easy matter to grow Cucumbers in such a house, which I suppose will he given up to them. If there is no pit to plant in, mounds of soil can be laid on the stages, supported with pieces of sod. The best soil is turfy loam, three parts, and one part very old manure. The Cucumbers may be planted in hoxes, or, better still, if there is room, fill as many cement casks (which can be obtained from any huilder) three parts full of stable manure, fill in the remaining space with soil, and put in the plants. Rapid growth should be sought, and to obtain this the house must he kept pretty close, and an abundance of water must he thrown over the stages and paths to keep up a moist, genial atmosphere.—E. HOBDAY.

13849.—**Cucumber culture.**—Let James Hurst try fertilising his Cucumber flowers. My fruit first appeared about May 10, and up to a week or so since I lost all through damping off. I, however, tried fertilising about a week ago, and have now (June 29) fruit 8 inches to 10 inches long. I have not lost a single fruit that has been fertilised. Whether this is the best or only remedy for damping off I don't know, and

would like to read other correspondents opinions on the subject. My house is only a small one (9 by 6), and I close up early in the afternoon before the sun goes off, with plenty of atmospheric moisture. I expect to cut half-a-dozen fine fruit this week.—H., *Manchester*.

THE VILLA GARDEN.

(Continued from page 227.)

Salsafy and Scorzonera.

I HAVE linked these plants together because they require the same treatment and resemble each other somewhat. The Salsafy is called the Vegetable Oyster, because when cooked its flavour has something of that delicious bivalve about it. It has a white root, from 8 inches to 12 inches long, and, when well grown, from three-quarters of an inch to an inch in diameter. The roots are very apt to fork out; therefore, they should be grown on good land, but without manure, or, if manure is used, it should be buried at least 12 inches deep. The seeds should be sown in March—towards the end of the month or the beginning of April will do in late districts. If sown too early some of the plants may bolt, and then the roots will be tough and useless. The seeds should be sown in drills half an inch deep and from 12 inches to 15 inches apart. When the young plants are 2 inches high thin to 6 inches apart, and hoe frequently to keep down weeds through the summer. The roots will be fit for use when large enough. They keep best in the ground till required for use, but they should be lifted in March before growth begins, and be packed in earth or sand in a cool place. The Scorzonera has a darker coloured root, and is less likely to fork out, otherwise there is but little difference in the treatment required. It should be sown at the same time as the Salsafy and receive as much space.

The Beet.

As a salad plant Beetroot possesses considerable value which the general public are only just discovering. In first-class establishments it has long been cultivated, and it ought to find its way into every middle-class household, and if known to it would be appreciated by every intelligent cottager's also. The seeds of the Turnip-rooted Beet may be sown about the middle of March for early use, as this variety is large enough for use long before any of the long-rooted kinds are ready; and this forms its chief value. The drills should be 15 inches apart, and half an inch deep. The plants should be thinned out to 8 inches apart, and they are fit for use as soon as large enough. I should only sow thus early to obtain a few early roots for the summer salads. Medium-sized roots are better in all respects than large, coarse ones, and to obtain these the main crop should not be sown before the middle or end of April. The soil should be deep and friable, and if it be of a porous nature a dressing of salt will be beneficial. The drills should be from 12 to 15 inches apart, and the seeds should be covered about half an inch in depth. The young plants should be singled out, as soon as large enough, to 8 or 10 inches apart. The land must be kept free from weeds by a frequent use of the hoe, but the skin of the roots is tender and very susceptible of injury from a careless use of the tool. The plants will transplant when young if it should be needful, and some people think the best-shaped roots may be obtained by transplanting; but to secure good shaped roots the young plants must be carefully lifted, special care being taken not to injure the tap root either in taking the plants up or in planting them again. If the tap root does not get a proper insertion in the ground the roots may be malformed.

LIFTING AND STORING.

This must take place before frost comes sharp enough to injure vegetable tissue. It is not generally safe to leave them out unprotected after the middle of October in districts where the autumn frosts are severe. If protected with tree leaves or dry Fern, or dry litter, they will keep in the ground all the winter. Some people think they are better flavoured when left in the ground, but if well kept and packed in rather dry sand, in a cool place, there is not much deterioration. The colour seems to be held in very loosely, for it oozes out at the least puncture, and no damage or injury must be done in lifting. The tops may be shortened, but not cut close up to the crowns. The best way is to twist the leaves off with the right hand, and as soon as the roots are dry pack them away in the store. No roots should be cut or even broken off, as such wounds do not readily heal, and when the roots are cooked the colour comes out at these injured places.

SAVING SEEDS.

Select a few of the best-shaped roots early in March, and plant them 18 inches apart in an open situation. Cut the seed-stems as they approach maturity, and hang them up in an airy room or shed till quite harvested, when the seeds should be thrashed out. If a large quantity is grown it may become necessary to harvest it in the field, which is done by cutting and standing it in clusters as Turnip and other seeds are done. Very often the seeds are cut and laid in small heaps at intervals, and are frequently turned to prevent damp settling on them. Good varieties are Egyptian Turnip-rooted, for early sowing; and for main crop Dell's Crimson, Henderson's Pine Apple, Nutting's Select Dwarf Red, and Carter's Perfection of Beets. E. HOBDAY.

The "Amateur" and "Cottage" question.—I am directed by the committee of a cottage garden society to ask advice under the following circumstances: Ours is essentially a cottage garden society supported by subscriptions from the neighbourhood, but to render the annual exhibition an attractive one we offer prizes to amateurs and gentlemen's gardeners. The rule says the following only may compete for prizes: "Persons whose yearly rent or rents for house and grounds shall not exceed £6 10s. No more than one person to be allowed to compete from the same premises. Such persons shall not be required to pay any subscription or entrance money. That no gentleman's gardener, or any person earning his living as a gardener, be allowed to compete in the cottagers' classes." Now we have two persons occupying cottages within the above rule who have erected greenhouses, and have hitherto exhibited in both the cottagers' and amateurs' classes. This year they have gone into the business of buying plants from nurserymen and selling them in the public markets, and also by advertisement in the local newspapers. The committee desire advice as to whether these can compete in either the amateur or cottager classes or in both.—H. E M., Secretary. *** *The persons who publicly advertise plants, and sell them in the open market, could not compete in a class set apart for amateurs. There is no reason why they should not compete in the class for cottagers. A cottager may sell any quantity of produce from his garden, or he may purchase plants and sell those plants again. This would not prevent him being a cottager. Is there any rule in the schedule stating "that cottagers must not sell plants?" One would have thought the object of a cottagers' society would be to encourage the culture of flowers, plants, and vegetables for sale. It seems by the letter sent that no "person earning his living as a gardener be allowed to compete" If the two cottagers alluded to do this they would, of course, be disqualified.*—J. DOUGLAS.

—— If "E. B.'s" committee (see p. 215) has decided that persons growing for sale are eligible to compete at his show, he has no remedy, either by protest or otherwise, this year. Another year he should get the committee changed.—1. An amateur is one who does not grow for sale, and who does not employ a gardener (I strongly object to anyone who keeps a gardener being allowed to compete as an amateur). Separate classes should be, and usually are, made for "gentlemen's gardeners and nurserymen."—2. A man who sells plants on a truck is not, and cannot be, an amateur, neither is any man one who gets his living by selling plants; but I should allow a person who, being of some other trade or profession, occasionally (not habitually), disposes of his surplus plants, but who does not make plants for sale, to be an amateur. Many gentlemen sell their surplus stock.—3. If "E. B." canvassed the patrons and members, and got a majority, he could make his committee rescind the resolution this year, by stopping supplies.—J. R. NEVE, *Campden*.

BEES.

SEASONABLE NOTES.

APICULTURE has made rapid progress within the last few years, and is becoming quite a national industry. Movable comb hives are now considered to be indispensable to successful bee-keeping, bees in frame hives being under the complete control of the bee master. County bee-keepers' associations are spending their energies in spreading a knowledge of improved bee-keeping throughout the country by holding bee and honey shows, where manipulation of the bees is practically illustrated—the best methods shown of driving bees, capturing the queen, transferring combs of brood and honey from straw skeps to movable comb hives, &c. These operations are shown in specially-constructed bee tents, in which visitors can view with perfect safety the mysteries of the hive and witness the perfect command the scientific apiarian has over his bees.

EXHIBITING AT SHOWS.—The honey harvest in many parts of the country has up to the present time been very abundant, and the honey shows now taking place are well supplied. White comb section honey in one pound sectional boxes glazed on either side or placed in specially-constructed exhibition crates present a most beautiful and attractive appearance. In this form honey is worth much more than when run or extracted, and the demand for it is rapidly increasing. For exhibiting at shows care should be taken to let all exhibits present as neat and inviting an appearance as possible. Sections of comb honey should be quite filled, and all cells sealed thinly and evenly. Evenness of surface is attained by the use of dividers of thin wood or zinc placed between each row of sectional boxes, by which all projections are obviated. Thinness of capping is one of the chief points of perfection in super-honey, the sections should, therefore, be removed from the hive immediately on completion or the cappings of the cells will be thickened by the bees, and the spotless whiteness of the comb spoiled by the heat of the hive and the traffic of the bees over them. When held to the light the honey within the comb should present an amber colour and be bright and transparent. All honeycomb in each exhibit should match in style of work, quality, and colour. Extracted honey should be put up in clear glass jars, containing one pound each. The glass of these jars should be clear, or the appearance of the honey will be spoiled. Each jar should have an attractive label affixed to it, and if not provided with glass stoppers should be tied down with vegetable parchment, which, if moistened with the white of an egg immediately before being tied over, will form an almost perfect sealing. Comb honey is in better condition for market or show if stored a few days where the air can circulate freely about it. Simultaneously with the growth of bee-keeping a great impulse has been given to the business of the hive and apiarian appliance manufacturer, and the large array of hives, section-crates, honey extractors, feeders, smokers, wax extractors, &c., is not the least interesting feature at the honey shows.

TRANSFERRING.—It is often desirable to transfer bees and combs from straw skeps to bar-frame hives. It can be performed in the following manner:—The bees are first driven from their hives into an empty skep, and placed on the stand the old hive occupied. The parent hive is then divided by cutting it down from top to bottom between the central combs; the combs are then carefully cut out; a piece of cloth, or any thin material, rather larger than the frames, is placed upon a table or board; a comb is laid upon the cloth, first having laid across it two tapes long enough to tie round the frames; a bar-frame is put upon the comb, which is cut and trimmed so that it may fit firmly in the frame; the pieces of tape are then tied round to keep the comb in its place till the bees fix it in; the frame, now containing the comb, is placed in the frame-hive, and the operation repeated till all the combs are used up. The brood combs are placed in the centre, lest the brood should become chilled; if, however, transferring be performed twenty-one days after the first swarm has left the hive there will be no brood, all having by then come to maturity. The front of the frame-hive is then wedged up an inch

or two, and the bees thrown from the skep into which they were driven down in front of it on to a sheet. They at once enter, and cluster amongst the combs, or they may be shaken on to the tops of the frames, and a sheet thrown over them till they have gone down into the hive. The bar-frame hive of bees and combs is now placed upon the site the straw-hive formerly occupied. In two or three days the bees will have repaired the combs, and fixed them securely in the frames, when the tapes are cut and gently drawn out. The hive is contracted by a division board, and increased space given as the bees are able to occupy it. Transferring is sometimes performed without driving out the bees from the old hive. In this case the bees are well smoked and driven away from the side of the hive where the combs are being cut loose, and are brushed direct from the old combs into the new hive, but the inexperienced will find it more pleasant and easy to first drive out all the bees before commencing operations.

Boxworth. S. S. G.

The bee season.—Although the swarms were late in coming out, they were so strong and they came out in such quick succession that the season was most promising to begin with. But for some reason or other the bees became very wild, and many swarms flew away and found quarters in rocks and trees and other unlikely places rather than stay at home, so that, at the time of writing, we are not able to chronicle a successful season. Those swarms, however, which stayed with us, and also the old stocks, are now (July 2nd) working away splendidly. We took our first super (weight 6 lb. 10 oz.) in the middle of June, and shall have others filled in a few days.—J. C. C., *Somerset.*

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XII.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

STRAWBERRIES.

THIS delicious fruit is one of the greatest triumphs of the gardener's art, and is, without exception, the most choice, tempting, and plentiful of our summer fruits. It is so good in its fresh and raw condition that any dressing or cooking is seldom resorted to. However, when an over-abundance prevails, too many and frequent repetitions of a plain dish even of Strawberries become monotonous. It is, then, for the benefit of those possessed of large Strawberry beds, or having a superabundant supply of the fruit, that we now proceed to give a few hints as to various methods of serving and preserving this luscious fruit, which is supposed to have derived its name from the cleanly habit of an ancient gardener, who always spread fresh new straw under the leaves of each plant, so as to prevent the berry (which delights in hiding itself under the leaves) from getting dirty and gritty. The fruit should be gathered in the early morning, or at evening, and not at midday in the full power of the sun's rays. Should it be necessary to keep the fruit for a few hours after they are gathered, choose a dry, cool, and dark place in which to store them, and let them, as far as possible, lay singly, not in a heap. Carefully look them over, cast away all bruised or mouldy berries, and pile them lightly upon a clean cold plate just before serving at dessert. When Strawberries are dusty and gritty, or have been gathered after a shower, and so become dirty, it is absolutely necessary to wash them, and this operation requires the greatest care and dexterity in its performance to avoid detriment to the Strawberries. Have a large basin of cold water, and an old soft cloth; take two or three Strawberries only at a time, plunge them in and out of the water; do not let them out of your hand, as a fall to the bottom of the basin would bruise them, and if they remain in the water the flavour will be lost. Drain them upon the cloth and serve at once.

A SALAD OF STRAWBERRIES.—Take one pint of freshly gathered ripe Strawberries, the juice from half a Lemon, one tablespoonful of powdered sugar, one wineglassful of brandy or Maraschino, half a pint of cream. Small Strawberries are best for serving in this manner. Remove the calyx from each berry, and put each one as prepared into a jug, sprinkle the sugar, and pour the Lemon juice and brandy over them, shake well, but do not use a spoon or you will break the berries; cover and let stand for ten minutes, during which interval whip the cream to a stiff froth, turn it on to a hair or tammy sieve, so that the milk may drain off and leave the cream firm and rocky; give the Strawberries another shake, turn them on to a crystal dish in the form of a pyramid, pour over the juice, and cover them with the whipped cream. This dish should not be prepared until just before the moment of serving, as it is never so good after standing.

A STRAWBERRY CHARLOTTE.—Take about two dozen fine, ripe, and sound Strawberries, half a pint of bright red and ripe smaller berries, three ounces of sugar, half a pint of water, the juice of one Lemon, half an ounce of gelatine, the white and shell of one egg; reserve the large picked Strawberries, while you crush the smaller ones with the sugar; put them into a porcelain-lined saucepan with the water, Lemon juice, egg, and gelatine, over the fire until nearly boiling, then let the contents of the pan boil for two minutes without stirring; carefully lift from the fire, cover, and let stand for fifteen minutes, and then strain through a clean, coarse cloth, which, for convenience sake, may be tied upon the legs of a kitchen chair reversed upon the table; place a basin under the cloth, and the clarifying or passing the jelly through again and again until clear will be found quite easy; dip a plain tin (one pint) mould in cold water, and, if possible, imbed it in ice, or surround it with common salt slightly damp; cover the bottom of the mould with the Strawberry jelly about a quarter of an inch deep, and just before it is quite set lay some of the finest berries in the jelly in a pretty design at the bottom of the mould, then dip one at a time into the jelly, and build a wall of Strawberries and jelly all round the inside of the mould, and put aside to become quite cold while you prepare the cream for filling the centre. For this you will require half a pint of cream, one gill of milk, a tablespoonful of powdered sugar, a quarter of an ounce of isinglass. Melt the isinglass in the milk, whip the cream, add the sugar and isinglass, and continue to whip until nearly set, then pour it into the Strawberry lined mould, and let stand until quite cold. Dip the mould into warm water for a moment, and turn out the Charlotte on to a clean crystal dish. If you have any jelly left, chop it and use it with fresh Strawberries for decoration around the Charlotte.

BOTTLED STRAWBERRIES FOR WINTER USE.—It is absolutely necessary to have the fruit dry, sound, fully ripe, and freshly gathered, otherwise it will ferment and not keep good one month. Have some wide-mouthed quart bottles quite clean and dry; allow six ounces of powdered sugar, and one wineglassful of brandy, to each bottle, with enough Strawberries to fill it up to the neck. Remove the calyxes from the berries and drop these lightly into the bottle, shaking the sugar over them by degrees; do not overcrowd or press the Strawberries in any way, as this will bruise and so prevent them keeping. Pour the brandy over, cork tightly, cover with melted resin, and store in a dry cool place. Good old sherry may be used instead of brandy. The fruit may be preserved without either brandy or sherry, only sugar, and the bottles tightly corked, but it is not likely to keep good for so long, nor to appear so fresh as when a little spirit is used.

STRAWBERRY WATER.—This is one of the most pleasant and easily-made beverages of the summer season, both perfume and taste being delightful. Bruise two pints of fresh ripe Strawberries with six ounces of loaf sugar, and the juice of three Lemons; add to this one pint of cold spring water; mix thoroughly, and pass as much as possible through a coarse cloth, but do not squeeze the mixture or the water will become cloudy; then add another pint of cold water, and place it beside, or upon, ice, to become quite cold, but not frozen. If the Strawberries are not of a bright red colour, a few drops of cochineal added to the water will considerably improve the appearance.

13992.—**Making Elder-flower water.**—Will someone kindly inform me of some receipt (old-fashioned preferred) for making Elder-flower water?—TROTTON.

Is Rhubarb nourishing?—Your correspondent, "W. W." (page 216), seems to think that because a thing is beneficial it must be nourishing. Rhubarb is beneficial, no doubt; but the nourishing property it contains must be of the very smallest, as the quantity of water it contains is enormous; in fact, by careful cooking you may reduce it entirely to sour juice and a little fibre. Sorrel is beneficial and wholesome, yet I doubt if it contains any nourishment; *per contra*, cheese is most nourishing, but little can be taken of it at one time, it being indigestible. I believe "Buckmaster's Cookery" states the nourishing elements of all food.—A. B. T., *East Anglia.*

Green Tomato pies.—Pare and slice thin some green Tomatoes, pour over boiling water and let them scald a minute or two, then put in a colander to drain. After lining your plates with a good crust, put in the Tomatoes, strew chopped Lemon peel quite thickly over them, sprinkle on a little flour and add a tablespoonful of vinegar to each pie; cover with sugar, and add a few bits of butter, then put on the top crust and bake. You will find these pies delicious.—RURAL NEW YORKER.

POULTRY.

13993.—**Best egg and chicken-producing fowls.**—"Vixen" would like to know the best breeds of fowls for producing large eggs and chickens. Would any poultry keepers state their experience in this matter?

13994.—**Distinguishing sex of guinea fowls** (*A. J. H.*).—The only noticeable difference is that the cock bird is generally of larger size, and has larger wattles than the hen. It is also said, but we do not know with what truth, that if the birds are shaken their sex can be distinguished by a rattling noise which is heard in the case of the male bird only.

13924.—**Sickly chickens.**—As "Clara" says her chickens this season have been reared in the same way as in former years it is almost certain there can be no defect in the feeding or general management which would account for her loss, and therefore I think gapes must be the cause of death. A remedy for this scourge will be found in last week's GARDENING. Another plan is to strip a small quill feather, with the exception of a tuft at the end; carefully introduce it into the trachea, turn it gently round, and then withdraw it, when the worms will be found attached. This requires considerable delicacy of handling, and preventive measures are to be preferred.—DOULTING.

13925.—**At what age do pullets begin to lay?**—Your Black Hamburgh pullet, though belonging to one of the best laying breeds, has commenced to lay much earlier than fowls usually do. Leghorns are considered the most precocious breeds of poultry, and from the brown variety eggs may be expected soon after the birds are five months old. The majority of pullets, however, do not commence to lay until they have reached the age of six months, and some are even longer before they become productive, especially if they have not been well fed. I expect "Precocious" has kept his birds well, and probably his strain has been carefully bred with a view to early maturity.—DOULTING.

13926.—**Best egg-producing fowls.**—The La Flèche is considered so very delicate a fowl that in situations where it thrives I think most other varieties may be expected to answer. I do not, however, recommend any of the breeds named by "Mrs. H.," but should prefer the Brahma, for hens of this variety may not only be depended on for eggs in winter, but there will be no difficulty in keeping the eggs separate from those laid by her present stock, the Brahma eggs having a brownish tint. The chickens from this cross may be expected to be good table fowls and hardy, and the Brahmas themselves are good sitters and mothers.—DOULTING.

BIRDS

13872.—**White starling.**—I have never seen a white starling, but the young birds are sometimes so spotted with white that they may be termed grey. Perhaps this is the case with "E. M. A.'s" birds? The young may be fed on bread and milk.—E.

13934.—**Parrot keeping.**—I have had a grey parrot for thirteen years and have fed it on canary seed and hemp seed, equal quantities, a tin of water, and milk biscuit night and morning. I should think the cause of losing the birds was giving them milk; mine had diarrhœa when it first arrived, but was cured by bread soaked in coffee. The latter acts as an astringent.—E. S., *Connoburg N*

GARDENING ILLUSTRATED.

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OUTDOOR PLANTS.

JAPAN LILIES.

Among the species of Lilies introduced into this country from Japan the varieties of the lance-leaved kinds are most valuable summer-blooming plants, either for conservatory decoration or for beds and shrubbery borders in sheltered positions. Bulbs of this class are now cheap, and easily procured, while their culture is so easy that failure need scarcely be apprehended. For conservatory or balcony culture they are best grown in pots, and, as they are gross feeders, a rich compost should be used for them, such as fresh fibrous loam and leaf-mould, with a sufficient quantity of coarse sandstone-grit in it to keep the whole in a porous condition; and, after the pots have become filled with roots, repeated doses of clear liquid manure will be found to be beneficial. By clear liquid manure I mean that from which all coarse sediment has been removed. Unless this is done, this sediment forms a close layer on the surface of the compost, clogging it up, and preventing the circulation of air, which is so essential to the roots of all plants in active growth. In potting Lilies I use 12-inch pots, place three bulbs in each on a well-drained bottom, and make it a rule to plant the bulbs low down in the pot, so that, when they are covered with an inch or two of compost, the pot is little more than half-full of soil. Thus, when the roots appear above the soil, fresh material is easily applied to them, which infuses fresh vigour into the young growths, and, as a matter of course, finer blooms are the result. As soon as all danger from late spring frost is over, I take the Lilies from the pits or greenhouse, and plunge them in coal-ashes outside, in a sheltered situation, at the same time giving them the protection of a tiffany awning, which not only breaks the force of the sun's rays, but also shelters the young growths from high winds. A border under a north wall suits them admirably, as I find that they do not like the full glare of the summer sun. Grown in this way, I have had fine specimens, from 4 feet to 5 feet high, and nearly as much through, bearing from 100 to 200 fully-expanded flowers and buds. When in this state of perfection they are invaluable for indoor decoration, and are also useful for conservatory ornamentation or exhibition purposes.

Outdoor culture.—Lilies of this class will also succeed in beds and borders for several seasons. For this purpose I start the smallest bulbs two or three in a 32-sized pot at the same time as those for pot-culture, viz., in February or March; but, instead of potting them on like the others, I simply turn them out of the pots into the positions which they are to occupy about the beginning of June, after which they require no attention, except staking, and occasional waterings in dry weather. A great point in the way of securing success is to plant deep in the following manner:—First, take out the soil of the bed 18 inches deep, forming a hole about the same width. "Imagine a hole half-a-yard deep in which to plant a Lily"—it may be said; but this is my system, and I must be blamed, after having tried it and failed to experience its advantages over sticking in the bulbs to be half-roasted by the scorching sun, if success is not the result. In some cases I have taken out a hole 2 feet deep, but the depth above mentioned is generally sufficient. At the bottom of this hole I place 3 inches or 4 inches of broken bricks, or lime-rubbish, to act as drainage, or some rough littery manure from the stable-yard does nearly as well, and upon this I place about 4 inches of rich soil, composed of ordinary garden loam and well-rotted hot-bed manure in equal proportions, and on this I turn out the Lilies, as above stated, in June. The ball need not be broken, and fill up round the sides with the loam and manure, giving a good watering to settle them in their places. Only just cover the ball. Now it will be seen that each plant is in a little well, or hollow, the sides of which serve to protect it from rough winds until the roots are firmly established in their new quarters. As the plants increase in height, fill up the hollow with rich sandy earth, and water as required. When the hollows are filled level with the surface of the bed or border, the roots are at least a foot below the surface of the soil, and, no matter how hot and dry the season may be, Lilies so planted will have plenty of moisture below in which their roots will luxuriate in spite of the hot burning crust of dry earth which surrounds the stems above. Our outdoor Lilies, thus managed, have invariably been greatly admired. On warm dry soils in some favoured localities the bulbs need not be taken up in the autumn, as they are hardy enough to withstand the most severe winter, if mulched with a thick coat of stable dung or leaves, covering the whole with a thin layer of soil to prevent its having an untidy appearance. The varieties I cultivate are

L. speciosum.—This is a showy form, having reflexed, waxlike, pure white segments suffused and spotted with crimson. The brightly-coloured anthers also add to the beauty of the flower; but if they are cut off before the pollen-cells burst, the flowers keep much longer in good condition than they do if left undisturbed.

Spotted Lily (Lilium speciosum).

L. speciosum album.—This is like the preceding in all respects, except that the flower is of the purest white, and, if anything, rather smaller in size. It is distinct, and well deserves cultivation as a variety.

L. speciosum punctatum.—This is as nearly as possible intermediate between the above, the segments being of pearly-whiteness, delicately suffused with soft flesh-colour, with a few deeper-coloured rosy spots.

L. auratum.—This, "the Golden-rayed Lily of Japan," as it is called, grows well and blooms profusely, treated as has just been described. It is generally grown as a pot or house-plant, but it is very nearly hardy—quite so in positions as far north as Leeds; it is one of the best, most easily-grown, and showy of hardy bulbs. Seedlings vary much in the size and colour of their flowers, but all are beautiful. This variety can now be had very cheap, bulbs being imported from Japan every autumn and winter by the thousand. The plant, of which we give an illustration on page 225, was grown at Rosewarne, Camborne, the residence of Captain Townley Parker.—J. B.

Peach-coloured Giant Poppy.—*The Garden* had an article lately on the subject of the Giant Poppies—Papaver orientale and bracteatum. The writer mentions four different colours which he possesses, and I send for your inspection a fifth, which he does not seem to possess, and which I have reason to believe is very scarce. It blooms earlier than any other variety, and the bud I send you is the very last of the season, consequently it may not be as large as some of its predecessors. I send it, however, that you may judge of the colour—a pale flesh. I have not in this cold wet climate (Co. Cavan) been able to get seed to vegetate yet.—D. K. *** *This is one of the most interesting plants we have seen for some time, and a very pretty addition to the list of Poppies. Of course we cannot judge of the general effect until we see a strong plant in bloom, but this is very promising indeed.*—Ed.

Marigolds.—Every flower has its merits, or it must cease to attract the attention of gardeners; and where is there a garden in which space cannot be found for a few of these familiar old annuals? Their neat and clean appearance must, we think, commend them to amateurs, possessing, moreover, as they do, features peculiarly their own—their entire distinctness, together with the harmonious contrast produced by their rich orange flowers dotted upon a cushion of dense sprays of handsome leafage sometimes approaching a blueish tone. When spring-sown annuals begin to present a worn-out appearance we doubt if there is anything that can be better employed to take their place during late summer than the French and African varieties, and for this purpose it is not too late to sow seeds now, excepting perhaps in bleak situations. Seedlings may also be had from nurserymen who are still offering them. African Marigolds are tall growers, and even in uncultivated clay soil we have found it necessary to support the plants with tall Dahlia stakes. They should therefore be placed 20 inches apart in spring, and at the present time nearly that distance in favourable sunny situations. Seeds sown in the open ground should be covered lightly in beds well watered previous to sowing, and kept shaded if possible. By sowing where they are to bloom time will be gained, and, as seedlings grow apace just now, they should receive due attention in the matter of keeping constantly

moist, using a fine rose pot. Indeed, to allow a seed bed to lack moisture at the present season must result in the certain sacrifice of seed where germination has commenced. French Marigolds are excellent pot plants. One in a 5-inch pot will be sufficient. A few seeds may be sown and the strongest plant left. Being of robust habit, no pinching out will be necessary, and if allowed sufficent room they bloom continuously till cut down by frost.—STAMFORD HILL.

BEDDING OUT.

I AM sorry that I should have disturbed "A. B. T.'s" equanimity by condemning bedding out. I am also sorry he still persists in imagining the question between beautiful and artistic grouping of plants and geometric arrangements of them to be a matter of taste, and, even if it were so, I should think any person calmly thinking over the matter would come to the conclusion that artists were the proper persons to settle those matters and not the general public. "A. B. T." says an anonymous writer has no business to speak authoritatively on such matters; as a general rule perhaps not, but a Cambridge M.A. has a right to speak with authority on matters of mathematics, and in the same way, and for the same reason, men who have gone through a public course of instruction in art, with the special aim of instructing the public in those matters, and have passed public examinations in all matters connected with decorative art in all its branches, have a right to speak with authority on matters of decorative art. I have not penned any private opinion of my own for the pages of GARDENING, and I have been particularly careful to make anything I have written so that the arguments could be easily followed by anyone possessed of ordinary logical training. The public have, however, practically settled the question of bedding by abandoning it, except in a few out-of-the-way places where the gardening press has only a few readers. Bedding is industriously advocated by nurserymen who make money out of the annual purchase of plants, and by gardeners who do not know even the names of outdoor plants. I happen to live in a quiet country town where the gardening press has a very small circulation, and where bedding is still practiced. The situation is favourable for winter and spring gardening, yet here every kind of wasteful ignorance is rampant. This year just as the spring flowers were coming into bloom nicely they were dug up to make room for the bedders. Owing to being planted in November, instead of August and September, the spring flowers were late, so that it was the second and third week of June before the bedders were put out, so here we are in July with bare earth and flowerless plants, and no flowers as yet, as the spring flowers were not allowed to produce more than a dozen blooms to a plant. If that kind of thing does not deserve stronger epithets than "foolish and silly" very few things do. What is the use of planting flowers if they are not allowed to bloom? The evils of bedding fall, unfortunately, most severely on those who can least afford the annual expense, as they have no places in which to keep their plants through the winter and must purchase every spring. Bedding plants are not suitable for towns. Lobelia is too small and Golden Feather too feathery, and both get smothered in dirt, and die. Geraniums come white at the edges of the flowers and do badly. Hardy plants, on the contrary, thrive famously if proper kinds are chosen. Primroses, Cowslips, Saxifrages, Tradescantia, London Pride, Funkias, German Iris, Achillea Eupatorium, Scillas, and many other things do well. Antirrhinums do well in sunny spots. Many annuals thrive well, and with the help of these there need not be a single bedding plant used; but the hardy plants must be properly planted and cared for. There must be no raised beds, and crowding things together so as to starve them, as I saw done the other day, where purple Rockets were being starved through being planted in a line with small shrubs, and were producing a few miserable flowers like threepenny pieces. The ignorance which bedding has fostered among gardeners is at the bottom of many failures with hardy plants. The things are dibbled in like Cabbages, and die almost at once. Bedding plants are turned out of pots, and the pot soil often keeps them alive all summer, whereas if they were planted in the ordinary garden soil they would die as quickly as the hardy plants. "A. B. T." gives in his own letter sufficient evidence of the infatuation which possesses those who bed out, and which seems to blind them to even ordinary commonsense. Bedding plants have to be renewed every year where there is no greenhouse, and yet "A. B. T." considers Irises, which cost, to begin with, only a third to a half more, far too expensive for him, although these Irises require to be purchased only once, and are therefore cheaper for the two years than the bedders are. In large gardens one can easily use greenhouse plants out-of-doors, provided they are not arranged geometrically, but in small gardens where there are only a few beds and borders, to adopt bedding is simply to deprive oneself of nine-tenths of the pleasure the flowers are capable of giving. Passers-by, no doubt, admire "A. B. T.'s" blaze of flowers. They would equally admire the blaze hardy flowers are capable of producing. I have had little crowds stop to admire mixed beds of Pansies. Passers-by see the best of bedding. The folly and disadvantage of it fall on those who condemn themselves and others to gaze on the same combinations of the same flowers for months together. Ridicule is a perfectly legitimate weapon, and is the only one available where reason is not listened to, or where false arguments are set up, or a cry raised of "Great is Diana of the Ephesians!" because a craft is in danger. J. D.

The Lantana in town air. — This beautiful low-growing perennial town flower should, we think, be in every place worth the name of a garden; and the little care necessary to its successful cultivation ought to render it a favourite with true amateurs. We speak of it as a town plant, but, alas! we have never seen it in a town, rural villa, or cottage garden, excepting where we have ourselves cultivated it; and this fact, combined with its accommodating character and dazzling brilliancy, bids us pause and wonder if this really is one of those beautiful flowers "born to blush unseen." GARDENING a short time ago contained a brief notice respecting it, recommending it as a beautiful flowering town plant, thriving as it will in situations enclosed by miles of houses on all sides; and its merits have not been overstated. With a view to making it better known to amateurs generally, we will endeavour more fully to describe it. The white-flowered field Yarrow closely resembles its truss in form, and the same rather pungent odour is observable in both. The small flowers, which form a compact truss, are of true vermilion scarlet and orange. The plants are hard-wooded and of branching growth, and in town air will cover 20 inches of ground, and are of easy propagation in summer. We choose small beds which the sun reaches during midday as a suitable position, forking in a little very old manure in spring, and planting 2 feet apart, using for an edging the common Thrift, yellow Pyrethrum, blue Lobelia, or Mesembryanthemum cordifolium, all good for towns. Where the beds are not manured, a little manure water twice a week during the growing season will bring on the flowers, which continue to bloom until frost sets in. They can be grown also in pots for window sills in a full or partially sunny position. For a late summer display they may be planted at once. We have never known them liable to be slug-eaten, but when young they should be protected from possible ravages. In having thus described their merits we do not think we are likely to be charged with exaggerating, nor with over-estimating their excellence as garden flowers, in classing them as bright and beautiful dwarf bedders.—STAMFORD HILL.

Dielytra (Dicentra) spectabilis. — This plant is frequently mismanaged in the open air through attempts being made to make it a spring flower. I grew it for four years in the open in an exposed place, and found it uninjured by two very severe winters. Owing to its being planted on a sloping bank at the roots of a hedge, and to a series of very dry springs, the plants were always injured by want of moisture, and did not flower well. This year, however, I have seen in Salisbury a number of plants of it grown in pots in the usual way, but treated as hardy plants. The flowers were quite equal to those on forced plants, both in size and whiteness, and the deep glossy green of the leaves was a great improvement on the sickly pale colour of the forced plants. But mark the season of flowering—not April or May, but the third week of June.—J. D.

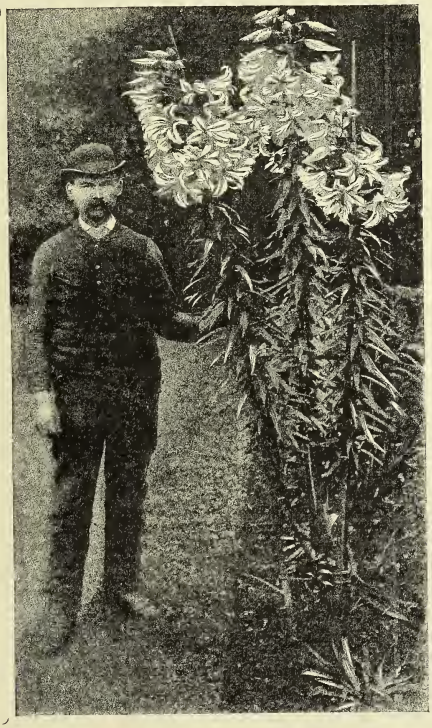
The Edelweiss in England.—Enclosed is a blossom of Swiss Edelweiss, which is so enormous that I thought it might be interesting to mention it in GARDENING. I have seen several letters from people who are proud of having plants of Edelweiss reared from British seed, but I cannot see the merit in so doing. To me there is a real interest in bringing home alpine or other foreign plants, and I have been very fortunate in those I have transplanted. The Edelweiss was sent to me from Pontresina in 1883 when it was flowering. It is now three times the size, and each year it has borne about sixteen blossoms over 1 foot high, and the enclosed is the average size. Of course they have lost their woolly appearance. I have also had large heads of yellow Auricula and pink Primula this spring, which I brought from the Engadine in 1878.—CECIL J. P., *Chelmsford.* *** *"C. J. P." sends a well-grown specimen of the Edelweiss, and the absence of the woolly appearance of which he speaks is only comparative, as his plant is really woolly enough. This interesting plant has been made the object of more silly remarks in the public press than any other. Writers generally ignorantly pretend that it is extremely rare in its native country, and extremely difficult to cultivate. It half covers the land in many hilly parts of Central Europe, and in England it is one of the easiest plants to grow if people will only plant it in any exposed rock garden, or even in a common border. We have seen it growing in different countries as freely as any hardy plant, but if people begin by making a needless fuss about it, and coddling it in a cold frame, or putting it in some position in rockwork in which it cannot root, they will probably fail. It would be well not to depend on one plant only. It has a very pretty effect when a group of a dozen or more plants are put together in a level open spot. Like other alpine plants it does not care for the society of, say, the Cow Parsnips, or other giant herbaceous vegetation which naturally grows in a wholly different position. Gazelles and elephants do not yoke well together.*—ED.

Are there any scarlet stocks? (see p. 223).—All depends upon what you consider scarlet. Before I began gardening I thought I knew pretty well what scarlet was, and in what it differed from other reds; but when I began to buy scarlet flowers and raise them from seed I began to find out that garden scarlet and artist's scarlet were two different things. There is nothing that wants setting in order more than the English names for colours. We have a few simple names, such as red, yellow, blue, and green, but the moment we want fine distinctions we get into a vague confusion of names of all sorts of origins—emerald and amethyst from precious stones; magenta, mauve, and carmine from dyes; cobalt blue, vermilion, and ultramarine blue from pigments; orange, maize, and plum from fruits; and rose, peach, lilac, and lavender from flowers. Scarlet is generally regarded as an intense form of pure red—Vesuvius and similar very bright Geraniums are pure scarlet. Red is neither inclining to crimson on one side nor to orange on the other; magenta is intense light crimson. It is too much the habit to call reddish crimsons, scarlet. I have seen some very bright red Stocks, but they were not scarlet, or anything approaching it, but fiery bright crimson. These, however, were splendidly grown, and in the same beds a little pink weed became brilliant magenta.—J. D.

Gentiana asclepiadea.—I was at Felsnegg, on the Lake of Zug, and in a wood near there were Gentians the size and colour of G. acaulis, but growing up a long stem 4 feet or 5 feet high. Can you tell me the name and where I can get them? I sent home several plants, but they were thrown away.—F. B. *** *You probably mean the tall blue Gentian (G. asclepiadea), which we have seen growing exactly in the way you describe. It is a beautiful hardy plant, obtainable in different nurseries where hardy plants are grown, and found also in many a country garden.*—ED.

PERENNIAL LARKSPURS.

AMONG the finest flowers of the July garden are the Delphiniums or Perennial Larkspurs, which we hope all our readers in the country endeavour to grow well. There is now a wonderful variety among them, although the colours are rather limited, ranging only from violet to a clear blue; but then there are double and single sorts, and white-eyed and dark-eyed. Nothing can well be grander than bold masses of these, well grown in a good-sized garden, and even the smallest garden can find room for at least a few of them. They require a liberal culture—that is, a good deep soil and plenty of manure, and should have a little attention, just as the shoots are pushing up in early May, in thinning out the weaker shoots and allowing only the strongest to grow. By this means finer spikes, which are often branching, can be got, and they sometimes attain a height of 6 feet to 10 feet. A rich collection of varieties has been brought us during the past week by Mr. Stevens, of Grasmere, Byfleet, who makes a specialty of the culture of these flowers. He possesses every variety of merit, and by planting them side by side in long rows, he is enabled to judge of the relative value of the sorts, some being dwarf and others tall, and some better adapted than others for a light soil; the soil in Byfleet is a deep sandy loam. The following is a selection of a dozen good sorts (those preceded by an asterisk are double): — *Alopecuroides (rich blue, veined with bronzy-red), Barlowi (dark blue, shaded with bronzy-red), Belladonna (beautiful sky blue), Cantab (pale blue, with black and brown centre), Formosum (dark blue, tinged with purple, white eye), Gloire de St. Mandé (dark blue, edge of petals suffused with crimson, centre velvety brown), *Keteleeri (lavender blue, tinted with reddish lilac, white centre), Magnificum (bright blue, white centre), *Madame Henri Jacotot (azure blue, faintly suffused with pink), Pulchrum (lavender blue, shaded with peach colour, white and blue centre), *Ranunculiflorum (rosy lilac, edged cobalt blue), *Sphere (silvery blue, suffused with lilac).



Golden-rayed Lily of Japan (L. auratum). See page 253

Zonal Pelargoniums from seed.—As at the present time during fine days the amount of heat in the open ground is little if anything short of that given out by fermenting materials during the cool months of the year, a stock of seedling zonal Pelargoniums may be easily raised; and as these flowers are very liable to sport, more than one variety may be produced from the same plant; or, at least, many seedlings may be raised totally dissimilar in character from the parent plants. Where seeds are not purchased, the unorthodox plan of allowing a few to mature may be adopted—of course at the expense of sacrificing the season's bloom display of plants so treated. The seed bed should be well worked by breaking up all hard lumps, and so present a fine, well-raked surface, and a little leaf-mould and silver sand may be added to the soil, which should consist of fine light loam. An hour or two after watering the seeds may be placed singly 3 or 4 inches apart, and will require protection from heavy rains, and to be kept constantly moist and shaded from hot sun. When about 2½ inches high they may be grown on as rooted cuttings, and if favourable weather prevail well-drained 4-inch pots will not be too large for them during winter, but they should not be shifted into these later than about the third week in September, and that without breaking the ball. They can then with advantage be placed in a window or greenhouse, a cold frame being quite unsuitable. When established they require looking over occasionally; remove any dead or dying leaves, and keep as clean as possible. In August, if about 4 inches or 5 inches high, which they should be in ordinary circumstances, the lead should be removed to induce side shoots to form. In the following spring, when new growth commences, a little further training will be necessary to ensure well-grown plants. I have raised numbers of these in town air, which, however, I have found totally unsuitable to zonal Geraniums, except in greenhouse, and for the open ground have long since discarded them in favour of Lantanas, which admirably replace them, and which in most situations enclosed by miles of houses will bloom perfectly.—STAMFORD HILL.

Using lawn sand.—Questions 13876 and 13888 may be answered in one. My lawns were overrun with Plantains, Dandelions, and multitudes of Daisies, as well as other running and tap-rooted weeds. They are now almost entirely cleared (soon will be altogether) of all these. For Plantains, which have a thick root about an inch long and thin fibres, a sharp-pointed forked-bent spud must be used, thrust down into the Grass well under the root, the plant then to be levered up. The whole will come out, and needs no acid; it will not grow again. For other nuisances, Dandelions, Daisies, &c., lawn sand is an effectual cure, acting also as a manure. For Dandelions, half a thimbleful or upwards, according to size of plants, must be heaped on the top of the crown. For Daisies, a small quantity must be poured from a spoon, or other convenient implement, on the centre of the crown of each plant—*not sown broadcast*, which is wasteful and not effective. They will turn brown and die altogether if enough have been used and no rain have come on soon after using. If not completely killed, a second smaller dose, applied as before, will finish them off. The Grass all around will not be killed, but will become a beautiful dark green. The sand must be dry, so as to run clean off (if damp, it will become pasty and useless); and it acts best when the weather is dry, and when applied in the evening. In my opinion, to those who do not like Daisies (for some do), and wish their lawns to be admired, as mine are, lawn sand, though rather expensive, is indispensable. — W. F.

Anemone apennina.—This is one of the loveliest of hardy flowers, is of very easy culture, and yet does not seem to be generally known. It is of dwarf habit, covering the soil with foliage, and the pretty flowers in the case of well-established plants form a sheet of lovely blue. This Anemone belongs to that class of hardy flowers which are never seen to advantage unless they are allowed to remain undisturbed from year to year. It does not like the disturbance to which an annual digging subjects it, and should therefore have some quiet corner allotted to it where the spade is not used. The great point is to prepare the soil well before planting, so that the roots have no trouble to work freely in it. Heavy soils should receive the addition of some lighter material.—J. C., *Byfleet*.

REPLIES.

13843 and 13900. — **Day Lilies not flowering.**—The Day Lily is one of those plants which like to be left alone. It does not seem to flower well until it has formed large clumps, and the flowers spring from the weaker crowns in the centre of the clump. The vigorous shoots round the outsides of the clumps produce leaves only—at least, that is my experience of them, both in seeing and growing them. Our clumps are a yard across; soil, stiff London clay only dug one spit deep.—J. D.

—— It is the cold heavy nature of the soil which prevents "Harborne's" plants flourishing. The Hemerocallis are free-growing plants in soils they like, but many of them will not move in those of a tenacious description. In such cases there is but one thing to do—viz., add plenty of light material, such as leaf-soil, sand, and wood ashes. Even common ashes will be better than nothing, the object being to render the soil more open to the passage of air and water. It is a good plan to dig such soils up roughly in August, and let them get baked by the sun, then well stirring and adding other material, and planting at the latter end of September. Treated in this way heavy soils will grow many things which otherwise will not thrive in them.—J. C. B.

13841.—**Treatment of Anemone fulgens.**—There is no wonder that your plants have not done well, seeing that they are in a shady place. This Anemone grows naturally where it gets well roasted in the summer, and a similar position should be chosen for it in gardens, more especially as it does not, even in the most favoured districts of this country, get so much sun heat as it gets in the south of France. Your soil being light is in your favour, and if it is made free by being well stirred, and is tolerably enriched, it ought to do well. Plant in August; then good roots are formed by winter.—J. C. B.

13892.—**Calceolarias failing.**—The cause of these Calceolarias dying is a mystery, which, so far as I am aware, has never been solved, and these plants are to a certain extent going out of public esteem. One way to prevent this evil somewhat is to put the plants out early—a month or two before the other bedding plants, with proper protection from May frosts—so as to ensure their getting a good hold of the soil before the hot weather sets in. The soil for these plants should be as rich as possible, but not rank. Given these conditions, and an abundance of water in dry weather, they can hardly fail to give satisfaction.—E. C. W., *Tottenham*.

—— It is by no means an uncommon occurrence for Calceolarias to die off just as they should be coming into bloom, and for this reason many do not grow them; in fact, Calceolarias

are not popular bedding plants nowadays. No way has ever been discovered of entirely avoiding this loss, which is more apt to occur in light soils than in such as are of a cool, moisture holding nature, but it may be mitigated by deep culture in combination with early planting and mulching. Calceolarias should never go into pots, but be wintered in a cold frame, planted out, as then they are not so apt to suffer from drought when set out. They should be put out by the beginning of April, as they are much hardier than the generality of tender bedding plants, and a few evergreen branches stuck among them will guarantee them against cold winds.—J. C. B.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, July 20th to July 25th.

Sowing black-seeded Brown Cos Lettuce for winter use. Potting on small Cinerarias. Potting Daphnes into a mixture of loam, peat, charcoal, bones, and sand. Planting out Lettuces and Endive. Earthing up Cardoons. Pulling up pickling Onions and spreading them out to dry. Topping Peas which are growing above the sticks. Getting large rough frames ready for sowing late Peas and late Dwarf French Beans, so as to protect them from the early autumn frosts; nailing and tying in Roses on walls and picking off all dead flowers. Hoeing and weeding among Strawberries, and cutting away all runners that are not required for planting. Layering Strawberry runners with which to make new plantations. Digging land for Turnips. Cutting Lavender. Sowing Laxon's Omega and Unique Peas, Budding Roses, and giving them a good mulching with rotten manure. Gathering Black Currants for preserving. Lifting early sorts of Potatoes, and spreading them out in the sun to ripen them well for seed next season. Potting Primulas, and afterwards placing them in a close shady frame till well rooted.

Planting Coleworts on land cleared of early Peas, making the holes with a crowbar, and afterwards watering the roots well in. Putting in Pink and Carnation pipings under hand-lights. Looking over Marrows and Cherkins, and closely stopping all. Digging up, manuring, and watering borders previous to sowing with Wheeler's Imperial Cabbage, and stopping and nailing in the shoots of Tomatoes on walls. Nailing in all the leading shoots of Peaches, Nectarines, Apricots, Cherries, and Melons. Filling pits with fermenting material in which to plant Cucumbers. Digging land for main crop of Spinach. Stopping the laterals through all Vineries, and giving late houses a good soaking with guano water inside and out. Thinning out Turnips, Carrots, and Spinach. Cutting back Laurels in pleasure grounds where overgrowing walks. Watering Lettuce and Endive beds, and hoeing among all growing crops. Putting in Phlox and Pelargoninm cuttings. Weeding, hoeing, and afterwards mulching, Aster beds. Stopping and tying out Dahlias and thinning out the blooms where required for exhibition. Cutting back Ivy on walls where overgrowing windows. Clearing off Peas, and manuring and digging the ground ready for autumn Cabbages. Getting new mould into cold pits and planting in them Parsley for winter use.

Cutting back the breastwood and nailing in the leaders of Plums and Pears. Potting Pinks and winter-flowering Carnations. Sowing Sir Joseph Paxton French Beans under the proteotion of a wall. Earthing up Cauliflowers. Planting Paris Cos Lettuce. Pricking off a late batch of Primulas and Cinerarias. Planting out a large breadth of Savoys for small heads, also Coleworts. Mulching late Peas with rotten manure. Giving Scarlet Runner Beans a good soaking with manure water. Weeding and cleaning Box edgings in garden walks. Watering Celery, Cardoons, Cauliflowers, and Tomatoes. Sowing Nemophilas for pot culture; also Ten-week Stocks, Phlox Drummondi, Lobellas, Rhodanthes, Schizanthus, and Clintonia pulchella.

Glasshouses.

FERNERY.—When structures are devoted to Ferns, and a portion of the larger species are planted out, attention should from time to time be given in keeping the larger growing kinds from encroaching too much upon the weaker habited sorts. This is especially needful where many of the stronger sorts with creeping rhizomes exist. These, if strong and not checked, soon extend in all directions; this can be corrected by cutting the fronds, which so far reduces strength as to prevent their spreading too fast. The rhizomes or creeping stems may also be shortened, which will cause them to break back and induce a closer, more compact condition. One of the mistakes committed in the cultivation of the tree species of Ferns is giving them too much root room, either when planted out or when grown in pots or boxes; in both cases, when accompanied by more artificial heat than requisite, it invariably induces a greater extension of the fronds than is admissible within the limits of most plant houses, the result being that the strong growers smother the weaker ones, and the interest attached to the collection is reduced by the smaller number of kinds grown. Plants that have had their roots confined within a limited space should have frequent soakings with manure water during the growing season; when sufficiently supplied in this way they can be kept for years in a satisfactory condition. Liquid manure, or moderate dressings of some light manure, answer well for most of the small growing kinds of Ferns, such as the Adiantums, Pteris, Davallias, and others of a like character. In Fern culture no more artificial heat should ever be used than is absolutely necessary, for it not only makes the fronds unduly tender, but also renders them much more susceptible to thrips. Where these are present it is best to dip or syringe with Tobacco water.

CONSERVATORY.—The whole of the spring-flowering plants that bloom during the earlier part of the season have now done flowering, and stove plants in bloom will come in most usefully to take their places, as, if associated with the hardier kinds of Palms, Tree Ferns, Cycads, and other fine-leaved plants, and tastefully arranged, they have a very fine appearance, and will make a display equal to that which existed in spring. Where many of the occupants of conservatories are permanently planted out, such a re-arrangement as is here recommended can only be partially effected. At this time of the year, when insects increase very fast, corresponding attention must be paid to destroying them, or it will be impossible to keep the stock in a healthy condition. Sponging by hand is a slow process, and seldom more than partially effective. It is much better, where it can be done, to take the plants out of the houses and syringe them freely with insecticide, as, if the work is well done, all the interstices in the leaves and bark where the eggs and larvæ are hid are reached. Care should be taken to keep roof plants as free as can be from such insects as brown or white scale or mealy bug, otherwise they are certain to be communicated to every plant underneath them on which they can live. It is well, as far as possible, to select for roof decoration climbers that do not afford acceptable food to these pests.

PROPAGATING ABUTILONS.—Independent of the decorative value of Abutilons as pot plants, their continuous habit of flowering is not surpassed by many things which are as easily grown, and therefore a good stock should always be kept up. Their ability to flower through the winter, if accommodated with a little extra warmth, is a still further recommendation. The white variety, Boule de Neige, is so useful for cutting, that it deserves a place everywhere where winter flowers are in demand. It blooms in a very small state; plants of all the varieties, struck from cuttings put in now and wintered in small pots, will make useful blooming stock next summer.

LILIES IN POTS.—These are most useful in conservatories. Plants of Lilium eximium that have done flowering must be well supplied with water so long as the foliage remains green; they may then be planted out in well prepared soil, as they are not likely to bloom much a second time where at all forced until they have had a season or two to recruit their strength. L. auratum and other species require to be similarly attended to in the matter of water, also to be kept free from aphides, as on the retention of the leaves until the bulb growth is fully completed depends their future well-being. L. giganteum, though mostly planted out in the open ground, will, if well managed, attain a larger size and produce more flowers in a pot; but it does not usually increase so well in this way by the production of suckers. Where this fine Lily is grown in pots, I have found it best to turn it out of them immediately the blooming is over, giving plenty of water if dry weather ensues. Plants of the different varieties of L. speciosum should have the stems supported with sticks before they get too far advanced, and in carrying out this operation with Lilies, care ought to be taken not to injure the bulbs.

GENISTAS.—The smaller plants of Genista are much more useful than very large specimens. Their easy propagation and the little difficulty involved in their after treatment is such as to make them deserving of much more general cultivation than they receive. If the plants are now out-of-doors, any shoots that show a disposition to outgrow the rest should be cut back, but no attempt ought to be made to keep them too formal by pinching in the whole of the branches, as this gives them an over-stiff appearance. In the case of young, thriving examples of these Genistas, where the pots are small and have got full of roots they should be frequently supplied with dressings of light manure or manure water, and they ought to be syringed over every evening in dry weather as they are liable to the attacks of red spider.

Flower Garden.

CASTOR-OIL PLANTS.—Those who are in search of sub-tropical effects in the summer garden, and who yet lack the convenience for wintering large growing sub-tropical plants, will find the varieties of Ricinus, or Castor-oil plants, indeed a boon. Their rapid and stately growth, large foliage, and the ease with which they are raised, all tend to enhance their value for the purpose just named. The varieties armatus, Obermanni, viridis, and macrophyllus, when sown in March and grown on without check, attain a height of 8 feet by August. The seeds should be sown singly in 3-inch pots; they quickly germinate in a temperature of 65 degs., and should be given this heat till they need potting into larger pots, when a temperature of 60 degs. will be ample. By the beginning of May they will be ready to pot into 8-inch pots, and at the end of that month may safely be planted out in their summer quarters. Deep tilth and well-rotted manure are necessary to ensure vigorous growth. The deep bronze foliaged and red-stemmed variety Gibsoni is not so strong a grower as the kinds just named, and is thus all the more valuable for use as an outer line to beds of the strong green-foliaged sorts.

SPRING FLOWERS.—Growers should now be making ready, where spring gardening is done, to get up a supply of the very earliest-flowering plants that have proved hardy enough to withstand the last few winters. The white and variegated Arabis, the purple Aubrietia, Myosotis dissitiflora, Daisies (red, white, and Aucuba-leaved), Gentians, Auriculas, Primroses, Pansies, and Polyanthuses are always satisfactory. These should be divided and planted in nursery beds to make good plants by October. Wallflowers, Stocks, and Honesty should be planted in single rows from the seed-bed before they get drawn up weakly. There are also many kinds of annuals which if treated so as to make them biennials—viz., by sowing them too late to flower during the current year—make excellent early spring flower beds. The exact date of sowing varies as regards different varietics, and also in early or late localities, but as a rule the beginning of September is soon enough to sow, as if too forward they suffer from severe frosts, and in mild winters they continue to grow all through the winter. Saponaria calabrica, Silene pendula, S. ruberrima, and S. pseudoatocion, Nemophilas, Limnanthes Douglasi, and Collinsias are amongst the most useful, but there are many others that do well under the same treatment.

PANSIES AND VIOLAS.—Propagate Pansies and Violas under hand-glasses or cloches, for under anything like good treatment they are all-the-year-round flowers, as they cease blooming only when exhausted. The earliest struck cuttings of such kinds as the Cliveden Blue, Yellow, and Purple will now be rooted sufficiently to be transplanted on to a good rich open piece of ground, when, if kept moist at the roots, they will become good plants, full of bloom-buds in the autumn, and in mild winters they will continue to open a few blossoms and be quite full of bloom with the earliest Snowdrops and other hardy bulbs.

CLIMBING PLANTS.—The growths of climbing plants should now be regulated and support given as required. Clematis Jackmani is as usual producing a cloud of blossom, and is still one of the best. Among the largest-flowered section C. lanuginosa is also excellent; it looks well trained thinly among other climbers. We have masses of its large mauve blossoms peeping out amongst the foliage of Wistarias, the two associating extremely well together. The tallest varieties of Tropæolum will now be making a fine display; they are valuable as temporary screens for hiding unsightly objects, being of rapid growth and extremely gay when in bloom.

GENERAL WORK.—Attend to neatness by regularly mowing lawns, clipping edgings, and weeding and rolling walks. Bedding plants will now be in their full dress, and in order that they may continue so, keep them well supplied with water, and remove all useless flowers at least once a week. Trailing kinds will require the same periodical attention as to regulating their growth, either by pegging down or train-

ing to sticks, as the case may be. Single Dahlias and other tall growers planted among lower growing plants may need a portion of their growth curtailed, both to preserve symmetry and to prevent them from encroaching too much on dwarfer plants. Keep carpet beds trim. Herniaria glabra rarely needs clipping, and this merit renders it the best of all plants for forming a green groundwork, edgings, and intersecting lines in this class of bedding. The dwarf Sedums and Saxifrages only require the flowers to be kept off them and to be pressed down with the hand to make them spread evenly. On herbaceous borders old flowers of Pyrethrums, Mallows, Delphiniums, Spiræas, and many others need cutting off; sticks also should be taken away. Roses are in full bloom, and almost daily now there are numbers of decaying flowers that for the benefit of the plants would be better off; if autumn bloom is desired also vigorous shoots should be shortened and the plants kept well watered and washed.

Fruit.

LATE PEACHES.—Where it is desired to retard the ripening of fruit in the latest houses until September or October, all the ventilators should be set open by night and by day until the flowers begin to open, and again after the fruit is set in order to delay the stoning process. It is hardly necessary to say that the houses from which this late fruit is obtained should have hot-water pipes running round the sides for keeping out frost when the trees are in blossom, and again for supplying dry heat after the crop is gathered; otherwise such excellent kinds as Walburton Late Admirable, Barrington, Sea Eagle, and Prince of Wales Peaches, Stanwick Elruge Nectarine (which never cracks), Victoria (which few can ripen on open walls), and Albert Victor cannot be expected to ripen their wood and perfect their buds before the winter sets in. Some years ago, when we had a number of large trees in pots and tubs, we used to make it a practice to place suitable kinds out-of-doors in a sunny, sheltered situation about the end of June, but fresh arrangements now enable us to gather quite as late from vigorous young extension trees trained under the roof of a house in which we winter standard Bays and Aloes. The latter were taken out for the summer before syringing—never a heavy item in cold houses—affects their growth. The dry fire-heat after they go back to their winter quarters seems to suit all round alike, and the constant watchfulness so essential to success in pot culture is rendered unnecessary.

VINES.—Lady Downes, Alicante, and other late kinds intended to hang on the vines until after Christmas will be improved by having the scissors passed over them again for the removal of imperfectly fertilised berries, and at the same time the shoulders should be carefully raised and tied up to allow a free passage of air when the leaves are falling in the autumn. To ensure the proper ripening of these kinds by the end of September a night temperature of 68 degs. to 70 degs., with a corresponding rise by day, should be given, and if this cannot be obtained from solar heat, gentle firing at the present time, while it increases the size of the berries, will be found more economical and beneficial to the vines than sharp forcing with double the amount of fuel in the autumn, when they should be sufficiently matured to require cool treatment. Muscats having their principal roots in inside borders, and now beginning to take their last swelling, should be well mulched with short stable manure. Vines in early and mid-season houses must be thoroughly cleansed as they are cleared of fruit.

MELONS.—Plants in pits and frames swelling off fruit will now take an abundance of water at the roots. In cold, wet weather it is not advisable to water overhead in these structures, where the plants are more subject to canker than when grown in houses, and spider does not make so much headway; but advantage may be taken of a fine afternoon for flooding the bed with water at a temperature of 85 degs. to 90 degs. without wetting the foliage, and closing about half-past three, when the atmospheric moisture will produce conditions highly favourable to the rapid development of the fruit. Pay particular attention to the preservation of the old leaves, as they cannot be interfered with without producing a check, and give them full exposure to sun and light by cutting away all lateral growths and keeping the glass clean. Elevate the fruit on inverted pots on a level with, but not above, the foliage, as some kinds are liable to become discoloured when they change for ripening if night airing is neglected. Attend well to the linings by turning and renovating with fresh manure before the heat in the bed shows signs of declining, cover with good dry mats, and give a chink of night air to prevent an accumulation of rank steam and condensation of moisture on the fruit. Get out young plants before they become pot-bound, and make a good sowing of some quick-fruiting kind for coming in in October. Meantime prepare a light, well-ventilated, efficiently heated pit for the reception of the plants. If bottom-heat pipes are provided, the fruiting pots should be plunged within their influence when extra warmth is required for setting and ripening the fruit, but until the nights become longer fermenting material will produce a moist heat.

Vegetables.

Among Peas, Standard, Marie, and John Bull are now in full bearing; the last is a trifle longer in the pod than the others, and the quality good. If Endive is not yet sown it may be put in now; where it is put in very early the young plants generally run to seed. Any ground falling vacant should at once be re-cropped with Cauliflowers, Broccoli, Kales, or Coleworts. No preparation is necessary except clearing it of weeds, as, without exception, all the Cabbage tribe do best in firm soils. Should there be any occasion, through drought, to water these plants, it is most effectively done when they are planted in drills, and, this being our invariable rule, we are able to recommend the practice, and it also renders unnecessary high ridging up. The last planting of Celery should now be got out. Ground that has been cleared of early Peas, Spinach, &c., is usually in good heart for this late planting. Throw out shallow trenches—single spit only—2 feet wide and 3 feet apart, dig in the trench the best manure that can be had, and plant out double lines of plants at 9 inches from each other. Well water and mulch with manure; they will then require no further attention till earthing-up is needed. This operation will now be necessary in the case of the earliest planted, prior to which thoroughly soak with manure water, or, in lieu, sprinkle guano between the plants and water it in.

Shallots are ripening fast; ours are planted in drills filled with burnt refuse, and in this no grub or other pest ever attacks them, not even mildew, and the result is a clean, healthy crop. Garlic, Shallots, and Potato Onions lift when dry and store in a dry dark shed. Lightly fork over the ground they have occupied, and sow it with French Horn Carrots, Turnips, and Radishes for autumn and early winter use. Sow Cabbages for autumn planting; for several years our main plot has followed Onions. Ridge Cucumbers, Vegetable Marrows, and Tomatoes should be gone over at least once each week for the purpose of regulating, training, and stopping their growths, and, in the case of Marrows and Cucumbers, surface-soiling whenever the roots appear on the surface.

CUCUMBERS.—Plants in frames now in full bearing will require unremitting attention if they are to be kept in good order for any length of time. Dress them over three times a-week and earth up with lumps of rich turf and old lime rubble as the roots find their way to the surface. Attend to the linings, as want of bottom heat is often the forerunner of canker and mildew in frames where the plants have been started well and afterwards neglected. When the oldest plants show signs of exhaustion, take one or two lights in hand, cut out all the fruit and old leaves, peg the vines down on the hills, pack the joints with pieces of fresh turf, and keep the frame close, moist, and shaded until new growth sets in. If a heated compartment, perhaps now filled with Melons, will be at liberty in about three weeks, the present will be a favourable time for sowing a few seeds of Telegraph or some other good kind for autumn fruiting. Be careful to thoroughly cleanse the house. Prepare the necessary fermenting material for giving bottom heat; have it well worked before it is taken in, and defer plunging the fruiting pots or making the ridges until all danger of burning the soil has passed away. Make frequent additions of light, rich turf to the roots of plants which have been in bearing for some time, feed copiously with clear liquid, and water occasionally with warm clarified lime-water to keep the hills free from worms.

J. S.

GARDEN PESTS.

The cat in suburban gardens.—I was amused as well as instructed by a "Southampton Amateur's" experiences so graphically and humorously described in GARDENING, July 4th. Every lover of a garden must sympathise with him in his troubles, and also endorse his statements. But I count him a comparatively happy man, inasmuch as the arch-enemy of every town garden, "the harmful, unnecessary cat," can nowhere inflict damage and annoyance to such an extent as is felt in London suburban gardens. Here he is an unmitigated curse—this paltry domestic tiger, this petty feline abomination; his number, too, is legion. Everybody seems to keep two or three cats. A dog tax is indeed a very proper and salutary impost, but why "pussy" should be allowed to roam scot-free not even the Chancellor of the Exchequer himself could, I am sure, give a satisfactory reason. It is high time the nuisance was abated. Now, surely, there is a great opportunity for a finance minister to distinguish himself by taxing grimalkin. We do not suffer from the depredations of sparrows, for the cats frighten all birds away, so that the innumerable army of small vermin have it all their own way, and chiefest among these destroyers in my garden ranks the earwig. Where "Southampton Amateur" has trapped his hundreds, I have killed my thousands. I calculate that two seasons ago I caught on an average three hundred a day for one hundred consecutive days, and this is not in the least overstated or exaggerated, yet the following summer their numbers did not seem greatly reduced. It is easier to imagine than to adequately describe the havoc done by these pests. I find it the best plan to begin to set traps for them early in the season, thereby destroying the young broods; the rate at which they increase is surprising. Although the trials of a country gardener are no doubt manifold, yet they are light and few compared with the afflictions of us poor London folks, who, in addition to the foregoing, have to abide under a soot-laden atmosphere, and to bear many other ills too numerous to mention; yet, with unremitting care and attention, we manage to cultivate some good flowers, such as the most favoured spots, blest with the purest air and brightest sunshine, would be proud to boast of and to claim for their own.

Peckham Rye. W. J. W.

The sparrow curse.—I was gratified with "An Amateur's" defence of the sparrow in GARDENING, July 4th. I enclose a cutting from a Cardiff paper, and add our experience as evidence on the same side. In the early spring when your correspondents were complaining of havoc to flowers, our sparrows and numberless finches, robins, titmice, and others, were regularly fed on a path close to a collection of choice named Crocuses—La Neige, Mont Blanc, Sir W. Scott, Othello, &c. Whenever I find the flowers eaten, a search always results in revealing the slugs as the depredators. We feed the birds with crumbs, small wheat, and meal and water, mixed into a thick paste. We are well repaid—Peas, fruit, and flowers are never molested by our feathered friends. I find the Robin an invaluable ally in the garden; he wages dire war on insect pests, following us about, and diligently searching for insect food. My remedy for wireworm is—give protection to the small birds.—AN ENGLISHWOMAN. *** The cutting is signed "Cockrobin," and is as follows: "For years past I have fed daily, and with no sparing hand, scores of birds. Every morning they are waiting on the trees on the lawn, and directly I open the window and throw out the food it is a toss up which touches the earth first. I have a happy family of starlings, tomtits, blackbirds, thrushes, robins, yellowhammers, bullfinches, pigeons, sparrows, and last, but not least, crows and jackdaws. The only birds who cause a disturbance are the sparrows, and they fight like little demons among themselves. My garden is about an acre, and is full of nests, which are never disturbed; and I find that since I took to feeding the birds the havoc among the fruit trees is infinitesimal."

MIDSUMMER ANNUALS.

We know an old-fashioned country house in the West. It has a border some 4½ feet to 5 feet wide, running all round the front, beneath the windows. On the walls are trained, somewhat loosely, Roses, Honeysuckles, Clematis, and Jessamines, which form a very telling background. In summer the border is filled with Dwarf Roses, Pinks, Clove Carnations, and a very pretty arrangement of annuals. The latter were sown in spring, and well thinned out, so that each plant had sufficient space to show its true character. The groups are not all of one size, neither is there any particular plan or method in their arrangement, nor yet is there any pinching or picking to make any particular group fit into any particular place; but the whole is free, graceful, and natural, and the border compares most favourably with any arrangement of bedding plants. In no other way could so much variety in colour be obtained, and the colours are so soft and pleasing, and there is so much grace in free and unfettered growth. Among the annuals used are Linum grandiflorum rubrum, Blue Cornflowers, Yellow Eschscholtzias, Dwarf French Poppies (both single and double in many colours), Mignonette, Love in a Mist (Nigella hispanica), Calliopsis tinctoria, several varieties of annual Chrysanthemums, Clarkia elegans rosea, Clintonia elegans (blue), Agrostemma cœli rosea, Brachycoma iberidiflora, Cacalia coccinea (Tassel Flower), Marigold (Meteor), Candytufts in various colours, Collinsia bicolor, Godetias in several varieties, Kaulfussia amelloides (blue), Leptosiphon in variety, Nasturtium (Tom Thumb) in variety, Nemophila insignis, Sweet Peas, Sanvitalia procumbens flore-pleno, German Stocks, Dwarf German Scabious, &c. When each plant has room to get strong it has a greater length of life, and if, in addition, the seeds are picked off, the season of blossoming is much prolonged. When annuals are well cared for they are not the weedy things too often seen. The engraving gives a good idea of what can be done with annuals at midsummer, and all may be sown where intended to flower without any assistance from glass.

MIDSUMMER ANNUALS.

Among the plants shown in the engraving are Poppies, Crimson Flax, Blue Cornflower, Corn Marigold, and Viscaria.

SECOND ILLUSTRATION COMPETITION.

THE present competition is confined chiefly to views of tastefully-arranged porches, verandahs, and arbours, Pergolas,* climbers round windows or on walls or trees, garlanded walks, and to illustrations of any way of growing climbing and rambling plants; but any beautiful illustrations of gardening interest sent at the same time will be heartily welcomed. The selected photos will be engraved and published in GARDENING, and senders of the chosen pictures will be entitled to receive useful garden books of the value of not less than One and a-half Guineas. All photographs for this competition must reach us by Saturday, the 8th of August.

In addition to the above, however, we propose to give to the persons who during the year 1885 send us the best series of illustrations,

THREE PRIZES OF HONOUR,

as follow:—First—A water-colour drawing of the Wild Field Rose, by the late Mrs. Coleman; purchased at Christie's for Twelve Guineas. Second—A water-colour drawing, by Madame Vonga, of Zurich, of one of the first plants of the rose-coloured hardy Water-Lily flowered in Europe; purchased for Five Guineas. Third—A water-colour drawing of a group of Pæonies, by Mrs. Duffield, purchased for Three Guineas. In awarding these prizes we shall deal only with those photographs which have been selected and engraved in each competition, and the number and beauty of the contributions of each competitor will be taken into consideration. The recent competition is included in these special prizes.

The following rules must be observed by competitors:—

First.—The photos may be of objects in one's own possession or cultivation, but the source whence they are obtained must be stated, and none sent the copyright of which is open to question; the Editor is to have the right of engraving and publishing the chosen photographs.

Second.—The name and address of the sender, together with the name and description of the object shown, should be plainly written on the back of each photo.

Third.—All letters relating to the Competition must be addressed to the Editor, and marked "Illustration Competition."

Figures of men or women, barrows, vases, rollers, implements, and all similar objects had better, as a general rule, be omitted from these photographs. The object is to show the beauty of the garden, and this cannot be done well when the photographer is confused by other considerations. Photographs may be mounted or unmounted; they should be clear, and the subject intended to be shown in good focus, and so as to be distinctly seen.

* PERGOLAS.—Not half enough is made in English gardens of the pretty Italian fashion of the shaded walks and spaces known as pergolas. In Italy they consist of piers of masonry, either square or round in section, roughly plastered, some 12 feet apart along the walk; rough timber logs cross the path overhead from pier to pier, and slighter woodwork is laid lengthwise again upon these. Upon this foundation grow vines and other climbing plants. A pergola for an English garden is best constructed of rough pieces of oak. The top pieces that are left over when oak is felled are the best possible material; the larger and straighter pieces are chosen for the uprights, and the smaller crooked branches for the top. By planting with vines, rambling Roses, Clematis, Aristolochia, and like climbing plants, a beautiful and delightful covered way may be made, or a highly enjoyable open air breakfast and dining-room.

13683.—**Amateur's greenhouse.**—The door of my furnace is 9 inches, but I should think a smaller one might answer "E. C. W.'s" purpose, although he must bear in mind that it is more difficult to keep the fire in a small furnace during the night, and he might regulate the heat by not putting in so much fuel until he banks up at night. If the back is of wood, of course he will have to be careful.—DELTA.

A jolly life.—What a jolly life insects must generally lead! Think what it must be to lodge in a Lily! Fancy the fun of tucking yourself up for the night in the folds of a Rose, rocked to sleep by the summer wind, and when you awake nothing to do but wash yourself in a perfumed dew-drop, and fall to and eat your bed-clothes!—*Form and Garden.*

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

13995.—**Plants for vacant beds.**—I should like to know what to plant in beds from which Campanulas, Marigolds, and Antirrhinums must shortly be removed, their blooms being over.—J. P., *Abingdon.*

13996.—**Pure White Pansies.**—Does any reader know a Pansy as perfectly white as Viola cornuta alba? If so, will he be so kind as to give names and degree of hardiness, and oblige?—AN ENGLISHWOMAN.

13997.—**Taking Cactus cuttings.**—Will any reader please tell me when I should take cuttings from an old Cactus, and what kind of soil the cuttings should be put to strike in?—IGNORAMUS.

13998.—**Dividing roots of Lily of the Valley.**—Will any grower of the plant kindly tell me which is the best time of year to divide the roots of Lily of the Valley and how to plant them; also what is the best situation for them?—A WEE BIT LASSIE.

13999.—**Moisture dripping from roof of stove house.**—I should like to be informed whether drops from the roof of a stove house—caused by condensation owing to outside temperature being so much lower than inside—are likely to be injurious to plants therein?—B.

14000.—**Cultivation of Fuchsias.**—Will some grower kindly tell me a good way to cultivate Fuchsias? Advice as to best time to propagate cuttings and the mode of treating the plants will be gladly received.—W. B., *Chelsea.*

14001.—**Propagating Ivy.**—What is the best month for planting cuttings of Ivy? Are they best struck in the place where they are to grow, or should they all be struck together, and, when rooted, transplanted out? Any information will oblige.—BLACKPOOL.

14002.—**Cyclamens for next spring.**—I am about to buy some Cyclamen plants; if I obtain good sized ones can I induce them to bloom by next spring in a green house, kept at about 45 degs. in winter? I have not grown these plants before, and do not know whether they require heat.—NOVICE.

14003.—**Fowls destroying plants.**—Will anyone whose garden is near a poultry yard tell me what course I can adopt in regard to injury done to my crops by fowls belonging to a neighbour who pays no heed to my remonstrances and will not keep them away from my ground? Is there nothing I can do besides proceeding to law?—W.

14004.—**Water plants in aviary.**—I should like to be told whether water plants are poisonous or not, as I have birds flying about, and they might manage to pick some of the leaves of the plants which I intend to put into a fountain basin. The latter is covered with wire.—FERMILEA.

14005.—**Fuchsia fulgens.**—Will any Fuchsia grower tell me what is the best and proper treatment for Fuchsia fulgens from a cutting to maturity? I cannot get mine to bloom; although they strike freely all the buds fall off before bursting. What soil should be used?—CANONBURY.

14006.—**Fern case.**—I have a Fern case, measuring 26 inches by 15 inches, which I wish to fill with about a dozen of the best Ferns, and being ignorant of their names, treatment, and soil, I should be glad of a little help in the matter. Will any lover of Ferns assist me?—J. A., *East London.*

14007.—**Spinach going to seed.**—Will Mr. Gilbert, or some other good grower, inform me why all the Spinach which we sow in our garden goes to seed before the leaves get larger than about an inch? Our soil is heavy, but other vegetables grow luxuriantly.—AN AMATEUR.

14008.—**Niphetos Rose.**—I should be glad of advice how to treat my Niphetos Rose (which is now flowering a second time this year) so as to secure flowers on it early next year. It is in a 7-inch pot, is a healthy plant, though somewhat straggling. Will any Rose grower tell me whether I must repot it, and when and how far it should be pruned?—P. L. H.

14009.—**The plague of cats.**—Will "Amateur, Bromley," who evidently knows how to deal with these wretched creatures, tell me where he procures the trap he speaks of; or describe it so that I may be able to make one like it? By so doing he will oblige one who is eager to test its efficacy.—R. D.—R. S., *Sale*, and F. B., *Ipswich*, ask the same question.

14010.—**Camellia buds falling.**—I bought a Camellia in the year 1883, and, not having room for it indoors, it had to make its growth outside. Towards the end of the same year I had a house put up for it, and in April, 1884, I gave it a shift into a large pot, when it made splendid growth and set its buds well. In January, 1885, when the buds started to open they all fell off. I may add that the buds were very thick and closely packed, and the ball never allowed to become dry. If any of the readers of GARDENING could give me any information as to the cause of the buds falling off they will greatly oblige.—R. F.

14011.—**Planting Strawberries.**—Will some Strawberry grower give me some concise directions how to plant and cultivate Strawberries? I want to replant an old worn-out bed; when should it be done, how near should the plants be put together, and should the ground be manured at the time of planting? Any information will be gratefully received.—FOXGLOVE, *Westmoreland.*

14012.—**Cultivation of Maiden-hair Ferns.**—Will any successful grower of Ferns please tell me how to grow Maiden-hair Ferns?—W. C. C. *** *Does "W. C. C." mean the common greenhouse Maiden-hair Fern, the nearly-hardy European or the quite hardy North American Maiden-hair Fern, or any other kind, for there are many?*—ED.

14013.—**Increasing Sun Roses.**—Will anyone who grows the Sun Roses (Helianthemum) kindly tell me what is the best mode of propagating them—whether by cuttings or layering—and the best time to set about the work?—A. W. G. *** *Increasing by seed is a good way, and by cuttings the next best. Perhaps some of our readers who have tried layering will state the results.*—ED.

14014.—**Water plants for fountain basins.**—In my aviary I have a fountain which consists of three basins; the lowest is 5 feet in diameter and is inches deep. Will any lover of aquariums tell me—1, What kinds of water plants would do well; 2, How much soil would be required, and of what kind; 3, When I should plant; and 4, Would the running of the water from the two basins above spoil the plants or not?—FERMILEA, *N.B.*

14015.—**Apple trees not bearing.**—I have several trees planted in a kitchen garden among Gooseberry and small fruit trees. They are well sheltered from the weather, and every season are quite full of bloom, but there is no fruit afterwards. They have been planted about eighteen years, and are of a kind for baking purposes. I shall be obliged if any grower will give me information as to the cause and remedy.—J. W. B., *Glossop.*

14016.—**Varieties of Musk.**—In reply to my query (13839) Mr. Gostage has very kindly assisted me, but still I am anxious to procure the variegated Mimulus moschatus (Musk) which was advertised last year in GARDENING. Could anyone kindly say who advertised it, or where I could get it? And I should also be glad of any assistance through these columns by being told the names of any varieties of the above, as I am desirous of forming a collection.—A. G. N. L.

14017.—**Strawberries not bearing.**—Last autumn I planted a lot of Strawberry runners got from one of the firms who advertise in GARDENING. About half of them are fruiting splendidly, but the other half, although by far the finest plants, have not a single fruit on them. Will any Strawberry grower tell me whether it is of any use leaving them until next year on the chance of their fruiting? or should I take them up and plant young plants from those that have fruited this year?—W. W. W.

14018.—**Insects on Pansies.**—My garden is infested with green fly, and the seedling Pansies are covered in places with a reddish-brown insect, which causes the leaves to curl and wither. I have tried Tobacco water, but do not perceive any diminution in number. I am told lime and soot is a good thing. Will anyone who has tried this and found it useful kindly state how it should be used?—CANONBURY. *** *Send your other question again in accordance with the rules.*—ED.

14019.—**Amorphophallus Riverii.**—Will any of your readers kindly tell me how to treat this plant? I have had a round tuberous sort of root in a pot in my greenhouse for two years, during which time it has not shown any sign of root, but has thrown up very slowly a conical growth about 3 inches high, of what looks like folded leaves. There are some slight indications of rootlets similar to those formed on a Lily stalk in the centre of the tuber. Why it should neither die nor grow is very incomprehensible to me.—BRYNTIRION.

14020.—**Vines with air roots.**—One of my vines, the best Black Hamburgh I have, planted in outside border, and trained through the wall, which is 2 feet 6 inches high, is completely covered with rootlets all up the stem inside the house, and single Grapes on the bunches are already turning, although the Grapes have only just done stoning. They have been syringed once or twice daily, and the house kept moderately damp, with a little fire during the night. The vine looks unhealthy, and the house has a south aspect. Will some practical growers kindly state the cause and remedy?—DEFECTO.

14021.—**Market Fuchsias and Geraniums.**—I should like to know how market growers get such strong and stocky plants of Fuchsias, Geraniums, Mignonette, &c., and what kind of house they grow them in. When I was in London a few weeks back they quite surprised me, being so dwarf, and strong, and full of flower, while mine, although I have a good greenhouse, are drawn up, and badly shaped, and very weak, and do not last long in flower. Would any market grower tell me when Fuchsia cuttings should be struck, and how they should be treated for market?—PUGH.

14022.—**Black and red Carnation.**—I have a Carnation plant producing flowers striped black and red, beautifully shaped, very double, and large size. The stripes are regular, distinct, as wide as the blade of a pen-knife, the red bright, and the black very dark, with a very slight purple tinge. The petals are of the Flemish variety, not indented. I have shown it to several amateurs, who say they never saw Carnations of that colour. Will any grower of Carnations kindly inform me through your columns whether this is a new variety?—E. P. *** *It is difficult to judge unless one sees a good specimen of the flower; the value is best estimated by a florist who grows Carnations.*—ED.

14023.—**Cobæa scandens.**—Does Cobæa scandens require any peculiar treatment? I planted one in spring against a south wall; it throve till about three weeks ago, when it drooped, and, in spite of repeated watering, has now died. The situation is hot and dry. I have some seedlings in pots, from 3 4 inches to 9 inches high. When and where should I plant them?—L. H. *** *One plant may perish from some unseen cause. If you are fond of the plant try several seedlings planted out now. We have never noticed it doing much good, except near the sea; but some of our readers may have had different experience of it. We think there are many more beautiful climbers for our open walls.*

14024.—**American blight on old Apple tree.**—I have a very picturesque old Apple tree in my town garden; from the age of its surroundings I imagine it is quite fifty years old, and until three years ago it was quite healthy and bore good crops of fruit. It became affected with American blight two years ago; I had it painted with paraffin, which seemed for the time to cure it. Last autumn I had some of the old dead under branches cut away, and had it mulched with dairy-yard manure; but this year, although it blossomed well, it seems unhealthy, there is scarcely any promise of fruit, the leaves seem to be eaten by some insect, and the American blight has appeared again. I do not care about fruit if I could keep it green and healthy-looking. Will some fruit grower kindly advise me what to do?—CRAB APPLE.

14025.—**Laying out garden.**—I should be very much obliged if one of your kind contributors would give me some advice respecting the laying-out of my garden. It has only lately fallen to my lot to have one to look after, and, being very ignorant and yet anxious that it should be a success, I turn to GARDENING ILLUSTRATED for help. My county is Cheshire, the soil is light and is said to be very good, and the situation south by east. I have one good-sized frame. I cannot afford to spend very much money on my garden, but should like to plant it with things that would be permanent, or rather, that would last from year to year—such as Anemones, Lilies, Violets, Pyrethrums, Forget-me-Nots. My difficulty is knowing when and where to plant these various things, and how to treat them.—A WEE BIT LASSIE.

14026.—**Christmas Roses and Lilies of the Valley.**—I have only a cold greenhouse, so do not attempt to force Lilies of the Valley or Christmas Roses, but grow them in pots for the greenhouse. Having had mine two years in the same pots, I should like to know whether they ought to be put in the ground to gain strength till October and then be taken up and repotted, or be kept in the same pots just put out-of-doors for the summer.—MISS H. S. *** *It will not do to put out and take in the Lilies of the Valley in that way. Keep established plants in pots altogether if you wish them to flower in pots. Treat them well, however, and make a small plantation out-of-doors, so that you may in the future have plants fit to force, and may be able to pot a few off every year. See a recent article (page 182) by Mr. Hawkins. It is best to plant your Christmas Roses out, and you will find that they will flower well protected by a handlight.*—ED.

14027.—**Treatment of Cape bulbs.**—Will anyone kindly tell me how to manage some Cape bulbs to make them flower? Early in May I had some sent me which had been imported direct from the Horticultural Gardens at Cape Town. They were Anthotyza, Babiana, Watsonia plantaginea, Ferraria undulata, Gladiolus præcox, Lapeyrousia corymbosa, Hæmanthus tigrinus, Ornothogalum, and one or two others without distinctive names. The Ornothogalum and one Hæmanthus I planted in the border; the others in pots in the vinery, where they still are, south aspect, but no fire. Most of them have come up, but do not grow much. Would they be better in the greenhouse or standing out-of-doors? Not one shows any sign of flower. I have had a bulb of Amaryllis Johnsoniana for years, now in an 8 inch pot; it always makes fine large leaves but never a blossom. Last winter I tried keeping it quite dry for a couple of months, then repotting and starting it in a hotbed frame; the result was just the same.—C. B.

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14028.—**Spanish Moss** (*Manchester*).—Yes; Spanish Moss (Tillandsia usneoides) can be grown as a creeper. A note in last week's GARDENING may interest you.

14029.—**Quick growing Ivies** (*Blackpool*).—The Irish Ivy and the various large-leaved hardy kinds (not variegated) are the quickest growing.

14030.—**Gulf Weed** (*Aberdare*).—This plant is stated in Miller's "English Names of Plants" to be Sargassum bacciferum.

14031.—**Oxalis hirta** (*S. M. M.*).—This is a well-known species from the Cape of Good Hope, and we are acquainted with no other name by which it is known.

14032.—**Work on cottage gardening** (*Enquirer*). Try Hobday's "Cottage Garden."

14033.—**Abortive Rose buds** (*J. Byron*).—We cannot help you unless you tell us how you grow the Roses. You say absolutely nothing about them.

14034.—**Budding Roses on Manetti** (*Buteman*).—Do you mean to ask how many buds of *different sorts* can be inserted on one stock? You must make your meaning plain.

14035.—**Geranium leaves turning yellow** (*A Constant Reader*).—We cannot tell you why your Geranium leaves turn yellow and drop off until you first tell us how you have treated them.

14036.—**Scale on Passion Flower** (*Mrs Harding*).—Nothing so effectually rids a plant of scale as hand washing every part of it with soft-soap water. Fumigation or syringing has but little effect on this insect.

14037.—**Melon plants setting** (*B. P.*).—Yes, let three to six set on each plant; the fewer the better. When enough fruit has set pick off all the remaining blooms.

14038.—**Treatment of Lilium auratum showing bud** (*Medicus*).—By all means keep them in the pots, as they are now, and water them well. Keep them in partial shade—they do not like full sun.

14039.—**Catalogue of herbaceous plants** (*J. M G.*).—"Try "Hardy Flowers," which will give you more detailed information than any catalogue, and if it does not meet your wants write to us again.

14040.—**Choice of three vegetables for show** (*Urpeth*).—If you can make a choice of those you name you had better take Cauliflower, Vegetable Marrows, and Celery; but you must be guided to some extent by what you have best at the time. We presume you want them for a cottager's show, and in that case your aim should be to show really useful vegetables.

14041.—**Tigridias not flowering** (*Medicus*).—Tigridias flower admirably in the open air in Surrey, whence you write. If you have them in pots keep them in a warm place in the open air or in an unovered frame.

14042.—**Tea Roses in Cucumber house** (*Buteman*).—Tea Roses in pots, and Tomatoes could not be grown in the same house with Cucumbers without difficulty and waste of space, because the Cucumbers would give too much shade for the others.

14043.—**Christmas Roses blooming in greenhouse** (*W. C. C.*).—It is certainly an unusual thing and a most unfortunate thing to keep Christmas Roses in a cool greenhouse in July, the Christmas Rose being a hardy plant from some of the coldest parts of Europe.

14044.—**Moving Christmas Roses and Lilies of the Valley** (*F. W. Smith*).—You may move the Lilies of the Valley with safety as soon as the leaves have died down or have become brown. Christmas Roses you may move at the end of September, or early in October.

14045.—**New Zealand seeds** (*W. S.*).—There is some chance of the seeds germinating, and the best way to test it is to sow them at once in a cold frame. As the cold weather comes on move them to a spare shelf in a dry pit or cold greenhouse. Of some of them you can procure plants in this country in case you fail.

14046.—**Training Cucumbers** (*Urpeth*).—Thin the young shoots out if too numerous, and also the fruit if too freely set; but if you have healthy plants and don't want them to ripen off seed your best chance would be not to aim at having the crop ripe at any one particular time, but rather to get a succession. You will then be more likely to be able to choose good fruit at the time you want it in September.

14047.—**Plant for winter bloom** (*Shrub*).—You do not say whether you wish to grow the plant in a greenhouse or out-of-doors. If out-of-doors you can have nothing better than the Christmas Rose and its varieties. For indoor cultivation there are very many plants suitable. You have not stated what coloured flowers you want; write to us again, giving particulars.

14048.—**Culture of plants** ("*A Wee Bit Lassie*").—Your question involves the whole art of gardening, an art which nobody can learn without years of study. You may obtain some assistance from our readers in reply to the query printed elsewhere, but it will be of a general nature. If you will ask distinct questions on particular matters that puzzle you we shall be happy to help you.

14049.—**Pruning yellow Jasmine** (*Gertrude*).—We suppose that you refer to the winter-flowering yellow Jasmine. Do not keep it too neat—neatness is really no merit in the treatment of wall plants. Many of them look infinitely better when allowed to hang freely and boldly from the wall in clusters and wreaths. Prune after flowering, and do not cut too hard back; rather thin out than cut back, and that, if carefully done, may be attended to at any time.

14050.—**Treatment of Hedychium Gardnerianum (Garland flowers)** (*A. H., Largs*).—Your plant was named (as above) in last week's issue. It will grow in a vinery in ordinary rich soil. Hedychiums generally may be grown well planted in a bed in a cool conservatory, and in summer some of them may be planted in pots or pans, and stood in tanks or other moist places out-of-doors. They may also be grown under the treatment given to the Indian Shot (Canna).

14051.—**Fowls in gardens** (*W. W. W.*).—Laying poisoned corn for the fowls would be dangerous, as undesired results might follow, and you might get into difficulties if you used a gun. The best of the three courses you mention is, we think, to summon your neighbour in the county court, when the damage would be assessed. But perhaps some of our readers living near unaccommodating neighbours who are poultry fanciers will tell you how they proceed in the matter; you will find your question put elsewhere.

14052.—**Grapes diseased** (*W. S.*).—The Grapes appear to have been scalded by the sun shining upon them whilst they were moist. By attending to the ventilation and shading you may prevent such injuries in future.—W. G. S.

14053.—**Mildewed Roses** (*J. M., Edinburgh*).—The Rose leaves sent are in a bad condition. The "frosted" appearance of the buds is due to the fungus of Rose mildew, Oidium leucoconium; the leaves are possibly scorched by the sun. They not only exhibit an abundance of mildew but plant lice as well. Your culture is defective.—W. G. S.

14054.—**Blighted Roses** (*Subscriber, Warkleigh*).—Roses are sometimes attacked by a fungus named Peronospora sparsa, and this gives them the appearance of being attacked by the Potato disease, as suggested by you, but we cannot see the fungus on your leaves, neither have we ever seen it on out-of-door Roses. Your leaves appear to us to be suffering from drought; the glossy appearance is caused by the epidermis separating from the fleshy part of the leaf, perhaps from insufficient moisture at the roots. The dark spots are where decay has commenced. Without further data from you we can say no more.—W. G. S.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These and others that are of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers by post.—*Correspondents are requested to note that we do not answer questions by post; we shall be obliged, therefore, if they will refrain from sending us post cards and stamped envelopes for replies.*

BUYING GREENHOUSE (*H. B. F.*).—You had better apply to a good firm of horticultural builders. It is very likely that if you offered good security a firm would consent to receive payment by instalments.—THE "GARDEN" (*Buteman*).—The first number of a new volume of the *Garden* was issued July 4th.—BOTANICAL DICTIONARY (*J. M. G.*).—You probably refer to the "Gardener's Dictionary," which you can procure through any bookseller.—EXCHANGING PLANTS (*Ivea*).—There is no exchange column in GARDENING, and therefore we cannot insert your communication.—CURE FOR MILDEW ON ROSES (*H. Robinson*).—We than you for your reply to the question, but you say neither how the composition is to be applied nor what experience you have had of its effect.—PLAN FOR GARDEN (*Mrs. P.*).—We have forwarded your letter to the writer of the articles in question.—OAPE BULBS (*Correspondent at the Cape*).—Apply to Messrs. Barr and Sons, King Street, Covent Garden.—AMATEUR'S PROPAGATOR (*Warwickshire*).—The address of the firm is given in the number to which you refer, page 144. You may be able to obtain it through any hardware merchant, but you can certainly be supplied direct by the makers. See May's Ind., page viii., for particulars.—STRAWBERRY PLANTS FOR SALE (*Mrs. L. M.*).—If you wish to dispose of your plants you must advertise them for sale. They are worth about 5s. per hundred.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*O. W. D.*—4, Senecio campestris. —*Amateur.*—Tragopogon pratensis.—*S. M. M.*—1, Oxalis lasiocarpa; 2, O. floribunda; 3, O. Deppei.—*Kingstown.*—1, Lycium barbarum; 2, Buddleia globosa. —*South Park.*—1, Hieracium aurantiacum; 2, Spiræa Filipendula; 3, Tradescantia pilosa; 4, T. virginica; 5, Erigeron strigosum. Send rest another time.—*G. O.*—1, Looks like Prunus Padus; 2, Justicia speciosa; 3, Diplacus glutinosus.—*Tipcat.*—Limnanthes Douglasi. —*G. W. A. J.*—Philadelphus coronarius (white shrub); Centaurea montana (blue); Cyrtomium falcatum (Fern); Gladiolus illyricus.—*G. Graves*—Syringa Emodi.—*C. F. L.*—Cannot name.—*H. Geer.*—Aspidium aculeare proliferum.—*Iris.*—We cannot name the Pæony; Lily is L. elegans var.—*J. G. K.*—Thalictrum flavum.—*J. H. E.*—Silene pendula compacta.—*Mrs. Bowles.*—Double white Clematis.—*C. S. S.*—1, Staphylea pinnata; 2, Spiræa hypericifolia.—*J. F.*—1, Pandanus utilis; we cannot name the Pink.—*Q. R.*—1, Cratægus Pyracantha; 2, Lilium pomponium; 3, Campanula rhomboidea; 4, Hemerocallis flava.—*Mrs. Alexander.*—Leycesteria formosa.—*Mr. Stave.*—1, Abutilon vexillarium; 2, Habrothamnus fasciularis; 3, A species of Œnothera; 4, Veronica Teucrium.—*P. P.*—Salvia pratensis var. *Telda.*—1, Andromeda Catesbei; 2, Tradescantia virginica; 3, Veronica Teucrium; 4, Rhododendron ferrugineum.—*A. E. P.*—3, Tradescantia virginica; 4, Scilla peruviana; 5, Asphodelus albus; others next week.—*T. S. W.*—1, Campanula persicifolia; 2, C. glomerata; 3, C. muralis. —*Devonia.*—Deutzia scabra fl.-pl.—*O. O.*—Salvia Horminum.—*R. H. Wake.*—1, Lonicera Ledebouri; 2, Astrantia major.—*H. R.*—We cannot name Roses.

Catalogues received.—*Stove, Greenhouse, and Miscellaneous Plants.* J. Backhouse and Son, York.—*Flower Seeds.* W. Thompson, 3, Tavern Street, Ipswich.

13686.—**Fertilising Moss.**—I have had plants in my sitting-room for three years in this Moss—Aralias, Dracænas, Palms, and Ferns. They are always perfectly healthy and free from insects and make new leaves every year. The cleanliness and lightness of the Moss are great advantages for plants in rooms; Azaleas flower beautifully indoors, if grown in Moss. It is quite a mistake to say that plants will not succeed for any length of time in it.—E. C. D.

Bedding-out.—This term is generally understood to apply to the planting-out in spring of the tender exotics raised under glass for the adornment of the geometrical garden or parterre. It is commenced about the middle of May, and is not finished before the first week in June, and sometimes later. None but those who have gone through it know what an immense amount of work it entails, and how disappointing much of that work is. But in many gardens the bedding-out has been much reduced, and the force of events is likely to still further reduce it. Looking back over the many years I have been working at it, and noting what I have seen of the struggle of others, often with insufficient means, I have come to the conclusion that the system of gardening expressed in the term bedding-out has been of no real benefit to gardening from a cultivator's point of view, and any system so entirely based upon fashion could not be lasting. In saying this much I am not inveighing against the planting-out of exotics generally. To a certain extent that was done before the term was coined, or the system, as a system, introduced, and many of the plants commonly grown in the greenhouse may with advantage be planted or plunged out in summer. —E. HODDAY.

OUR READERS' ILLUSTRATIONS.

A Spray of Clematis.

A friend of mine who lives in a house not by any means architecturally beautiful—in fact, a plain square and somewbat squat building with a plain porch in front—has, by the judicious use of the Wistaria and a few plants of various Clematis, made a lovely combination of leafage and bloom. Tbe Wistaria is used on the east and nortb sides of the house and reaches the roof, and just now (June 7th) is a glorious sight. On tbe south side a verandah occupies part of the ground plan, and up the pillars supporting it are trained two or three climbing Roses and Clematis, one or other of which will be in bloom for some time to come. The spray from which the photograph here reproduced was taken was one of many which hung over a window. The tender green of its foliage, and the soft lilac tint of its large starry blooms, form in the summer a pleasing and restful object to the eye, whether from within the room or outside on the lawn. I ought to say that a few Ivies are grown too, but are kept well within bounds, so that, summer or winter, the outside of the old house is never naked or unbearable, as many houses of greater pretensions are.—C. H. Evans, *Redditch.*

Our Readers Illustrations: A spray of Clematis.
Engraved from Photograph sent by Mr. C. H. Evans, Redditch.

13829.—**Heating greenhouse without hot water.**—Though I do not claim to be one of your practical readers, I will endeavour to help "Col. H." out of his difficulty as I was helped out of mine. I assume he requires something efficacious and cheap, as I have found it to be, and I append particulars, as if not useful to him it may be to others. My small glass-house is built in continuation of the washhouse, through the wall of which from the gas burner I carried a piece of tubing and attached it to a small gas stove raised a few inches from the ground to admit of draught; over the stove I placed a sheet-iron cylinder 18 inches high by 7 inches diameter, closed at the top. I had some 2-inch sheet-iron piping made of the required length — any tinman can make it. I fastened this into the cylinder. about an inch from the top, a hole having been made for the purpose, carried my piping along one side of the house and along the back under the staging, and out at the end, where I placed a small cowl to prevent down draughts. I gave a slight upward tendency to the piping to admit of the gas fumes being carried off easily, and with this contrivance, cost of which I give below, I managed to keep the temperature in my house, which is 12 feet by 7 feet 6 inches and 8 feet high, at between 45 and 50 when it was freezing outside—and this with but a very small expenditure of gas. Cost of gas stove, 1s. 6d.; cylinder, 2s. 6d.; sheet iron piping 3d. per foot, India-rubber tubing 3d. per foot, and a few staples for fixing and small cowl 3d.—Veritas, *S.E.*

ROSES.

ROSES FOR WALLS.

Among strong-growing Roses bearing red flowers, there is no more useful variety than Cheshunt Hybrid. We find it classed in most catalogues as a Hybrid Tea; but the fact that it is so classed should not deter anyone from planting it. It will be found to be one of the most free-flowering varieties we have, and it has full, well-formed blooms that are sweetly scented—more so, indeed, than most Roses—and, when planted in a suitable soil, it continues flowering more or less during tbe whole of the summer. Reine Marie Henriette is also a useful Rose, with bright red-coloured flowers. It may not, perhaps, prove quite so hardy as Cheshunt Hybrid, but on a warm wall it will disappoint no one. Duchess of Edinburgh has crimson flowers, is a strong grower, and flowers well botb in early summer and autumn, but in no respect is it equal to either of tbe two just named, and should only be planted when more than two in the same way as regards colour are wanted. Anyone who oan give climbing Devoniensis a warm position and plenty of space will find it to be one of the most valuable Roses for filling up space quickly. We planted it in ordinary garden soil against a south wall, and it outgrew its space in a few years; it did not submit kindly to severe pruning, and therefore was removed. It does not flower so freely as the ordinary Devoniensis, but in other respects the flowers are quite equal to those of that charming variety. Gloire de Dijon is too well known to need any recommendation; but we should like to say, in regard to pruning this Rose, that after it has grown sufficiently to reach the height to which it is intended to go, it is a good plan to cut down to within 2 feet of the surface a strong branch once in two years. This induces young growth to be constantly pushed up from tbe bottom. Amongst Noisette Roses there are several varieties suitable for the covering of walls, the most distinct in colour being Solfaterre, sulpbur white. This will cover a large space in a few years. Jaune Despres, bronzy yellow, is an old Rose, but still a good one. For covering a wall from 6 feet to 8 feet high, the following may be confidently selected; they are very hardy, moderately vigorous, and free flowerers, viz.: Aimée Vibert, white; Céline Forestier, yellow; La Biche, blush; and also Lamarque, lemon yellow shading to white. Amongst China Roses tbe old-fashioned crimson is well worth a place on a warm wall. For those who have suitable positions—that is to say, large spaces to fill up on warm walls — the Banksians, yellow and white, should find a place, and so should Maréchal Niel, but the last-named does not thrive satisfactorily in all places As regards general management, most of us must, we think, plead guilty to a certain amount of neglect. This may arise from different causes in different cases; but certain it is that, as a rule,

Many climbing Roses are neglected at a time when they should receive attention. We maintain that tbe proper time to attend to them is just after the first crop of flowers is over, and in the majority of cases this is the beginning of July. If not attended to then—*i.e.*, if the exhausted shoots which have flowered are allowed to remain until the autumn before they are cut out—few flowers will be produced late in the season. If we observe the behaviour of climbing Roses we shall find that as soon as the first flowers have faded they make an effort to grow again, and therefore the cultivator should assist them by cutting out as many of the shoots which have flowered as can be spared, so that the roots may not have to support useless growth, and that what is left may bave tbe benefit of more light and air, as well as the full advantage of the root support. Tbis, it must be understood, is not advocating a severe system of pruning, because nothing is more

hurtful to climbing Roses than to be constantly removing growth; but when they have for the most part filled up the space which they are intended to occupy, and they have been allowed to make a season's growth and flowered in due course, such shoots, or the greater portion of them, are no longer wanted, and advantage should be taken of the first opportunity either to shorten them back or remove them altogether, according to the space that may be available. Care also must be taken of the young shoots which are sure to be made during the summer, keeping them regularly nailed or tied. If we except the Banksian Rose, there is not much difference in the time and manner of growth of any of the other climbing varieties. Most of them flower freely in June, and, as we have before remarked, are ready for their annual pruning early in July, and, except nailing in the summer's growth, that is about all the attention which they will require until next year at the same time, unless there should be any exceptionally strong plants which make more growth during the summer than can be found room for on the wall; in that case some cutting away of the weakest shoots may be desirable early in the winter. We have referred to the

Banksian Roses as requiring somewhat different treatment from the others, but this only applies in marked degree to young plants. These should not have any of the young growth cut away while the face of the wall is visible. A thoroughly satisfactory specimen of this Rose should completely hide the wall; but, to get it to do so, the growth on young plants must be nailed or tied in while there is any space uncovered, because, if the lower part of the wall be not filled up when the plant is young, it will not get filled up when it gets older; for, as soon as it gets established in the soil, the tendency is for the branches to grow so vigorously at top, that the bottom remains thinly filled up with growth. However, no difficulty need be experienced in filling up the lower part of the wall. Some of the top shoots may be brought down, or the strongest of them may be cut away from the top for a time, so as to give strength to the lower branches. When old plants have filled up the space intended for them, and are in vigorous health, they may be safely pruned with a pair of hedge shears as soon as they go out of flower. We shear our own plants at the end of June, cutting in neatly all the growth that stands out beyond one uniform even surface, and we find this to be all the pruning they require, except it be to remove any long straggling shoots in the autumn. We should not, however, think of using the shears later than the time here stated. If they are sheared up in the same way in the autumn, for the purpose of making them more trim-looking, we should not expect many flowers next year, as the points of the shoots which would produce the flowers would be sheared off.

As regards soil, these Roses are not very particular, provided it is fairly rich and deep. In gardens where the staple is heavy and the lower stratum inclining to clay, it is desirable to give them something of a lighter texture to start in, and also to provide ample drainage. It is always desirable to give the roots as much room as possible, for the more root room they have the longer they will remain in a satisfactory condition. As to the time of planting, if the plants can be had in pots they may be put out at any time during the summer; but as a rule the early part of April is a good time to get them planted.—*Field.*

Fortune's Yellow Rose in Scotland.—Fortune's Yellow Rose is flowering on the terrace wall at Gladswood this season in great variety. Gladswood stands 450 feet above the sea, and 218 feet above the river Tweed. It is very rarely that it flowers, except in the South of France.—MRS. M., *Melrose.* *** *Fortune's Yellow Rose has not been uncommon this year in warm gardens in this country; on warm soils, at least, it flowers in great profusion.*—ED.

White Japan Rose.—Mr. Stevens, of Byfleet, reminds us of the great beauty and value of this Rose by sending us a good specimen of it. Nowadays, when people are beginning to think of the beauty of single Roses, it is well we have a lovely kind not difficult to procure, perfectly hardy, long flowering, beautiful in leaf, fruit, and bloom, and deliciously scented. It is easily increased from suckers, and is a fine plant for a bold rock-garden, or indeed for any position. It seems to grow in all soils. The Latin name is Rosa rugosa alba, and we have no doubt that most nurserymen have it in stock, or can get it.

13834.—**Keeping Roses clean in greenhouse.**—The insecticide used was probably too weak, or the fly would have been killed, although several applications are generally necessary before it can be exterminated. Soft soap, at the rate of 2 ounces to the gallon, seldom fails to clear it off; but we much prefer Tobacco powder, because it is not only safe but deadly. All you have to do is to well dust the infested parts with it and leave it on for a week, and the fly will either die or desert the plants. Two dustings at an interval of a fortnight will exterminate this pest.—J. C. B.

INDOOR PLANTS.

THE CHRYSANTHEMUM.

THE Chrysanthemum has of late years been brought to a high pitch of cultivation, and "Chrysanthemum-ing" is one of the chief amusements of those who represent wealth, beauty, and fashion in London during the time they are in bloom in the Temple Gardens. Its culture is very easy, and cuttings may be struck almost up to the time of its flowering, and when the collection is a choice one pot culture is the best to adopt, as by that means a splendid show of Chrysanthemums can be kept up from October to Christmas. Few things root more certainly than the Chrysanthemum, and if rooted pieces of the old plant are taken instead of cuttings, propagation will go on without trouble. Never allow them either to be pot-bound or to suffer from drought—constant attention to watering is very necessary. The blooming pots should be 10 inches deep and 8 inches in diameter at the top and between the thumb-pots, and then there should be three shiftings. They should be stood out-of-doors in the shade until the flower buds are formed and ready to open, when they should be moved into a cold house or protected from the frost in some way or other; the best compost consists of two parts light loam to one part of well composed dung freely mixed with sand. The Chrysanthemum, like other plants producing terminal flowers, has a tendency to send up one leading stem, which, if not interfered with, would produce a bunch of flowers on the top. This is counteracted by stopping the terminal shoot, which causes a shrubby growth and many more flowers. If, however, grown for exhibition purposes they should not be stopped, as the flowers will be finer. They have been divided into three varieties—large, Pompone, and Anemone-flowered. Among the large-flowered varieties are: Alfred Salter, light pink; Adrianne, cream; Bacchus, fawn, incurved; Dido, white, incurved; Etoile Polaire, yellow; Excelsior, crimson; Golden Queen of England, canary; Guelder Rose, white; King, peach; La Reine d'Or, yellow; Vesta, ivory white; Vulcan, crimson. Of the Pompones, the following are good varieties: Adonis, rose and white; Apollo, chestnut yellow; Diana, white; Ida, yellow; Nemesis, orange; Sacramento, yellow; Little Pet, blush white; Stella, pink. The large, Anemone-flowered varieties are not equal to the others in beauty. They consist of a centre of close petals like an Anemone, and a fringe of loose petals for an outer edging. Among the best are the following: Lady Margaret, white; Margaret of Norway, red-gold; Fleur de Marie, large white; Juno, white; George Sands, red with gold centre.

Leatherhead. C. F. DAVIS.

Bouvardias in summer.—Bouvardias are most valued in winter, but, if desired, they can be had in just as good condition in summer, when I find them to be very useful in a cut state, and also as decorative plants in pots. The double-flowered kinds surpass the single sorts as regards endurance. Our plants blooming now were struck last summer. They were then potted off into small pots and good sturdy growth encouraged. They were stopped once or twice before winter, which they passed on a light shelf in a warm greenhouse. In February we potted them in 5-inch and 6-inch pots. They were then kept in gentle heat for a little time to encourage free growth, and they are now good bushy plants, full of flowers. Besides those grown for flowering now, we had a quantity of old plants that had flowered early, and that were kept for propagating from. These yielded a crop of cuttings, after which they made plenty of young shoots, and were gradually hardened off. About a month ago we planted them out in a warm sheltered border prepared for their reception by a liberal dressing of manure and decayed leaf-mould. Being kept well supplied with water, they soon became established, and are already showing large numbers of bloom-buds, of which a succession will be kept up till frost sets in. In this way each summer we gather great quantities of bloom from a small bed of these plants. Cuttings sometimes fail to strike after the season is as far advanced as this, though in early spring they struck root readily. This is owing to the shoots becoming too firm in texture, and, therefore, instead of taking cuttings from the strong vigorous shoots that are produced out-of-doors or in a cool house, a few plants should be placed for a little time in a warmer structure, when the slightly attenuated growth produced under such circumstances will strike readily. The cuttings must be kept in a close case, and prevented as much as possible from flagging till rooted. The sorts which we grow are B. jasminoides, pure white and fragrant; elegans, scarlet, a good free growing kind, and one of the hardest; flavescens, yellowish; Dazzler, bright cerise; Humboldti corymbiflora, long tubed, pure white, and highly fragrant; The Bride, when first expanded nearly white, but afterwards changing to flesh colour; Queen of Roses, bright pink, sturdy in habit; Vreelandi, white; longiflora flammea, reddish rose, and very free flowering; rosea oculata, a very floriferous pale flesh-coloured kind. The double-flowered varieties, Alfred Neuner, white, and President Garfield, pink, should be added to the list.—H. P.

FORCING SPIRÆA JAPONICA.

OF flowering plants few indeed are more useful than this. We force it into bloom in January, and have a constant succession of it until the middle of July. For cutting for vase decoration we find nothing more useful, especially in early spring, the flower-heads being graceful in form and of that pure white which harmonises so well with all other shades of colour. There is nothing flimsy about the blooms; they invariably open well, remain a long time in good condition, and are not easily injured by transit in a cut state. This Spiræa is suitable for either the greenhouse or the herbaceous border. Our early plants of it adorn both. As to its culture no plant can be more easily grown; it is perfectly hardy, it will succeed exposed to the sun from morning till night, or it will thrive and bloom profusely without being exposed to a single ray of sunshine. Our latest plants are growing along the bottom of a north wall, where they are constantly in the shade, but these shade-grown plants would never force into flower early in spring. To accomplish this it is of the greatest importance that the plants be grown strongly in the early part of the season, and that they have their crowns thoroughly matured before the winter sets in. Large plants in 10-inch and 12-inch pots are most useful for late spring and Easter decoration, but for January flowering small well-developed crowns, in 6-inch and 7-inch pots, are best.

When plants of this Spiræa become too large, a number of them should be divided and potted into small pots early in the season, or after they have done blooming. These should have a good rich sandy soil in which to grow. Until the end of May they should be afforded the protection of a frame; after that, until the autumn, they should occupy a warm, sunny position, and if the pots can be plunged, so much the better. This will keep the roots cool, which is an advantage, as they cannot bear anything like roasting or dryness at the root in summer, and one of the main points in their culture then is to keep them constantly well supplied with water. The

earliest developed and best matured crowns should always be used for forcing first; weak ones or those only recently done flowering would never be satisfactory if forced in December to bloom in January. When plants have been forced year after year for a few seasons, thus impairing their constitutions to some extent, it is well to give them a rest and turn them out into the borders, where they should be allowed to go on in their own way for a year or two before being repotted. Plants which bloomed in January last for the first time may be allowed to bloom again at the same time, or thereabouts, the following year, but they should not be forced more than this for some time afterwards. They will, however, bloom freely later in spring, or they may be turned out and rested in the open borders. It is no hard matter to force them into flower from the new year onwards. A temperature of 70 degs. and plenty of moisture will do it, and a succession of flowers may be kept up by introducing a few plants into heat every two or three weeks. In April and May plants in pots will come into flower without any artificial heat if they have the protection of a glass light, then those growing in ordinary borders succeed them, and finally those behind the north wall finish up a seven months' supply of Spiræa bloom. J. R. M.

13728.—**Rating greenhouse.**—If it adds to the letting value of the premises the corporation can and will make you pay rates for it, but you had better consult a solicitor.—*E.* HOBDAY.

AN EDIBLE-FRUITED TROPICAL ARUM.

IT would be difficult to name a more noble plant than Monstera deliciosa, or Tornelia fragrans as some call it, for the stove, greenhouse, or the sub-tropical garden in summer. Apart from its stately aspect, it bears large succulent fruits possessing a luscious Pine-apple flavour. The reason why this fruit is not more appreciated is that it is invested in an outer layer, consisting of short, stiff hairs, similar to those found in Rose hips, but this can be wholly removed if the fruit is perfectly ripe, leaving the succulent part of the fruit entire. In some large gardens it is, like the Banana, grown specially for its fruits, and is considered a choice addition to the dessert. Though the gigantic stature of this noble Aroid, such as it assumes in its native habitat (the forests of Mexico), can only be seen in spacious hothouses, as, for example, in those at Kew, which are devoted exclusively to tropical Aroids, still it may be grown to perfection in small houses provided there is sufficient heat and moisture. It is never, however, seen to thorough advantage unless it is so placed that the roots have free access to water in a similar manner to that suggested by the annexed engraving, which represents a fully developed specimen bearing fruits. It delights in places where it can cling to a moist wall, or twine its pliant branches round the stem of a tree for support, and where also its thong-like roots can dip and ramify in a water tank, which is usually placed in all tropical hothouses.

Edible-fruited Tropical Arum (Monstera deliciosa).

When grown in these hot, moist stoves it develops rapidly, and its singular perforated foliage, together with the quaint forms which it often assumes, strikes the uninitiated with wonder, and when studded with its cone-like fruits it certainly presents a highly ornamental appearance. High temperature and dense shade are, however, by no means necessary for its welfare; it enjoys a light, somewhat airy position, and when so placed it assumes a more shrubby, compact, short-jointed habit, and may be utilised for the decoration of apartments, corridors, &c. It should always find a place in sub-tropical arrangements, as it does well in sheltered nooks or similar situations throughout the summer. Although the Monstera will thrive in a low temperature, ft will not develop its true character as a fruit-bearing plant unless a brisk growing heat be maintained during the spring and early summer months. The elements of success in order to obtain fruits are heat, light, and moisture, and, provided these conditions be one and all supplied, success will be ensured. Any form of training may be adopted which will bring the plant well up towards the glass. It may be made to cover a portion or the whole of the back wall trellis, or, what is preferable, it may be trained round forked tree stumps, a system which suits it admirably. It may be grown in a tub, but preference should be given to planting it out in a good body of fibrous peat and loam in equal proportions, which should rest upon a good drainage of brick rubble. Thus placed, unlimited supplies of water may be given in hot weather, and the fruit will be fine in quality and abundant. J. T.

*** *Its interest to the amateur consists in this, that it may be grown in a warm greenhouse. It is growing freely in the large conservatory in Regent's Park, and thrives well in ordinary greenhouse temperature.*—ED.

13893.—**Market Hydrangeas.**—In order to grow Hydrangeas in 6-inch pots with single stems and large heads of bloom, as seen in Covent Garden, the cuttings must be taken in August, as the wood approaches maturity. Take the terminal shoots, choosing only those from strong branches, leaving three joints to each one. They are inserted firmly in sandy loam, and kept in a cool, shady frame till rooted, and are then exposed to the full sun. They are wintered in a frame or in a cool house, and are potted off singly into small pots in March, in good loam, with some rotten manure in it; and when the pots get full of roots they are shifted into 6-inch pots. The general treatment consists in attending carefully to watering, giving plenty of air in fine weather, and syringing on sunny days in the afternoon. As soon as the pots become filled with roots give liquid manure at every alternate watering. If they are wanted for early bloom they must have warmth in spring.—J. C. B.

13781.—**Increasing the Genista.**—As I have never succeeded in getting cuttings to grow, I allowed my Genista fragrans to ripen seed two years ago; last year the pods were opened and the seed sown in pots. I have seven sturdy plants. The Cape Broom comes true from seed. I expect these will be equally so—the foliage is fine and of good colour. Perhaps I should remark that the plant was outside, fully exposed to air and sunshine, during the time the seed-pods were forming and ripening.—AN ENGLISHWOMAN.

Plants bleeding.—Many plants will bleed when wounded; indeed, most will bleed, if wounded when in the full tide of growth, for a time till the wound begins to heal. When the sad is in full flow upwards in spring, if the tree be wounded, some bleeding, more or less, will ensue. In the case of the Grape vine the bleeding will continue unless stopped by some artificial means till the leaves begin to unfold. The Fig will bleed copiously when the growth is pinched in summer. Though the sap may consist chiefly of water, it is hard to believe that excessive bleeding does not cause injury. Various substances have been recommended for dressing wounds to stop bleeding in vines, &c., such as searing with a hot iron; sealing up the wound with hot wax; thrusting the wounded cane into a raw Potato; and dressing the wound with painters' knotting. The latter plan is a good one if done at the time the branch is severed before the sap begins to exude in any quantity.—E. HOBDAY.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—III.

Sowing seeds.—Every window gardener should try to raise some plants from seed. There is a greater charm in having brought the plants you growinto life, than in taking to them only when they have attained a certain age. Whoever can raise a few Primulas, Cinerarias, Lobelias, and grow them on into good plants in a window, will have something to be proud of, and I have known some really successful attempts in this way. I have seen Primulas grown entirely in windows quite as good as the generality of those cultivated by florists, and they would not have disgraced Covent Garden Market. The principal point to be borne in mind in raising plants from seed is that the soil must be kept in a uniform state of moisture until the seed germinates. An excellent plan is to put the pot containing the seeds in another two sizes larger, stuffing the space between with Moss and putting a pane of glass on the top. In this way, by keeping the Moss damp, the soil remains moist, if the surface is occasionally sprinkled, using always tepid water. If the pot containing the soil is unprotected the ventilation given to a room soon dries it through, and necessitates constant watchfulness, and the use of too much water to keep it from parching. Those who prefer to do so may have neat boxes made to fit into the window, but the pots will do very well. A fair amount of drainage should be given, and the soil should be fine, porous, and sweet. All soil used for seed sowing should be exposed to the weather for some months, as then with careful watering it will remain in that free, sweet condition which is so congenial to the young plants when in their primary stages of growth. Nothing is more fatal to the germination of seeds than a soil the particles of which adhere to each other, and which bakes or becomes hard on the surface, and for this reason the main ingredient of a compost employed for such a purpose should be leaf-soil, with a little loam and plenty of white sand added. Fill the pots to within half-an-inch of the rim, make it moderately firm by tapping it on the bench, and with a smooth circular piece of wood make a firm perfectly even surface; then water moderately, so that the whole of the soil becomes moistened through; allow the superfluous water to drain away; sow the seeds rather thinly, and cover with very fine sandy soil. Then, if you dispose of the pot as above recommended, lay a piece of paper on it, and the pane of glass on that, and the surface soil will be screened from the action of the air, so that it can scarcely dry before the seeds germinate. When the young plants appear, tilt the glass a little on one side, so as to admit some air, and as they advance in growth gradually remove it. When they have about four leaves they may be pricked out, eight or so together, in 4½-inch pots, and when they touch they may go into small pots.

Striking cuttings.—A great many of the free-growing soft-wooded plants may be propagated by means of cuttings, and as plants are always liable to outgrow their quarters it is well to be able to strike a cutting or two from time to time. Geraniums are easily struck at any time during spring and summer, a good way being to take off the terminal shoots about the beginning of April, as then the young plants have time to grow into nice little specimens by autumn, and the old ones break again and flower well during the summer. Plants which have bloomed through the summer in windows will often make long, naked shoots; these make the best of cuttings if taken off with about three joints. They have sufficient maturity and hardness of tissue to enable them to withstand damp, and are sure to strike in an ordinary living room if carefully watered. Put the cuttings singly in small pots in light very sandy soil, and water only now and then when quite dry. Fuchsias are best struck from the young growing wood, in May or June, before they come into bloom; if the wood becomes at all hard they are a long time in making roots. The same rule applies to Paris Daisies, Lantanas, Petunias, Verbenas, and plants of a like nature; it must always be the growing tips of the shoots that are selected for cuttings. A simple way of striking them is to fill a 4½-inch or 6-inch pot with fine light sandy soil to within 2 inches of the rim and surface with half-an-inch of white sand. Water moderately after inserting them, and cover with a frame of glass. Every morning take the glass off for an hour, but keep quite close in the day-time, and shade from sun. When, by beginning to grow, the cuttings show signs of having made roots, gradually increase the time of exposure, leave on a little air in the day-time, and remove the cover at night. Another way is to fill the pots full of soil to within an inch of the rim, filling up level with sand and covering the cuttings with a bell-glass which is manufactured especially for this purpose, and which, fitting down tightly on the sand, quite guarantees the cuttings against atmospheric changes. Common tumblers will do very well if bell-glasses cannot be had. Take care that the sand never becomes dry, and water always in the morning, so that no moisture remains on the foliage through the night, as this will cause the cuttings to damp off. In a general way but little water will be needed, especially if the pot is placed in another, as recommended in seed sowing, and experienced propagators seldom water cuttings under bell-glasses overhead, but merely pour some water between the glass and the pot, and the interior is thus kept in an equable state of moisture. BYFLEET.

A WINDOW CONSERVATORY.

GARDENING is the most democratic of pleasures. It shows no undue favour to the great and the wealthy, but rather reserves its brightest smiles for the humble and the poor. The pale-faced seamstress feels, be sure, a keener delight in the long green box of Mignonette standing in her garret's narrow window-sill, than is possible to the lordly owner of gorgeous conservatories. And reason good, for the one is the offspring of its mistress's love; its wreaths of bright green leaves, its array of perfumed flower-spikes, are the result of her constant daily care. It is she who sowed the penny packet of seed so heedfully, who watered it so regularly, who thinned the seedlings with such gentle hand, and saw them gradually "increase in stature," with a sweet hope that ere long becomes a yet sweeter satisfaction. But the other, the mile-long "stoves" of Orchids and Palms, tended by an army of skilled hirelings, what are they to the millionaire? He knows nothing of their wants and ways; he has no personal interest in them; they are no more to him than his upholstery and his plate; he pays for them, and that is all. Certainly, of all forms of horticulture, window-gardening is the most widely enjoyed. There are some, far too many, denizens of our crowded towns who cannot command even a few feet of back-yard; but a window is available to all. And good use do thousands, especially of the home-keeping sex, make of it. I never see a trim, healthy, flourishing window-garden, full of brightness and beauty, but I think it is a type of the home within, and generally, I believe, it is so. If cleanliness, neatness, forethought, gentleness, love of home, order, and beauty, are virtues, window-gardening promotes them very largely, and accordingly ought to be encouraged by philanthropists, who would find it, I believe, more effectual in "elevating the masses" than some of the means they most rely on, besides giving the most soothing of antidotes to the eating cares of life. My own efforts in window gardening have been on a more than usually extensive scale, and I feel inclined to occupy as much space as the editor will allow me in "'spounding and 'splaining" the same.

My window does not appertain to a room, but to a staircase, which on the whole is advantageous, especially in the temperature being more equable, and the plants out of the way of dust and other domestic disturbances. On the other hand, subjects requiring warmth in winter cannot get it, owing to our benighted English system of unheated passages. There is another thing which differentiates—as the philosophers say—my window from most others, which is that it is arranged for inside effect, for folks to enjoy as they go up and down the stairs, whereas the usual plan is to produce a tier of flower and foliage for the benefit of the passers-by, while the grower, his sisters, cousins, and his aunts, behind the scenes, are forced to be content with naked stems, under-sides of leaves, pots, saucers, and shelves. I am not philanthropic enough for that, though to be sure it looks nice from outside, considered as an adjunct of clean curtains and neat blinds. Then, again, mine should rather be called a window conservatory than garden, for the plants are not so much grown as shown there They are grown elsewhere, in a pit, for instance, and only brought to the "conservatory" when approaching their most ornamental state. This system enables me to grow plants in much greater perfection and variety than would be otherwise possible.

The architecture of the window is as follows: Fixed to the sill outside is a wooden tray, 4 inches deep, projecting 20 inches, and the same width as the sill itself. Inside, a shelf runs along the bottom, and up each side are three brackets in a triangle, the centre one being nearer the glass, the upper and lower farther back, in the angle of the wall. The tray will accommodate thirty pots, little and big; and the entire display consists of about forty-five subjects, including a hanging basket or pot of some trailer, of which graceful class there is no better than Ivy-leaved Geranium Konig Albert, with its mauve flowers so beautiful and distinct in June and July, and its glossy leaves all the year round. In fact, the Geraniums, especially the zonal section, make the very best of window plants for the warm season, as everybody knows; and the shelf afore-mentioned blazes with them for many months. They are treated thus: After they have done flowering I cut them down to within an inch or so of this year's growth, and stand them out-of-doors on their sides (to keep off rain), giving them very little water; by which I mean that I water them seldom—say once a week—but when I do of course I soak them, for "a little water is a dangerous thing; plants should drink deep, or taste not the what's-his-name spring," as Pope, or somebody else, beautifully observes. This treatment produces a hard, woody growth, and enables the Geraniums to encounter with the minimum of suffering the damp and cold of their winter purgatory, which is passed in some light room or pit, of which more in due season. In April they are repotted in a mixture of three-parts turfy loam, the remaining part being old manure and fresh-sifted ashes; and, as this compost is suitable for nine-tenths of the plants with which we have to do, I will say a word or two more about it. The loam is made by laying up turves to rot, but may be obtained in small quantities from any nurseryman. The manure I obtain by storing up in some out-of-the-way corner a few bucketfuls of horse-droppings. It will take half a year at least before it is fit for use. Ashes I prefer to sand for nearly all purposes for which the latter is generally employed; besides being free from any weed or insect germs, it contains a proportion of soot and other manurial elements. Plants root into it eagerly. My favourite sorts of zonal Geraniums are:—Single: Henry Jacoby, very deep crimson; Jealousy, salmon yellow; Constance Bantard, blush; Lady Sheffield, lilac; Eureka, pure white; New Life, scarlet and white, striped; De Lesseps, scarlet, white eye. Double: Madame Baltet, white; Asa Gray, salmon; Charles Darwin, purple. If all seem to be coming into flower at once, pinch off the buds of some, and they will make a succession. The two ends of the shelf are too shady for Geraniums, so here we place some Ferns: Pteris serrulata, P. cretica, P. c. albo-lineata, Asplenium Adiantum nigrum, Scolopendrium vulgare, and its varieties, will be found among the most suitable. These Ferns, too, make good tenants for the lower brackets, which, as will have been seen, are some distance from the light, which is very trying to all plants, and death to some; consequently, it is advisable to provide a duplicate set, and let them relieve guard, week and week about, giving those off duty an airy but sheltered position out-of-doors in summer, under glass in winter. This, however, will not apply to the upper brackets, where are grown, and not merely shown, a couple of the small wood Ivy (Hedera Helix), which will flourish splendidly under these, or even more, adverse conditions, and be a thing of beauty from January to December. All honour to the Ivy, says the overworked gardener.

There is a great choice of very charming things of more or less drooping habit for the

centre brackets, any or all of which may be relied on to gladden the amateur's heart. Among the best are Campanula muralis, flowers mauve and white, quite hardy, likes moisture and a little shade; Fuchsia procumbens, quaint little blooms, pretty habit, but leafless in winter; Lobelias, blue, also white, the popular bedder, very floriferous; Sedum carneum variegatum, creamy variegated foliage, pink stems, very distinct, must have as much sunshine as possible, and little or no water in winter; Creeping Toadflax or Kenilworth Ivy, a native wall plant with dainty, slender growths, beautiful always, and multitudes of tiny "dognose" blooms for many months. I need hardly mention Mother of Thousands and Creeping Jenny, for who is there that does not know them? For the summer show in the tray outside I depend on Geraniums again, but for foliage only this time, requisitioning the most distinct of the variegated sorts so fashionable for bedding, which use does them but poor justice, I think, as they are apt to grow coarse in the open ground; whereas, in a sunny window (I should mention that mine has a due south aspect) they attain a vividness of contrasting colour that, in my humble experience, is quite without parallel. I keep the bloom picked off, as it is very inferior compared with the "crack" sorts inside, is monotonously red, and detracts from the appearance of the leafage, which it also robs. The first week in October they are removed to their winter quarters, having had little or no artificial watering for some weeks previous, and their place is taken by

A collection of alpine plants: Sedum album, glaucum, Lydium, acre elegans; Saxifraga Aizoon, longifolia, Andrewsi, Geum elegans, densa, cæspitosa, palmata, and Wallacei; Sempervivum tectorum, speciosum, and arachnoideum. Variegated Thyme is also a pretty winter plant, and so are the variegated Arabises, both the golden (A. lucida var.) and the white (A. albida var.). Saxifraga oppositifolia must not be forgotten, for in addition to the beauty of its minute foliage, it is covered in early spring with brilliant purple bloom. These alpines will refresh the eye, even in the most horrid weather, with a quiet mosaic of greens, greys, creams, browns, whites, and yellows. Small pieces, potted in early spring in 3-inch pots of gritty soil, plunged in an open place, regularly watered, and shifted into larger pots as they grow, will make presentable specimens by the time they are wanted. Meanwhile, the inside Geraniums "one by one fade off the ethereal plain," and are replaced by a selection from the retiring outsiders, reinforced by that prince of window plants, the Scarborough Lily, flanked by two of the white-leaved Centaurea ragusina. These can be conveniently grown during the summer in the tray, among the outside Geraniums, to which the hoary foliage of the one, and the long, arching, deep green leaves of the other will afford a happy relief. November and December are not allowed to go by without a Chrysanthemum or two being "put on the shelf," in a sense the reverse of the ordinary meaning of the phrase. Struck in April, potted in rich soil, and plunged in the full sun, pinched twice, at proper intervals, and afforded plenty of water, with liquid manure when the pots are full of roots, they will make fine bushes covered with flower. There are no better sorts for our purpose than Elaine (white), Julie Lagravère (deep crimson), and Mrs. Dixon (golden yellow).

During the dreary days of midwinter there will be but few flowers, but various-tinted foliage will do much to console us for their absence. Soon, however, a selection of spring bulbs will give a succession of the gayest blooms to set off, and be set off by, the Centaureas and Ferns. Snowdrops, Crocuses, Scillas, Daffodils, Hyacinths, Tulips, and Narcissus poeticus will flower in the order named from the middle of January to the end of May, and then the Geraniums will be ready again. The bulbs are potted early in October; 5-inch pots are the most convenient, and will take half-a-dozen Snowdrops or Crocuses, three Daffodils or Tulips, and a single Hyacinth in each. After potting they are stood in a sheltered spot out-of-doors, and covered with several inches of ashes for six weeks or so, when they are transferred to the pit or spare window, and kept carefully watered till ready for exhibition. Thus my window conservatory is provided for during the circle of the seasons. I have only to add that I ventilate by the upper sash, keep the glass well cleaned—especially in winter, when every ray of light is precious—and syringe or sponge all inside plants once a week, when the whole display is rearranged, to counteract the effect of the side light.

Southampton. J. F. R.

13839.—**Varieties of Musk.**—There are Mimulus moschatus grandiflorus, M. moschatus rubrum, and, newer still, Cloth of Gold. I purchased a plant of grandiflorus last year, and it has succeeded admirably as a window plant. I can recommend it to "A. G. R. L."; it is supplied by firms who advertise in GARDENING. Flanked by a pair of Eucalypti (globulus and amygdalina) this Musk would be charming in a sick room.—AN ENGLISHWOMAN.

FRUIT.

Insects on fruit trees.—Some time between now and next spring every owner of a Plum orchard or Apricot tree should insert in the trunk, or, if the tree is large, into each main limb, an iron plug to strike on with a heavy hammer for jarring down the curculios. The plugs may be easily and cheaply made by a blacksmith, by chopping up a round iron rod, say three-eighths of an inch diameter and 3 inches long; and then set in holes bored in the tree an inch or two deep. A blow on one of these plugs will bring down every curculio upon the sheets to be spread under the trees.—*Californian Patron.*

Frequent Orchard pruning.—After trying all sorts of plans, I am convinced that there is nothing equal to the little-and-often system of pruning, or rather pinching. The soft young shoots can be readily removed by the finger and thumb, which is the easiest way. Anyone who is really interested in his garden will be likely to pass among his trees and shrubs quite often, and if he sees any want or defect he will at once supply or remove it. With this view a well-known cultivator recently remarked that his season for pruning is all the season through.—C. P.

13845.—**Treatment of Black Hamburgh Grapes when colouring.**—No absolute rule can be laid down for the admission of air when the berries are colouring; all depends on the weather. I have known the nights so cold in August that the avoidance of a chill was only possible by closing early and storing up as much of the sun heat as possible by keeping the ventilators closed; and I have known them to be so warm as to allow of keeping on air back and front all night. It is just as wrong to admit air through the night in cold weather as to keep the house closed when the weather is warm. I am referring, of course, to houses where no fire is made during the growing time. Many Grape growers make a practice of firing a little at night during the colouring time if the nature of the weather demands this attention, thereby ensuring a certain temperature, and this is the proper way to secure first-rate Grapes. At the same time very good fruit can be grown without fire if the sun heat is economised in the way mentioned. Indeed, if this is not done, and no artificial heat is employed, there is a danger in some years of Grapes not ripening.—J. C., *Byfleet.*

THE KITCHEN GARDEN.

13886.—**Nitrate of soda and Cucumbers.**—I do not use nitrate of soda, neither do I know its qualities. I always use sheep manure. After I have made my bed, which is composed of stable manure in a six-light frame divided into two, I pinch out the leader, pegging the shoots down in all directions and watering in the afternoon, well ventilating according to weather, and using the manure water about a pint to each plant, rather strong. I fertilise all the blossoms. Since May 31st I have cut 58 Cucumbers averaging 1½ feet long. I have three plants (Telegraphs and Clusters) in each division.—W. C. C., *Worcestershire.*

13876.—**Plantains on lawns.**—"J. C. C." is, I think, mistaken in recommending (p. 244) citric acid to destroy Plantain; one of the strong mineral acids—nitric, hydrochloric, or sulphuric—is probably intended. Citric acid is a crystalline, not liquid acid, and when dissolved in water would form a solution chemically equivalent to lemon juice.—E. W. C., *Chemist.*

THE VILLA GARDEN.

(Continued from page 251.)

Chicory.

THIS makes a useful salad plant in winter when forced. In good soil it produces a root as large as a medium-sized Carrot, and these roots may be either stored away like Carrots or be left in the ground till required for forcing. Sow in May in drills 12 inches apart, and thin out to 8 inches in the rows when large enough to single. It is not particular as to soil, though, of course, the finest roots are produced on the best soil. Keep down weeds in summer, and in autumn, when the roots are full grown, some may be lifted and placed in heat. The roots of Chicory are mostly forced in the Mushroom house, as light must be excluded, so that the growth which shoots from the crown of the roots as soon as the heat is applied may be blanched and lose some of its bitterness. Where there is a good supply of Endive, Chicory is not much called for, but it is always advisable to grow a few roots, as it makes a nice change in winter and will not disappoint no matter what the weather may be. It will force in any dark place where a temperature of 60 degs. can be insured. It may be planted in boxes and shut up in them, and placed under the stage in a warm greenhouse.

Dandelion.

This, like all other plants, improves under cultivation. The seeds are offered in several of the seedsmen's catalogues that have come through my hands, and those who like may gather seeds from strong plants growing in the fields or by the wayside, or roots may be collected and planted in spring to get strong; or large roots may be sought for in autumn to force at once in any warm, dark place. Seeds should be sown thinly, in drills 8 inches apart in March. When the young plants appear, thin to 6 inches apart, and pick off all flowers. If this is not done the Dandelions will become a nuisance in the garden from the scattered seeds. In autumn the roots can be lifted and potted, or planted in a warm, dark place, such as the Mushroom house. The Dandelion is a valuable salad plant, that would be better appreciated if not so common, and from a medicinal point of view it is valuable. The late supply may be blanched in the open ground by covering the bed with sifted ashes or old tan.

Lamb's Lettuce, or Corn Salad.

Though not much grown in this country, this makes a useful addition to salad plants, especially in winter and spring. In summer, when there are plenty of Lettuces, it would not be so much called for. It should be sown in August, September, and October for winter and spring use, and again in March and April for summer. Sow in beds broadcast, lightly raked in. Unless sown thickly not much thinning will be required, as the largest plants may be cut first and the smaller left to grow on.

Radishes.

If desired, Radishes may be had pretty well all the year round. The first sowing should be made in a hotbed in January. Where much vegetable forcing is done the crop is frequently worked in with other things, such as Horn Carrots, Potatoes, Lettuces, &c. The Radishes germinate and turn in quickly, are cleared off, and the whole space is left for the other crops just at the time they need it. At the time this sowing is made under glass, a bed is sown in the open air on the early border and covered with a sprinkling of straw. This covering keeps off birds, shelters from cold, and forwards the germination of the seeds by keeping the soil even in temperature and moisture. As soon as the plants appear the straw must be taken off a few hours every day and replaced again at night until the plants are hardened enough to bear full exposure. If a regular succession of Radishes is required, make fortnightly sowings from March till the end of September. The early sowings should be Wood's frame, but from April through the summer and autumn sow French breakfast and the red and white Turnip Radish. The

black Spanish is sometimes sown for winter because of its hardiness. For summer use sow on cool, shady borders, and make the soil rich. We have some beds of rich loam and leaf-mould that we use in spring to prick bedding and other plants on, and after these are cleared the beds come in for Radishes and other things which may require rather better treatment than can be given in the ordinary soil of the gardens, and unless Radishes are grown quickly, and are crisp and cool, they are uneatable and useless. It is better to sow in drills, as this permits of frequent surface-stirring, and also leaves space between the rows for a mulch of short manure, which is a great advantage, especially in summer. When the plants come up too thickly, some of the smallest should be thinned out. When young every part of the Radish may be used in the salad bowl, and the later plants thinned out where too thick may be washed and used in the mixed salad. In dry weather Radishes must have water, and it should always be given in the evening. To insure quick germination in hot weather, water the soil thoroughly the day before the seeds are sown, or if sown in drills soak the drills with liquid manure just before sowing, and cover in with light soil. Cover the beds with mats till the seeds germinate, or shade in some way.

Watercress.

There are several ways of securing a supply of this wholesome plant. In winter the cuttings may be planted in pans of light, rich soil in the greenhouse. The pots or pans should be plunged in Moss, which should be kept damp. A frame which can be kept close if desired will do for its culture in spring and summer, and it may be planted in the open air. In gardens where the water is laid on it will be a very easy matter to make an artificial hollow, and plant it with cuttings of Watercress, 3 inches or so apart, and turn the water on occasionally as required. After each cutting a little top-dressing of light, rich soil will be beneficial. Where cuttings cannot be obtained the plants may be raised from seeds, sown in pots of light soil, and placed in a frame, and kept close till germination takes place, when, as soon as large enough to handle, they should be dealt with in the same way as cuttings are.

Rampion.

This plant has a white root like a Radish, which may either be eaten as a Radish or be sliced up in the mixed salad. Sow the seeds in May and June. The seeds are like fine dust, and the beds must be carefully prepared and thoroughly pulverised. If sown in drills draw them very shallow, about 5 or 6 inches apart, not more, and cover lightly with very fine soil. If the weather should be dry, water the drills before sowing the seeds. When the plants come up thin out to 6 inches apart. Water when necessary, and keep clean. It is as well to make two or three sowings during May, June, and July. The first will come into use in autumn, and the others in winter. The roots may be taken up and stored like Turnips in winter, or be covered with dry leaves or Ferns, to keep out frost.

Various Cresses.

The plain-leaved Cress is the one most commonly grown, and it may be sown any time. In winter make weekly sowings. From the first of April to the end of October sow in the open air. As the leaves are cut in a young state the seeds should be sown thickly. Some cover the seeds lightly with fine sandy soil, but, if kept moist, the seeds will grow on the surface without any covering. I have seen them grown on moist flannel wrapped round a bottle of warm water. The American Cress, which is used as a substitute for Watercress, should be sown in April and August, and the Golden or Australian Cress in March and April.

Mustard.

This is a most useful salad plant, and as it can only be used in a young state it should be sown weekly where a regular supply is required. It should be sown thickly like Cress, and the seeds need not be covered. From November to April sow under glass in heat; and from April to November sow in the open air. The first batches in spring, and the last in autumn, may be sown under handlights. E. Hobday.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XIII.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Salads.

Every country has its own peculiar method of preparing a salad, and naturally each one thinks its own the best. In order to procure a well-flavoured and good salad a great deal of consideration and discretion is required. There is always a certain amount of mystery appertaining to the preparation of every home salad-dressing. A salad must always be composed of three things: Firstly, the vegetables, or green meat; secondly, the sauce, or dressing; and thirdly, the trimmings, or garniture. The spring and summer salad is usually composed of raw or uncooked vegetables, such as Lettuce, Endive, Watercress, Tarragon, Cress, Chervil, Cucumber, Onions, Radishes, Chives, Burnet, Garlic, Beetroot, &c.; all or any of which may be advantageously combined in the salad when once the flavour is familiar, and you understand how to use them. The first necessity of a salad is that the green meat shall be freshly gathered and free from water, and the sauce quite newly made. When Lettuces are obliged to be kept treat them as you would a flower; put only the stalk into water, and keep them in a dark and cool place. This same rule will apply to all green meat. Never wash salad until just before you are ready to use it, and do not let a steel knife come in contact with it more than is absolutely necessary. To cut a salad into fine shreds immediately destroys the freshness of it. Endive is less likely to be spoiled by cutting than Lettuce, but even with this vegetable it is not desirable to use a steel knife too freely. Lettuces should be cut in quarters, and the leaves torn asunder with the fingers, and then rinsed well in fresh cold water. No salt should be added to the water when washing salad, as it has a tendency to take away the crispness which is most desirable. When well washed gently wipe with a soft cloth, or swing in a wicker or wire basket sold for the purpose; but, if more convenient, shake in several napkins, substituting a dry one for each as it is wetted until every leaf is perfectly dry. It is then ready for the salad bowl. Small Cabbage Lettuces are the best for salad making. The fine Mustard and Cress should be avoided as much as possible, as they make a salad look ragged and untidy. The leaves only of Watercress, Tarragon, Chervil, and Burnet should be used, and not the stalks, and they should be well washed and dried. As a rule, Onions and Chives should be very finely minced, but there are exceptions in a few salads where slices of Onions are required. Most of the flavouring herbs should be chopped very finely, and a small pinch of either will suffice for an ordinary salad; the proportions of every ingredient must be regulated by the taste of the consumer. Garlic should at all times be used sparingly, and should never be distinguishable. A slight rubbing of the salad bowl with a piece of Garlic will impart sufficient flavour for a moderately sized salad, or a piece of bread crust may be slightly rubbed with Garlic and put into the salad-bowl while the salad is being mixed, and then removed. When Celery is used it should be cut very small. Fresh young Dandelion leaves make a good salad and are suitable for mixing with Lettuces. Cold boiled Potatoes are useful in salads either as forming a part of the dressing, or when cut in slices and used for decoration with Radishes, Beetroot, Cucumber, or even the flower or small leaf of the Nasturtium. A judicious admixture of the ingredients used in making the dressing or sauce is productive of a charm to the most ordinary salad. Oil is here one of the most important elements, and it requires an experienced eye and cultivated taste to determine when it is good. It should possess a nutty flavour, and be of a slightly golden colour. That which is white and colourless is invariably of an insipid nature, and not good for salad dressing. Should a bottle of oil be long unoorked and exposed to the air and light, it will become rank, strong, and unfit for use. When once the bottle has been opened, keep it tightly oorked and in a dark place, and, if you have not a large household, purchase only a small bottle of salad oil at a time. Vinegar requires the next consideration. Procure the best and purest; do not use the common brown vinegar, which is good enough for some cookery purposes, and for pickling. We recommend the white French vinegar, which can be procured at any first-class Italian warehouse. The greater the variety of flavoured vinegars used at discretion the more palatable a dressing will be procured; for instance, a small quantity of Tarragon, Chili, clove of Garlic, Capsicum, Celery, *fines herbes*, or Cress vinegar, carefully selected and mixed with plain white vinegar, will impart a pungent and agreeable flavour each in its turn. Eggs are absolutely necessary when preparing a good dressing, and may be used either uncooked or hard boiled. In the first condition only the yolks are required, while in the latter the yolks are used for the dressing, and the whites for decoration. Mustard also forms a prominent part in salad dressing, and should be of the finest quality; the pepper and salt used should first be ground to a powder; the usual proportions are one gill of oil to half a gill of vinegar, with two eggs, mustard, pepper, and salt to taste. These will make enough dressing for an ordinary sized salad. Mix them in the following manner:—Put the hard-boiled yolks of eggs into a round-bottomed basin, and mash them with the back of a wooden spoon quite smoothly; then stir in quickly and evenly mustard, pepper, and salt to taste. When these are made into a smooth paste pour in the oil a very little at a time, and mix thoroughly each time before adding more. When all the oil is in beat briskly for five minutes; then add the vinegar very slowly, stirring continually one way. You may then mix Chives, Onions, or herbs that have been finely minced, and it will be ready for use. The salad should be prepared and put in the salad bowl before the dressing is poured over it, then well mixed, and garnished on the top with whatever you may have prepared for that purpose. If the smallest amount of water be amongst the salad, or too much vinegar in the dressing, it will be found impossible to mix a salad satisfactorily. Although it is generally desirable to serve a salad as soon as possible after the dressing is added, yet it will be good for about an hour after the green meat and dressing have come in contact with each other; after that time it will quickly deteriorate and spoil.

14055.—**Clarifying cider.**—Will any of your correspondents kindly tell me how to clarify a hogshead of cider?—Subscriber.

Apple snow.—Preserve some good cooking Apples, as for Apple sauce, sweeten with white sugar, and flavour; when reduced to a pulp beat well with a fork, and put by to get cold. When wanted for use add the unbeaten whites of one or two eggs, according to the quantity of Apple, and whisk for thirty minutes, or until it is quite white; this makes a delicious dish.—Mrs. Parsons.

Cooking Mercury.—"E. M. P." will find the leaves of Mercury very good when prepared as a vegetable in the same manner as Spinach, recipes for which may be found in Gardening Illustrated of June 27th, page 215.—A. M. G.

BEES.

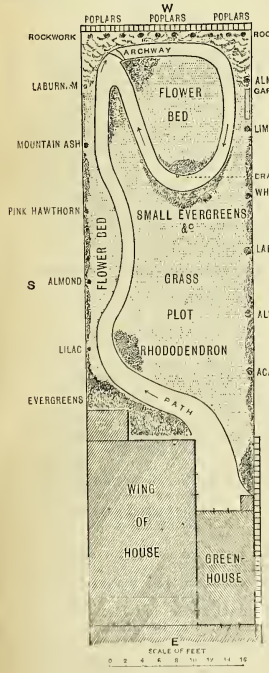
Swarm deserting hive (M. H. Adams).—Newly-hived swarms deserting their hives, and even flying quite away, is a common occurrence, and a source of great annoyance and loss. There is, however, one certain remedy for these vagaries; it is to place the hive containing the swarm on the site the parent hive occupied, having removed the latter a little way off, with its entrance turned to one side at first, and gradually bringing it round to face the same way as the swarm. A frame or two of brood-comb given to a swarm is a great inducement to it to remain in its new hive. A hive if not new should, before a swarm is put into it, be thoroughly cleansed and washed with salicylic acid solution. It would not be advisable to turn the bees out of the skep now, because they have probably by this time filled it with comb, and it is getting late in the honey season. The better plan would be to winter them in the straw skep, and in the spring transfer bees and combs to the bar-frame hive, or put an early swarm into it. As the sectional boxes become filled they should be removed, and new ones, furnished with foundation, take their place.—S. S. G., *Boxworth*.

Swarming vagaries (P. P. G.).—This season has been productive of many odd things in swarming. Insorutable have been the ways of the bees. In your case the queen probably failed to join the swarm on its leaving the

hive, the bees swarming prematurely on account of the great internal heat; but, finding no queen with them after clustering, they returned to the hive. On the final leave-taking, the queen, no doubt, was ready to depart, and so accompanied the swarm, which consequently settled down to business in its new quarters. Sometimes a queen falls to the ground on leaving the hive with a swarm, on account of her wings being imperfect or having been injured in some way. In this case, if the bees are unable to find and cluster with her, they eventually return to the parent hive.—S. S. G., *Boxworth.*

GARDENS OF LIGHT AND SHADE.

HAVING read the interesting articles entitled "Gardens of Light and Shade" (see GARDENING, p. 234), I should like to follow up the theme by giving a plan of a plot, say, 50 feet by 20 feet, which is about the average size of thousands of gardens in the suburbs. My garden is fenced



Gardens of light and shade.

on both sides, the end consists of a wall, and there is a wall also, dividing my house from my neighbour's, extending the length of the wing. Between the house and this wall is a greenhouse, 14 feet long; the inevitable dustbin is placed by the side of it, being about the only available place without marring the view of the garden. Euonymus shrubs almost conceal it from view. Along the fences are Ivies of sorts, Climbing Euonymus, Everlasting Peas, Clematis of sorts, Honeysuckles, and Maréchal Niel Roses. About every 8 feet are Standard Laburnums and other trees. These are kept within bounds every year by judicious clipping. At the end of the garden you pass under an archway of Ivy, Hops, &c., and come to the rockwork or fernery. Poplar Trees are planted here which entirely hide the houses opposite, whose gardens adjoin mine. The wall is covered with close-growing Ivy, and Corydalis lutea and Snapdragons are establishing themselves on the wall. Near this is a rustic garden seat, well sheltered by a Lime tree, and opposite is a large flower-bed; in the centre is a Pampas Grass, and around are planted a selection of good herbaceous plants, perennials, &c. From the seat the pathway tips about 2½ feet below the level, and gradually rises again to the side pathway; on each side I grow Sedums in variety and Saxifrages, backed by a few small Rhododendrons; at the bottom of this "dip" is a small drain to carry off the surface water. The side pathway has a bed on the left hand side consisting of Sweet Briers, Thyme, Mint, Mignonette, and a few dwarf showy annuals. The side of the house is covered partly with a Grape, old-fashioned Black Cluster, and Ampelopsis Veitchii—part of the Grape vine is in the greenhouse. The fences are about 5 feet high, and I have added small trellis work with wire netting, the latter at an angle of 45 degs., for the purpose of preventing the oats from coming over, which it effectually does.

Brockley, S.E. J. W.

—— There is one mistake in plan No. 1, given on page 234, and that is the round beds for Roses. The dictum of a well-known writer on the Rose should be taken as an axiom by all gardeners and committed to memory, "Planting of standard Roses in turf, or little beds on the edges of turf, is usually the first step towards failure in Rose growing." If the beds are made large enough, Bush Roses can be grown in that way and can have some shoots bent down to the turf, but standards will not do planted singly. I have looked at, I may say, thousands of standard Roses, both budded where they were to stand and purchased, but never saw one thriving if planted singly unless in a very sheltered nook. The stem of the Brier will not last without shelter similar to that which it has in the hedgerow. Therefore standard Roses, if planted at all, should be planted in beds among Bush Roses. The bed marked "Trees and Shrubs" would be the best place for Rose in plan No. 1. The plan No. 3 is very good, but for a very small plot it would be better if the Grass were omitted.—J. D.

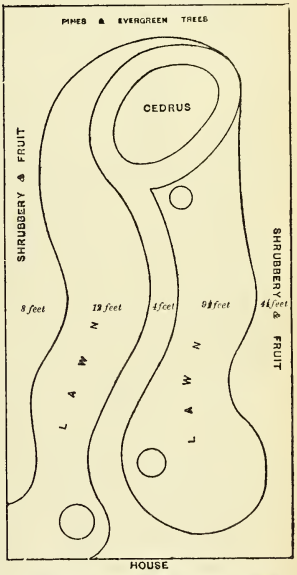
FRUIT AND VEGETABLES IN SUBURBAN GARDENS.

I BELIEVE GARDENING ILLUSTRATED is designed to encourage every form of gardening, and it undoubtedly falls into the hands of many who are amateurs in every sense of the word. Under the above heading, however, much was written in the issue of July 4 (p. 228), which would deter and discourage many from attempting the growth of vegetables and fruit who are limited in space, means, and other resources. It is charily allowed in that article that possibly some Scarlet Runners and French Beans may be grown in London or suburban gardens, but that Peas (except under favourable circumstances) and Cabbages, &c., cannot be, or if Cabbages be grown they obtain a vile taste of soot. Now, in spite of all this, given a sufficiency of ground, I say it is possible in London to grow all these and more. Yes, for less than five shillings' expenditure fifty Cabbages, a good stock of fine Peas, Strawberries, &c., may be had. My garden is under the usual circumstances in London, within half an hour's walk of the City, with walls each side, and yet I have grown these. I never had a garden till last year, but have read your paper and other gardening works, with the result that without much difficulty I have Strawberries from my own garden, Cabbages, &c., and though the sparrows devoured the green of all my first Peas, I have a second late crop now in flower (by the aid of the black-thread protector). The idea of purchasing manure has alarmed me, for gardening has taught me a true lesson in the economy of nature. I have never spent any money in this way, with the exception of a few pence given to a couple of street urchins, and the loan of pails and shovels for the purpose, which procured me road sweepings and manure in abundance; add to this the house refuse, with what soot can be obtained at times from the kitchen chimney, and then one has all he needs to make good growing ground. It makes one smile at anyone who talks of artificial manure and guano; for a small garden the household can provide all that is needed, if nothing be wasted. A dozen or more London houses could be named who supply good Cabbage plants (Early Yorks) at 50 for 6d.; Broccoli, &c., 25 for 3d.; good Pea seed at 6d. the half-pint; other things equally cheap. A friend in Norfolk sent me some Strawberry plants early in the year, and I have gathered some from them of delicious flavour this last fortnight. A couple of bundles of Bean sticks (9d. per bundle), or a 6d. bundle of string, and for the vegetable garden one has all that is wanted. I plant my Cabbage plants closer than directed by books, and pull half out for Coleworts when a little grown, leaving the remainder to heart. To complete my garden I have a fair space nearest to house door for flowers. So with the instruction of the friendly gardening periodicals, &c., the result is for me—a *little* labour and *much* pleasure.

Kennington Road. H. S.

TREES AND SHRUBS.

Flowering shrubs for towns.—I should like to call attention to several shrubs which do not appear to suffer in a smoky climate. I had a plant of Escallonia macrantha in my greenhouse, but it has been outside and unprotected for two winters, and is now covered with flowers, whilst the young shoots are of the most lovely glossy green. Then Weigela rosea



Gardens of light and shade: Additional design (see page 234).

bushes are a mass of bloom, and throw out a delightful scent. Last year's shoots of Ampelopsis Veitchii, though to appearance dead, burst into leaf, and are growing fast; whilst the common Virginian Creeper is in great luxuriance. A neighbour has had a Magnolia in flower. The way in which my Rhododendrons and Hollies are making new wood is very remarkable, showing that, in spite of cold nights, this has been a favourable season for growth.—D., *Kersal, Manchester.*

The Potato Tree.—There is at present in flower here, and it has been in flower for the past two months, a grand specimen of the so-called Potato Tree (Solanum crispum); it is now covered over with one mass of greyish blue blossoms; the tree is 17 feet high by 20 through; the trunk measures at 9 inches from the ground 25 inches. I believe this splendid shrub is not as much grown as it ought to be, the beautiful colour of its blossoms contrasts splendidly with the dark green of its foliage, making it a beautiful object to look upon. It thrives well on ordinary soil. This tree is growing on a damp, clayey soil with a slight mixture of lime rubbish. If any readers of GARDENING would give their experience of the cultivation of this tree, and where in flower, it may prove interesting to many others.—M. C. J.

POULTRY.

LICE ON FOWLS.

"ORION'S" remarks on this subject in GARDENING for July 4 are worthy the careful consideration of all who are interested in the well-being of their poultry. There is no doubt that when "Orion" referred to the necessity of keeping the roosting places clean, he touched upon the weak spot in the management of many poultry keepers. I have no hesitation in saying that if a breed of fowls be selected suitable for the particular climate in which they are to be kept, and carefully looked after, cases of sickness will be few and far between, for nearly the whole of the diseases which affect our domestic poultry are simply the outcome of bad feeding or neglect in some of the many details of management. On the food question I do not propose to enter, but will confine the few remarks I am about to make to the unsatisfactory conditions under which many fowls have to live. First, there is the want of cleanliness in the roosting house. This, perhaps, is the one drawback which the majority of fowls have to contend with, no matter who their owners may be, for poultry kept on a farm, well supplied with food and water, possessing an unlimited range, and therefore, one would say, the most highly favoured among fowls, are, more often than not, quite as badly off in this particular as poultry kept in the backyards of our large towns. Although it may probably be said that the management of farm poultry does not properly come within the scope of this journal, I trust it may not be considered altogether out of place to refer here to the little attention paid by agriculturists generally to the welfare of their fowls, especially with regard to the point I am now alluding to. Some of the readers of GARDENING may, perhaps, have visited farmhouses, and noticed the sad state of the fowl-houses, or the buildings which have to do duty for such. Cases may be found without difficulty where the place is only cleaned out about once a-year, and some where they are never cleaned at all. Is there any need to ask the question why so many fowls are unable to thrive amidst such surroundings? What other kind of farm stock could be kept under such conditions? But if this neglect of providing proper sleeping accommodation leads to disease and death in the case of farm poultry fairly looked after in other respects, what may be expected in the case of birds which are kept in small pens, whose whole life is a dreary existence, and who lack those advantages which their fellows in the country possess in such abundance? Many of the readers of this paper who keep fowls are, I expect, compelled to keep them more or less confined. This cannot be avoided in many cases, and, although I prefer to see fowls enjoy their liberty, I am bound to admit that there is no reason why they may not be satisfactorily kept in the smallest runs if only ordinary precautions are taken. The houses in such cases are usually made for the purpose, and therefore may be much more easily cleaned than the cartsheds and lofts which are turned to account in farm buildings. I advise all poultry keepers to insist on the droppings under the perches being removed once a week at least, and more often if possible. It really means only a minute or two each time the operation is performed, especially if a board be placed under each roost, as I recommended a week or two since. The house should be frequently well brushed throughout to remove any vermin which may have found a temporary resting-place on the walls, and if whitewashing be occasionally resorted to there is but little fear of insects being harboured in any way. It is needless to do more than refer to the necessity of providing a dust bath in which the fowls may clean themselves. The runs, too, should be frequently swept, and, unless covered with Grass, should be dug up deeply from time to time. They will thus be sweeter for the birds, and give the latter an opportunity of picking up worms, &c. This operation is beneficial in another way, that is, it gives the fowls something to do. The same end is also obtained by means of a piece of turf which may be placed in the run, with plenty of soil attached, so that it may furnish green food and worms as well. Green food must be given in some way, and if Grass be not procurable a Cabbage may be tied to the side of the run. The water for drinking purposes should be pure, and placed in a position where the fowls cannot scratch the dirt into it. The dish should also be kept in a shady place during summer weather. A supply of mortar rubbish had better not be forgotten, or the egg shells will suffer. Overcrowding must be guarded against. This is often the cause of fowls not coming up to the expectations of their owner, for a dozen or more are kept in a space sufficient for less than half the number. Chicken-raising, too, should be avoided, for it cannot be successfully carried out unless the breeder has plenty of space at his command, and Grass runs, so that the chicks may be kept apart from the older fowls. Many of these simple hints are entirely disregarded by those who keep fowls in confinement, at the cost of much discomfort to the birds themselves, and some loss to their owners. In every town, numbers of people indulge in poultry keeping whose accommodation is of the most scanty description, and who sometimes ought to be prevented from using their premises for the purpose. Men are prosecuted and fined for ill-treating their horses and other animals, but the cruelty practised by several owners on their unfortunate poultry is allowed to go unpunished, although none the less deserving of blame.

DOULTING.

Fowls losing their feathers.—Loss of feathers, when not caused by the natural process of moulting, is most prevalent among confined fowls. In the natural healthy moult the fall of the feathers is caused by the protrusion of new feathers from the skin. In the diseased state which we now speak of no new feathers come to replace those that have fallen, but the fowl is left bald and naked. The affection is probably constitutional rather than local. External remedies will probably, therefore, not be efficacious. Stimulants applied externally will, however, serve to assist the operation of whatever medicine may be given. Sulphur, Cayenne pepper, and fresh butter, in proportion of a quarter each of the first and second, and a half of the third, form a good mixture to give internally, acting as a powerful alterative, restoring the healthy functions of the body without any sensible evacuation. The diet should be changed, and cleanliness and fresh air are essential.—*Rural New Yorker.*

QUESTION.

14056.—**Diseased chickens.**—I should be glad to know the cause of and cure for a disease which has attacked my chickens for two successive years. They lose all power in the lower part of their legs, and their feet are drawn up, though they can move about on the second joint, and are apparently in perfect health. They have every attention paid them—fresh water twice a-day, plenty of space for running about, variety of food, and they are kept very clean. In spite of all this care I have been obliged to kill them on account of the weakness I have mentioned. Can any poultry reader assist me?—TORQUAY.

REPLIES.

14057.—**Gapes in chickens** (*Co*).—Your chickens are probably affected with gapes, remedies for which you will find described page 236, July 4th. Sometimes neglect to keep the poultry house clean is responsible for the ailment, which will probably affect other members of the brood.

13993.—**Best chicken and egg-producing fowls.**—For good layers of large eggs the Leghorns, Minorcas, Andalusians, and Houdans may all be recommended. Certain strains of game are also very good, and, if their eggs are rather smaller than those of some of the breeds I have mentioned, it must be admitted that they contain a greater proportion of yolk. With the exception of the game none of the above-named breeds will hatch their own eggs, and, if they are kept, sitters must be provided. Brahmas are good "all-round" fowls, for while they make excellent mothers as a rule, they are also very fair layers, and do not make bad table fowls if killed when young. Crossed with the Dorking or Houdan a capital table bird is produced, being large and of first-class quality. If we take pure breeds suitable for chicken-raising the Dorking must be placed first, the chickens being of good size and excellent quality. In the latter property the game is not to be beaten, but the great hindrance to keeping this breed is the pugnacious disposition of the chickens, which commence to fight when only a few weeks old, and often fight to the death. Houdans, too, are not to be despised, for, though they may be smaller than the Dorking, they are very plump, and not only are large broods the rule—which is the reverse of the Dorking—but the chicks are easily reared.—DOULTING.

13930.—**Egg-eating hens** (*Novice*).—A certain cure for this fault is to burn the extremity of the hen's bill with a red-hot poker. It does not hurt, as the beak is a horny substance. It blunts the bill, and the hen can no longer make a hole in the egg-shell. I have kept poultry for eighteen years, and never found it fail.—A. M.

13929.—**To prevent hens sitting.**—I find placing hens in what I call a coop, with a bar bottom, a capital plan—the bars are about 1 inch wide and 2 inches apart—the idea being that the bird must perch or grip the bars to stand up, and, therefore, cannot sit, and the desire passes off in from four to seven days.—H. G. N. *S.E.*

BIRDS.

QUESTION.

14058.—**How to treat goldfinches.**—Would some lover of birds kindly tell me how to treat a goldfinch? It is a last year's bird, and was caught in January. I want to know how to treat him and what sort of seed I should give him.—TOMMY.

REPLIES.

13933.—**Diseased pigeons.**—Your pigeons have a diphtheritic affection of the throat and mouth, or canker in a bad form, and require immediate treatment. In either case the same method of treatment must be adopted. As this disease is likely to be communicated to the others, it will be well to remove and isolate the affected ones, and treat first by removing all cankerous or cheesy matter which collects in the throat and mouth. This may be done by using a small peg of wood, roughly pointed. Then paint the sores with perchloride of iron, applied well with a camel's-hair brush. When there is inability to feed, cod-liver capsules, administered twice daily, will be beneficial. Feed principally on wheat and a little canary seed, entirely discarding maize, and see that the birds have free access to pure water. Unsanitary condition and polluted water are the chief causes of this malady.—J. H., *Tavistock.*

13934.—**Treatment of parrots.**—I am a constant reader of GARDENING, and frequently find lovers of birds, like myself, in trouble as to proper food, particularly for parrots. I will write my experiences, having had the same birds many years. I never give them sop of any kind, as I cannot hear of any food in their native countries which it is intended to represent. I feed on Hemp seed, Maize, Oats, Nuts of all kinds, dried Figs, Raisins, ripe fruit of all kinds in moderation, flowering Grasses—in fact, as much variety as possible, and always keep fresh water in the cage. I have at all events had the good luck not to lose a parrot.—MRS. EVANS.

—— The best treatment of parrots is to feed them continually on Hemp seed, a little Indian Corn now and again, also soaked bread—but little of both. Water should always be kept in the tin with the food. My idea is that the milk was the cause of the parrots' not living. Grey birds are by far the strongest. I have had one bird over eight years, and I rarely change the diet, except now and then to indulge him with the bone of a mutton chop, or a trifle of meat; and a friend has had a similar bird, that is a grey with a white and red tail, for over twenty years. They are both good talkers. The best method of teaching them is to speak to them in the dark the last thing at night.—A. S.

13992.—**Making Elderflower water.**—This can only be properly made by distillation. Old-fashioned and modern receipts vary but little. The following was published in 1851, and has continued unaltered in modern editions of the same work up to the present time:—Fresh Elder flowers 10 lb., water 2 gallons; distil 1 gallon.—E. W. J., *Chemist.*

Smithfield Market, Evesham.—List of prices realised 10th July, 1885:—Asparagus, 1s. 1d. to 1s. 6d. per 100; Beans (Broad), 1s. 1d. to 1s. 4d. per pot (40lb.); Carrots, 1½d. to 2d. per bunch; Cucumbers, 10d. to 1s. 1d. per brace; Lettuce, 11d. per pot; Onions (green), 2½d. per bunch; Peas, 1s. 6d. to 5s. per pot (40lb.); Potatoes (new), 3s. 6d. to 7s. per pot (80lb.); Sage, 1½d. per doz.; Turnips, 1½d. per bunch; Vegetable Marrows, 2s. per doz.; Cherries, 14s. to 22s. 6d. per side (63lb.); Currants (red), 2½d. to 3d. per lb.; Currants (black), 3d. per lb.; Gooseberries, 4s. 3d. to 4s. 9d. per pot (63lb.); Strawberries, 1½d. to 2½d. per punnet.

GARDENING ILLUSTRATED.

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OUTDOOR PLANTS.

A STEPPING-STONE BRIDGE.

Where water occurs in the rock garden some arrangement such as suggested in the accompanying cut would be more satisfactory and tasteful than the little bridges sometimes seen. The engraving shows how well the plan enables one to enjoy various beautiful aquatic plants, from the fringed and crimson-tipped Bog Bean and the graceful Weeping Sedge (Carex pendula), at the sides, to the Fringed Buck Bean (Villarsia nymphæoides) and Water-Lilies among the stones. This mode of garden bridge-making, while infinitely more beautiful than the ordinary way, is also less expensive; but care is required so to arrange that it may satisfy the eye, offer free passage to the water, and afford an easy means of crossing.

The Siberian Larkspur.—I send you blooms of that very beautiful but now very scarce, old-fashioned flower, the Siberian Larkspur. It is a great pity that such a lovely thing should have very nearly passed out of cultivation. Probably an explanation of this is that it is a rather delicate grower, does not increase rapidly, and that slugs seem to be more fond of it than of any other plant in cultivation. Unfortunately it seems to require just the kind of soil most productive of these vile crustaceæ, a rich moist one.—Denis Knox, *Virginia Rectory, Ireland.* *** *This is a beautiful and rare old plant, and we are much obliged to Mr. Knox for sending it to us.*—Ed.

White Lilies.—Clumps of Madonna Lilies and pale blue Delphiniums alternate on either side of a broad walk, and just now form a picture good to see. Beneath them, asleep in the hot sunshine, lie buried Snowdrop and Crocus, Scilla and Narcissus, in great patches or in slender lines, but the glory of a well-stocked garden just now consists in the sheaves of the old white Lily, than which no flower can well be sweeter or fairer. I know some cottage gardens in country villages on the cold Leicestershire clay where this old white Lily luxuriates, but it is not everywhere at home. It is one of the very oldest of garden flowers, and was ever a favourite with religious painters, who placed it in their pictures of the Madonna, but there is doubtless some still older legend which may account for this general usage as well as for the name. However this may be, one thing is certain, viz, that as seen at its best no other Lily can be finer than Lilium candidum.—R.

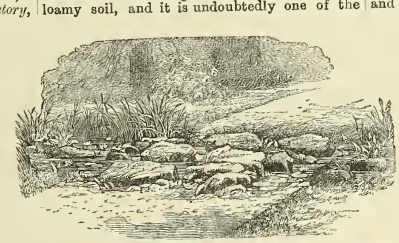
Balm of Gilead.—The Balm of Gilead of old writers, Cedronella triphylla, is a bushy perennial with compound leaves, and seldom exceeds 2 feet in height. The flowers, which are produced in July and August, are pale blue, and borne on short thick spikes; they are very pretty when the plant is well grown. In mild winters it will grow in the open, but a sunny spot against or near a south wall should, if possible, be chosen for it. The ease with which it is increased by means of cuttings, and the fact of its only requiring the protection of a cold frame even in severe winters, together with its rapidity of growth, render dependence on mild seasons hardly necessary. It is a native of the Canary Islands, and has been distributed at various times under the name of Dracocephalum canariense. C. cana, the hoary-leaved species, is a very handsome plant, and useful for ornamental purposes. It grows about 2 feet high, and has a fine erect and graceful habit. Its flowers are produced in July and August in whorls, on a spike about 1 foot in length; they are bright purple and showy. It grows well in the ordinary border, and may be increased freely from cuttings. Another species which should find a place in every collection is C. mexicana. It is easily distinguished from the above by the total absence of the hoariness of the leaves. The flowers are reddish purple and are very pretty; they open in September and October. This plant may be used with advantage in the rockery, flowering as it does at a season when most plants are over.—D.

HARDY BORDER PLANTS IN FLOWER.

At the present time there is a great variety of beautiful hardy plants in bloom, but there are some kinds that have been exceptionally fine, especially the old double white Rocket. I have grown this old-fashioned favourite for many years, but never had it so splendid before. I planted a large bed of some 250 strong plants early last autumn on a well-prepared piece of ground, and for the past six weeks or more they have been simply magnificent. Many of the plants had from twelve to twenty-five spikes of bloom on each, and such a large mass of flower had a charming effect, not to mention its delicious perfume. In dry weather, such as we had recently, they require a liberal supply of water. The large Blanket flower (Gaillardia grandiflora major) is now in splendid bloom, a large bed of it being remarkably showy; the bright yellow flowers with crimson centre are on long stems, and they are thus rendered excellent for cutting or exhibition. I find it perfectly hardy in light or loamy soil, and it is undoubtedly one of the best perennials in cultivation. St. Bruno's Lily (Anthericum Liliastrum) is a very beautiful hardy bulbous plant of a pure white colour; it has bloomed finely with me this season. Pink, Mrs. Sinkins, is a charming addition to our border kinds, being very free-flowering, of good substance, and very fragrant. Pyrethrums, both single and double varieties, have done exceedingly well this year. They are of easy culture and are fine for cutting. Some of the white kinds, such as Mont Blanc, Argentine, Sylphide, Niveum, Plenum, and others have been especially good. They succeed best in a moderately stiff loam, and if cut down after first flowering will bloom well again later on. Gladiolus Colvillei and G. Colvillei alba (the Bride) are at the present time very finely in bloom. They are first-class for cutting, being extremely pretty, and are a great addition to our early summer flowers; they also appear to be quite hardy. The Dwarf Red Larkspur (Delphinium nudicaule) is a very dwarf species; it has been a mass of bloom since May, and it is a very attractive flower. Delphiniums are now looking very gay indeed, and are at the present time the most showy perennials in the garden. Some of the double varieties are especially fine, considering the dry weather we have lately had. Hermann Stenger, Amadee Hans, Monsieur Barral, Mrs. James Helme, Lord Mayor, Madame H. Jacotot, Madame E. Geny, and Prince of Wales are some of the best of the double kinds; while among good single sorts I should mention Belladonna, Madame Chate, Gloire de St. Mandé, Hendersoni, Globe, Coronet, and Grandiflorum as being well worth cultivation. The golden-flowered Columbine (Aquilegia chrysantha) is a very fine variety, of a golden yellow colour, abundant bloomer, very hardy, and will grow in any soil. It is now, and has been for a considerable time, very showy. The Double Scarlet Avens (Geum coccineum fl.-pl.) is one of the most attractive perennials now in bloom. It is of a brilliant scarlet colour, very free flowering, most useful for cutting, and lasting a long time in flower. The Double White Ragged Robin (Lychnis Flos-cuculi alba fl.-pl.) is a pretty plant of a moderate habit. It has numerous small white flowers, borne on long stems, and is most useful for bouquets or button-holes; it has been flowering freely the past two months. Saxifraga granulata fl.-pl. (Meadow Saxifrage) is a very pretty kind, with pure white flowers. It does best in a moist, shady situation, where it blooms well for several weeks during early summer. Leopard's-bane Groundsel (Senecio Doronicum) is a very showy yellow flower of dwarf habit, now very full of bloom; it is good for cutting.

Sidalcea candida is a fine new perennial, growing about 2 feet high or more, and now finely in flower. It is, I consider, quite an addition to our hardy plants, the pure white flowers being very effective. Spiræa—(Meadow Sweet)—Aruncus is one of the most handsome perennials we have; it is of stately growth, the flowers are creamy white, freely produced on long spikes, and it is, altogether, a most effective plant for borders, being very hardy. Double Potentillas are now in splendid bloom; they are exceedingly showy, producing an immense quantity of flowers, of all shades of colour, from yellow to deepest crimson; they are most effective when grown in a bed by themselves; all of them are of free growth and very hardy. They have been much improved during the last few years, and some of the new varieties are very fine. Campanulas (Bell flowers) are at the present time very gay, most of the varieties being well in flower. Among the dwarf kinds Hendersoni, turbinata elegans, Portenschlagiana, and pulla are good; while the best of the taller varieties are grandis, latifolia, persicifolia alba fl.-pl., P. coronata alba, macrantha, lactiflora, urticæfolia alba, and Van Houttei. They are all of easy culture, very hardy, and effective border plants.

Chipping Norton. J. Cooper.



Stepping-stone bridge, showing Lilies and other aquatic plants.

Hardy Yuccas.—Few hardy plants have a more stately appearance when in flower than Yuccas, one or more species of which may generally be found in the majority of gardens, either as isolated specimens, planted in masses, or associated with rockwork or water. Not being at all particular as regards soil, Yuccas are admirably adapted for any of the above-named positions. The common Adam's Needle (Y. gloriosa) and its varieties are probably the hardiest and most robust. Old plants of this species grow to a height of 6 feet or more, and when branched form heads nearly as much in diameter. Yuccas do not flower at any definite age or size; one in a group may produce a panicle this year, while others beside it under precisely similar conditions may not do so for a long time. There is one advantage in this, viz., that those which do not flower one year may be strengthening to flower the next. That the whole energy of the plant is required to sustain a panicle of flowers need not be wondered at, seeing that they often number between 300 and 500. Yucca recurvifolia is now, I believe, considered to be a variety of Y. gloriosa, and as regards the size and colour of its flowers, which are greenish white, there is but little difference between the two. The panicles in Y. recurvifolia are, however, much more branched than in Y. gloriosa, and the leaves are very distinct, being gracefully recurved, as the name indicates.

This plant is well adapted for decorative purposes, as when established in pots it will bear a larger amount of rough usage than will most subjects of a similar description. In Y. filamentosa we have a plant very distinct from either of those already mentioned, both in the leaves and colour of the flowers. This species seems to have a greater tendency to flower than most others, and it is dwarfer in habit. Its flowers are of a chaste creamy white colour, and the panicle is branched similar to that of Y. recurvifolia, thereby showing the flowers off well individually. The leaves are stiff, and furnished with hair-like filaments on either side. This distinct and beautiful species should be largely grown on account of its dwarf and floriferous habit. Other hardy Yuccas, though attractive as fine-foliage plants, are seldom seen in flower. Those above mentioned are tolerably plentiful, and where a quantity is grown flower more or less annually.—J. G. K.

AQUILEGIAS.

I DO not know among hardy plants any more attractive for amateurs and small gardeners to cultivate than the better forms of Aquilegias. When I say the "better forms," I mean such varieties as chrysantha, glandulosa, and cœrulea, and the various coloured seedlings that may be raised from them. In my opinion their value is considerably enhanced from the fact that they look exceedingly well in pots, as well as in the open air, and they can be had with very little trouble for either purpose, as they are easily raised from seed. This may be sown at any time during the summer, but the best time for sowing is as soon as the seed is ripe, which is generally early in August. From seed sown last August we had several plants in flower this season in May, but of course there were not many. But I like to sow in August, for the better reason that it gives a longer time for the plants to grow and get strong enough to put up three or four flower stems from each plant. The seed is best sown in deep pans of sandy soil, and the pans kept in a cold frame, and as soon as the plants are large enough they should be pricked out into other pans so as to have room to grow, for with the protection of a glass light they keep growing all the autumn. Through the months of December, January, and February the soil in the pans should be dry rather than wet, for it is a peculiar character of these plants that, although they like plenty of root moisture when they are making active growth, the roots will perish during the winter if the soil about them is at all wet. The middle of March is quite soon enough to think of moving them again, and in the meantime prepare a piece of ground for them if they are to be taken up and flowered in pots. If not, some preparation should be made for them in mixed borders, or wherever they are to flower. In any case the soil should be moderately heavy and deep, and the surface level, for if the weather is dry they will want plenty of water both while they are growing and while they are in flower. With us the varieties of cœrulea will flower for three or four years, but they do not do so in all soils, more frequently dying away after they have flowered twice; therefore, it is necessary to raise a stock of young plants, if not every year, once in two years; those required to flower in pots should be taken up and placed in 6-inch pots at the end of October, and the plants kept in a cold pit all the winter. In this structure they will come into flower early in May, and will make striking objects for any position where decorative plants are required. As soon as they go out of flower the stems may be cut down and the plants turned out again into the bed whence they were taken. J. C. C.

Too many flower beds.—"J. D." (see p. 245) says the advice I gave at p. 217 is likely to lead your readers astray, for "although it is right in theory, it is wrong in practice." Now this is such an oft-repeated phrase, that one hears it until one is almost forced to believe it; yet in point of fact it is impossible for anything to be right in theory if it cannot be put to practical use. And in this case the subjects taken to illustrate my views were ordinary every day ones that I meet with at every turn, the right way and the wrong being often found side by side, both in town, suburban, and rural gardens. It is not so much the position as the taste of the owners, for although there are drawbacks to town gardening they are overcome by the extra zeal manifested in their management, and I may add the extra outlay on their embellishment. "J. D." says flowers cling to the fences in country cottage gardens and thrive as well there as anywhere else, but in town gardens they must be in the middle of the plot if they are to thrive at all. Allow me to say that "J. D.'s" experience and mine are quite different, for if there is one thing that gardens on the south coast excel in more than anything else it is the wealth of flowers and foliage that adorns every bit of wall or fence from the top of the villa, cottage, or mansion to the ground. Climbing Roses, Wistarias, Clematis, and a host of others grow in wild luxuriance, and at the base flowers, Ferns, and various foliage plants leave no bare unsightly spaces, but a complete mass of luxuriant leaf and flower. I may mention that in these mixed borders the old Calceolarias that have stood out unprotected for the last two winters are now masses of the richest golden flowers such as one never sees in one-year-old plants, and Marguerites grown into great bushes several feet in diameter are covered with myriads of blossoms, so that flowers, at all events, are not a mistake, as "J. D." says turf is. Well, this may be, but I have seen more gardens spoilt by too much gravel than by too much turf, and I can safely say that there is nothing the owners of town gardens prize so much as a bit of green turf, not only for the fresh verdant look it imparts, but for the pleasure it gives in hot weather to see the children playing on it, and the convenience of lawn-tennis, &c.; and I find that the prevailing taste is to concentrate rather than scatter the floral effects in either beds or borders, leaving the turf as much unbroken as possible, and in places where the garden is of the smallest dimensions worthy of the name, or surrounding our ducal palaces, the same good effects of concentration are visible. I am well aware that tastes differ, and like to see the widest possible scope given to individual taste, as the great bane of gardening is copying one another too implicitly; but I must caution your readers against accepting "J. D.'s" view until they are tolerably well assured that it will suit their own case.—J. GROOM, *Gosport, Hants.*

Larkspurs.—The bright colours of this plant and its peculiar form make it particularly attractive. Both the annual and the perennial varieties should have a place in the garden. As cut flowers, for table bouquets, they are indispensable. The shades of blue they afford are almost, if not quite, unequalled by any other flower. The plants are of the easiest culture, adapting themselves to almost all soils, and yield their flowers in great profusion; still, the finest spikes and largest flowers can be raised in well-drained, rich soil. The perennial varieties are very desirable to plant among shrubs, or to form a border to a bed or group of shrubs; they will remain in fine condition a number of years, and when too old can be divided. A mass of these plants can be kept in fine flowering condition a long time by retarding the blooming of every other plant, by pinching it back or cutting it off in the spring when it has made from 8 inches to 12 inches of growth. Cutting down the young shoots will cause the plants to make others, and more of them, and will delay their blooming until the earlier plants have finished theirs. Except for their short life of one season, the annual varieties are about as good as the perennials. Both kinds are quite hardy, and the annuals can be brought into bloom early in the season by sowing seeds in August or September.—*Vick's Magazine.*

Scarlet Stocks.—Now that "Borderer" (see page 223), and the editor of GARDENING have brought their influence to bear on the subject of scarlet Stocks we shall hope to see hereafter in all our seedsmen's catalogues the word "scarlet" (in reference to the colour of Stocks) changed to that of "crimson" or "cardinal red;" and until that is done neither "Borderer" nor the editor will induce the public to give up a name they have so long been used to. In naming the colours of the East Lothian Stocks in the way I did, I only followed a long established precedent; to have done otherwise would only have caused confusion in the minds of many, and this would be undesirable, for hardy flowers have none too many admirers now. At the same time I quite agree with "Borderer" that there is no such thing as a scarlet Stock—at least I have never seen one—and that it would be more correct to call them either red or crimson.—J. C. C.

THE MOUTAN PÆONY.

FEW objects are more beautiful when in flower than well-grown examples of Moutans. There are both double and single-flowered varieties; but I think those with double blossoms are the most effective, although there is a greater depth of colour in the flowers of the single kinds. In habit and manner of growth both are about equal, and one can only wonder why they are not oftener met with than they are. They should occupy a position fully exposed to the sun, and then I feel sure they will be admired by everyone. When it is wished to cultivate these plants so as to form them into handsome specimens, they must be planted in a strong, deep soil, sufficiently well drained to prevent any accumulation of water about their roots, and the branches must be allowed plenty of room in which to extend; not that the Moutan is an unruly plant, but if it is to be seen under the most advantageous conditions, it must stand clear from everything else, and then its neat, sturdy growth and handsome foliage will have space sufficient to show off to advantage the imposing character natural to it when grown under favourable circumstances. It may be well to state that Moutans are not fast-growing subjects. Probably they never exceed 6 feet high unless they are drawn up by being overcrowded. They are admirable plants isolated on Grass or in mixed borders, and their blossoms are wonderfully showy when used in floral decorations if not wanted to last more than one day. For forcing nothing in the way of hardy plants can equal them, provided fair-sized plants can be had for the purpose. On several occasions we have had them in the second week in February with more than a score of flowers on a plant, and, as most of the blossoms open at one time, they are strikingly effective. There is a delicacy in the colouring of the flowers when forced that is very pleasing, and certainly uncommon at that season of the year. Unfortunately, the plants suffer a good deal through being forced, although they do not require much heat to bring them into flower, the blossoms opening freely in a temperature of from 55 degs. to 60 degs. Even that, however, appears to be too much for the wood buds, for the greater portion of them invariably perish. What effect the same temperature might have on them a month or six weeks later I have not tried; probably, if they were brought on without forcing, the wood buds might survive and flourish when taken from underglass. It is this loss of buds which injures the plants so much, and from which they take three years to recover. To have plants fit for forcing every year, three sets are necessary, in order to give them time between to recoup their strength. When they have been forced into flower it is necessary to carefully harden them after they are brought from the conservatory and before they are placed again in the open. They should be planted out about the end of May in a good rich soil, there to remain until they are in a condition fit for forcing. J. C. C.

The Edelweiss in Wales.—I have three patches of this interesting alpine, which is growing luxuriantly in a mixture of about two parts good rotting turf from an old pasture, one part peat, and one part coarse sandy grit; this last contains pieces from the size of a Walnut downwards. The three patches face three different aspects, but there does not appear to be any difference in their growth. The finest piece, formed of three plants, now carries about two dozen heads of bloom, and many have been gathered, as they make charming button-holes, in conjunction with Thalictrum minus, which is better in this case than the fronds of the Maidenhair Fern. During winter I throw all the snow I can get over my alpines, and it is very pleasant to see them emerging from their snowy coverlid when thaw sets in. I supply the Edelweiss, in common with all alpines, with an abundance of water.—CARNARVON.

CULTURE OF SNAPDRAGONS.

AMONG the blossoms of Snapdragons are forms and markings of the most varied and beautiful kind, and the plants may be had in flower all through the summer and autumn months. Snapdragons are best when treated as hardy biennials. A pinch of good seed sown in a box or pan in a house or frame during the month of March will furnish abundance of plants for any ordinary garden; and when these seedlings are 3 inches or 4 inches in height they may be placed in the box or pan in which they are growing, in the open air, until the stems have become hard and wiry; then transplant them into whatever

Snapdragons (Antirrhinum majus var. nanum).

position they are to occupy, and by midsummer, or soon after, they will begin to bloom, and will continue to do so until the end of November. As a rule I find that no other hardy border plant flowers more continuously or more freely than the Snapdragon, and those side shoots that come so abundantly after the centre spike has done blooming offer most useful material for cut bloom at a time when flowers are of great value. If seed be sown as soon as the earliest pods are ripe, which will be about the end of June on old plants, a batch of seedlings should be raised from it sufficiently strong to stand the winter, and these will flower early in the ensuing summer. The best plants and the finest spikes are produced from those plants that have bloomed the previous autumn, as, if the tops have been partially cut down during the winter, an abundance of strong, robust growth will come up early in the spring from the base of the plant, and these shoots will furnish splendid spikes of flower, varying from 6 inches to 9 inches in length, all open at once. These would be at their best probably about the middle of June; but if a goodly number of plants be grown there would be little difficulty in getting good spikes for exhibition all through the month. The Snapdragon is a very easily cultivated plant, and, if horticultural societies could be generally induced to encourage its culture by offering good prizes for the best eight or twelve spikes, it would doubtless receive more general attention than it does at present. The most pleasing forms of the Snapdragon are those with flaked and striped flowers, and these come very constant from seed. It is peculiarly noticeable that seedling plants of this striped strain have stripes or flakes on the under sides of the leaves, and the stems are also sometimes marked in the same way. The flower markings are so diversified, that out of a batch of 100 plants scarcely two have flowers exactly alike. Many of them are also bizarre in character, having a coloured ground, and two other diverse colours flaked upon it. In securing a collection for any purpose, it would, however, be unwise to overlook the beauty of some of the self-coloured flowers, or those that have white throats with rich coloured mouths, and especially those that have deep coloured mouths and orange or white lips. Most of these colours are found best in the tall-growing strain; and as these, when in the second year of growth, will rise to a height of 30 inches, they should be planted several feet from the front of the border, in order that dwarf plants be not obscured. There is a dwarf or Tom Thumb strain that is perhaps best adapted for pot culture. These will grow to heights varying from 10 inches to 15 inches when in flower, and, in addition to a very free blooming habit, have colours that do not exist amongst the tall kinds. This dwarf strain is just as hardy as the other, and requires the same process of cultivation; but, if planted in the open border, it should be kept in the front row with other medium-sized plants. If seed of these be sown in the spring under glass, plants will be produced that will flower during August and September; and if potted up into 32-sized pots will make a rare display in windows at that time. There are a few very fine double forms of Snapdragon, but these do not seed, and have to be propagated by cuttings. The flowers are very large and massive, and have a curious appearance, but are not, on the whole, so pretty as the single kinds. It is always easy for the grower to perpetuate any favourite kind by means of cuttings, which should be taken from strong side shoots in the summer, and struck under a hand-light in some shady or cool situation. A. D.

Ten-week Stocks for cut flowers.—In March we sowed a few packets of these Stocks, of distinct colours, under hand-lights. They were hardened off by the removal of the tops on fine days, and at the end of April planted out in single lines between rows of double and single Primroses, for the purpose of giving shade to the crowns of the Primroses in scorching weather. They were both kept moist by watering, and the Stocks developed into fine branched heads, 90 per cent. being double and really beautiful. The side branches are for furnishing vases, the clear whites and bright crimsons looking extremely well arranged separately; the beautiful fragrance they emit in the garden makes them well worthy of culture for that purpose alone.—L.

Beautiful Carnations.—The universal popularity which the Carnation Mary Morris has won for itself is sufficient proof of its high merits. When it was first exhibited some few seasons ago it at once became a favourite; its lovely colour and bold large flowers captivated all who saw it. Beautiful as it is when seen at the shows, however, we think it far more lovely when growing freely in a border, in large quantities. A short time ago we saw over a thousand expanded blooms of it. The sight of so many blooms of such a beautiful Carnation was charming in the extreme—every bed was a glow of colour of a clear, yet deep rosy pink. It is, indeed, this peculiar shade of colour, which everyone admires, that has made this Carnation so popular; but in order that a Carnation, even of this colour, should be first-rate, it must possess other essential properties. It must be a vigorous grower and an abundant flowerer. These qualities Mary Morris possesses in a remarkable degree, and, combined with them, it possesses a stout calyx or pod, which does not split, so that the flowers are held firmly together without the aid of the tie or india-rubber ring which the generality of Carnation blooms require. The flowers of the lovely new Carnation Gloire de Nancy are large and pure white, and they have a delicious Clove-like perfume. The variety is strong in growth, and a most profuse flowerer.—W. G.

Alstrœmeria aurantiaca.—This plant is not half well enough known in the smaller gardens, it being one of the finest hardy perennials that we possess for growing in southern districts. It is a graceful plant, grows about a yard high, and bears loose heads of bright orange-yellow flowers—two of the petals being tiger-striped—which remain a long time in perfection. It delights in a warm sandy but not too dry soil. Mr. Stevens, who brings us fine specimens, grows it in great perfection at Byfleet, and small specimens which he planted a few years ago are now large spreading masses which give no trouble from one year to the other. The plant requires no manure and no tying, but is grateful for a little watering during very hot weather. It is rather a difficult plant to increase, because of the fleshy roots being so brittle. Generally nurserymen keep them in pots, so those are the best plants to buy when more are required. Seedlings can be raised easily, as the plant produces seeds in fine seasons, and in about three or four years good flowering plants can be so obtained.

Carnation "Grenadier."—I think a few words about this beautiful Carnation will not be altogether out of place. In April, 1884, I sowed a packet of seed in the open ground, and when they had made two seed leaves I pricked them off into good loamy soil, 2 inches apart, and in September they were placed in their blooming quarters. I think after the slugs (which must be carefully looked after) had satisfied their appetites, I had about fifty plants left, which have been for the past three weeks, and are at present, literally covered with bloom of a rich scarlet colour. Only one plant came single, and that one is very much admired. I advise lovers of Carnations, who have not yet tried this variety, to purchase some young plants, or sow some seed at once, it not being too late to sow now if they are grown on strongly.—W. H. R., *Claughton.*

Zinnias are a useful class of annuals which specially deserve cultivation on account of their hardiness and showy flowers. They vie indeed in beauty with the best class of Asters; while Asters often fail to grow freely or bloom profusely, Zinnias are certain to succeed in every respect. We have frequently seen them growing here and there in mixed borders with good effect, but they are much more attractive when grown in large masses. Of course, double-flowering ones are decidedly the best. The blooms vary from 2 inches to 4 inches in diameter, in the best strains, and the petals are beautifully arranged, while the colours are of every known hue. The single ones bloom equally free, but the flowers have a ragged appearance, and are not so effective when seen either close at hand or at a distance. Both, however, require the same treatment. Seed may be sown any time after March, either in pots or in the open ground. The seed germinates freely in light, sandy soil, and anywhere where the temperature is from 60 degs. to 65 degs. At first the young plants may be quite close together, but as they form a few leaves they should be taken from the seed quarters and given more space. Their easy culture is greatly in their favour, and those who have no houses or frames may have them in bloom from July until November.—G.

Senecio pulcher is, when well grown, a really fine plant, and seems especially at home on our deep sandy alluvial soil, when it gets much moisture. Treated as a biennial it succeeds best here. We dig up some of its thick white quill-like roots in November, and cut them up into 1 inch long pieces, which we dibble into a pan or box of sandy loam rather thickly. Placing the box near the light on a shelf in a warm greenhouse, these roots soon produce buds

Tyerman's Groundsel (Senecio pulcher).

and leaves, and by May or even earlier are nice little plants fit for the open borders. They bloom splendidly the second year, forming stout plants over 2 feet in height, with their masses of golden-eyed purple stars looking full up at the autumnal sunshine.—F. W. B., *Dublin.*

THE JOBBING GARDENER.

The jobbing gardener is not to blame for the bad arrangement of gardens where these are laid out by, or to the orders of, speculative builders, or owners, or occupiers of houses, but only in those cases where he is called in and allowed to do as he likes, and lay out the ground in his own way. A casual labourer cannot, of course, know where plants that are not above ground are hidden, and there comes in one of the most pernicious practices of the jobbing gardener. Ever since my earliest remembrance it has been the practice of jobbing gardeners to persuade their employers that all flower borders required digging over at least once a-year. It is a good many years since one of our most successful amateurs wrote: "All periodical digging of flower beds, or turning over, as a matter of course, has for its sole object the destruction of plants." The casual labourer, or any other labourer, has no business to touch the flower beds in any way that will injure the most delicate or insignificant thing growing there, and it is only by giving up that practice, and giving plants proper soils and stations, and leaving them undisturbed as long as top-dressings will keep them in health, that the highest beauty of the flower garden will be reached. Florists' flowers should be cultivated in separate beds.

"H. H. H." (p. 193) has not quite caught my meaning about bedding plants only requiring small accommodation. What was intended was that when the small nurseryman could satisfy his customer's requirements with zonal Pelargoniums and Fuchsias, helped by a few Calceolarias and Echeverias, and some boxes of Golden Feather, blue Lobelia, Perilla, and Amaranthus melancholicus ruber (these were all one saw in hundreds of gardens, and in some benighted places Geranium, Calceolaria, and Lobelia are still the Alpha and Omega of summer gardening), only a small space and a few houses were required to keep up the necessary stock. Hardy plants require even for one or two varieties, say, Phloxes, Chrysanthemums, and Carnations, quite two-thirds of the space the whole bedding stock would occupy, and these are only three out of two hundred plants now required. Bedding plants could be successfully grown near large towns, but a good stock of hardy plants requires purer air for rapid growth and propagation, although many do well in suburban gardens as decorative plants. As regards prices, "H. H. H." forgets that the expense for bedding-plants is an annual expense, whereas the expense for hardy perennials is not; and very many perennials can be raised from seed in the smallest garden. Pentstemons, Lychnis, Evening Primroses, Delphiniums, Phloxes, Pansies, Carnations, Auriculas, Polyanthuses, Single Primroses, Antirrhinums, and Columbines are only a few of the things that any one can raise from seed, and with the help of a small sunny greenhouse or a slight hotbed the smallest amateur can raise better plants of Phlox Drummondi, Asters, Stocks, Zinnias, Portulacas, Salpiglossis, Lobelias, and Verbenas than he can buy. Even where perennials do not thrive permanently, seed can be saved and sown, and those plants raised in one's own garden I have often found do where purchased plants failed. Hardy plants propagate themselves. The weakest of my Phloxes and Chrysanthemums of last year have produced of themselves a dozen rooted cuttings each, ready in April to plant out or give away. Many hardy flowers multiply even too fast, while if the ground is only top-dressed and not disturbed, hundreds of self-sown seedlings and offsets keep coming up. There is nothing of that kind with bedding plants. I quite agree with "H. H. H." that hardy plants often do not do well in small enclosed gardens, but that is caused by

Bad selection of kinds and improper cultivation. In those gardens where hardy plants cannot be grown, bedding plants will be equally useless. Healthy greenery, and even a respectable sprinkling of flowers, can be had in town gardens in positions where bedding plants could not exist. Town gardening is yet in its infancy, and every year is adding to our knowledge of what will stand the unfavourable conditions and what treatment is required. The most fertile sources of failure with hardy plants in towns, are poor, unmanured soil; neglecting to wash the leaves of the plants frequently, and, above all, planting at the wrong time. In towns hardy plants (except spring flowering ones) should be planted in April, May, and June, and allowed to have a whole year's growth before they are expected to flower. Of course if people plant sun-loving subjects under trees they cannot expect them to thrive, but many woodland plants do well in such positions if fed with their natural food — fallen leaves. I had a front garden for some years in the outskirts of London in exactly the position described by "H. H. H.," and facing due north, but had no difficulty in keeping it bright with Lily of the Valley, Creeping Jenny, and Pansies, which flowered the whole summer, while my neighbours with similar plots were struggling to grow bedding plants, which scarcely produced a dozen blooms each throughout the season. As an extreme instance of

How bedding has narrowed people's ideas, and made gardening of little more interest and beauty than the causeway blocks of the city streets, I may mention that I see a garden every day—a tiny plot, in front of a pretty old house facing due south; at the foot of it is a deep river of brown water just slowing to a mill dam. The river is not two feet below the level of the garden. What a place for aquatics one naturally thinks! Water Lilies, Marsh Orchids, Rosa sulphurea (the old yellow Cabbage Rose), Mimulus, tall Lobelias, Cape Pond Weed, and Iris Kæmpferi ought to be prominent plants. Geraniums, Calceolarias, and Lobelias, in rows and spots, are the whole stock! Nobody wishes to injure the jobbing gardener or prevent him from earning his living. I know of several who are useful, intelligent men, who love flowers, and are delighted when their work is appreciated, and who cannot at the same time help laughing at the absurdities they are called upon by customers to perpetrate. I only object to the jobbing gardener when he insists upon digging among plants; when he tells his customers that hardy plants require annual raising from seed or cuttings, or characterises everything that is difficult to multiply in quantity, or that he has not a stock of, as "rubbish not worth growing," or "sure to dwindle and die." Even with Geraniums the bedding-out man often gives wrong advice. Gardeners always say that newly-struck plants are best for bedding, whereas I have often seen the jobbing gardener's Geraniums, planted under his own superintendence, remain very much as they were put into the beds, only beginning to grow and flower when it was about time to take them up; while old plants cut back and just kept alive all winter, have come into bloom before the newly struck plants, and flowered profusely the whole season. J. D.

The St. Bruno's Lily.—The St. Bruno's Lily (Anthericum Liliastrum) is a most graceful plant that usually grows about 15 inches high, and throws up spikes of snowy white Lily-like blossoms. It has bloomed admirably with me this year. It should be planted in deep free sandy soil, and in early spring the plants should be protected from slugs and caterpillars. If the ground is dry a good mulching with rotten manure will be useful. It is an excellent plant for choice borders, and would look better still as a good colony or group in an open space between dwarf shrubs. Propagation is effected by division of the roots in autumn (which is the best time to plant), or it may be raised from seed.—D.

A beautiful Lily.—Lilium testaceum is justly a favourite in gardens; it is distinct from any other in point of colour, is also graceful in growth, and, above all, easily cultivated. Its peculiar nankeen-tinted flowers, moreover, are deliciously fragant—very different from the powerful and unpleasant odour which characterises the scarlet Turk's-cap Lily, which is probably one of its parents, the other being the Madonna or common white Lily. The Nankeen Lily, as L. testaceum is popularly called, combines the characteristic features of both parents in a marked degree.—R.

Black Opium Poppy.—"J. S. W." sends us a very dark, almost black, and very double, Poppy. Closely examined, the flower does not seem to us as attractive as other kinds, but these large Poppies are valuable for their distant effect rather than for their beauty when closely viewed, and it would be impossible to judge of the value of this kind from specimens showing the head only. The underside of the petals is a rich shiny black, and altogether this is, we think, the blackest large flower we have ever seen.

Disposing of cut flowers.—I see many enquiries in Gardening as to the best mode of disposing of cut flowers. I regularly supply local dealers, and send to one of the best firms in Covent Garden occasionally, and can assure inquirers that none but the choicest varieties of flowers pay for the trouble and expense of packing and sending. Really well-grown perfect buds of Maréchal Niel, Niphetos, &c., white Camellia buds, Stephanotis, and best button-hole Carnations, will fetch their price; but all these must be supplied in dozens, not twos and threes. Primroses, Wallflowers, and Mignonette, &c., are grown and supplied by market gardeners close to London at a nominal price.—Grey Friars.

Viola General Gordon.—Mr. W. Jones, of Balham, forwards a few blooms of his white Viola, General Gordon, which, he says, has a good habit and a good, hardy constitution, while it blooms throughout the whole summer. It is an extremely beautiful flower, slightly fringed, and differing in other respects from Mrs. Gray.

REPLIES.

13941. — **Propagating broad-leaved Myrtle.**—There is no better time than the present for propagating Myrtles, and the easiest way I have found of doing so is as follows:—Take off shoots with about three eyes of the partly matured wood, and having well stirred the soil in a shady place, insert them firmly, leaving only one pair of leaves out of the ground. After insertion give a good watering to settle the soil round them, and see that it does not become quite dry at any time. Under an Apple tree is a good place, but any shady position will do. Treated in this way 90 per cent. of the cuttings will strike.—J. C. B.

13951.—**Culture of Kalosanthes coccinea.**—Place the plants in a light, airy position, fully exposed to the sun. They may be out-of-doors from now until September. With that treatment they will flower next year.—J. D. E.

—— Strong healthy plants of the dimensions described ought to bloom well, and the cause of their not doing so is want of maturity in the shoots. Kalosanthes, like all other succulents, require a large amount of light and air; they cannot get too much sun, and the more they are roasted the more likely are they to bloom well. When grown in small greenhouses, or among a miscellaneous collection of plants, where they do not get enough space, they are apt to run up quickly, apparently making satisfactory growth, but this is too rapid to admit of its acquiring much solidity. There is no place so good for them as a shelf in a sunny greenhouse near the glass and close to the ventilators, as there they make a short, stout growth, and are sure to bloom well. A good plan in the case of old plants is to put them out in the open, in a sunny place, for a month or so in summer. The foot of a sunny wall is an excellent position. As the Kalosanthes is apt to become tall and ungainly, it is better to keep a few young plants growing on, and to throw away the older ones. The best cuttings are those furnished by shoots that have not bloomed. Inserted three together in a $2\frac{1}{2}$-inch pot, they make roots quickly, and get established by winter. In April shift into $4\frac{1}{2}$-inch pots, not dividing them, and they will form nice compact specimens coming into bloom during the summer. When done blooming prune the shoots back to half their length, and keep rather dry till well in growth again. In winter they need great care in watering, or the roots perish.—J. Cornhill.

13940.—**White Foxgloves.**—Seeds saved from a white variety will produce many plants of various purple shades and some white varieties. There is no method of treatment which will cause all the produce to give white flowers. The natural laws of reproduction cannot be altered at the will of any cultivator.—J. D. E.

13838.—**Raising hardy plants.**—Such plants as Pinks, Pansies, and the like should not be coddled up in a greenhouse during winter. Sow the seeds out-of-doors, and let these and all other hardy plants be planted in suitable soil early in the autumn, so that they may be well established before the cold weather sets in. Many hardy plants are killed by frost or wet in winter owing to their being planted out too late in the year.—J. D E.

13797.—**Virginia Creeper withering.**—The Mile End Road is not a very good locality to grow even such a hardy plant as Virginia Creeper. Are there any chemical works near it? If so, that might account for it. The recent dry weather might cause it. Examine the roots, and if they are all right trust to a second growth being more fortunate.—J. D. E.

HUMEA ELEGANS.

THIS graceful old plant seems, we don't know why, to be disappearing from our gardens. At one time it was used a good deal, and was often very graceful, but we have not seen it well grown for some time. Humea elegans should be grown one year as a frame plant in order to be prepared for the second season, when it blooms during the summer and autumn months. The best situation for it is the centre of a large circular bed, or it may be grown in the form of single specimens on the lawn, the pot which it occupies being plunged a little below the rim. Seeds may be sown at any time between the middle of March and the beginning of May. Most people sow either in shallow pans or well-drained 6-inch pots, but some prefer to sow on a gentle hothed. The young plants should be pricked out singly in 3-inch pots, and allowed to remain on the hothed until established. They should be kept as near the glass as possible, and air should be given daily, and water when required. They make rapid growth in a compost of three parts turfy loam and one part rotten hotbed manure and leaf-mould, with a sprinkling of silver sand to keep the whole porous. Shift into larger pots as required, and always take care to ensure perfect drainage. By the beginning of autumn they should be established in 9-inch pots, and the plants should be about 18 inches high. An ordinary greenhouse temperature will be warm enough in winter, and even a degree or two below the freezing point will be hetter for this biennial than too much heat. Give plenty of air on all favourable occasions. By the end of February it will begin to grow freely, and should he shifted into 10-inch or 11-inch pots. At the beginning of April move into cold pits, take off the lights in mild weather, and plant out in ground that has been deeply dug and made tolerably rich. Each plant should be fastened to a stout stake, and, after planting, a good watering should be given. For greenhouse, balcony, or verandah decoration the most healthy plants should be potted into 12-inch pots, when the other plants required for the flower garden receive their last shift. R. T.

Pink, Mrs. W. M. Welsh.—This comparatively new Pink is one of the most beautiful pure white varieties yet raised; indeed, it is superior in all respects to all other white Pinks we have yet seen. Its flowers are large and full, its petals are broad, smooth, and of a thick texture, and the plant is a strong grower and a profuse flowerer.

Erica Maweana.—This is a charming little Heath, and one of the best of the hardy varieties. It somewhat resembles E. ciliaris, but the flowers are larger and the spikes more massive. The colour is a rosy pink, therefore soft and pretty. It is dwarf in habit and a vigorous grower, a capital plant for the rock garden, and possesses the rare character of flowering almost throughout the summer.

Winter in summer.—On the fourth day of July I saw the Grass in St. James' Park litterred with pots, from which the men had just set out the bedding plants that had been stored in the said pots during the winter, spring, and early summer. Even the most crass admirer of bedding out can scarcely think this anything but stupidity itself.—J. M.

The sparrow curse.—Every lover of flowers can sympathise with "An Amateur, Bromley, Kent" (p. 245), so far as his enmity to our sworn foes, cats, is concerned; hut when he also vents his anger on our friends, and good friends too, the sparrows, we say to him "Farewell." These friendly little scavengers are a great help to amateurs, and even if they do take toll of Grass and other seeds they really earn it. Last year my garden, a very small one, was infested by caterpillars. How many tribes there were I cannot say, but the chrysalis of one kind was black, something like India-rubher, and to see my friends the sparrows "wiring in" to these made one feel very forgiving towards them for any little ills they might have done. Now they hunt every day all along the eaves of the walls, picking out both spiders and their eggs. In conclusion, I must remark that I cannot understand how people see only the faults of these plucky, confiding little friends.—R. B., *Stoke Newington., N.*

*** *Our experience is that they are very offensive, and are inimical to other birds which sing, and do not merely make a noise "like that of a spring-trap," as "Amateur" says. We see them repeatedly destroying various garden crops. We object to their pugnacity and their rapacity. Evidence of the mischief they do is found in the numerous questions addressed to us by correspondents who wish to know how to protect their gardens. Have any other of our readers anything to say of their destructiveness?*—ED.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, July 27th to August 1st.

Sowing Broad-leaved and Green Curled Endive on a moist border; also Wheeler's Imperial and Heartwell Early Marrow Cabbage; planting out the last rows of Celery in trenches, in which was put a good supply of well-rotted manure, to which had previously been added soot and salt at the rate of 25 pounds of the former and 1 bushel of the latter to the load. Putting Jargonelle Pears in gauze bags to protect them from wasps, &c.; nailing and tying in leading shoots of Peaches and Nectarines; layering Strawberry runners in pieces of turf 4 inches square which had previously been soaked in manure water. Sowing Brown Cos and All the Year Round Lettuce, Red and White Turnip Radishes, and Early Horn Carrots for autumn use; potting Primulas and Cinerarias for supplying cut flowers; storing Shallots and Garlic in a cool shed; earthing up Celery while it is perfectly dry.

Stopping laterals through all vineries where the fruit is ripening; hoeing, cleaning, and watering amongst late Peas; taking up a border of Early Ashleaf Kidney Potatoes and laying them in the sun to get green for seed; sowing Turnips; putting in a few Pelargonium cuttings; staking Chrysanthemums; pruning and nailing Plum trees. Pulling up pickling Onions and laying them out to dry; stopping and nailing the shoots of Tomatoes on walls; sowing Mignonette in pots, also Telegraph Cucumbers. Renovating linings round all Melon and Cucumber frames; digging ground (previously occupied by Peas) for Cabbages; hoeing among Gooseberries and Currants. Sowing Spinach; earthing up Leeks; thinning Turnips and Spinach; sowing a bed of Early White Naples Onions for use in spring; pulling up one portion of spring-sown Onions to dry.

Work in the Town Garden.

ALL outside planting being now finished, there remains little to be done, beyond the usual routine of watering and keeping everything clean and neat, for the present; so that the diligent worker may now rest on his laurels for a time, and enjoy the fruits of his labour during the winter and spring. Remember, however, that neatness has quite as much to do with the proper enjoyment of a garden as careful cultivation, and that unless the horders are kept regularly weeded, paths swept, Grass cut with scythe or machine, and edges trimmed, the finest flowers will lack their setting, and make but a poor display. In the greenhouse also there is really not much to be done just now, except the needful watering and shading, &c. Cuttings of choice Zonals and Pelargoniums may he put in for flowering early next spring, and Cinerarias, Primulas, and herbaceous Calceolarias must be pricked off and potted on for winter and spring flowering and a few of the best douhle and single Zonals, such as Vesuvius, Wonderful, F. V. Raspail, &c., may be potted into 48's for late autumn flowering; but, as a rule, it is not much use attempting to get bloom from this class of plants, in the town garden, after November.

Amaranth feathers (Humea elegans).

HOUSE PLANTS.—It is often difficult to find a plant that will stand, if only for a time, the dirt, smoke, and impure atmosphere generally of a large town, when used as a sitting-room or table plant. Even the long-enduring scarlet Geranium will not sustain for more than a brief period the dry, dusty air of a town parlour, and what to get that will last more than a few days is often a difficult question. There is no doubt that the best of all room plants is the Aspidistra lurida. The green or plain form of this plant is certainly the hardier of the two; in fact, given any moderately suitable soil, and a little water sometimes, and it is scarcely possible to kill it by fair means. The variegated form is the more ornamental, however, and but slightly more delicate. The foliage, as most of our readers are aware, is of great substance, broadly lanceolate in shape, and longitudinally striped with a creamy-white variegation. The foliage rises directly from an underground, slow-creeping stem, and in a good specimen is extremely bold and handsome. A mixture of good loam and peat, with a little sharp sand, and good drainage, suits this plant best, and it is better not to give any water, especially in a low temperature, until actually required. A well-grown example of this Aspidistra, with six to a dozen leaves, forms a very handsome object. Unfortunately there is no way of increasing it but by division, and as it is of very slow growth under any circumstances, the price is, of necessity, somewhat high. The India-rubber plant (Ficus elastica) is another very suitable plant for a town parlour or window, and is perhaps more generally known than the Aspidistra. When in anything like good condition it is extremely handsome, hut is not nearly so tenacious of life as the last-named plant. It requires the same compost as above, and much the same treatment as regards moisture, giving a more liheral supply in spring and summer, while growth is heing made, and less during winter. A comparatively little known, hut extremely hardy and useful, as well as graceful, town plant, either for greenhouse or sitting-room, is the green-leaved Dracæna or D. viridis australis. This is wonderfully vigorous in growth, though by no means rapid, and will stand the dry, dusty atmosphere of a sitting-room for a long time, and even, with good light and plenty of care, will grow and flourish almost anywhere. We dispose of a large number annually for this purpose, and though propagated as fast as possible, we have never too many in stock. It is increased by means of root-cuttings, which require heat to start them, but once in growth the temperature of a room is quite sufficient. Sandy loam, with a little peat or leaf-mould, suits it admirably. Another very good room plant is the Grevillea rohusta, a handsome plant with Fern-like foliage, very easily grown; and Aralia Sieholdi, or Fig-leaf Palm, is also extremely useful in a small state. Both do well in open sandy loam, and should only be watered when they really require it. Of Ferns, some of the Pteris family are much the best. P. serrulata and P. cretica are about the most useful, though P. tremula often does well. B. C. R.

Glasshouses.

HYDRANGEA PANICULATA. — The panicle-flowered Hydrangea is a very good subject for forcing or bringing on slowly in a cool house, and is much superior to the old variety. Where it has been so used, now, when the hlooming is over, the plants ought to be turned out of the pots in good soil in an open, sunny place, have their strongest shoots well shortened back, and, if the weather becomes dry, be well supplied with water; so treated, after another season's growth they will be ready for again using in pots. Plants of the ordinary kind that have been used for pot work should also be turned out of the pots, have the old bloom shoots cut out, and the young growth usually found at the base of forced stock encouraged, so that it may he in a condition to flower next season. Many of these forced plants will do this if well cared for, although in their case it will be well not to attempt forcing, simply letting them come on in a cold house or pit, when they will be found very serviceahle to follow the early-flowered examples. Young stock of this species struck from cuttings in the spring should be moved to the pots in which they are intended to be forced, and plunged out-of-doors in a full sun, well attended to with water so as to ensure stout growth and get it well matured.

POT CULTURE OF FUCHSIAS.—In the pot culture of Fuchsias the system often followed of

keeping old plants on for a number of years is quite a mistake, as they usually get bare and naked at the bottom, and are deficient in the fresh vigorous character which young stocks possess; if small specimens of the freest blooming kinds are grown, pretty plants can be had by midsummer, but where really fine examples are required either for exhibition or home decoration, to bloom from July to the end of September, there is no method by which they can be had equal to that of striking cuttings about the end of July, and keeping them growing slowly in an intermediate temperature through the winter. So treated they can be had from 4 feet to 5 feet high, and 3 feet through, furnished with shoots bearing a profusion of flowers and healthy foliage that will all but hide the pots. For this system of cultivation cuttings should at once be put in; select for the purpose shoots that are free as regards growth and do not produce flower-buds. Where large examples are wanted early in the season, old plants will answer best; when these have been flowering for a considerable time they will begin to get exhausted. Where such is the case they may be turned out-of-doors to harden a little for a fortnight, and then have their shoots shortened in to about half their length, placing them in a close house or pit, syringing well, and as soon as they begin to push growth freely keeping them regularly supplied with weak manure water; managed in this way they will again start away and flower until late in the autumn. A matter of importance in Fuchsia growing is to keep them freely syringed regularly two or three times a week, being careful to get the water well to the undersides of the leaves, without which they are all but certain to become infested with red spider. Pick off all seed pods as soon as they are formed.

Large-flowered Pelargoniums that were placed out in the open-air after flowering, and have sufficiently matured their shoots, should be headed back; but though it is desirable to get this operation completed without delay, as upon its being early carried out depends the time of bloom next year, heading down should never be attempted until the bases of the shoots have attained a woody condition and are quite hard. If the plants are already as large as it is desirable to have them, all the shoots should be cut down to within two or three eyes of where they were shortened to last year, letting the earth in the pots get quite dry before they are cut in. If this is not done many of the roots will perish. After cutting down they should be put in a cold pit or frame, and kept moderately close to induce them to break. No water should be given them until they have broken, but a slight moistening overhead every afternoon will be an advantage. Should it be desirable to increase the stock of any kind, cuttings ought to be put in.

Chrysanthemums.—The stronger and more vigorous the plants are the greater the amount of sustenance that they will require in the shape of watering. Now that the pots should be getting fairly full of roots they are best plunged in ashes, as then the temperature of the roots is more equable, and they are less likely to suffer through want of water. If the best display obtainable for a long period is required, a few of the earliest blooming sorts should also be cultivated. These will very soon be showing their bloom buds, and will bear weak manure water using altogether.

Celosia pyramidalis.—This elegant plant is particularly useful when late, so as to be in flower up to the end of the year. If small stock newly vegetated be not already at hand, a pinch of seed should at once be put in; the plants resulting from this last sowing will, if well cared for, succeed, and come in either for cutting or intermixing with other things. Where a sufficient stock of this Celosia is grown the plants help to brighten up a conservatory or greenhouse, their erect form of growth relieving the even surface which bushy specimens present. They are sometimes affected with red spider, but a sufficient use of the syringe will keep this pest in check.

Red spider.—This diminutive insect is one of the most troublesome pests that gardeners have to contend with, as it cannot be destroyed by fumigation like aphides. Its presence is invariably followed by much worse consequences to the leaves of the plants it gets established on than result from aphides. Many people are deterred from attempting the growth of such subjects as it is especially partial to, which necessarily limits the variety present in greenhouses and conservatories during the summer months when it is more prevalent. Yet this is a mistake, as where sufficient means are taken from the spring onwards to prevent its ever getting a lodgment, there is little danger of any plant being injured through it. All that is necessary is a daily and sufficient use of the syringe with clean water, not simply sprinkling the upper sides of the leaves in the way too generally deemed sufficient. This, in most cases, is wholly useless so far as keeping down the pest, which instinct teaches, both for protection and food, to keep almost entirely to the undersides of the leaves. This is one of those small matters in gardening that are so obvious to anyone who has any knowledge of insect life, so far as it affects plants, that it would seem all but unnecessary to mention it were it not that little observation is needed to see that for want of getting enough water continuously through the growing season to the parts where the spider takes up its quarters, unlimited numbers of plants suffer, and are made more an eyesore than an ornament.

Flower Garden.

Many annuals beautiful in bloom are of short duration, and if the seed is not required they should be cleared off and replaced by other plants as soon as their beauty is over. Biennials and perennials raised from seed sown during the spring must on no account be allowed to stand too close in the beds, for if crowded, the whole get drawn up weakly, and a season is so far lost that they flower only meagrely the ensuing spring and summer. In preparing nursery beds for those that do not absolutely require a shaded position, select an open situation where they will make close, compact growth, which will enable them to stand the winter and produce double the quantity of flowers that can be obtained from weakly grown examples. Those that do not like full exposure to the sun, as, for instance, Primroses and Polyanthuses, should have a place at the north side of a wall, not, as they are often seen, crammed away under the shade of trees that not only darken them too much, but impoverish the soil greatly.

Herbaceous borders.—Stake and tie all plants that require it, especially tall-growing subjects like Hollyhocks, before they are broken down by the wind. Hollyhocks are often thrust at the extreme back of a border, close up to trees or shrubs, where there is no possibility of their ever being more than mere shadows of what they would grow to if justice were done to them; in such places the bottom leaves are usually all destroyed by red spider before their flowering is half over. Mulching with 3 inches of rotten manure over the roots will greatly assist them, and a free use of the syringe with clean water twice a week, taking care to moisten the roots as well, will much improve their health and appearance. Remove all dead and decaying tops from plants that have flowered early, in order to reduce to a minimum the greatest drawback to herbaceous plants; but never, for the sake of mere appearance, remove the healthy tops from any plant.

General work.—Notice should now be taken of the best arrangements in the flower garden in order that they may, if wished, be repeated another year. Perfection of keep, both as to turf, beds, walks, and all the surroundings, should now be the one great aim, for, however perfect the arrangements and flowers may be, weeds, decaying flowers, and long Grass will mar their enjoyment. Our own routine at this season is something like the following: Beginning with shrubbery clumps, Rhododendrons and Azaleas are freed from seed-pods, suckers are pulled off, straggling shoots cut in, weeds destroyed, and verges cut fortnightly; fernery and rock garden weeding, cutting in shrubs that encroach on walks or over the Ferns, cutting off old flower stems on rockwork, clearing rusty fronds off Ferns, and weeding out any of the common kinds to give room to the best varieties. The common Bracken we find very troublesome; owing to the soil having been brought from land where it grows naturally, every particle of root with a joint soon makes a large plant. Sub-tropical beds are looked over weekly, in order to keep the plants well up to their supports, and for the present the flowers are kept picked off Castor-oils, Cannas, Tobaccos, and any of the plants that we would rather grow large than to flower. The undergrowths are either pegged down or are kept dwarf and spreading by repeated stopping, as may be needed by the kinds of plants used. When no such undergrowth plants are employed, the beds are kept mulched either with leaf-soil or decayed manure. On the parterre there is always much to be done by way of trimming of formal bedding arrangements. Mentha, Mesembryanthemums, Herniaria, Sedums, and Saxifrages require to be clipped or pressed down at least once a week; Verbenas, Petunias, and the like to be pegged down; and part of the flowers should be picked off Calceolarias, and all the seedling flowers off Violas; they are also kept mulched with rotten manure, and under such treatment never wane, either as regards vigour or flower, in the driest season. Roses are gone over once a week for the purpose of cutting off bad flowers and shortening long shoots. Climbers are twisted or tied to their supports, those on walls syringed to keep them free from insects, and turf verges and Box edgings, Privet, Laurel, and Yew hedges, are clipped.

Fruit.

Vines.—The roots of Muscats now beginning to take their last swelling should be well mulched with half-rotten stable manure, the ammonia from which will be found inimical to red spider, while its stimulating properties will benefit the foliage and draw many of the active surface roots to the influence of warmth and air so essential to the perfect finish of this valuable Grape. To insure the ripening of this and all the best kinds of winter Grapes by the middle of October, the minimum temperature should be 70 degs., with a corresponding rise through the day, and if these cannot be secured from solar heat alone, steady firing, while it increases the size of the berries, will be found more economical now than sharp forcing with double the amount of fuel in the autumn, when the Grapes should be sufficiently advanced to require cool treatment. Where ripe Grapes are hanging enough gentle heat should be maintained to prevent condensation of moisture on berries. If it is desired to keep them for any length of time, two or three folds of a fishing-net thrown over the roof will break the direct rays of the sun, as black Grapes soon lose their colour and freshness at this season. It is not, however, a good plan to allow Grapes to hang longer than is absolutely necessary, as late hanging is almost as great a tax to the vines as early forcing; but where heavy crops have to be kept, the cutting of the last bunch should be followed by liberal supplies of diluted liquid to the inside borders, and good syringing to keep the foliage clean and healthy. Encourage newly-planted vines to make rapid growth by closing early with plenty of solar heat and moisture. Keep the laterals pinched to one or two buds, stop the leaders when they have filled two-thirds of the trellis, and then allow an unrestricted growth up to the end of the season.

Peaches, Nectarines, and Apricots which have not been nailed in should have immediate attention. Before nailing is commenced, stop all laterals and sub-laterals, and pinch the points out of growths which are likely to become too strong, and carefully guard against overcrowding by laying in a single shoot that will have to be cut away in the winter. Follow up the removal of breastwood from Plums and Pears on walls and espaliers, commencing at the top and working downwards, and lay in no more wood than is wanted, as the spurs and buds will require all the warmth and light that can be secured to them.

Morello Cherries should be netted to protect the fruit from birds, but first of all see that the tips of the shoots are free from black aphis, and, if necessary, repeat the dipping in Tobacco water. Prune and net Currants, but do not cut the young growths too short, as a moderate quantity of foliage protects the fruit from sun and rain, and favours its keeping well into the winter. Vicomtesse Héricart de Thury and the good old Elton are two of the best Strawberries for preserving purposes. Paxton resists wet better than President. Oxonian, Loxford Seedling, and Frogmore Late Pine are at the head of the list of late varieties. We

plant Oxonian extensively on north borders, and find it the most valuable and profitable crop we can grow. If Cherries or Currants occupy the wall, a fishing-net, supported on slanting laths running from the top of the coping to the margin of the walk, protects the two crops, and the fruit is accessible at all times. When the gathering is over for the season, beds that are to be retained may be dressed out and well mulched with rotten manure or fresh loam, which is equally valuable in old gardens.

Vegetables.

TOMATOES. — These plants are naturally so vigorous that they usually grow too rank if they receive over much moisture at the roots, but in exceedingly dry weather they must be regularly supplied with water, or the fruit will not swell to the requisite size nor will the plants continue growing. Do not allow them to get too much crowded with superabundant shoots or to hang loosely from the wall, or the progress will be slow.

SUCCESSION OF CROPS.—Shallots, Garlic, early Peas, early Cauliflowers, autumn-sown Onions, and the earliest kinds of Potatoes ought to be harvested, and as soon as they are lifted let the ground be cropped as follows :—On the Shallot, Garlic, and Onion ground put Lettuces, Endive, Turnips, and Early Horn Carrots; on the Cauliflower ground, winter Spinach ; and on the Potato ground, Broccoli or other kinds of winter Greens. If the ground was well treated for the preceding crops, no preparation beyond that of cleaning and levelling will now be necessary. We usually plant the main crop of Broccoli on the Strawberry plot that has done duty for two years. As soon as the fruit has all been gathered, the plants are planed off with spades, and the Broccoli planted between the rows, in holes made with a crowbar, and filled in with fine soil. Under these conditions Broccoli thrives at least as well as on ground that has been elaborately prepared.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

14059.—**Culture of Kohl-rabi.**—Will anyone who grows this well in England tell me the method of culture. —S?

14060.—**Bulbs for winter blooming.**—Will Mr. Ravenscroft, or some other reader, tell me what bulbs besides Roman Hyacinths I can prepare for winter blooming for greenhouse (cool)?—VIRA.

14061.—**Wanted, a white Sweet Brier.**—Can any of your readers tell me where I can find a white Sweet Brier? If there is one, one ought to be raised.—J. H. B.

14062.—**Propagating frame.**—I am about to construct a small propagating frame, and should like to know if common inch gas piping may be used for bottom heating. Will any reader kindly inform me?—ANXIOUS.

14063.—**Flowers for bees in spring.**—Having just begun bee-keeping, I am desirous of knowing what I can sow and plant in my garden to bloom for early spring feeding for them. Will any reader who is a bee-keeper kindly help me in the matter?—ANXIOUS ONE.

14064.—**Roses for garden near Leeds.**—Will someone kindly give me the name of half-a-dozen good Roses (not climbers) that would grow in a garden facing south in the neighbourhood of Leeds? Atmosphere and soil are suitable.—A. J. D.

14065.—**Onions splitting.**—Will any experienced Onion grower kindly tell me the cause of my winter Onions splitting when they get about 12 inches to 14 inches round? How can I prevent it? I want to grow them to a large size for exhibition.—HARRIS.

14066.—**Gas boiler.**—I wish to heat a small lean-to with a gas boiler, and will be glad if anyone will state his experience and advise me in the matter. Would "G. F., Oxford," who wrote on this subject in March, this year, mention the name of the maker of the boiler spoken of by him?—BENSHAM.

14067.—**Highly perfumed Roses.**—Will any readers of GARDENING who delight in good Roses give lists of those that are most highly scented? Many Roses are almost worthless, in my opinion, from want of this quality.—J. LODER.

14068.—**Orange tree.**—Will anyone who has grown Orange trees inform me what kind of manure should be given to them (if any be needed), when they should be repotted, and whether they require much water? Mine is plunged in the centre bed of a greenhouse, and the leaves seem inclined to turn yellow; it has fruit on, and is still blooming.—MISS C.

14069.—**Melon stems cracking.**—I have a Melon ridged out in turfy loam on a bed of leaves in a cold pit. The plant has made strong growth and is carrying three good-sized fruit; the foliage seems healthy and clean, and at the same time the vine or stem is cracking, and in some places rotting. Will any Melon grower kindly tell me, a young beginner, what I ought to do?—THOMAS H.

14070.—**Grubs in Cabbage.**—Will Mr. Hobday, or any other good vegetable grower, tell me how to get rid of grubs at the roots of Cabbage? My plants looked very healthy about a fortnight ago, and now about one-fourth of them have dropped their leaves and died. On pulling some of them up I found that little white grubs had eaten into the roots.—A YOUNG BEGINNER.

14071.—**Fuchsia blooms dropping.**—The blooms of my Fuchsias are dropping off, and I shall be glad if anyone who grows these plants would tell me what I should do to them. They are watered three times a-week at night; they are in a greenhouse on the east side of my yard, facing west, and one of the doors is opened about 4 inches each day.—WEEKLY READER.

14072.—**Keeping Peas true.**—Having a quantity of Peas of different varieties growing in my field, I wish to know if I could save some of them for seed purposes, and how to keep them true. The different sorts are about 6 yards to 8 yards apart from each other, and I should feel obliged if some good grower would tell me how to keep them true.—R. G. P.

14073.—**Diminishing Gorse.**—My house is surrounded by about 20 or 30 acres of Heather and Gorse intermixed. Each year I find the Gorse increasing and the Heather diminishing, which I regret, because we prefer the Heather to this dwarf Gorse, that yields little or no flower. Will any reader of GARDENING kindly suggest any means of destroying the Gorse without injuring the Heather?—S. L.

14074.—**Seedling Pelargoniums.**—Having some seedling Geraniums of last year's growth which do not show any signs of flowering this year at present, I shall feel obliged if any grower of these plants will tell me how I am to treat them to obtain bloom.—J. B., *Bermondsey.*

*** *No doubt "J. B." means the house or the bedding Pelargonium. Geraniums proper are hardy herbaceous plants. He should grow them on freely in a light house or sunny frame.*—ED.

14075.—**A question of heating.**—Following the advice of "B. C. R.," I have abolished stages in my small greenhouse, and now stand my plants on a solid bed of ashes, as recommended by him. I intend to heat the house with hot-water pipes, but am afraid that they will be so near the plants as to be injurious. The stage is just about 2 feet wide, and as the pipes (2-inch) must be placed on top of the stage next the glass, it seems to me that the pots next them will be dried up, while those farther away will only get the necessary amount of heat. Will any other reader inform me if such will be the case, also if it would be any advantage to make a channel in the ashes for the return pipe, or if this would mean a loss of heat. The house is about 6 feet square.—TAM GLEN, *Maryhill.*

14076.—**Plants for vacant spaces.**—I shall be glad to know what I can put in my garden now that most of the annuals are over, such as Nemophila and Limnanthes Douglasi. Sweet Sultan and Virginia Stocks are still blooming, but the want of the other annuals leaves ugly blanks, for I cannot afford either money or accommodation during winter for bedding plants. I know that Sweet Alyssum grows again after cutting back, but not so Limnanthes and others. Would any reader recommend any plants?—E. W.

*** *You ought to depend more on good hardy plants, both evergreen and summer-leafing. Use the annuals to fill up spaces. It is almost too late to put anything out now with a view to the present year's bloom, but much might be done with a view to providing for the coming year.*—ED.

14077.—**Unfruitful Strawberry plants.**—In August, 1884, I planted two beds with strong Strawberry plants, all of which did well and are now large plants, and many of them bearing well; still, many of them are blind —that is, without any bloom. Can any Strawberry-growing contributors assign a reason for so many failing to bloom, and are they likely to bloom if allowed to remain to another year? I should like to know whether there is anything to show in the young plants now forming that they will or will not be bearing plants next year, provided they are healthy and properly managed. My plants are mostly of mixed sorts, but I have some Presidents, which seem to have more blind plants than the mixed sorts. They were mostly raised in pots from the first runners and planted early in a well-prepared rather light soil.—A. B. C., *Birkenhead.*

14078.—**Laying out garden.**—"A Novice" will be thankful for information as to best mode of laying out a garden, 100 feet by 40 feet, at Peckham—neglected for years and almost a wilderness—such as digging, manuring, and planting, dealing with full-grown old and young fruit trees, also quantity and kind of manure required.

*** *Everything depends upon what you want to grow. Each man should make the garden that he would best enjoy and that the place would best permit of. In many instances the best town garden would be a Grass plot with quiet borders; in other cases you might grow shrubs with advantage. Whatever you do, do not do what everybody else does; that is the bane of gardening. Think how you would best like to have your little garden, and we may be able to help you further. We print your question, and perhaps some kind reader will compress an encyclopædia into thirty lines for your benefit.*—ED.

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14079.—**White Lilies** (*Mrs. R.*).—Yes; your Lilies should be replanted when they have done flowering.

14080.—**Transplanting edging Box** (*S. A. F.*).—You can transplant it at any time of the year.

14081.—**Will gas lime destroy weeds?** (*A Rector*).—We think gas lime would destroy any vegetation.

14082.—**Greek Valerian.**—Yes; the blue Polemonium is often called by the name of Greek Valerian.

14083.—**Mint turning yellow** (*H. Haigh*).—Let us know how you have treated it, and send us a specimen.

14084.—**Sand for storing bulbs** (*Mrs. R.*).—Yes, the sand of which you send a sample will do for storing bulbs and tubers.

14085.—**Jasminum gracilimum for cut flowers** (*W. H. J.*).—This will be a most desirable plant for a stove if cut flowers are required.

14086.—**Dwarf shrubs for sandy soil** (*Shrubbery*). —Any of the variegated or golden Conifers, Hollies, Aucubas, Euonymuses, or Box will suit your purpose.

14087.—**Soil for Echeverias and Sempervivums** (*Mrs. R.*).—These will grow in any kind of garden soil. Echeverias are not hardy, and require either to be lifted in autumn or protected during winter.

14088.—**Winter blooming plants** (*H. Haigh*).—A series of articles, by Mr. B. C. Ravenscroft, begun in the number for January 31st (p. 608) will give you full information.

14089.—**Re-laying lawn** (*Nelly*).—You will find an article in a recent number giving directions how to make a lawn. You may relay it in autumn or spring, or at any time during a mild winter.

14090.—**Tuberous Begonias** (*A. C., Bedford*).—We do not know what you mean by "Begonia alba"; but B. weltoniensis is certainly not a tuberous Begonia in the ordinary sense of the term.

14091.—**Best Cucumber for exhibition** (*F.P.*).—Rollisson's Telegraph and Tender and True are the best for all purposes. You can get the seed from any seedsman.

14092.—**Destroying moles** (*M. Temple*).—We know of no other remedy than that of catching them. They will probably leave your garden as soon as they have captured all the worms.

14093.—**Putting out Azaleas** (*Vira*).—They should have been out before now, but they will be benefited by being put out for the next few months. They will do in any convenient place in the open air.

14094.—**Plum trees not fruiting** (*M. Temple*).—No doubt the small trees that have risen up round them have something to do with the failure of the trees to fruit. Try the effect of root pruning the vigorous trees during next winter.

14095.—**Officials exhibiting at flower show** (*An Allotee*).—Speaking generally, it is not advisable that officials should compete for prizes at an exhibition; but their right to do so depends entirely upon the rules framed by the committee.

14096—**Treatment of Euonymus** (*Amateur*).—You do not say which Euonymus you mean—evergreen or summer-leafing. If evergreen, cut the bush hard back next April; it will then branch out. If summer-leafing, prune in autumn.

14097.—**Melons in cold pit** (*H. G.*).—The Melon loves a high temperature and a hot sun, and your cold pit does not meet its wants in this way. You can do something to assist it, perhaps, by shutting up earlier in the afternoon and by not overdoing the water.

14098.—**Repairing lawn mower** (*Anglica*).—You had better show your lawn mower to a skilled blacksmith in the neighbourhood, or send it to the makers. No one can tell you how to repair it without examining it to see what is wrong.

14099.—**Oleanders** (*R. B.*).—There are several forms of the common Oleander, many of them very beautiful. They are not much seen in our country because the proper cultivation of these plants is not generally understood by us. It is very well grown in France and other countries on the Continent.

14100.—**Judging wild flowers** (*E. E. J.*).—Judge them by the general effect, and also by the evidence given of judicious selection of the most beautiful wild flowers obtainable at the time. If the prizes are given for the largest number of wild flowers or for the rarest, you will, of course, have to act otherwise; but we do not think it is wise to give prizes of this latter kind, as it tends to the extermination of rare plants, and does not at all help to get a good effect. Three or four kinds, well massed or grouped, will give a better effect than two hundred jammed together.

14101.—**Blighted Ivy** (*S. A. L.*).—The blight attacking your Ivy is one of the aphides nearly allied to the common green fly. Use one of the following mixtures with a syringe or garden engine, or dip the shoots in it:—Soft soap, 2 ounces; flowers of sulphur, 2 ounces, boiled in 1 gallon of water; use cold. Or 1 lb. of Quassia chips, 1 lb. of soft soap, in 10 gallons of water.—G. S. S.

14102.—**Fungus on Roses** (*Brier*).—The fungus attacking your Rose leaves is not the mildew as a remedy for which flowers of sulphur are used. This mildew is a white growth which attacks the leaves, shoots, or buds. A solution of 1 ounce of sulphide of potassium (or liver of sulphur, as it is sometimes called) dissolved in 1 gallon of water is said to be a most effective cure for this and other fungoid growths attacking plants.—G. S. S.

14103.—**Insects infesting roots of flowers** (*Wraith*).—The grub you forwarded had become a chrysalis before it reached me; it would in due course have become a small fly. I should recommend you to keep the soil well broken up during the winter and free from any weeds, &c., which the various insects you mention might feed on. A good dressing of gas or quicklime would be useful.—G. S. S.

14104.—**Winter-blooming climber for warm conservatory** (*W. H. J.*).—Heliotrope is a very good plant for the back wall of a warm house. It soon covers the wall. (Read our rules and send your other question again.)

14105.—**Bigarreau Cherries** (*G. P.*).—If y u bought yours for white Bigarreau Cherries—those which, as you say, are now so plentiful in the market—you have made a mistake. But there are varieties of Bigarreau Cherries, and we cannot tell from the specimens what yours are. If they are Bigarreau they are very small and poor, and this is due either to bad cultivation or to the variety being a poor one.

14106.—**Cherry Culture** (*S.*).—If you have had a good crop this year you may well let the tree have a little rest, and be content with a sparse crop next year. Fruit trees rarely bear equal crops year after year. However, you can do no harm by manuring the ground around your trees if it appears to be in a starved condition. We insert your second question also, but you must send the other again, as you have not taken the trouble to follow the rules given above.

14107.—**Books on the cultivation of plants** (*Vira*).—You give us no indication of the kind of plants you are interested in—whether outdoor or indoor. Bulbs that require greenhouse and stove temperature, including all those usually grown in pots in spring, you will find treated of in Mr. Baines' book on "Greenhouse and Stove Plants," which is now ready, and can be obtained through any bookseller. For outdoor bulbs and flowers generally the "English Flower Garden" is the most comprehensive book.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

EXCHANGING PLANTS (*Patience*).—It is impossible for us to do what you suggest.——OBTAINING NITRATE OF SODA (*Mrs. Young*).—You can obtain this from any manure merchant.——LAWN MOWER (*J. Gosden*).—The agent for the firms you mention are J. G. Rollins and Co., 108, Upper Thames Street, E.C.——CAT-TRAP (*Various Correspondents*).—The cat-trap referred to by "Amateur, of Bromley," can be obtained from Mr. J. Langford, Whittington Avenue, Leadenhall Market, E.C.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*A. E. P.*—1, Aspidium labatum var.; 2, Orchis mascula.——*Joseph McChesney.*—Davallia pallida.——*Reader.*—1, Viburnum Opulus; 2, Potentilla fruticosa.——*Mrs. R. S.*—1, Gladiolus segetum; 2, Allium (species).——*Trentham.*—Cratægus tanacetifolia.——*G. W.*—1, Begonia ascotensis; 2, B. weltoniensis.——*Ozhey.*—Not Spinach, but Goosefoot; Chenopodium album.——*S. R., Aberdeen.*—Erythrochæte pinnatifida, also called Senecio japonicus.——*Miss Grey.*—Dracopis amplexicaulis.——*Garhart.*—Boussingaultia baselloides. This plant does not bloom until it is several years old.——*A. R. C.*—Adiantum puhescens.——*A. D.*—2, Aster Amellus; 3, Veronica longifolia variegata; 4, Agrostemma coronaria; 5, Centranthus ruber. We name but four at a time.——*Brandon.*—1, Double Rosa alpina; 2, Double Persian Rose; 3, Appears to be the Manetti Rose; 4, We do not recognise the other.——*E. A. K.*—Diplacus glutinosus.——*H. E. S.*—Calceolaria scabiosæfolia.——*Bucks.*—Erigeron philadelphicum; Eccremocarpus scaber.——*H. E. Harris.*—Datura Stramonium.——*L. B. Falkner.*—Paulownia imperialis.——*Miss Lucas.*—Leycesteria formosa; Aira cæspitosa prolifera (Grass).——*J. W.*—Spiræa callosa; other is probably Verbascum Thapsus.——*Knaresborough.*—1, Thalictrum aquilegifolium; 2, Veronica Teucrium var.; 3, Saxifraga Aizoon; 4, Kind of Mule Pink.——*C. G. O'B.*—Feather Columbine is Thalictrum aquilegifolium; Scarlet Columbine is Aquilegia californica.——*Coventry.*—1, Campanula glomerata; 2, Inula glandulosa; 3, Galega officinalis; 4, Astrantia major.——*E. F. Shaw.*—We do not name Peas.——*P. Greig.*—Tropæolum speciosum. It can be grown in England out-of-doors, but is a difficult plant to manage.——*Patience.*—1, Hedysarum coronarium; 2, Next week; 3, Medicago lupulina. Send another leaf of Beech.——*O. S. Kelly.*—Please send better specimen.——*C. Wolston.*—Kalmia latifolia.——*Lubina.*—Mimulus cupreus or guttatus. You can get it from any nurseryman or seedsman.——*B. Harcourt.*—1, Artemesia vulgaris; 2, Next week.——*W. C., B. Hill.*—1, Diplacus glutinosus; 2, Apparently Alonsoa incisifolia.

Smithfield Market, Evesham.—List of prices realised 17th July, 1885:—Beans (broad), 1s. 1d. to 1s. 2d. per pot (40 lb.); Beans (dwarf), 2s. 6d. for 11 lb.; Carrots, 2½d. to 3d. per bunch; Cucumbers, 6d. to 10d. per brace; Onions, 2s. 6d. to 3s. per cwt.; Peas, 1s. 6d. to 3s. 6d. per pot (40 lb.); Potatoes (new), 4s. 9d. to 5s. 6d. per pot (80 lb.); Turnips, 3d. to 7½d. per dozen; Vegetable Marrow, 2s. per dozen; Apples, 10s. per pot; Cherries, 10s. to 17s. 6d. per side (63lb.); Currants, (red), 1½d. per lb.; Currants (black), 2½d. to 2¾d. per lb.; Gooseberries, 4s. to 5s. 6d. per pot (64 lb.); Raspberries, 3d. to 5d. per punnet; Strawberries, 1½d. to 2d. per punnet.

SECOND ILLUSTRATION COMPETITION.

The present competition is confined chiefly to views of tastefully-arranged porches, verandahs, and arbours, Pergolas,* climbers round windows or on walls or trees, garlanded walks, and to illustrations of any way of growing climbing and rambling plants; but any beautiful illustrations of gardening interest sent at the same time will be heartily welcomed. The selected photos will be engraved and published in GARDENING, and senders of the chosen pictures will be entitled to receive useful garden books of the value of not less than One and a-half Guineas. All photographs for this competition must reach us by Saturday, the 8th of August.

In addition to the above, however, we propose to give to the persons who during the year 1885 send us the best series of illustrations,

THREE PRIZES OF HONOUR,

as follow:—First—A water-colour drawing of the Wild Field Rose, by the late Mrs. Coleman; purchased at Christie's for Twelve Guineas. Second—A water-colour drawing, by Madame Vonga, of Zurich, of the first cultivated plant of the rose-coloured hardy Water-Lily flowered in Europe; purchased for Five Guineas. Third—A water-colour drawing of a group of Pæonies, by Mrs. Duffield, purchased for Three Guineas. In awarding these prizes we shall deal only with those photographs which have been selected and engraved in each competition, and the number and beauty of the contributions of each competitor will be taken into consideration. The recent competition is included in these special prizes.

The following rules must be observed by competitors:—

First.—The photos may be of objects in one's own possession or cultivation, but the source whence they are obtained must be stated, and none sent the copyright of which is open to question; the Editor is to have the right of engraving and publishing the chosen photographs.

Second.—The name and address of the sender, together with the name and description of the object shown, should be plainly written on the back of each photo.

Third.—All letters relating to the Competition must be addressed to the Editor, and marked "Illustration Competition."

Figures of men or women, barrows, vases, rollers, implements, and all similar objects had better, as a general rule, be omitted from these photographs. The object is to show the beauty of the garden, and this cannot be done well when the photographer is confused by other considerations. Photographs may be mounted or unmounted; they should be clear, and the subject intended to be shown in good focus, and so as to be distinctly seen.

* PERGOLAS.—Not half enough is made in English gardens of the pretty Italian fashion of the shaded walks and spaces known as pergolas. In Italy they consist of piers of masonry, either square or round in section, roughly plastered, some 12 feet apart along the walk; rough timber logs cross the path overhead from pier to pier, and slighter woodwork is laid lengthwise again upon these. Upon this foundation grow vines and other climbing plants. A pergola for an English garden is best constructed of rough pieces of oak. The top pieces that are left over when oak is felled are the best possible material; the larger and straighter pieces are chosen for the uprights, and the smaller crooked branches for the top. By planting with vines, rambling Roses, Clematis, Aristolochia, and like climbing plants, a beautiful and delightful covered way may be made, or a highly enjoyable open air breakfast and dining-room.

The Second Illustration Competition.—A reader has kindly suggested that inasmuch as many good things that might be shown in the photographs for our present competition may not be obtainable during the stipulated time, and might not, indeed, be in perfection in that time, we should repeat the competition next year. That would enable those who may not have the opportunity during the next few weeks to secure photographs for next year. We give notice of our intention, therefore, to arrange a precisely similar competition next July.

GRAPES AND FLOWERS.

WE so frequently get enquiries as to the possibility of successfully cultivating pot plants in vineries, that a few remarks on the subject may be acceptable to the numerous readers of GARDENING who may not be quite satisfied with the results they have attained hitherto. My own experience for the present year is briefly this: We have six houses devoted to vines, the first just ripe and the latest just thinned out, and a more regular crop throughout could not be wished for. The work of each vine is heavy, for we grow Grapes simply for market, and if they do not produce a heavier crop than is set down as the orthodox quantity for a vine to carry there would be little profit attending them, as the high prices of bygone days are out of the question. By growing heavy crops of Grapes, and having the houses filled with plants as well, we have managed to compete with all comers thus far, and I question if they are likely to be sent into market at a much lower rate than they have been from any source. During the winter months our vineries are full of bedding plants and various kinds of flowering and foliage plants that are used for window gardening or house decoration, and the still larger quantity that supply cut bloom, and when the vines get into full foliage the stages are used for Ferns and other plants that require shade; in the hottest summer months there is less necessity to utilise the space, as most of the ordinary greenhouse plants are benefited by exposure out-of-doors, and when the Grapes are ripe we like to keep the atmosphere of the vinery dry. As regards insect pests being introduced to the vines by means of the plants, I find that mealy bug is the only really dangerous pest, and that is usually found on stove plants that require a high temperature; and one may safely grow any kind of greenhouse plant in the vinery without injury to the Grape crop. The main points of attention to ensure success with both vines and plants is to avoid high temperature by night. Keep them safe from frost, and let the daily range of temperature increase by means of the gradual rise of outdoor temperature, shutting up early to economise solar heat, as this is not only the best but cheapest kind of forcing. As soon as the Grapes begin to colour keep abundance of air on night and day, and maintain a drier atmosphere, and as at this season of the year the space under glass is in less request, we get the house as clear of plants as possible; but, as previously stated, our vineries are full of pot plants for at least nine months out of the year, and I question if our Grapes would be any better if pot plants were excluded, as all the surplus water and liquid manure that runs through the pots goes to help the roots of the vines, so that there is no waste whatever.

Gosport. J. GROOM.

Notes from Kirkstall.—Gunn's Bush Aster (Eurybia Gunni).—I am glad to see this charming shrub noticed in these columns; the wreaths of pendant, Daisy-like blossom and grey-green foliage are both distinct and pleasing to a more than usual degree, and it is with pleasure that I can contradict that part of your notice which seems to place the plant beyond the reader's reach, for it is being quickly propagated [our observation referred to E. stellulata]; moreover, it is not unlikely that it will prove a winter bloomer if placed in heat—treated in the way of Deutzias. Another lovely blooming shrub is Escallonia Phillipiana. It has starry-white blossoms half an inch across, closely set on the arching twigs, and blending sweetly with small dark green leaves. The scent, too, is delicious. I enclose a bit. But a brief description of this kind can convey no idea of the effect of a four-foot specimen on rockwork. It has a weeping habit, and, if planted so that its branches can hang over ledges, for a month it will give the utmost pleasure to its owner. The ladies steal the sprigs for the little girls' hair and hats, but when they ask you to "see how lovely" they are when so appropriated, you forgive the theft!—J. WOOD, *Woodville, Kirkstall.*

Books received.—*Cacao Planters' Manual.* By E. J. Bartelink; translated by H. J. Vogin. London: Kirkland, Cope, and Co., 4, Northumberland Street, W.C.——*Eyre's Hotels for 1885, and Gazetteer of the Principal Towns in Great Britain.*—Eyre Brothers, 26, Paternoster Square, London, E.C.

OUR READERS' ILLUSTRATIONS.

FOXGLOVES ON "THE BANKS," DURHAM.

THIS common aspect of English woodland beauty in summer is very attractive. Among all the native flowers there is not, perhaps, a more beautiful one than the common Foxglove, whether seen singly, in little groups, or in large colonies in the woods throughout the country. The illustration here published is an engraving of a photograph taken by the Rev. H. E. Fox, of Durham, who writes :—"The scene is a narrow strip of woodland fringing the river close to this city, locally known as 'The Banks,' the property of the dean and chapter, but thrown open to the public. Little was formerly done for it—it was left as a wilderness; but of late years, mainly through the exertions of Canon Tristram, a good deal of judicious care has been shown, and it is being turned into a charming wild garden. The Foxgloves were pricked out in an open glade on a rising bank, beautifully situated to show them off, with a dark background of trees, and were of mixed colours. The head gardener, or forester, is Mr. Burnell. Our Durham people have learnt thoroughly to appreciate what has been done for their enjoyment, and, notwithstanding the opinion expressed by a great many some years ago, hardly a flower is now touched except by casual 'cheap trippers' from a distance, though the place is entirely open and no policemen are about." Our illustration well shows the wonderful luxuriance and beauty of the plants, though perhaps their beauty is all the greater when they do not have quite so much of their own way, when the struggle for life or other cause makes them congregate in spots, while they send out scattered groups and scouts here and there.

OUR READERS' ILLUSTRATIONS: Foxgloves on "The Banks," Durham. Engraved from photo taken by the Rev. H. E. Fox, Durham.

How to catch moles in gardens.—Many find this very difficult. Where the ground is loose the animal is almost sure to evade the trap; but if the trap be set where the run crosses a path it can be as easily caught as in a meadow. The run across the path is often difficult to find, as the mole, on reaching the path, goes along the edge some way, as if in search of softer ground, before it makes the attempt to form a crossing. To find the run get a piece of pointed iron rod, and a hammer or mallet, and lengthways with the path, where the run is suspected to cross, keep driving in the rod at a distance of 1½ inches till the rod goes in easily, when upon examination most likely the run will be discovered.—L. C. K.

An example from Holloway.—I have been at my present address for five years. When I came here the garden was a perfect wreck. I began by taking in GARDENING ILLUSTRATED, and have several volumes bound. Then I only had one plant—one red Fuchsia—and ten bunches of Grapes; now we have 150 bunches in the greenhouse and upwards of 200 bunches outside, and all sorts of plants; and I must say that nearly all have been got by reading and studying the information given by your correspondents. I think the best part of your paper is the weekly advice given at all seasons; it is of the greater value because you advise according to the weather, while most books go only by seasons—hot or cold, wet or dry, which we amateurs cannot follow. I am told our neighbours are jealous of our show of flowers. I tell them to take in your paper, and study it, and they can produce the same. We do not buy anything; we raise all our plants from cuttings or seed, and have something like two thousand plants out and inside, all genuine amateur's work. We never show anything, but we simply go in for gardening for its own sake, and for occupation and to save the doctor's bills!—B., *Holloway*.

INDOOR PLANTS.

CULTURE OF CYCLAMENS.

THE Cyclamens, which have in recent years been much improved in all respects, are now among the most beautiful and continuous bloomers of all greenhouse plants. The ordinary and much the best way of propagation is from seed, which may be sown at different times of the year, according to the season they are required to flower. If well managed, the plants will be large enough to flower when from fifteen to eighteen months old. To bloom in spring sow about November or December; if wanted to come into flower during the late autumn and winter months sow about the end of July in wide shallow pans filled with a mixture of sifted fibrous loam, with some leaf-mould and a little sand added. Press the material moderately firm, scatter the seeds an inch apart over the surface, and cover them with about a fourth of an inch of the soil. When sown at this time stand in a temperature of about 60 degs., where they will soon vegetate if the soil is kept a little moist. To do this without giving too much water a thin paper may be laid over the surface, and removed as soon as the plants are up, after which they must be kept close to the glass, and the sun not allowed to reach them. The best place in which to grow them through their early stages is a low heated pit where an intermediate temperature (which is necessary all through the first autumn and winter so as to get them on large enough to flower satisfactorily by the close of the ensuing year and on through the subsequent winter) can be kept up. Give a moderate amount of air daily from the time the young plants are up, keeping the atmosphere a little moist, and syringing slightly in the afternoons; as soon as large enough to handle move singly into small pots, using soil similar to that in which the seeds were sown. Stand them on a moist bottom, still close to the glass; leave off shading as the sun decreases in power, and keep up a night temperature during the winter of about 50 degs., in which they will go on growing so as to require moving at the beginning of April into 3-inch pots. Then use similar soil, but add a little cow manure that has got old and mellow. They will now require a little more warmth, and until the season is further advanced enough fire should be used in cool weather to keep them up to 55 degs. in the night, and proportionately higher by day when there is an absence of sun to raise the temperature. A thin shade will again be needful through the spring and summer whenever the sun comes on them. Care must be taken at all times through the season of growth that they never want for water at the roots, or they will receive a severe check. Keep the atmosphere and the material on which the pots stand moist, syringe overhead each afternoon, all of which are requisite to keep them free from red spider. Give air every day, but avoid draughts; towards the end of June move the plants into 6-inch pots, which will be large enough to flower them in the first season, and use a fair amount of drainage. Continue to treat as hitherto advised in the early part of the summer until September, when give more air, and discontinue shading and syringing so as to solidify the growth and induce the formation of flowers. Still let them have a position near the glass, but through the autumn and winter let the material on which the pots are be dry. If each plant is now stood on an inverted pot it will allow a better circulation of air round them; with the same view do not crowd too close—a condition that should in all the stages of growth be avoided, or the leaves will get drawn and weak and the plants spoilt. If all has gone well they will now be sturdy examples, with short stout leaf stalks, the foliage half covering the pots; they will flower freely through the last months of the year and early part of winter, during which they should be kept in a night temperature of 45 degs. or 50 degs.

After blooming keep a little cooler, and when all danger of frost is over they may be turned out under a north wall, the pots plunged in ashes, or, still better, they may be kept in a cold frame, placed where they will be out of the full sun, and given enough water to prevent the soil getting quite dry. The plants will lose most of their leaves through the early part of summer, but will afterwards push up quantities; as soon as these are visible give more water, and when a little growth has been made move into pots a couple of inches larger, shaking away the old soil and replacing it with new, of a like description to that hitherto recommended. Afterwards stand them in a pit, frame, or house, and treat as advised for the preceding season, except that they will not now require to be kept quite so close. The ensuing winter the plants will yield numbers of flowers proportionate to the increased size they have attained. After

blooming again treat as in the previous spring and summer in the matter of standing out, repotting, &c. They may be kept on after they have again flowered, or be discarded and their place taken by younger stock, which it is well to keep coming on by sowing some seed each season. When the sowing is deferred until autumn keep a little cooler both before and after the plants come up, and it will be well to prick them off, when large enough, 2 inches apart in pans, allowing them to remain until spring before potting singly; afterwards treat as advised for the early sown stock. Red spider, to which they are liable, will usually be kept under by following the course of cultivation detailed. Thrips and aphides sometimes attack them, getting to the undersides of the leaves and doing much mischief before being seen. These insects should be repeatedly sought for; when discovered dip in Tobacco-water or fumigate with Tobacco. T. B.

CULTURE OF EPACRISES.

Thanks to the skilful hybridist we now possess a host of beautiful garden Epacrises, of great value for decorative purposes. Since the introduction of the first species from Australia, now almost a century ago, Australian Heaths, as they are sometimes called, have always held a foremost position amongst garden plants, and although not now so generally grown as they were a little time back, in the days when hard-wooded plants were everywhere popular, they are uneclipsed by the majority of greenhouse subjects now cultivated, and will find favour long after many of these are discarded. As is the case with their African cousins, the Ericas, the original species of Epacris have been employed by the hybridist with such good effect as to obtain from them a race of superior kinds for garden purposes, and the species have therefore almost totally disappeared from cultivation. That the species would freely intercross is evident from the difficulty experienced by botanists in circumscribing them by any definite characters, as nearly the whole of the twenty-six species known seem to pass into each other by small gradations. Of these twenty-six species, all but four are found only in the cooler regions of Australia, these four being natives of the adjoining country, New Zealand. There are no Ericas in Australia, their place being filled by the Epacrises.

As regards cultivation, Epacrises require a little extra attention, the special treatment necessary for Ericas being with slight variation suitable for them. As their propagation is a somewhat tedious and slow operation, it is always best to begin in the cultivation of Epacrises by obtaining from some nursery, where they are well grown, nice stocky little plants in 4-inch or 5-inch pots, early spring being the most favourable time for this. In February or March all the winter-flowering kinds should be cut in hard, the whole of the flowering growths being removed to within an inch or two of the base, and the stronger of the barren ones pinched back. By placing plants thus treated in a warm, light greenhouse, and keeping them moist about the tops, and withholding water for a little while from the roots, they will at once break freely into growth, when those plants which require more pot room should be repotted, using for this a mixture of good peat and silver sand, five parts of the former to one of the latter. Carefulness to provide good drainage should not be overlooked. The soil must be pressed in firmly about the old ball, which ought not to be disturbed beyond removing the drainage from the bottom. Warmth, moisture, and all the sunlight possible should be allowed these newly potted plants as well as those which do not require a shift into a larger pot. The object of this extra amount of warmth and moisture for Epacrises is to induce them to make strong and long growths, and if the sunlight and ventilation are properly attended to, the first step towards well-furnished free-flowering specimens by the end of the year is secured. As the growth matures more air may be admitted, until by the end of July the plants may be removed into a frame where they can be exposed during warm weather. Finally in August a position altogether exposed, but if possible where the midday sun would be excluded from them, will be a suitable one for Epacrises treated as above. In no case should the young growths be stopped after April, unless it be those kinds which flower in spring, and therefore are later in starting into new growth. It is only the stout, long shoots which have been properly matured and ripened through exposure in autumn that flower well, and if the shoots are late they neither grow stout nor long, nor do they ripen properly, so that late stopping for Epacrises is not advisable.

Close pruning, an early starting into growth—under conditions such as are favourable to quick, yet sturdy development—and exposure to air and sun-light in the autumn are the conditions most favourable to the successful cultivation of Epacrises. For the erect growing kinds the pruning in spring should be severer than is necessary for those kinds whose shoots are more or less pendent, such as miniata, Eclipse, and grandiflora. These flower in spring, and their shoots do not grow to such a length in one year as do those of the others. Beyond this the treatment for the last-mentioned kinds should be similar to that advised for the others. It is hardly necessary to point out that with Epacrises, as with Heaths and the majority of other hardwooded plants, the use of the watering-pot must not be more frequent than would be sufficient to keep the soil moist without its ever becoming soddened or sour. When water is given let it be in sufficient quantity to permeate the whole of the soil, and do not give more until the soil is nearly dry again; on the other hand, avoid the other extreme of excessive drought, which is at least as disastrous to hard-wooded plants as too much water. During the winter many of the Epacrises will bloom, and they may then be placed in the conservatory or cool greenhouse until they have done flowering. All through the winter a light, airy house or frame, from which frost is just excluded, will answer for Epacrises. After they have flowered the above routine may be again commenced. If flowers are wanted early, any of the kinds of Epacrises may be subjected to forcing without the slightest injury to them, as they force freely without being at all weakened by extra heat and moisture in winter. All the kinds are useful for cut-flower purposes, as their flowers last for at least a week when placed in water, and the grace and beauty of the thickly-crowded flower-shoots render them of great value for decoration. Among the most beautiful kinds in cultivation are the following:—

E. alba odorata, white, sweet-scented; ardentissima, crimson; Butterfly, carmine and white; Eclipse, scarlet and white; Fireball, deep scarlet; hyacinthiflora and varieties; ignea, rose; impressa and varieties; Lady Alice Peel, salmon and white; Lady Panmure, white; Lowi, red, white-tipped; miniata, rosy red, white-tipped; Mont Blanc, white; nivalis, white; onosmæflora, white; o. flore-pleno, white, double; Queen Victoria, white; rubella, purplish rose; Sunset, purplish red; The Bride, white; Vesta, white, pink-tipped; Vesuvius, scarlet; and Viscountess Hill, scarlet.

RAISING COLEUSES FROM SEEDS.

The last spring I planted a package of mixed hybrid Coleus seeds, and succeeded in getting a growth from almost every seed, I imagine, and then such a brilliant variety of colours, and such a divergence from all that I had ever before seen of the Coleus family. I matured two hundred and fifty plants, about two hundred of which, however, are discarded as not being sufficiently distinct to deserve survival. But the fifty were, and are, jewels, for I have them yet, and propose to keep them as long as possible. We wintered most of them in our sitting-room window, where they were things of beauty, as well as of utility. An even temperature is what they must have to thrive in, a room heated by hard coal securing that to perfection. But a less high temperature will serve their purpose, and at the same time be healthier for the human occupants of the room.

I sowed the seed in a 5-inch pot, in sifted soil of loam and sand, with deep drainage; and to insure indemnity against damping off when the time for feeding the plants should arrive, I resorted to the original scheme of inserting a shallow tube in the centre of the pot, into which to pour the moisture. It worked like a charm. Certain it is, I lost no plants that showed themselves above the surface of the soil. I placed the pot on bottom heat in a small greenhouse which I have the satisfaction of possessing, covered it with a pane of glass, and in due time the young brilliants appeared. My success with them after that, which is indeed the critical time with seedlings, is due mainly to the irrigating scheme above mentioned. By means of it I kept the roots of the plants moist without endangering the stalks, and that brought them safely through until they were big enough to take care of themselves, so to speak. Among the survived fittest is one that is the especial admiration of all beholders, not so much because we call it "Old Maid," as because it is altogether unique; colours staid, though manifold; leaves fringed or ruffled, and large; in the summer dark; in the winter like leaves of autumn. Why we call it "Old Maid," in addition to the reasons given above, is that it has the appearance of a woman "terribly fixed up," and, as intimated before, perhaps that is why it is so much admired. Well, it is "beautiful as a butterfly," anyhow, and its exclusiveness does not detract from its beauty. By all means try raising seedlings. It is a pastime full of surprise, and comparatively free from failures, especially if you adopt my plan, on which, I will condescendingly add, there is no embargo.—V. M.

GREENHOUSE AND STOVE PLANTS.*

This book, by one who may be, perhaps, described as the best cultivator of pot plants in the present day, is now ready. It is full of information clearly given, and is a thoroughly useful handbook, on which our readers may rely. The arrangement is alphabetical as regards the plants, and in addition a full index gives facility of reference to everything in the book. The work deals with the propagation as well as with the culture of plants, and this is a point that has been neglected in many similar books. Mr. Baines is well-known as a thoroughly good gardener, and when he cultivated stove and greenhouse plants won the best prizes at our leading shows. It is generally believed that good cultivators are seldom good writers, but if this is the case Mr. Baines is an exception to the rule, as he has also the ability to write, and, more effectually than any other gardener, has shown the way to good culture. As a sample of his mode of dealing with his subject we extract the following note on the beautiful New Zealand Clematis, which affords such a splendid crop of flowers in greenhouses:—

Clematis indivisa.

This is a strong-growing, very handsome evergreen greenhouse climber, bearing white flowers in great profusion during the spring months. It is from New Zealand, and is a very suitable plant for a large house, where a considerable space has to be covered, and where it has room to develop itself sufficiently to exhibit its natural character. It is a free-rooting subject, and requires to be planted out, as no ordinary sized pot could contain enough soil to support the growth which it makes; but in commencing with young plants it is better to grow them on for a time in pots, so as to get them well furnished with roots before turning out into a prepared border. This Clematis will strike from cuttings, but much the best method of propagation is grafting small bits of the shoots on pieces of root of any strong-growing kind; this should be carried out early in the spring, keeping the grafted plants in a warm, confined atmosphere until a union is effected, and they have begun to make growth, after which they must be gradually inured to more light and air, and kept on in a growing temperature until there is enough solar heat to keep them growing freely through the summer; move them into larger pots as these are required, training the single shoot which each young plant should have to a stick. Keep through the autumn and winter in an ordinary greenhouse; in April move into pots 3 inches or 4 inches larger, stopping the points of the shoots. The plant grows well in a mixture of half peat and loam, with a moderate quantity of sand added to it. For this, as for other free-rooting things, it is well not to make the soil too fine; break the turfy pieces into bits, the size of Walnuts, and mix the sand well with it. After potting insert in the pots several tall sticks, round these twine the shoots, which should be confined to from one to three in number, so that the plants may be induced to

* Greenhouse and Stove Plants, Flowering and Fine-leaved, Palms, Ferns and Lycopodiums. By Thomas Baines. London: John Murray, Albemarle Street. Price 8s. 6d.

make considerable progress during the season. When potted place them in an ordinary greenhouse, and encourage growth by the usual means of damping the atmosphere in bright weather, and shutting up early with sun-heat, as also syringing freely overhead. Beyond this nothing will be required through the growing season except keeping the shoots regularly trained round the sticks. If this is not attended to they get entangled in a way that renders it difficult afterwards to separate them. As autumn approaches give more air, and discontinue the use of the syringe. Winter the plants in the usual greenhouse temperature of about 40 degs. in the night. Warmer than this they should not be kept, or they will be induced to make growth through that which ought to be a season of complete rest previous to planting out. This will be understood from the plant being indigenous to a country where the winters are cool. Prepare the border in which they are to be planted by efficient drainage, well secured from the soil getting down into it by a layer of fibrous material, than which for a strong-growing subject of this description there is nothing better than a thin, turfy sod of about an inch in thickness that has lain together sufficiently long for the Grass to have become decayed. This, if put on the turfy side downwards, will for years exclude the finer particles of soil from getting down into the drainage, which is better for being some 6 inches in depth. Previous to planting out this and all other climbers, especially in greenhouses and conservatories, care should be taken that they are prefectly free from any of the worse kinds of insects, such as scale or mealy bug, for if plants to occupy a position over the other occupants of the house, such as these roof-climbers, are at all infested with these pests, as a natural consequence they affect every plant standing under them that the insects will live upon, entailing an endless amount of labour. The position of plants thus trained on the roof renders them much more difficult to clean than when grown as ordinary pot specimens; it is equally of importance that any plants at all affected with these insects that are introduced to the house in which roof-climbers are grown should never be stood in contact with the stems of the climbers, for if so placed the pests are sure to be communicated to them, the worst results of which must follow. Let the planting-out be done sufficiently early in spring, before any growth has commenced, so that the necessary disentangling of the roots from the ball of earth, with a view to spreading them in the new soil, can be carried out without injury, which would follow if growth in either roots or branches had begun. After planting give no more water until they have commenced to grow; this is necessary to keep the soil in a suitable condition. During the growing season keep the shoots regularly tied up into the place allotted to them, and supply the roots with water. This Clematis is very appropriate for planting at one end of a house, and training under the ridge. When allowed to hang thinly in festoons it has a good effect, and is more fitting for being so grown than things which are not naturally calculated for extending far. As the soil in which the roots are placed gets exhausted, recourse must be had to stimulants in the shape of copious waterings during the growing season with liquid manure and renewal of the surface soil in the spring by removing an inch or two from the top of the border the roots occupy, and replacing with new. When the space is filled which the plants are intended to occupy each year, after flowering, the knife should be freely used so as to reduce the shoots within proper limits, and to allow room for the season's growth.

Insects.—Red spider will, during hot weather sometimes make its appearance on this Clematis, and should be guarded against by a free use of the syringe. Brown scale can be removed by sponging in the usual way. If white scale gets upon this, or any plant grown overhead on the roof, there is no chance for its extirpation except cutting the head close in during the winter when at rest, and dipping or washing the affected stem and remaining shoots with a strong solution of insecticide.

It was originally Mr. Baines' intention to issue two separate works on greenhouse plants and stove plants, but it was thought better to put the whole in one book handy for reference. It contains over 360 well-printed pages.

REPLIES.

13958.—**Tecoma jasminoides.**—I think this must certainly be classed among greenhouse plants, and it cannot require stove heat. My reason for saying this is that in the Isle of Wight it lives and does well in the open ground. A fine plant scrambles over the south side of my house, and blossoms in late July or the beginning of August. Of course this is a very different part of the world from Cheshire, but we certainly do not aspire to grow stove plants all the year round in the open ground.—H. E., *Ryde.*

13944.—**Fuchsia buds dropping.**—This is caused by a sudden change of temperature, or by allowing the plants to become too dry at the roots. If the plants are grown as they ought to be at this season, in an ordinary greenhouse with ample ventilation, and the plants are well supplied with water, the buds will not drop off. Neither will they in an ordinary dwelling-house if the plants are placed in the windows, which ought to be opened daily, and in such hot weather as we have at present the plants may be put outside. The question is rather vague. It is not stated whether the plants are grown in a greenhouse or dwelling-house, and no hint is given as to the treatment they have received. —J. D. E.

—— This is caused by a want of vigour, and rarely happens to plants liberally grown in a light airy greenhouse. It only occurs with us in the case of some of the double white kinds which have an element of weakness in them. The remedy lies in giving plenty of air night and day, so as to strengthen the wood and foliage. Plants grown in windows are most liable to cast their buds, owing to the confinement. When this happens, and the weather is warm, put the plants in the open air in a sheltered, not too sunny, place. Water only when dry, and if they are root-bound, top-dress with some concentrated manure, or water with soot or guano water twice a week. This will soon give them strength enough to open their flowers. When in a root-bound state Fuchsias want a lot of nourishment. Very often window gardeners do not prune back their plants in spring, so that they make a weakly growth incapable of the production of good blooms. They should be cut back in February, leaving only two eyes of the previous season's growth, and quite cutting away all very weakly growths. Then they start strongly, and if shaken out of the old soil and repotted when the young shoots are an inch in length they form stout flower-bearing branches.—BYFLEET.

13837.—**Monstrous Geraniums.**—This is evidently a result of the season, as we have a number in our own garden in the same state, notably a variety named Mrs. Turner. The soil used to pot with was very rich. The cause is probably over rich soil. Use a rather poor potting soil, or, if they are to be planted out, do not dig in much manure.—J. D. E.

Flower and garden painting.—I think "J. D." (p. 245) is mistaken in thinking it requires a different kind of drawing for landscape. Drawing is not mere facility of handling a brush or pencil, but the power of seeing form correctly; and a landscape to be good requires as much drawing of form as do figures or flowers. It is true that if you place a line of type letters some distance away they become unreadable; but at the same time there is a distinct mass of form which will require accurate drawing to make it look what it is, and this is the same with landscape; everything that comes under light has a form of some kind that requires drawing, and a distinct drawing too, not as a part, but in its proper relation of size and tone with the whole. All kinds of brushwork are, I know, used to render these landscape effects, and it is this trickery of brushwork taught in schools of art that is the cause of so much poor drawing in our exhibitions. The kind of painting useful, or rather necessary, for flowers is one and the same as that necessary for figure and landscape, and that is a thorough knowledge of drawing, not as it is understood in our art schools, but as great masters such as Velasquez, Rembrandt, and Frans Hals had, and such as is taught in French and Continental schools of the present day—that drawing does not mean an outline to form, but that form makes the outline. Let students be taught to draw and they will then see the beauty of flowers and paint them for their own sake, without an idea of what price will follow, and when they do good work they will probably find someone to buy it.—H. M.

*** *We have given as much space as we can spare to this subject, and can scarcely hope that what we have said will open the eyes of the public to the badness of our system of art teaching. But, in any case, they will see very few true pictures painted till a great change is made in this respect. It is not a question of money at all, as "J. D" supposes; the artists, as now trained, could not do the good work if given power to draw on the Bank of England without stint!*—ED.

FRUIT.

STRAWBERRY SUPPORTS.

ONE reason why the various expedients recommended for keeping Strawberries clear from grit and free from the attacks of slugs have not been generally adopted is doubtless the expense; but to my mind there is a still more substantial reason, which is that when the fruit is supported at any distance from the ground it does not attain the same dimensions as if it had been left undisturbed. It may be difficult to explain why this should be so, but the fact holds good that unless the work is carried out with the greatest care, and the fruits only removed an inch or two above the soil, they will not grow to so large a size as those close to the ground. Such is my experience after having tried various plans to keep the fruit clean and out of the reach of slugs. It seems that when the fruit is near the ground, the temperature, if not higher, is more uniform than when there is a current of air passing between it and the soil, and probably the degree of moisture, which doubtless is considerably greater near the ground than elsewhere, has something to do with its more rapid swelling. It appears to me that directly we suspend the fruit in the air by artificial supports we place it in an unnatural position, which it resents by refusing to swell to its natural size. No doubt there is a right and a wrong way in using supports. The right way is, there cannot be a doubt, only just to lift the fruit clear of the ground. I am quite convinced it is wrong to have a greater space than 2 inches between it and the earth, and, further, if any supports at all are to be used, they should be put to the fruit some days before it begins to colour, in order that its surface may have time to get hardened by exposure before it commences to ripen. The skin of Strawberries is like that of Melons—very tender when just on the point of ripening, and a sudden removal from the shade of the leaves to strong sunshine would result in the surface of the fruit being scalded on the side exposed to the sun. Whether we shall ever get a suitable Strawberry support, and one at the same time cheap enough to use on a large scale, is doubtful. We have not made any progress in that direction for the past quarter of a century. The nearest approach to any serviceable invention were the Strawberry tiles registered more than thirty years ago, but they never found their way into many gardens. These tiles were set round the plants, and for rather small single ones they did very well, but where the plants grew vigorously it required three and sometimes four tiles to go round them, and then they could not be got near enough to shelter some of the earliest and best fruit. As regards the now common practice of

Using long litter for the purpose, one can hardly say a word against it, seeing that it is available in large quantities in most gardens, and it is a fairly good makeshift if laid on in good time, so that it can be well cleansed from all impurities by the rain; but it is not the best, nevertheless, and those who would like to have Strawberries sent to their table in the cleanest possible manner without any great outlay should allow their gardeners to take a lesson from the small market growers of Kent, or rather that portion of it that lies between Dover and Canterbury, where there are great numbers of small growers of this fruit, who select every sunny bank or sideland piece of ground that faces south for the production of early crops. These growers do not attempt to put anything over the surface until the fruit begins to swell. Then they get clean wheat straw, and with a chaff-cutter properly adjusted the straw is cut into lengths of about 3 inches, and this is strewn

sufficiently thick all over the surface to keep the fruit clean. But this is not its only advantage, for slugs do not like it; in dry weather it is too harsh and the ends are too sharp for them. It is certainly the best material for the purpose with which I am acquainted. There is the cost of the straw, which might not amount to a large sum certainly, but the long litter now so much used may be had for the carting in most places, and that makes all the difference. In a large garden a score or two of trusses of straw would not be too much, which means an additional outlay that might cause some demur, and for the most part the gardener has enough to answer in that way, and gladly escapes all that he can when they do not concern matters absolutely necessary to carry on his work. J. C. C.

HOW TO GROW STRAWBERRIES OUT-OF-DOORS.

In June or July select the earliest runners, and put under them pots full of earth (turf-mould preferred), sinking the pots in the ground, but a little exposed, so that gatherers may see and avoid them. Put a stone on the cord close to the young plant, but do not cut the cord till the young plant is well-established. About September transfer the young plants from pots to a bed prepared some time before and well settled on a substratum of farmyard manure. Put the plants in beds of two rows, at a distance of 15 inches in the rows. The rows themselves should be 24 inches apart, and the beds 30 inches. The space between the beds should be slightly scooped out, so as to form a channel. The plants should be alternate, not opposite, in the rows, so as to increase the distance between them, thus:—

. . . . . .
. . . . . .

With regard to distances between the plants, some kinds, as Elton Pine, Black Prince, and Oscar might do with less, but the measurements given above are not excessive. As to placing the plants on a bank or a flat, the preference should, perhaps, be for a flat, or rather a slight slope facing south; but the important point is not to grow Strawberries, or anything else, continually on the same ground. The plants should remain in their beds undisturbed (by digging in manure, &c.,) till they are removed. Keep down runners continually as they start, unless they are required for plants. In the spring apply liquid manure (not too strong) two or three times, and when the flowers are formed keep watering as occasion requires. By using the channel between the beds the objection to liquid manure and hard water is got rid of.

When the fruit begins to form put three or four little sticks in the ground close round each plant, and pass a piece of bast round them about 8 inches from the ground. Thus the fruit is kept from the ground. Throw out and renew one-third of the plants each year, remembering to change the situation. If the plants be thus renewed it might be possible to reduce the distances named. There are, however, kinds and soils for which a longer period may be taken, but, in the absence of contrary experience, the rule given here is safest. Observe what kinds do best in your neighbourhood and, as different seasons seem to suit different kinds, do not hastily reject a kind which does badly in one season. In the writer's garden two kinds which last year were the best among twenty-eight kinds, are this year "nowhere," though grown on the same and also younger plants. Plant early, main, and late kinds for succession. Thus Strawberries may be had for six weeks.

The following kinds can be recommended without underrating other excellent Strawberries. They are placed in order of ripening:—(*a*) Black Prince—the earliest and the best for preserving, but small, and of no distinct flavour—will do well with little attention, and does not require renewing so often as the finer kinds. (*b*) Keen's Seedling—early, and a good cropper, but does not stay. For those who grow but one kind this is, perhaps, the best, but it needs constant renewing, as recommended above. (*c*) President—perhaps the best cropper in this list, and of excellent flavour, but deteriorates rapidly. Requires good treatment and renewing. (*d*) Vicomtesse de Thury or Garibaldi—stays long in cropping; delicate flavour. The favourite Strawberry for the Paris market. (*e*) British Queen—the best for flavour. Requires good soil and treatment. Not very profitable, taking one year with another. (*f*) Elton Pine—late. If a larger kind is desired, substitute Frogmore Late Pine or Eleanor (Oxonian). The writer's experience has been on gravelly soil in West Herts.

Watford. N. P.

ORCHARD MANAGEMENT.

The general treatment of orchards is bad; nothing could well be worse. An orchard is planted and then left to itself. Often the ground is cropped, sometimes without manure; both trees and grain are thus starved, making the loss a double one. The trees suffer, showing dead branches, and some of them die. Usually, however, Grass is substituted for grain; this is less exhaustive, yet the great complaint of orchards in Grass suffering proves that both Grass and grain are too much for the soil. There is a remedy here, and it is twofold: It is manure and underdraining. The ditching should be no less than 3½ feet deep—deeper would be better, as the roots will be less apt to interfere with the drain. This work should be done before the orchard is set, so that the trees may be healthy from the start, and have a vigorous growth. Too much growth at this time can hardly be given a young orchard. Even if continued until late in the season, so that the frost kills the tips, no harm will result to the trees. It is better, however, to have the growth suspended before frost arrests it, and give the wood a chance to ripen. This is done by having the greater part of the force of the manure expended during the early part of the season, applying less manure, yet sufficient for the necessary growth of the trees. This, experience must determine on account of the variable character of the soil. The best time to apply manure is in the fall, thus giving opportunity for its strength to penetrate to the roots of the trees, preparatory to an early push in the spring, for every day gained then is so much growth gained in the season, and so much earlier the terminal bud will be formed. At first, crops may be grown, and hoed crops are the best. A rotation of Corn, Potatoes, root crops, &c., will be a still further benefit. Weeds may thus be exterminated which, if left, would, with their long roots, be a serious drawback to the trees. Thus, while the young orchard is growing the land can be put to good account. As the trees advance, more manure must be used, to keep up the enlarged growth, as the roots in a few years will extend pretty much over the whole ground. After this it is desirable to have the orchard in Grass. Some make a lawn of it, and pretty enough it is if given proper management. The trees of an Apple orchard should be no less than 40 feet apart; farther would be better, but it is so hard to get people down to the liberal point in planting.

There should be space between the trees for air and sun, as well as among the branches; otherwise with mature trees there will be dead branches, Moss, mildew, and small fruit, with a loss in quality. With full sunshine and air in and around the trees, health and brightness of limb and foliage will result, with fruit large, clean, and well coloured. Different fertilisers may be used to keep the sod well established, which, if liberally applied, will be sufficient also for the trees, the roots—if near the surface, and they generally are—getting the larger part of the manure. If the soil is deep and rich, so that the roots penetrate well, the Grass gets the greater share of the benefit, and it needs but little, as the clippings from a lawn, if kept on it, go far to make it self-sustaining. Passing the lawn-mower over frequently and regularly, the clippings, which are then short, will disappear in the Grass and soon decay, thus feeding the soil constantly. Fine stable manure, applied in the fall and brushed down, will soon disappear in the spring. If superphosphate does well (which trial will determine), that may be sufficient, the effect extending over two or three years, and a good article in the way of coarse-ground bone is safe for three years; it should be applied in the fall for effect in the spring. Where the roots of the trees are confined to a shallow surface soil, manure should be applied every fall, and in the necessary quantity, which experience will determine. Too heavy manuring would push the wood growth at the expense of the fruit. The roots, having direct access to the manure, take up its strength rapidly. The greatest success is attained by keeping up a uniform growth, having in view a proper balance between the wood and fruit growth. This can usually best be done by frequent and lighter manuring, though good results are obtained where one application is made to do service for two years.

Cultivating a mature orchard is unnecessary. It may be kept in permanent Grass, either for pasture, meadow, or lawn. If kept in pasture, the affected fruit will be eaten by the stock as it drops, thus to some extent arresting the propagation of injurious insects. If it is decided to keep the Grass clipped, an early crop of hay may be taken and the sod kept shaven after that. The crop, if of the early and strong growing Grasses, will mature sufficiently to be removed by the middle of June. This may be done with June Grass (Poa pratensis), which stands the shade well, and is a good lawn Grass. Orchard Grass does still better as to yield and endurance of shade, but gives a rough surface to the ground, from its disposition to grow in tussocks. Grass is more desirable than grain in an orchard. After the trees have attained size, a grain crop cannot be made profitable, principally on account of the shade. There is more money in hay and pasture, and least in a lawn.—*Country Gentleman.*

Caterpillars on Gooseberry trees.—I have seen a considerable amount of correspondence in Gardening on the above subject, and various remedies have been recommended, some more complicated than others. I am happy to say that I am never troubled with these pests; it may be simply a coincidence that I am not, or it may be that the "precautions" I adopt are successful. Be that as it may, I will merely state that many years ago, when a boy at home in a country village, I remember that for several years all our leaves were eaten off, and, consequently, the fruit was spoiled. We were then recommended to cut a piece or two of yellow prickly Furze in full bloom, and place in each tree early in the spring. This was done, and we were never troubled afterwards. I have done the same thing now for some years, and am never troubled in this way. It may, as I have stated, simply be a curious coincidence; but with me and my friends it has been a singularly consistent one!—A. S.

Ants in fruit houses.—These little pests are extremely troublesome when they get established in the borders of fruit houses, for one cannot destroy them, without greatly disturbing the roots, by the ordinary method of pouring boiling water on the nests, and trapping them with pans of treacle is a tedious method. They may, however, be greatly reduced by such measures if taken in time. Some May Duke pot Cherry trees that had ripened a good crop in an early Peach house were attacked by the pests, and in such numbers did they swarm to these trees, that as soon as a fruit was attacked it was quickly cleared to the stone. After trying waddingsoaked in paraffin, and several other remedies, to no purpose, we set shallow tin trays under the pots and filled them with water, raising the Cherry tree on inverted flower-pots; this proved quite effectual, and I can strongly recommend the plan in any similar case, although, as before stated, it is safest to anticipate their attacks by trapping them before they commence their depredations, as they are not very easily baffled, and with trees planted out this remedy could not be easily applied.—J. G.

REPLIES.

13850.—**Gooseberry culture.**—Exhibition Gooseberries should not be grown by those who require fruit only for puddings and for dessert, for although they do not generally fail so utterly as in the case of "A Disconsolate Amateur," still, with very few exceptions, they are not profitable to grow. One of the exceptions adverted to above is in the case of a variety named London. This, with us, is a good all-round kind. Whitesmith is another profitable sort for general cultivation. The Green Walnut is also an excellent sort, for puddings, for making jam, and also when ripe

for dessert. We have numbers of bushes, each carrying more than a bushel of fruit. Crown Bob is a good red kind for general purposes, and the Warrington, named by the querist, has no superior. Yellow Smith is a good yellow variety, and the early green hairy, though rather small, is a nice dessert fruit. On very dry soil, in a season like the present, with a heavy crop, the ground beneath the bushes should, if possible, be mulched.—E. HOBDAY.

14020.—**Vines with air roots.**—According to Dr. Lindley, in his "Theory and Practice of Horticulture," the cause of the growth of these roots is a cold border, while the vine is grown in a damp hothouse. "Vines under these circumstances," he says, "habitually exhibit this tendency." There can be little doubt, also, that the syringing described has at least helped to increase the damp in "Defecto's" vinery. The remedy should be the warming of the border by drainage, and by lifting and relaying the roots among fresh soil, mixed with open and porous materials, such as broken brick-bats, old plaster, charcoal, &c. Further, in order to keep a drier atmosphere in the house, much less syringing should be practised than has hitherto been the case.—J. M., *South Hants.*

13792.—**Unfruitful Currant trees.**—This is a somewhat difficult problem to solve. As a rule, the wood of the Black Currant ripens well enough to secure plenty of fruit even under adverse circumstances. Spring frosts sometimes plays havoc among Currants, but in Sussex this ought not to apply. Are the bushes much crowded? There must have been a check of some kind given. I should recommend mulching in May, with something to keep the roots at an even state of moisture and temperature, or just before the time the fruit usually falls.—E. H.

13831.—**Strawberry mats.**—Long Grass cut and allowed to dry in the sun for two days is the best, or, at least, it is excellent, material to lay under Strawberries. A better plan still is to mulch between the plants with decayed manure, and when the flowers are set take small branches, about a foot long, and insert them round the Strawberry plants, so that the Strawberries may hang among the branches. We generally use for the purpose the cuttings from the top of the Pea sticks.—J. D. E.

13744.—**Blight on Gooseberry and Currant bushes.**—The best remedy I have ever tried in my own garden, or have ever seen in the gardens and orchards of my neighbours, is a mixture of different kinds of shells, and the more pearl dust there is among them the better. When they are properly prepared, blended and reduced to powder, the pearl dust is so sharp that the insect that causes blight cannot comfortably exist where it is; at the same time it will not injure the bushes or trees. It is also very useful in Hop grounds, Asparagus beds, and even among green crops where insects attack them. Large quantities of this preparation are used in the large Raspberry and Peach plantations of New Zealand and Tasmania. A small quantity goes a very long way, as it should be sparingly used, and directly after a shower a second dusting should be given.—J. W. A., *Deal.*

13937.—**Improving Cherry trees.**—The quality of Cherries obtained from trees grown on Grass is poor, if they do not get any manure. A good dressing of rich manure should be spread over the ground under the trees every year in November and December. There is a great difference, too, in the varieties; some are better adapted for orchard culture than others. Some of the best varieties are: Governor Wood, Knight's Early Black, Black Tartarian, Elton, Kentish (for kitcher use), Morello, also for kitchen, to succeed the Kentish, Late Duke, and Bigarreau.—J. D. E.

13947.—**Grapes shanking.**—This usually takes place just before the Grapes begin to colour. The cause has not been clearly ascertained. Grapes grown out-of-doors never shank. I believe the most probable cause to be want of water at the roots, which checks the flow of sap, and gives a shock to the system of the vine. It has also been suggested that it might result from cutting off too much young wood all at once. I fancy this is not such a likely cause as the other.—J. D. E.

13950.—**Treatment of neglected vine.**—The vine has probably made too much young wood. In that case it will be badly ripened. The right thing to do is to cut out any superfluous young wood and give that remaining sufficient space to fully develop the leaves. The old rods should be cut out gradually—one or two each year—and be replaced with the young growths.—J. D. E.

—— If "Lancashire's" vines are under twenty years old he should lift the roots in November and plant them again in a new-made border. If they have been planted longer than that it will be better to make a new border and plant young vines.—J. C. C.

THE KITCHEN GARDEN.

CULTURE OF WATERCRESS.

WATERCRESS is a most highly-appreciated salad, and is extensively grown for the London market, where it meets with a ready sale. The following details of the mode of culture followed in France may be interesting:—The water from springs is utilised in the cultivation of this plant, which was first commenced in the neighbourhood of Senlis, on the banks of the Nonnette, in the beginning of the present century. The ground in which the Watercress is cultivated is situated below the spring which feeds it. Across the slope a series of trenches are dug, which communicate with each other, and the flow of water is regulated by little sluice-boards placed at the point of communication. The trenches having been completed, and the communication with the spring cut off by the first sluice-board, the Watercress is sown in spring at the bottom of each trench, which has been previously cleaned out, and from which every aquatic plant that might prove injurious to the crop has been removed. Instead of sowing, some cuttings might be planted in August in the bottoms of the trenches, after the ground has been moistened by admitting a gentle stream of water. These cuttings are placed 5 inches or 6 inches from each other. In a short time they take root, and the plants soon cover the surface; the sluice boards are then raised, and water is admitted to the depth of 5 inches or 6 inches, which will be found sufficient. If the plants have been well taken care of, well selected, and well cleaned from every parasitical encumbrance, the Cress-bed, once established, requires no other care than to be guarded from the frost. In order to do this, the water is allowed to rise and cover the Cress while the frost lasts; but as soon as the weather becomes mild it must be let off to its former level, as continued submersion injures the plants. There should be an outlet from the spring not communicating with the Cress-bed, which should be opened in times of thaw or heavy rains in order to prevent the trenches being overflowed to the detriment of the plants. It is a good plan to protect the trenches from cold and heat by means of hedges planted in the intervals between them; but the leaves from these hedges should not be allowed to get into the trenches, otherwise the Cress will be smothered and cannot grow. This evil may be prevented by fixing a trellis or mats on each side the hedges. The Cress is gathered by placing a strong plank across the trench; the Cress may be cut with a pruning-knife, but it is better to nip the shoots off with the thumb-nail one after another, as by this method the plants are not disturbed at the roots.

During summer, as long as the season is favourable, a trench may be visited, and the plants cut or gathered every three weeks; but, if the season be cold, we must wait two months before making a second cutting. When the gathering for the year is over, the trench is left dry, and a light layer of well-decomposed cow-manure is spread over the entire surface, after which the plants are pressed down with a plank, which has a long handle at each of its extremities. Two workmen take this implement, and, as they go from the end of the trench, press down the plants which have been raised at the times of gathering. A Cress-bed will last a long time if carefully managed; but, as it is seen to be running out, it should be renewed. In doing this, the plants are pulled up by the roots and laid on the spaces between the trenches. The trenches are then dug over, and manured with well-decomposed cow-manure; after which the Cress is replanted as at first. Some growers take up the plants every year, remove the mud from the trench, dig the bottom over and manure it, after which they replace the old plants. For supplying water to, and emptying, the Cress-beds, stoneware pipes 3 inches in diameter are used. The water must be allowed to run freely if it be desired to have Cress of a good quality. The sluice-boards are only used to stop the water in frost, and to let it off during a thaw or heavy rains. The seed is gathered from the finest plants in each trench in August. It keeps good for four years.

Planting Broccoli.—Though June is the month in which most gardeners try to get their plantations of Broccoli finished, yet it is frequently July before the work is done. Plants put out in August will make nice heads, but the sooner the planting is done after the middle of June the better. Though early planting insures the finest plants and largest heads, the time of sowing or planting does not materially affect them as regards the time they come into use. If the planting be done in June or July, from 2½ feet to 3 feet must be allowed between the plants; if deferred till August they need not be allowed so much room. If the weather be dry, the seed-bed or that from which the plants are taken should be watered well the night before, to soften the soil. The holes to receive the plants should always be made sufficiently large to admit of their being easily put in without breaking their roots. "Buttoned" and stunted plants are in many cases caused by bad planting. They are put in with broken and mutilated roots; and those that have a tap root often have it bent double in getting it into the hole, and, instead of the point being at the bottom of the hole, it will be sticking up above the surface. No one should wait a very long time for wet weather in which to plant Broccoli; it is better to get the planting done and water well once or twice, and the plants will then do till rain comes. When the plants are fairly established, and have grown a little, they must be earthed up with the hoe, and this will prevent the wind from swishing them about and disturbing their young roots.

Onion maggot.—Having paid particular attention of late to our Onion beds, I find that this pest attacks the tops first, for on opening the stem at the top I could trace the gradual development of the maggot down to the bulb, in which it attains its full size. This fact may be worth recording, in order that in future we may be able to arrest its progress before it gets into the bulb.—R. J., *Whitechurch.*

REPLIES.

13801.—**Culture of Asparagus.**—There are places where Asparagus will not grow, no matter how good the treatment. I know several such places in different parts of the country, and in all the soil is a cold heavy clay. The real remedy would be to burn some of the clay, and cart in a lot of good soil, and use plenty of rich manure. Of late years I have discarded the old bed system, and now only plant in trenches 4 feet apart, and set the plants 2 feet apart in the trenches. All the garden refuse (the roughest and longest of which is charred) is reserved for working into the trenches, which are opened 15 inches wide and 12 inches deep, and when the roots are planted the trenches are filled in with the compost to within 3 inches or so of the ordinary ground-line. The soil that is taken out of the trenches is spread between the lines of plants, and every autumn the rows are heavily top-dressed with similar compost with some manure added. Most of the artificials now used, and which are found useful for other crops, may be beneficially given to Asparagus. This trouble need only be taken with inferior soils, but it will be difficult to make the soil too good. Salt is a good dressing for porous soils, and it may be used in moderate quantities any time, sprinkled on the surface of the soil round the plants. I have found among my amateur friends who have during the last eight or ten years commenced to grow Asparagus, that some injury has been done by over-cutting. Young plants if cut too much will die from exhaustion. When a plantation only throws weakly Grass, it is a sign that too much has been taken from it, and that it has not been sufficiently nourished. House sewage, or any kind of liquid manure, will be a great help applied now. The weak may be made strong, and the strong made still more robust, by this treatment.—E. HOBDAY.

13342.—**Pulling Rhubarb in autumn.**—Rhubarb may be pulled in moderation during August and September. If pulled in excess, the produce the next year will be weakened.—E. HOBDAY.

13943.—**Obtaining Tree Frogs.**—They can be purchased in Covent Garden Market, and recently they have been sold by Messrs. Prothero and Morris, the auctioneers and horticultural valuers, Cheapside, London.—J. D. E.

TREES AND SHRUBS.

THE INDIA-RUBBER TREE (FICUS ELASTICA).

In European gardens, in sitting-rooms, and wherever plants are used for decoration, the India-rubber plant, with its straight stem and bright polished green, oval, leathery leaves, is a popular favourite. But while with us a plant in a 6-inch pot and with a stem several feet in height is considered to be large—too large for the nurseryman, in fact—in the hot, moist countries of which this Ficus is a native, it attains the size of a gigantic forest tree, worthy to be compared with our native oaks and elms. Such a specimen is shown in the accompanying picture, and in some of the towns in India and Ceylon long avenues are frequently met with composed of immense spreading trees of this Ficus. Each tree will form an enormous crown, often 100 feet wide, its great horizontal boughs bearing thousands of leaves, and sending down to the ground beneath numerous aerial roots. From the base of the trunk a circle of roots is also developed, which extend to a long distance from the tree, and spread like huge creeping snakes over the surface of the soil, a habit to which the Ficus owes its name of Snake tree. In this country the propagation of the India-rubber plant is by no means easy, as cuttings require to be especially prepared and carefully nursed so as to form roots; but Indian cultivators experience no such difficulty, for we are told that in moist warm climes large branches lopped off and planted will speedily establish themselves. It is possible that our difficulties spring from the use of the young shoots for cuttings, no plant of this Ficus being considered of any value, except as a source of stock, after it has reached the size of an ordinary bush. The sap of this tree forms, as its name denotes, a well-known caoutchouc called Assam-rubber, but it is stated that the rubbers obtained from the newer Heveas and Castilloas of America are superior to that obtained from this Indian Ficus. The sap is taken from the last-mentioned on its attaining the age of twenty-five years, the tree continuing to yield till it is about a hundred years old. The sap yields about one-third of its weight of rubber, and is collected and poured into boiling water and stirred till it gets firm; it is then cleaned, and finally washed with lime-water. It is not usual to tap the trees oftener than once in three years. The view represented in our woodcut is the outside of a garden in the island of Bermuda.

India-rubber Tree, Bermuda (Ficus elastica).

REPLIES.

13798.—**Picea nobilis.**—No one can tell whether the production of cones in this instance is a sign of debility or not without seeing the tree. It is usual for trees in a debilitated state to make an effort to reproduce their species before dying; in that case the growths would be stunted, the leader not being more than a few inches long. If the tree makes leading growth a foot long or more it is in a thriving state, and the production of cones will do no harm.—J. D. E.

13955.—**Raising Rhododendrons from seed.**—Rhododendron seed when ripe should be sown in pots of peat and sand, placed in shady position, and kept moist. I have a potful of seedlings sown in the spring, and also some out-of-doors treated in this manner.—G. F. C.

13832.—**Propagating the Orange Ball tree** (Buddlea globosa).—It may be propagated both by layers and cuttings; the latter should be put in late in the autumn when the wood is ripe. Layering may be performed in August.—J. D. E.

Plant protectors.—Three or four years ago, in the time of autumn frosts, when some bright-leaved Golden Feathers were curling and drooping in the pinching air, a bottomless crock was at hand and was placed on one of the plants, forming a wall around it about 8 inches high, carrying cold and parching winds clear over the foliage. The plant soon began to wear its natural bright and smiling look, and in order to give other plants the same advantage, I put extra hoops on some old nail and fish kegs, cut them in two, and took out the heads, and used them also in the same manner. Old tin pans and boilers have been since utilised in the same way to shelter Daisies, Vinca major, Parsley, Pinks, Snapdragons, and other small clumps of evergreen low plants during the bitter season, and with a success which compensates for the roughness of their appearance. I now save everything suitable for this use in a corner of an out-shed, and shall give each a coat of mineral paint, making them look "not so bad" while doing duty as plant life-preservers.—W.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—IV.

Watering.—If the truth were known, one-half of the failures which occur in the culture of plants in pots are caused by unskilful or neglectful watering. As the human being will pass through hardships unharmed if the digestive apparatus is retained at its normal strength and activity, so will a plant often thrive fairly well under adverse climatic conditions if its roots are preserved in a thoroughly healthy condition, whilst supplying them with what they need in the way of liquid and other nourishment. Red spider, green fly, scale, mildew, and other ills that plants are heir to, often owe their appearance to a morbid condition of the tissues of the plant, brought about by defective root action. What window gardeners have to continually bear in mind is that they must keep as far from extremes as possible, neither allowing the soil to become dust dry nor bringing it into the condition of mud by repeated waterings when the soil is already moist. It must also be remembered that a plant which has recently been repotted does not need nearly as much water as one having filled the soil with roots. After repotting considerable care is necessary, for if an overdose of water is given the fresh compost becomes too close for the free entry of the roots. An absolute rule in this particular point is to allow the soil to become nearly dry, and then give enough to moisten it through. This keeps the compost sweet, and the roots come out of the old ball into it, finding the new quarters to their liking. In the summer, when the plants are growing freely, and especially when they are coming into bloom, the soil should be constantly moist, as, owing to great root activity and quick evaporation, water is being drawn up into the plant and passed off through the leaves at a rapid rate. The more water a plant can utilise in the growing season the greater luxuriance will it exhibit; in fact, the generality of plants do not increase much in size until they need frequent doses of water. Many amateurs think they fulfil their whole duty to their plants in this matter by looking to them once a-day, but I wish them to bear in mind that they can never hope to excel in plant culture if they do not learn to vary their practice according to circumstances. The almost marvellous results attained by market growers are principally due to the discriminate use of the water-pot. I know of instances where the plants are looked through four times a day in warm weather, and a case came under my notice this spring where a house-ful of Paris Daisies were watered with weak guano water every hour in the day. The plants were in a root-bound condition, and, coming into full bloom, were growing in an airy house in the full sun, and therefore found no difficulty in utilising the large amount of moisture and food. Plants in window-ledges and balconies require a considerable amount of water, as they are so exposed to atmospheric influences, especially when in full exposure to the sun. In hot weather they should get a good watering in the evening, a little more in the morning, and be looked through again at mid-day, when those that have become dry should be watered. There is a great difference in the floriferousness and general appearance of plants which are thus looked to regularly, and of those that get but ordinary attention. Many plants, by reason of possessing roots which are very sensitive to anything like saturation of the soil, require careful management; the rule with them is little and often, just giving enough to keep the compost in a moist but not wet state. Cyclamens, Primulas, Calceolarias, and Cinerarias belong to this class, and it is generally owing to an error in watering that they go wrong. If such things as these are attempted to be grown, they should, if possible, be so placed that a current of air should not play on the pots; then they can be kept in an equable state of moisture without watering frequently, and this observation applies to all newly-potted plants—the roots commence to work much more freely in the new compost when it is in a condition between wet and dry. In winter no more water is needed than is necessary to keep the roots from perishing; the soil should be allowed to become quite dry between each watering, and it must be borne in mind that much less water is required to moisten it than in summer, when it becomes heated through by solar influence or dried out by parching winds.

The art of watering plants consists in giving them the water they require and no more; every drop given in excess of their needs may be said, without exaggeration, to contain the germs of disease or debility. A saturated condition of the soil, when the functions are sluggish, not only cripples the roots, but fills the leaves with crude sap, which cannot be elaborated or thrown off for some time, and thereby sets up a gouty condition of the tissues, the effect of which on the general state of health is soon shown by the leaves turning yellow and the whole plant looking weary and decrepid. Only practice can determine the exact amount of water that each plant should get, but it may in a great measure be determined by its general appearance. A vigorous-looking specimen, which has a good head of foliage in proportion to the size of the

pot, may be watered with greater freedom than one which has never made very strong growth. An experienced plant-grower will know by the appearance of each plant whether he can water freely, or whether he must think twice before he gives any. Plants grown in living rooms, especially those esteemed for beauty of foliage, are liable to suffer seriously from an overdose of water, as, owing to the confined atmosphere, evaporation goes on slowly, and the soil is so liable to become sour. Such plants should always dry out before being watered. When a plant goes wrong, the cause of its doing so will generally be found to lie at the roots, and it is necessary to ascertain it. In order to do so, place the left hand over the top of the pot so that the fingers enclose the stem; then reverse the plant, and tap the rim of the pot gently on some hard substance, holding the pot in the right hand. This loosens the soil from the sides of the pot so that the latter can be drawn away, thus exposing the ball of soil. Thus you will be able to see whether the roots are in a healthy state or otherwise. If they are black at the tips they have been overwatered, and remedial measures must be taken.

Renovating unhealthy plants.—The first thing to do in the case of a plant which has gone wrong in this way is to restore root activity. Supposing the plant to be root-bound, a course of careful watering will in time bring it round, allowing it to thoroughly dry out before giving water. But restoration to health may be quickened in the following way: Turn the plant out of the pot as above directed, choosing a time when the soil is moist, and dust the whole surface of the ball with fine, very sandy mould, returning it to the pot again. This sprinkling of new soil acts as a tonic to the unhealthy roots. They almost immediately throw out fresh white fibres, and from that moment the plant takes a new lease of life. It is really wonderful what this dusting of new compost does, and even plants which one does not care to shift, and which are otherwise in good condition, are immensely benefited thereby. Ferns especially seem to gain in health and strength when thus treated. At one time, when I grew a number of them, I made a point of dressing all that were root-bound twice a-year, and found that the necessity of repotting was in a great measure avoided, and I was enabled to grow large specimens in small pots. If the roots never seem to have taken possession of the compost, and are in a great measure decayed, the right way is to shake as much of the old soil as possible, allowing it to nearly dry out first, and then with a sharp knife cut away all decayed portions. Then take a pot which will comfortably hold the roots, well drain it, and work in some fine sandy soil among them, potting rather lightly. Water only when dry and sprinkle overhead once or twice a day in fine weather. The result of this operation will not be discernible for some time, but in due course the pot will fill with roots, and will make a fresh start. Then the plant may be shifted into a larger pot, and will go away into growth again The proper time to do this is from April to August, and I may here observe that no plant grown in windows should be shifted after the end of July. A frequent source of debility in pot plants is starvation. Geraniums and Fuchsias, and other free-flowering things, are apt to come to a standstill and lose their healthy appearance from this cause. When a plant is blooming freely, and is tolerably root-bound, it should get a top-dressing of some concentrated manure or some liquid stimulant from time to time.

BYFLEET.

14016.—**Varieties of Musk.**—There is a variegated Mimulus moschatus, the leaves of which are blotched with white or pale yellow, flowers yellow, perfume exquisite, and it comes true from seed. It was raised by a person living near this town, and is a decided novelty, well worthy of cultivation. I have a pot which I raised from three cuttings this spring. I do not know exactly where it can be procured, but if "A. G. N. L." will send me his address I will endeavour to procure him a specimen.—E. HEWETT, 13, *Buckingham-street, Stockport.*

Œnothera Lamarckiana for house decoration.—The value of this as a cut flower for indoor decoration is not enough known. On a growing plant the flowers close and droop in sunlight and bright daylight, but in the shade of a room they remain all day in an open state nearly as good as on the growing plant in the evening and early morning. Cut 3 feet long and grouped in a tall glass with a large branching piece of Eryngium amethystinum they form an important room decoration that will last for a week, and the daily removal of the dead flowers is all the attention that is required.—G. J.

ROSES.

13936.—**Striking and pruning Banksian Roses.**—Cuttings made of the young wood that is fairly hard will strike freely in sandy soil if they are inserted firmly and the pots stood in a close frame that is shaded; or the cuttings may be put in the open ground if they can have a handlight put over them and be well attended to as regards shading and watering. There must be no delay in doing what pruning is necessary, but none of the growth must be cut off if all the space is not covered. It must be nailed to the wall where the growth is thin; old-established plants of this Rose which are growing away from the wall, and do not show any bare spaces, may be sheared back, if the work is done at once—it would have been better if this had been done a month earlier.—J. C. C.

13942.—**Roses for pot culture**—Tea-scented Roses will be the most suitable Roses for you to grow. The best are Belle Lyonnaise, yellow, Madame Lombard, rose, and Marie van Houtte, yellowish white.—J. C. C.

—— There are so many of the Hybrid Perpetuals suitable for your purpose that it is difficult to select six varieties without appearing to slight the others. The following will suit you:—Boule de Neige, white; Duke of Teck, bright crimson; A. K. Williams, carmine red; Emily Laxton, bright rose; Ferdinand de Lesseps, violet-purple; Madame Rivers, pink; and Violette Bowyer, shaded pink flowers.—J. C. C.

13949.—**Roses for pots.**—The best three are La France, Duke of Edinburgh, and François Michelon; these are Hybrid Perpetuals. The best three Teas are Caroline Kuster, Comtesse de Vadaillac, and Belle Lyonnaise.—J. D. E.

13943.—**Wiring and gumming Roses.**—Roses do not require any gumming; a few varieties require to be wired—those only that have weak stems. Twist the wire once round the seed vessel, then twist it two or three times round the stem of the flower. Ordinary bouquet wire cut into lengths answers the purpose; it holds the Rose erect. Tea Roses nearly all require this process before they are used for bouquet work.—J. D. E.

13945.—**Good climbing Roses.**—Two light-coloured Roses, Gloire de Dijon and Solfaterre; best two dark, Cheshunt Hybrid and Reine Marie Henriette. If you can secure the plants in pots you may plant now; if not, wait until the end of next February.—J. C. C.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XIV.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

THE CURRANT.

THE composition of Currants when ripe very much resembles that of Gooseberries, and the two fruits are employed in much the same way. A useful jelly and good wine are made from red Currants, and a pleasant liquor is procured from black Currants. White Currants are usually reserved for dessert.

RED CURRANT JELLY.—Endeavour to secure perfectly ripe, sound, and dry fruit, pick it from the stalks and put it into a preserving-pan with a very little cold water, place the pan over a slow fire and stir frequently to prevent the fruit sticking to the bottom. When the skins begin to look shrivelled, strain off the juice through a fine cloth; do not squeeze the fruit, or the skin and pulp will make the jelly cloudy. Measure the juice thus obtained, and to every pint allow three-quarters of a pound of sugar; put these into a preserving-pan and boil rapidly, stirring all the time with a wooden spoon, as metal is liable to spoil the colour; remove every particle of scum as it rises, and when the jelly has boiled for twenty minutes, drop a little upon a cold plate; if it solidifies when cold it is boiled enough, if not give it another boil and try it again. Be careful not to boil the jelly too long, or not only will it be hard and stiff, but the colour will be injured. Have ready some small jelly pots, perfectly dry, and pour the jelly hot into them; skim away any froth, and stand aside until the next day before covering them. This is done by placing a round of paper, previously steeped in brandy, close on the top of the jelly; tie some paper over the pots, and keep the jelly in a dry and cool place. A few white Currants used with the red will give the jelly a much brighter and more delicate colour than when all red are used. If the fruit is not squeezed when straining off the juice the residue may very well be utilised by making it into jam for immediate use, with three-quarters of a pound of sugar to every pound of fruit; put this in a preserving pan, and boil it rapidly for half an hour; skim away the froth as it rises to the surface, and pour the jam hot into dry pots. When quite cold cover the jars with paper to keep out the dust. A few Raspberries added with the sugar will considerably improve the flavour.

CURRANT JELLY NOT BOILED.—Take some fully ripe freshly gathered dry red Currants (a few white ones will improve the colour), remove the stalks, place the Currants in a large earthenware jar, and when it is quite full tie a piece of white paper over the top. Put the jar in a saucepan with enough cold water to come about two-thirds up the jar; let the water boil around the jar for about half an hour, or until the juice is extracted from the fruit; then strain the liquid through a fine cloth, but do not squeeze the fruit. For every pint of juice allow one pound of powdered lump sugar, which make quite hot before the fire or in the oven without allowing it to become caked or coloured. Put the juice into a preserving-pan over the fire, and as soon as it reaches boiling point remove it from the fire; then add the sugar gradually, stirring all the time, and when the jelly is nearly cold put it into small dry jars; let it stand at least a week before tying it down, then store it in a cool dry place.

BLACK CURRANT LIQUOR.—For this liquor to be a success you must have fruit perfectly ripe, fresh, sound, and dry. Pick the Currants from the stalk and then weigh them. Put one pound of fruit into a clean dry stone jar, and pour upon it three pints of spirits of wine. Seal the jar tightly by first putting in a cork and then tying it down with bladder. Put the jar when securely closed into a dry cool atmosphere, and let it remain untouched for three months. At the expiration of this period strain the whole through a filtering paper without pressing or squeezing the Currants. To three pints of juice thus obtained allow one pint and a half of syrup, to make which put 3 lbs. of the best lump sugar into a clean saucepan, and pour over it one pint of cold water; let this boil over the fire until it is perfectly clear and thick, remove any scum that may rise to the surface; pour the syrup into a basin, and stand it in a plate of cold water to accelerate its cooling. When nearly cold mix the Currant spirit with the syrup thoroughly, and pour it into bottles scrupulously clean; cork tightly, set aside, and in one month the liquor will be ready for use. A soothing and refreshing beverage may be made from the fruit left in the filter. Put the Currants into a preserving-pan, with one quart of cold water, boil for ten minutes, pour into a tanney cloth, and with the assistance of a second person wring as much juice as possible out of the Currants; add to this one gill of spirits of wine and one pint of syrup. Mix these thoroughly and pour into clean bottles, cork tightly until required for use. Serve two table-spoonfuls of the mixture in a tumbler, and fill it up with cold fresh water, potash, or soda water. Both the liquor and black Currant syrup will be found valuable as a remedy for sore throat or hoarseness.

RED CURRANT AND RASPBERRY TART.—Take two pints of fresh ripe Currants, half a pint of ripe Raspberries, a quarter of a pound of sugar, and some short crust (page 150, May 23rd). Strip the Currants from the stalk. An easy manner to accomplish this without staining your fingers or mashing the fruit is to hold the stalk between your left thumb and finger while you strip the Currants with the prong of a silver fork into your dish. First lay half the Currants in a pie-dish, then the sugar, with the Raspberries, which must be carefully looked over in case there be any small maggots in them. Put a strip of paste round the rim of the dish, and cover the fruit over with paste; trim and ornament the edges as fancy dictates,

and bake in a moderately hot oven for half an hour. Dust some powdered sugar over the crust, and set aside to get cold, and serve with a jug of cream or a boiled custard.

Orange preserve.—Some time, when Oranges are plentiful, and consequently cheap, try this old-time recipe for making preserves of them: Grate the thin outer portion of the rind, then squeeze out all the juice and pulp; put the Oranges into cold water, and let them lie there for one day and night; meanwhile weigh the juice and pulp and grated peel; allow twice their weight of sugar; boil them together until the syrup looks clear, taking care to skim off any scum that rises. Put this in a cool place until the Oranges have been in the water the required time; then cut the Oranges into small pieces, drain them well, put them into some fresh water, just enough to cover them, and add sugar in the proportion of half a pound to one pint of water. When they have boiled in this until they are tender, add the pulp, &c. Let them boil then for ten minutes, after which they are ready to be put away in cans. Instead of cutting the Oranges into small pieces you may chop them very fine.—R.

Salad making.—Miss Griggs writes some very good sound sense on salad questions, but the English cook and writer on cookery always exercise their influence for the destruction of all the fineness and delicacy of salads. The idea of putting eggs into a salad dressing is a peculiarly British notion, and one which I am sorry to see Miss Griggs recommend. The best salads of the world are made of the simplest materials. There is no mystery whatever about them when one knows how to make them. There should be no salad dressing at all in the British sense. The best oil and the best vinegar—which Miss Griggs insists upon—and such salt and pepper as may suit the taste are all required, save a little chopped Chervil and Tarragon. All good salads are made of one thing, not of many things, save and except the "Salade de Légumes," which is not sufficiently known in this country. Take the delicate little Cabbage Lettuce of the Paris markets—that makes a perfect salad by itself. Take the Cos in spring—the tender Cos grown under a cloche—a most perfect salad, it might be taken as the very type of crispness and delicacy. That also is best unmixed. The best Tomato salad—perhaps, in some respects, the most valuable of all salads—is made of Tomatoes alone. For all these salads no mixture or dressing whatever is required, but a bottle of oil and good vinegar. Many people who are aware of the need of pure oil never pay the least attention to the vinegar, and in that way murder the salad. Excess of salt and pepper often spoils it. The Salade de Légumes is made of delicate cold vegetables of three or four or even more kinds, anything that may be at hand—Peas, Beans, Kidney Beans, Potatoes sliced, &c. These should be dressed in the same way, with pure oil and vinegar only, with a slight delicate seasoning. So much rubbish has been written in English books about the art and mystery of making salads that I, however, despair of doing much good by writing to GARDENING. The art of good salad making is simplicity itself—the art of bad salad making is complexity and the use of many things that are not wanted.—A. S.

The pies and puddings along Park Lane are modified this year with some of the old white Lily, which looks well even in such company! The little hand-raised vertical edgings, crcaked and looking like sections of mud pigstyes, are still used. They were a most unfortunate discovery for English flower gardening!

13796.—**Starting market garden**—This question is evidently asked by someone having little or no knowledge of the subject. No one can tell what amount of profit can be made out of a 6-acre garden after wages, &c., are paid. If the owner of the garden has no practical knowledge, and has to trust mainly to a manager, the chances of getting a profit after the interest of the money invested is paid are but small. I had a friend who was very anxious indeed to grow fruit and vegetables for market. He tried it on 12 acres. I found him an excellent manager; and, after six years' trial, he does not get any profit, after paying wages and other expenses with interest on £2,000 invested. It would require at least £1,000 to work a garden of 6 acres with anything like a chance of profit. —J. D. E.

COBBETT'S RURAL RIDES.*

WILLIAM COBBETT, the politician, has now little interest for us, and without some political knowledge of his time it would be difficult for most people to understand some of his writings; but William Cobbett as an observer of rural life and as one who enjoyed and described the delightful country south of London is a writer whose works are even yet far above the average in point of interest. With all his strong language and violent political feelings he had a true taste for country life, and few men who ever attempted to describe it did so more successfully, or in purer, clearer language. English people travel the whole world over in quest of the picturesque and fine scenery, while many of them are utterly ignorant of the beautiful country which lies within an hour of London, and which in the purity of its air and the variety of its undulations, its woods, and its landscapes, is perhaps the loveliest in the world. Cobbett knew the country well, having been born in its midst, and having had through it many delightful rides, which, happily, he has described in his forcible way. Cobbett's "Rural Rides" is to us a delightful book, but it is one which few people know. We are not sure that, up to the present time, it was possible to get a nice edition of it. We are, therefore, glad to see that Messrs. Reeves and Turner's recently published edition is a very creditable production—two handy well-filled volumes. We give an extract from the work to show its quality from a descriptive point of view. For its notes of the state of the country in his time, the "Rural Rides" will always be a valuable book to those interested in English country life. The following is from the

Rural Ride from Winchester to Burghclere.—We went to Kings' Worthy; that is, about two miles on the road from Winchester to London; and then, turning short to our left, came up upon the downs to the north of Winchester race-course. Here, looking back at the city and at the fine valley above and below it, and at the many smaller valleys that run down from the high ridges into that great and fertile valley, I could not help admiring the taste of the ancient kings, who made this city (which once covered all the hill round about, and which contained 92 churches and chapels) a chief place of their residence. There are not many finer spots in England; and if I were to take in a circle of eight or ten miles of semi diameter, I should say that I believe there is not one so fine. Here are hill, dell, water, meadows, woods, corn fields, downs: and all of them very fine and very beautifully disposed. This country does not present to us that sort of beauties which we see about Guildford and Godalming, and round the skirts of Hindhead and Blackdown, where the ground lies in the form that the surface-water in a boiling copper would be in, if you could, by word of command, *make it be still*, the variously-shaped bubbles all sticking up; and really, to look at the face of the earth, who can help imagining, that some such process has produced its present form? Leaving this matter to be solved by those who laugh at mysteries, I repeat that the country round Winchester does not present to us beauties of *this sort*; but of a sort which I like a great deal better. Arthur Young calls the vale between Farnham and Alton *the finest ten miles* in England. Here is a river with fine meadows on each side of it, and with rising grounds on each outside of the meadows, those grounds having some Hop-gardens and some pretty woods. But, though I was born in this vale, I must confess that the ten miles between Maidstone and Tunbridge (which the Kentish folks call the *Garden of Eden*) is a great deal finer; for there, with a river three times as big and a vale three times as broad, there are on rising grounds six times as broad, not only Hop-gardens and beautiful woods, but immense orchards of Apples, Pears, Plums, Cherries, and Filberts, and these, in many cases, with Gooseberries and Currants and Raspberries beneath; and, all taken together, the vale is really worthy of the appellation which it bears. But even this spot, which I believe to be the very finest, as to fertility, and diminutive beauty, in this whole world, I, for my part, do not like so well; nay, as a spot to *live on*, I think nothing at all of it compared with a country where high downs prevail, with here and there a large wood or the top or the side of a hill, and where you see, in the deep dells, here and there a farmhouse, and here and there a village, the buildings sheltered by a group of lofty trees.

* Rural Rides in the Counties of Surrey, Kent, Sussex, Hants, Berks, Oxford, Bucks, Wilts, Somerset, Gloucester, Hereford, Salop, Worcester, Stafford, Leicester, Hertford, Essex, Suffolk, Norfolk, Cambridge, Huntingdon, Nottingham, Lincoln, York, Lancaster, Durham, and Northumberland during the years 1821 to 1832; with Economical and Political Observations. By the late William Cobbett, M P. for Oldham. A new Edition, with Notes, by Pitt Cobbett, Vicar of Crofton, Hants, 2 vo's. London: Reeves and Turner, 196, Strand.

POULTRY.

14057.—**Gapes in chickens** (*Cof.*).—The symptoms are apparently those of the gapes, suitable treatment for which has already been recommended. It is considered that the worms in the windpipe, which cause the gaping, are hatched from the eggs of an insect which takes up its abode in the head of the chick immediately after birth, and it is in order to destroy this parasite before it does its work that dressing the hen with carbolic acid is advised. Another preventive is to touch the head of the chick with an ointment composed of mercurial ointment, 1 ounce; pure lard, 1 ounce; flour of sulphur, ½ ounce; and crude petroleum, ½ ounce; to be used in a liquid state, and applied directly the chick leaves the nest. None of the chickens of the same brood or age (if they are running together) may be expected to escape the attack, though some may only get it in a mild form.—DOULTING.

14056.—**Diseased chickens.**—Probably the chickens are suffering from leg-weakness, which frequently attacks birds of the heavier breeds, and others which have overgrown their strength. The produce of parents too closely bred would also be likely to suffer from this complaint. Animal food in the shape of meat or worms will be found beneficial, and the legs of the chick may be placed in cold water for a few minutes daily. This I have known effectual in such cases. It is well to add bone-meal to the food. Mr. L. Wright recommends the following prescription: Sulphate of iron, 1 grain; strychnine, 1-16th grain; phosphate of lime, 5 grains, and sulphate of quinine, ½ grain. To be made into a pill, and given three times daily. In a week or so the pills may be stopped, and Parrish's "Chemical Food" substituted, ½ teaspoonful to be given in twice its bulk of water morning and evening.—DOULTING.

14108.—**Fowls hatched in an incubator** (*F. C.*).—Your adviser has either been talking "bosh," or trying to make game of you. Chickens hatched in an incubator should be as perfect in their constitution as if they came into the world in the ordinary way, and there need be no doubt of their breeding if allowed an opportunity of doing so.—DOULTING.

The feline fertiliser.—I never heard a better idea among the many I have gathered from GARDENING than that of making our enemies, the cats, into useful fertilisers of the earth they defile, for the benefit of the plants they are wont to destroy (see page 245)—for several of my favourite shrubs and plants are broken, and eventually destroyed by them, in the way they attack certain herbaceous plants. These are troubles apart from those of the ordinary cat-worried amateur, which I also share in, so I shall be glad to know of the most efficient harmless trap. I have a trench already open.—J. H. B.

—— Let me, as a disgusted amateur, express my thanks to the gentleman from Bromley for the encouragement which his decided language has given me. Alas! I was too meek and long-suffering, for it is now too late to restore my broken-down plants—too late to save my garden from destruction; but, happily, it is not too late either for revenge or for reducing the numbers of these wretched, useless abominations, so that in future they may do less mischief. I have begun to devote the leisure hours which, had it not been for them, I might have spent among my flowers, in making a trap for the purpose described by "Amateur." There is only one thing I should like "Amateur" to advise me about. What shall I do with the bells, ribbons, &c., which these garden vandals wear as ornaments? I don't want to keep them; I am afraid the owners would not appreciate my kindness in returning them; would it be best to enrich a local hospital with the proceeds?—T.

GARDENING ILLUSTRATED.

Vol. VII. AUGUST 1, 1885. No. 334.

OUTDOOR PLANTS.

ADAM'S NEEDLE IN FLOWER IN THE OPEN AIR.

Just at this time of the year we put in this cut of a good Yucca to show those who do not know and grow them how much they lose. These fine hardy plants are good all the year round, and some flower as freely as Lilies during the summer. They are most precious things; one or two kinds flower every year, but others bloom more slowly. There are a good many sorts worth growing, and Londoners who pay a visit to the gardens on the Embankment will be able to judge for themselves of their value. So, too, in the Grass near Hyde Park Corner there is a noble bed of them in bloom. It has stood the vile vapours of London for years—the plants being as hardy as the park railings. Our London readers should have a look at it and see what a noble effect one single hardy plant will produce.

The culture of Double Pyrethrums.—I was particularly struck with a large bed of these which I saw a little while ago; they were arranged in rows of distinct colours, and could therefore be judged fairly and picked out according to their merits. This way of growing them is not, however, to be recommended, except for trade purposes or where quantities are required for cutting. In these cases it has a double advantage, as, the plants being together, the flowers can be got quickly without robbing the borders, and the plants can be soaked occasionally with liquid manure. This is a wonderful help to them, as the enormous amount of blossoms that they produce is a great tax on the roots, which dry and exhaust the ground near them to such an extent that the foliage will soon flag if assistance in this way is not rendered. It is on this account that they require a good depth of soil, enriched and broken up by trenching, which enables them to stand the weather better than they otherwise would. In borders where it is intended to grow them singly holes should be dug out to a fair depth, and some rotten manure worked in; and if the soil is very light it will greatly benefit the plants if some mouldering clay is mixed among it towards the bottom; as used in this way it is exceedingly retentive of moisture. Double Pyrethrums also make remarkably fine pot plants and force well, provided they are brought on slowly in gentle heat, where they can be placed near the glass and have plenty of air. Without this they draw up weakly, and the flowers come thinly. An attempt to grow this class of Pyrethrums from seed will end only in disappointment, as most of them come ragged and single; it is, therefore, much the best plan to buy a few named sorts and increase them, if so desired, by division, which may be done any time in spring before the plants get far advanced.—D.

The Wallflower.—This, one of the oldest among free-blooming garden flowers of early spring, is too well known to need much comment; and, being one of the first to brighten up the garden, it is just one of those sweet things calculated to attract young eyes, and a spray of which, doubtless, some amongst us, when quite the youngest of "amateurs," have in bygone days longed to possess when able only to lisp out our thanks in return. There is a great diversity of opinion as to what to do with Wallflowers when we have them. Some amateurs allow their plants to remain in the ground for a number of years, others throw away the old plants and raise a stock either from seed or cuttings annually; and where either of these methods results in a fine display of flowers we would say "Stick to the old plan," for no doubt soil and situation have a great deal to do with such matters. Our practice has been to raise a stock annually from cuttings. Seed sown at the present time will, if attended to in the matter of regulating the growth of the seedlings and planting out in rich soil, produce good flowers in spring, but without these aids the flowers will generally be few and far between, particularly so in poor soil. We have had good displays by planting out in March strong roots in bud, and increasing our stock by taking cuttings after flowering; and the amateur will do well to note the shape of a good market root, which should be short, thick-set, and full of plump blackish buds in March. To produce

Adam's Needle in flower in the open air.

these should be his aim. It may be well, however, to call the attention of amateurs generally who need such advice, that care—especially just now—should be exercised in selecting the proper growth with which to make cuttings, as, by incautiously using woody or pipey stems, no callus or thread of roots will form. Firm, fresh, green shoots of recent growth, and about 3 inches or 4 inches long, are what should be chosen, and if taken off under a pair of leaves, and inserted an inch deep in sandy soil with a little leaf-mould where at hand, they will soon strike in a shaded or partially shaded border. If kept moist, and placed about 5 inches apart in the cutting bed, they need not be removed until they are to be planted out in their permanent quarters, which they should be during September or October, and both these and seedlings will be better for a little judicious training by nipping out the shoots when growing, so as to induce the formation of well-shaped, short-jointed specimens. Many gardeners are raising plants at the present time both from seed and cuttings, and no time should be lost. But present operations will ensure a spring display if both rooted cuttings and seedlings are planted out in well-manured soil as recommended. Slugs are fond of these plants when young; they should, therefore, be protected by applications of cinder ashes and soot after rain until strong enough to withstand their ravages.—Stamford Hill.

Calceolarias.—As I have been a very successful grower of Calceolarias for a good many years, I will tell you the method I pursue. I have a three-light frame; in one division I put a little leaf-mould and 3 inches of road or river sand on the top of it. Early in October the cuttings are inserted and thoroughly well watered. If the sun is bright they are shaded for a little time. The ground should be kept well moistened for a few weeks, and then they may be left mostly alone for the winter, though it is well to let them have a little water if they seem at all dry. As soon as they begin to grow in the spring, I fill the other two lights of my frame with rotten manure and sand, and in this put out my cuttings about a foot apart, water well, and keep close for a few days. When the plants seem well started, the more air given to them the better. Pinching must be attended to in order that they may be sturdy and bushy. I have a bed got ready for them towards the end of April—rotten manure, leaf-mould, and sand—and then the first day there seems a prospect of rain they are put out, care being taken to take up a good large ball of earth with each plant. It is not worth while to put in any plant that has got the earth shaken from its roots—the chances are that it will die.—Rusticus.

The Primrose in town air.—This, one of the earliest and most familiar of wild spring flowers, is becoming increasingly popular. The charm of simplicity which it possesses, its delicacy, and its exquisite purity and freshness, have earned for it the admiration of poets and writers of all ages. A few observations upon its culture in town air may not be out of place in Gardening, and our excuse for saying anything just now about a spring flower must lie in the fact that amateurs who would have a seasonable display of Primroses must raise their stock at the present time, or increase the plants by root division later on. "The Primrose is not suitable for town air," we were recently informed by a daily paper; but the appearance each summer of a large quantity of seedlings round the old plants would plainly show that there is something wrong in this assertion. We grew them for years in the border of a low-walled garden, open to the sun from eleven till about four. It was, nevertheless, a garden in town, and three or four miles from any open space. In such a position the common yellow Primrose will form a good spring edging. The soil should be fine and well dug, and receive a liberal dressing of well-decayed horse or cow manure and leaf-mould, with a little sand, and the plants should never be allowed to suffer from drought. They have a neat and clean appearance, but after flowering they can be removed to any spare corner during summer, and in autumn may be divided and planted out for spring blooming. For window sills strong plants purchased when in full bud will bloom very satisfactorily;

every bud will expand. This is a ready means whereby a window garden may be made gay during spring with little trouble and small outlay. Of late years Primroses have been vastly improved, and seed if sown now in a fairly open position in a partially-shaded bed composed of light loam, leaf-mould, and a little silver sand, will soon germinate, and the seedlings should be planted out in the autumn in soil recommended for the old plants. The seed bed should be kept moist and protected from the sun during hot weather. A few might also be sown thinly in 6 inch pots where space is limited. A good strain will yield flowers of many colours, including lilac, maroon, and pure white. There are also many good doubles, all of which can be purchased in full bud in spring, and are, therefore, useful for an immediate display. Of these varieties and others the familiar yellow Primrose of our woodlands—Primula vulgaris, the subject of our few observations—if not in all cases the parent plant may at least be said to be the head of the family.—Stamford Hill.

Double Snapdragon.—I beg leave to forward you a curious specimen of Antirrhinum, which we have just lit upon in our garden, where the plants sow themselves year by year, and, in fact, grow like weeds. Possibly it is not very extraordinary; but it is the first time that I have noticed such a peculiar double growth of flower within flower, the inner one having a calyx as perfect as the outer one. We have only this one specimen in the garden—*i.e.*, of the double kind. I have been living here five years, and have never sown any Antirrhinum seed; so I suppose it is merely a curious hybrid. —J. M, *Newmarket.* *** *It is very curious and showy, and we do not remember ever having seen it before. You should endeavour to perpetuate it by seed, as it would be an effective kind in masses.*

Propagating Dahlias without bottom heat or glass.—"J. G. B." (page 231) speaks of propagating Dahlias with the aid of a frame and greenhouse; let me say I do not use either, and my plants are now (July 15th) bursting into flower so that one can see their colours. I stored the roots in a corner of the tool-house, and covered them with dry earth. Early this spring I sprinkled a little water over them and allowed them to remain until they began to shoot; then I divided them, cutting off, if possible, a piece of tuber with each plant, and planted them in a piece of reserve ground on a north border (for the simple reason that I had not a south one unoccupied). When large enough they were planted where they are intended to flower, and they are now full of flower with fine side shoots.—J. L., *Cornwall.*

Hardiness of New Zealand plants.—Several notices having appeared from time to time in Gardening as to the hardiness of New Zealand plants in this country, it may interest your readers if I give them my experience in this locality, which is three miles inland from St. Andrews Bay, and nearly 300 feet above sea level. Twelve years ago I planted out in the garden a small plant of the New Zealand Flax (Phormium tenax), where it has grown ever since without any protection from the weather, and some of our winters since then have been very severe. With the exception of some of the leaves being split and torn with high winds, it has suffered no injury, and is now a splendid plant with leaves 7 feet 6 inches high. It has flowered three times—once in 1880 when it had two flower stalks, again in 1883 when it had one, and this year it has two flower stalks, measuring at the present time 8 feet 6 inches in height. By inserting a rod into the ground beside the stalks I found their rate of growth to be 2½ inches in twenty-four hours, viz., 1½ inches during the day and 1 inch during the night. Another New Zealand plant, Travers' Speedwell (Veronica Traversii), has proved perfectly hardy here also. Six or seven years ago I got a small plant, which I kept in a cool greenhouse in winter, and planted out in summer for two years until it got too big, when I planted it out and let it take its chance, and it has done so well that it now forms a beautiful round evergreen bush, 4 feet high, and 5 feet through the centre. At the present time (July 20th) the leaves are almost hidden with its numerous spikes of pure white flowers, each about 3 inches long. Neither of these plants has had any protection whatever in the severest weather, as they are fully exposed to the north and east, and a nor'-easter from the German Ocean blowing across St. Andrews Bay is, to use an American phrase, "a caution!"—W. W., *Strathkinness, St. Andrews, N.B.*

Old plants of yellow Calceolaria.—Those who are accustomed to grow their yellow Calceolarias from cuttings put in under glass in autumn, like Geraniums and other soft-wooded bedding plants, can form but a faint idea what gorgeous effects can be produced by older plants, that have got hard and woody like ordinary shrubs. In this locality, owing to close proximity to the sea, winter frosts are merciful, and half-hardy plants, like this Calceolaria, survive ordinary winters without any protection, and for some weeks past the old bushes of yellow Calceolarias have been complete masses of the brightest gold. They form very striking effects in combination with masses of evergreen shrubs, and help to light up the mixed borders for a very long period, as these old plants are in full bloom before those used for ordinary bedding are planted out; and I have no doubt that those who live in more inland situations will find that if they left some of the healthiest plants in October, put them in cold frames during the winter, and planted out early in March, they would be well rewarded with a golden harvest of bloom. As pot plants for cool conservatories, verandahs, &c., they come in most acceptable, making a brilliant display of colour, and saving choicer plants from having to be used in positions where they are likely to suffer injury, as the great demands on the resources of gardens nowadays renders it indispensable to always have a stock of flowers ready for any emergency that may occur.—J. G., *Hants.*

Digging herbaceous borders.—I see "J. D." does not approve of digging and hoeing herbaceous borders. I wish he could see my garden now. I have hundreds of hardy plants of all kinds, pictures of health and beauty. My borders are always dug (by a careful gardener) in the spring, and hoed over through the summer two or three times. The soil is a strong loam.—E. A. H., *Durham.*

Daisies in sunshine and shade.—Drought is very trying to moisture-loving plants; and the difference observable in the same kind of plant growing in close proximity, in the same soil, one exposed to the full rays of the sun and the other shaded, is very remarkable, inasmuch as the fully-exposed plants cease flowering and the foliage looks rusty and dying, while those shaded are a mass of flower and luxuriant foliage. Therefore, in selecting summer quarters for plants of this class, we should make shade from the direct rays of the sun a point of the first importance; for, although such plants do revive on the return of moist weather, it is difficult to understand how they can be benefited by the defoliation to which they are subjected. Daisies, Primroses, Polyanthuses, and similar plants in the south of England are undoubtedly benefited by partial shade during the hottest months of the year; and those who grow them for filling spring flower beds should bestow on them special care, for after the transplanting they will be easily affected by drought. Evergreen branches laid over the beds make good temporary shade, and a thin covering of litter or straw also answers the same purpose. It is frequently argued that they flower all the better for a good roasting, but I feel sure that the loss is far greater than the benefit derived from too much exposure.—J. G.

Carnation Mary Morris.—With regard to what "W. G." says about the Carnation on page 271, is it not the case that it has certain defects in point of vigour, and that in many respects it is surpassed by many other good border Carnations? Will any growers of Carnations state their experience?—R.

The Iceland Poppy.—A very attractive bed may be made of the yellow form of Papaver nudicaule, the deep golden hue of the blossoms producing a fine effect. Such a desirable showy flower ought to be in every garden; it is perfectly hardy, and may be raised freely from seeds, which are produced abundantly. The white-flowered form is also a very pretty flower, and the two colours harmonise well.—R.

Senecio pulcher.—I think "Tyerman's Groundsel" (see page 271) is a very ugly name for a pretty plant. Why not call it the tall Purple Daisy?—R.

REPLIES.

14005.—**Fuchsia fulgens.**—The buds of Fuchsias will fall off before they open if the plants receive any check to their growth. They require regular supplies of water, and a frequent cause of the buds dropping is that the roots become over dry. The variety in question succeeds well in rich sandy loam. It will flower well during summer if it is planted out in the open ground in the ordinary soil of the garden.—J. D. E.

14025.—**Laying out garden.**—A catalogue of hardy perennials will afford you large scope for selection. Plant bush Roses in January; also Lilium lancifolium, roseum, rubrum, and album; also L. auratiacum, and other orange-coloured hardy Lilies; also Tulips in variety, Jonquils, Border Narcissi, and Croci. In sandy soil the Lilies may be left, as may the Croci; but Tulips, &c., are better lifted annually, and stored in a dry place. Strong plants of Zonal Geraniums and Lantanas will do for bedding out now, and cuttings may be taken the last week in August. You might also sow Pansies now for spring bloom, and propagate by cuttings in May or June. You may plant Pyrethrums and Chrysanthemums. Early in the year is a suitable time for planting Anemones. Violets and Lilies of the Valley sometimes require skilled treatment, and many are the failures with these flowers. Gardening recently contained an article upon the cultivation of the latter which you will do well to peruse.—Stamford Hill.

13998.—**Dividing roots of Lily of the Valley.**—February is the best month in which to divide Lily of the Valley roots. Spread them on the surface, leaving a distance of 4 inches between each clump of roots, and then cover them 2 inches deep with fine soil. These Lilies require fairly rich soil. If you want the flowers as long as they can be had, you had better plant one half in a shady place and the other in the full sun.—J. C. C.

—— The leaves have now decayed, and the masses of roots may be taken up and divided any time between now and before they start next year.—J. D. E.

14003.—**Fowls destroying plants.**—If your questioner does not care to quarrel with his neighbour at any price, his best plan will be to put a fence of wire netting round his garden, high enough to prevent his neighbour's fowls flying over. On the other hand, if he should be made of sterner stuff, the following may, perhaps, be of use to him:—I, too, was once troubled with neighbours' fowls destroying my garden. Remonstrances proved futile. I therefore proceeded to active measures. I caught one of the fowls and placed it in safe keeping. My neighbour thereupon paid me a visit, and was very determined in claiming his property. I was as determined in refusing to give it up unless a bill for £3 9s. 6d., damage done to my garden by the fowls, were paid to me. We parted, mutually threatening legal proceedings. The next two days I noticed the fowls were kept penned up. The day following I drove a few sticks into the ground, well in view of my neighbours, and fixed thereon, with some trouble, a plate, containing the mortal remains of a fowl that had served for supper. Two days later again I discovered my neighbour busily employed erecting a good, substantial wire fence, casting now and again a tearful glance at the plate. I watched the progress of the work with intense delight, and, after it was duly completed, I despatched my servant to my neighbour's with my compliments, and the fowl, quite unharmed. The resurrection came upon my friend—for I may now call him so—as a most delightful surprise. It was positively touching to see him presently emerge from his back door, carrying the fowl, followed by his family, maid, dog, and all, and restore the captive to its companions. We have been friends ever since.—P. H.

—— One does not like to quarrel with next-door neighbours, but if those neighbours allow their poultry to trespass into the next garden, the only way out of the difficulty is to make them pay for the damage they do. Fowls are a worse nuisance than cats.—J. D. E.

13940.—**White Foxglove.**—Seeds of this often produce plants bearing pink flowers; indeed, it is difficult to keep them true if any of the common pink Foxglove is growing near enough for insects to carry the pollen to the white flowers. I have some fine spikes of the

white variety over 6 feet high, the seed from which I feel sure (from the absence of any pink plants) may be relied on to come true. If "Martha" will send me her address I will send

A pretty Clarkia (C. pulchella var. integripetala limbata) Flowers dark rose and white.

her some seeds as soon as they are ripe. They should then be sown at once, preferably where they are to remain, and should then form nice flowering plants for next year. My plants have been raised from seed, and there has not been one that is not pure white.—J. H. Goodger, *Coventry*.

13995.—**Plants for vacant beds.**—You are not too late to establish Chrysanthemums or Asters in well-manured ground. Many annuals may also be sown for succession, or young plants can be obtained from nurserymen.—Stamford Hill.

14018.—**Insects on Pansies.**—Some soft soap dissolved in the Tobacco water would have killed the green fly. Lime and soot will not answer the purpose. Perhaps Tobacco powder could be more easily applied. We use an ordinary pepper box to dust with.—J. D. E.

The cat nuisance.—Cat nature, like human nature, is, I suppose, the same everywhere and always. Irish cats do not form an exception Last year I went to some expense and trouble to get up a little garden, but a favourite cat (which my people kept, under the erroneous impression that a cat is an indispensable appanage to a house), aided by a host of acquaintances, completely destroyed my seeds, and deprived me of very much expected bloom. This year, however, I have taken advantage of another trait in cat nature—namely, their fastidious avoidance of entrusting their precious bodies on any other than *terra firma*. I have placed slight wire lattice along the walls, and it is quite amusing to see the gentlemen and lady grimalkins approach, put out their paws for examination of the swaying obstacle, and then retire, so that I hope next year to leave my little hobby to the undisturbed possession of the robins and other birds. Let "W. J. W." go and do likewise.—G. G.

The toad as an ant exterminator.—We are very much troubled here in Colorado with red ants. They get into lawns and gardens, and as necessity is the mother of invention we have found ways to exterminate them. The toads, very numerous here, eat the ants in the garden, but do not find those on the side walks. We build a little pen around the ant hill, and put into it a good-sized toad, and find no ants there after a few days. Another way we have is to trap them, by sinking a small-necked bottle level with the ground near their entrance; the ants will run in and fall in, and a few days' perseverance will catch a large colony. The ants in the bottle can be killed with a few drops of kerosene, and the bottle put into the place again. Another way I have heard recommended was to dig up the hill, early in the morning when the ants were all in the nest, and with a pail of water work the nest over thoroughly until the whole mass was thin mud.—*New York Tribune.*

CLARKIAS.

These hardy pretty Californian annuals are robust in growth and of easy culture, and flower profusely for a long time. There are two species from which the numerous varieties now in cultivation have been obtained. C. elegans grows about 2 feet high, erect and much branched, bearing long, leafy racemes of flowers, varying from purple to pale red or salmon colour. The principal varieties of this species have double flowers, and two—Purple King (deep purple) and Salmon Queen (salmon pink)—are very effective border plants. The other species is C. pulchella, which varies in height from 1 foot to 2 feet. It has normally magenta flowers, but there is every variation between deep purple and pure white. There are also several double-flowered forms of C. pulchella that are very pretty; and there is a very distinct variety called integripetala, from which some beautiful forms have been obtained, notably limbata (dark rose and white) and marginata (pale rose and white). Altogether, there are about a score of varieties mentioned in seed lists, and most are distinct. All the varieties are suitable for borders, and the dwarfer kinds are, from their habit of growth, well adapted for sunny spots in the rock garden or on the ridge of sloping banks. Like all other hardy annuals, they may be sown either in autumn or spring. If sown at the beginning of September the seedlings gain strength before the winter, and flower well in early spring. The first spring sowing should take place in the beginning of March, and the plants would flower in July; other sowings may be made until about the middle of July for flowering in September and October. The best soil is ordinary garden mould, not too rich or too dry.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, August 3rd to August 8th.

Potting young scented-leaved Pelargoniums, Balsams, and Carnations; also Strawberries. Sowing Bath Cos, Neapolitan, and Drumhead Cabbage Lettuce, Radishes, and winter Cucumbers; also Mignonette in pots. Putting in cuttings of Cinerarias and variegated Pelargoniums. Planting a good breadth of Cauliflower and Grange's Broccoli. Staking Chrysanthemums, dwarf Dahlias, Calceolarias, and late Peas. Nailing Apricots. Shifting Primulas and old stools of Poinsettias. Cutting down Pelargoniums. Exposing fruit on trees in late Peach house to the sun. Making trenches for Leeks. Layering Strawberry plants for planting out-of-doors. Earthing up Broccoli. Digging ground for Wallflowers. Hoeing among Roses. Clipping hedges. Sowing Schizanthus and latest Balsams. Potting young Strawberries for planting out, consisting of Garibaldi, Keen's Seedling, President, Dr. Hogg, Eclipse, Elton Pine, a few Black Prince, British Queen, and Sir Joseph Paxton; also last-sown Cinerarias and Carnations. Putting in cuttings of Coleus and Alternantheras.

Shifting Primulas into flowering pots, Wigandias into 8 inch pots, also Stocks, and parting and repotting Caladiums. Staking and tying Dahlias and Larkspurs. Pulling up Onions. Cutting Lavender. Digging ground for Spinach. Earthing up Broccoli. Sowing Radishes and Lettuce. Potting some Stocks and Wallflowers for spring, three in a pot. Layering Pinks; staking Chrysanthemums and Gladioli. Moving herbaceous Calceolarias to shady place in frame. Earthing-up early Celery. Sowing Tripoli Onions. Planting Lettuce and Endive; also some Stocks and Wallflowers. Taking up Garlic and Shallots. Clipping Yew hedges. Removing faded Sweet William stems. Earthing up Brussels Sprouts and Manuring land for Turnips. Digging ground for Onions, Cauliflower, and Broccoli. Sowing Endive for spring crop; also Intermediate Stocks. Planting Wallflowers; also July-sown Bath Cos Lettuce, and some Paris Cos and Ne Plus Ultra Cabbage Lettuce. Sowing Nemophila; also main crops of Prickly Spinach, Veitch's Incomparable, Reliance, Imperial, Queen, Little Pixie, Enfield and Red Cabbages, Walcheren Cauliflower, Snow's and Osborn's Broccoli, Tripoli Onions, and Cucumbers. Netting Gooseberries.

Work in the Town Garden.

House plants.—The Camellia is another first-rate subject for a window in town, and with a little care and attention will, strange and unlikely as it may appear, not only live, but flourish, and even bloom very fairly, in town air. A vigorous, healthy plant should be obtained to start with, and it should be potted in suitable soil, with plenty of drainage, when, if judiciously supplied with water—that is, given none until it is needed, when the soil is approaching, but has not actually attained to, a state of moderate dryness, and then afforded a full supply, enough to moisten every fibre the pot contains—the plant is almost certain to thrive. As a general rule, however, the soil should be kept rather drier during the winter, especially if in a cold room, and pretty constantly moist during spring and summer, while growth is proceeding. The foliage should also be kept constantly clean by sponging at least once a week with a soft bit of sponge and tepid water. Both sides of the leaves should be sponged. Camellias should be repotted in early summer, soon after the blooms are over, and nothing should be used but the best fibrous peat, with a fourth of very fibrous loam for large plants only, and a good dash of coarse-grained silver sand. Orange trees also make very suitable window plants, and will do much better than most things in a heavily shaded or sunless aspect and comparative gloom. Seedlings are easily raised from the pips of a well-ripened Orange, and grow very vigorously in any good light or peaty soil, with some sand and good drainage. The foliage, being large and quite smooth, is easily kept clean by frequent sponging, and this has a great deal to do with the health of the plant. Of course, these seedlings do not bloom for a great number of years; but, being evergreen, the foliage is always handsome, and if the plants are "worked" (which almost any good nurseryman will do for a small sum), sweet and elegant blossoms in plenty, as well as green and golden fruit, are very soon produced.

Out-door creepers.—Any kind of strong-growing, vigorous climber is of great value in town gardens for covering and hiding the many bare walls, high fences, and other unsightly places always to be found in such a position. The most generally useful of these are the common Vine (Vitis) and the Virginian Creeper. A healthy vine planted in anything worthy of the name of soil will grow anywhere, and, if neatly nailed to a wall or trained over a trellis or archway, is green and pleasant to look at all the summer through. On a sunny south wall a suitable variety will often fruit abundantly, and, though the Grapes are usually somewhat black and sooty by the time they get ripe, this is easily washed off, and does not affect the flavour. Placed in a glasshouse of almost any description, so long as the roots have plenty of sound, rich, loamy soil to feed in, and the branches can enjoy the benefit of sunshine during the greater part of the day, a Black Hambro' or Sweetwater will, with the usual attention to thinning, stopping, &c., produce a good crop of very fair Grapes after having been planted two or three years, and where there is a greenhouse, and the trouble and expense of growing pot plants is not desired, this is much the best way of making use of the house. No fire heat is necessary; indeed such vines seem to do really better when frost reaches them in the winter than where it is carefully excluded, and if the sun heat is made the most of in spring

Clarkia elegans fl-pl.

and autumn, the Grapes will usually ripen very well by October or November. A sunny aspect is, however, absolutely necessary to success, as any appreciable amount of shade has a most injurious effect upon the vine, at least as regards fruiting, and if the requisite amount

of sun and air is not obtainable, mildew and other undesirable affections are almost sure to make their appearance, to the almost certain destruction of the few bunches that may appear. It is almost unnecessary to add, that if really good Grapes are desired, the vine or vines should have the house entirely to themselves directly growth has fairly commenced, and that a fair amount of atmospheric moisture in the earlier stages, with a comparatively dry air during the setting and ripening of the fruits, should be supplied if good Grapes are expected.

B. C. R.

Glasshouses.

Herbaceous Calceolarias. — These free-flowering plants are not so much grown as they used to be. Why, it is difficult to say, as seed of the best strains may now be had, from which a race of plants can be grown that are much more robust and vigorous in constitution than the miffy, spare-leaved representatives of this section of Calceolarias that were going in times past; and, in addition, the plants of the present day have the still further merit of producing flowers no less attractive in much greater profusion. The two methods of propagation are by cuttings and seeds. Where any exceptionally fine variety has appeared it is well to increase it by cuttings, but most growers will find it to their advantage to raise some from seed annually. The time for sowing is from the middle of July to the third week in August; if later than this the plants have not time enough to gain the requisite size before winter. The seed should be sown in soil of a nature that will admit of the young plants, when they require to be potted off singly, being moved without much root breakage. For this reason it must be light and open. Good loam, sifted, three or four parts to about one of rotten manure, and leaf-mould in equal quantities, with enough sand, will answer in every way. Use ordinary seed-pans, press the soil moderately firm and smooth, sow the seeds thinly, and cover lightly with fine soil, gently pressing the surface, which will prevent it drying so quickly. Stand the pans in a greenhouse or pit, shading from the sun until the seedlings vegetate.

Fuchsias.—These useful decorative plants will strike easily at any time of the year when suitable cuttings can be had. In winter, cuttings may be obtained from plants that have been started in heat about the beginning of the year, which will root readily and make nice little flowering plants during spring. But the natural disposition of Fuchsias to flower, in place of making growth, when the sun gets full force, is such that it is difficult to get them as large as they are sometimes wanted. For this reason old plants are often retained for years when the insufficient branches they produce makes their appearance indifferent. This can be avoided where a temperature of 50 degs. or near it can be kept up in winter, as cuttings put in during the latter part of July and the beginning of August, and accommodated through winter with the warmth named, will keep on growing and make flowering specimens much larger and capable of producing a much greater quantity of flowers than winter or spring-struck stock. No time should now be lost in getting in the cuttings; such shoots as are in free growth, and have not set flowers, are the best. Put six or eight together in 5-inch or 6-inch pots, filled with a mixture of sand and loam, keep moist, close, and shaded in a little heat, and they will strike in two or three weeks.

Tuberous rooted Begonias.—Where these are at all restricted for pot-room they must be regularly supplied with manure-water, or they will not make enough growth to produce the required amount of bloom later on. If seedlings that were raised this spring are still under-potted, although late, it will be better to give them a little more room, or the growth of the tubers will not be such as is desirable. Any of the fibrous-rooted varieties required to bloom in winter, that are yet in small pots, should be transferred to those they are intended to flower in.

Primulas.—The latest-sown plants intended to be in bloom about the end of the year should be at once moved to their flowering-pots, if not already in them, keeping the plants a little close for a week or ten days afterwards. Primulas from the seed-pan onwards should be so treated as to prevent their leaves ever becoming drawn and weak, for if this occurs they will never be equal in growth or bloom to plants that have been well managed all along. In the pits or frames they occupy the plants should be elevated so as to nearly touch the glass, and if the lights are run down each evening, so that they are wholly exposed to the air and dew, they will be much benefited thereby.

Epacrises.—Plants that are required to come into flower early, if not already stood out in the open air, should at once be exposed, the effect of which is to immediately induce the bloom to set. There are no more useful decorative greenhouse plants in cultivation than Epacrises, for, with a moderate number, a succession can be had in flower from autumn through the winter and early spring. They are much more serviceable, as well as brighter in the colour of their flowers, than winter blooming Heaths, yet they are not held in so much esteem as these.

Pelargoniums. — The large-flowered and fancy varieties that bloomed early, and have now been for some weeks in the open air to ripen their wood, will be ready for heading down. The fancy sorts should not be cut in nearly so close as the large-flowered kinds, otherwise they may not break freely. In the case of both sections allow the soil to get quite dry before cutting them in, and at once place them in a pit or frame, where by keeping the lights only a little tilted they will be induced to break immediately. To further assist this, syringe the plants freely overhead every evening. Pelargoniums for winter flowering of the zonal section, and also such of the regal or decorative sorts as are intended to bloom in winter, should now be out-of-doors in the open air, where, if stood moderately near together, yet not so as to cause them to become drawn, they will be enabled to get their growth solidified and ripened up in a way that is not possible when kept wholly under glass. Attend to them regularly with water, but see that they do not get too much should heavy rains occur. Where the zonal varieties intended for blooming at the season in question are as large as necessary they should have the soil kept somewhat drier, which condition will assist the growth to become harder, and cause the plants to bear more warmth in winter without getting drawn.

Hard-wooded plants in the open air.—Ericas generally, as well as most other hard-wooded plants, including Acacias, Adenandras, Boronias, Chorozemas, Eriostemons, Aphelexis, Pimeleas, Correas, Hedaromas, Myrtles, Neriums, and Polygalas, should now all be stood out in the open air, the beneficial effects of which will be seen in the winter by the less disposition the plants will have to become affected with mildew. In addition to the usual selection of soft-wooded plants that are cultivated generally, the above-named hard-wooded kinds in small or medium-sized examples should find a place in every greenhouse, otherwise much of the beauty and variety which it is capable of affording is absent. While hard-wooded plants of the above character are in the open air, all except the Heaths should be syringed freely every evening, getting the water well to the underside of the leaves. Where this operation is regularly carried out little trouble need be looked for through the season from that little pest, red spider.

Humea elegans.—There is no more elegant subject for conservatory or greenhouse decoration than this old much neglected plant, that requires no skilful treatment to have it in good condition, but simply attention in never letting it suffer from want of pot-room, deficiency of water, or injury from aphides and red spider. Plants raised from seed in spring, and moved as soon as large enough into little pots, must, when these are filled with roots, at once be placed in others considerably larger, giving them ordinary loam, with liberal additions of rotten manure.

Stove.—Give manure water once or twice a week to flowering plants of all such things as continue blooming during the summer and autumn. Enough assistance given in this way will keep them flowering freely as long as required, whereas if it is withheld there will be a corresponding deficiency of bloom. Let the stock of such things as Plumbago rosea, Sericographis Ghiesbreghtiana, Thyrsacanthus rutilans, and the different sorts of Justicia, be at once moved to the pots in which they are to flower, using loam well enriched with rotten manure, and enough sand added to allow of the large amount of water they require passing freely through it.

Euphorbia jacquiniflora and Poinsettia pulcherrima.—If spring-struck cuttings of the former are now in 6 or 7-inch pots these will be large enough even if three or four plants occupy each. If this plant is assisted as it should be with manure water, or, still better, with a concentrated manure sprinkled on the surface of the soil, so that it gets washed down to the roots by the water given, it will do better and bloom more profusely than if large pots are given, as it is a spare rooting subject, and does not like much pot room, but will bear an unusual amount of high feeding. The plants are better not stopped, but allowed to attain as great a length as they like, keeping the heads always near the glass, in a warm house, and lowering the pots as required. Seven-inch pots will do for spring-struck Poinsettias, if they are well supplied with manure such as advised for the Euphorbias. Where very large heads of these plants are wanted, spring-struck plants should be kept on growing in heat. Older stock will do cooler; but both should be kept with their heads close to the roof.

T. B.

Flower Garden.

Summer work amongst Roses. — Roses everywhere have flowered so grandly that we may be sure that they have to a great extent exhausted their strength; this is especially the case in districts where the rainfall for the last month has been below the average, and that is pretty general. Now is the time, then, to assist our Roses to regain the strength they have expended in the production of so many flowers. The first attention they require is to have all the faded flowers removed; this is best done by cutting off a few inches of the top of every shoot which has flowered. When this is done the roots should have a good soaking of water, and if it can be a liquid manure of some kind so much the better for the plants. What is wanted now is to give them fresh vigour to start them into growth again, for if they do not make fresh growth we cannot hope for another crop of flowers in the autumn. When applying water let sufficient be given to soak all the roots, and if liquid from a farmyard cannot be had, guano at the rate of 1 ounce to a gallon of water will benefit them immensely, and this treatment should continue for a month, giving the beds a good watering once a week. It will also help them if the surface is stirred up and something laid on it to confine the moisture. Where Roses are growing in beds or borders with other plants, see that the Roses are not crowded by the plants near them. It often happens in putting out the summer bedders that they are planted too near the roots of the Roses. When such is the case it will be better to sacrifice the bedders than to allow them to rob the Roses of the moisture; no plant, however small, ought to be nearer than 30 inches of any Rose tree. Sometimes it is the branches and not the roots which interfere with the Roses; in such a case the branches should now be cut back. Where green fly is getting a lodgment on the Roses no time should be lost in either dipping or syringing the shoots with soft soap and water at the rate of 1 ounce to the gallon of water. If the Briers for this season's budding are growing in poor soil the roots should have a good soaking of manure water about three days before it is intended to put in the buds, as the bark will run much easier for it. I prefer to let the Briers grow their own way until budding commences; the long shoots are then cut back to within 1 foot of the stem. When I once begin budding I never wait to get promineut buds; if the buds show well up in the axil of the leaf well and good, but if not I get them from shoots that are showing the buds less prominently, and in the end I find one is almost as good as the other. All who are not experienced in tying in Rose buds I advise to use soft Berlin wool for a tying material.—J. C. C.

Mulching.—For several years past sundry small plants in the flower garden failed to grow as swiftly as we wished; notably so Alternantheras, Coleus, and other tender kinds, and also some hardy sorts, Sedum acre elegans being among the number; and, believing them to be

dry, frequent waterings were had recourse to, but with indifferent results. Another year as soon as planted some of the plants were mulched with Cocoa-fibre, and seldom watered, and they did remarkably well. All have now had this mulching, and have not been watered more than half-a-dozen times, and yet the growth is perfect. The present is a good time to fill up any spare space there may still be in mixed flower borders with seedling Wallflowers, Antirrhinums, Pentstemons, and Sweet Williams. Plant them out in clumps of three or five plants together, and give them a good watering when they are first put out. All the attention required afterwards is protection from slugs until they have become well established. Herbaceous plants generally need attention as to ties and supports and weeding. Dahlias, Hollyhocks, and all large growing sub-tropical plants should be frequently looked over, and be kept tied to stakes as growth progresses. Roses should have all decayed flowers cut off at least twice a week, an operation which will tend to the earlier production of a second bloom. Stir the ground about them deeply, and if they lack vigour of growth, give a good dressing of guano. Its effects will soon be visible in the darker hue of the foliage. If it is not intended to save seeds of Delphiniums the seed-pods should be removed in a green state. This will cause the side-stems to flower strongly. Tie the stems of Pentstemons and Antirrhinums now coming into bloom to sticks as they advance in growth.

Fruit.

Strawberries.—Young plants that have been recently shifted from small 3-inch into fruiting pots may be removed from partial shade to a light, open spot, free from worms and within easy reach of water, of which they will take liberal supplies until the time arrives for storing them away for the winter. In placing the early kinds, which generally occupy very small pots, the latter may be made to shade each other from the direct rays of the sun until the foliage requires more room, when every alternate plant may be taken out, or, better still, the whole block may be turned over and rearranged to prevent them from rooting into the bed. When the potting of the forcing plants is brought to a close, provision must be made for another year by planting out the surplus runners before they begin to suffer from confinement in the small pots in which they have been layered. In the selection of a site the first consideration should be light and air, as plants which are shaded and drawn cannot be expected to produce good runners. Next comes the soil, which should be well prepared by the use of manure and deep trenching, and if a little new heavy calcareous soil can be placed round the ball of each plant, the labour will not be thrown away. If, in addition to the foregoing conditions, a situation near water can be selected, its importance should not be overlooked; but it will be better to incur expense in carrying water than to choose an unsuitable site, as a robust stock cannot be raised from weakly parents.

Hardy fruit.—Thin out the new canes of Raspberries to the minimum point—about three to each stool—and as soon as the fruit has all been gathered, any of the old canes that interfere with the full development of the new growths should be removed. In order to prevent injury from wind the new canes should be tied in at once. The new shoots and points of cordons and espalier-trained trees of Apples and Pears may likewise now be tied in. Spur back all growths not required for furnishing the trees to within three joints of the old wood—an operation which, combined with partial root-pruning at the proper season, will conduce to fruitfulness. The majority of Peaches and Apricots may now have the current year's shoots laid or tied in to the wall; but previously pinch closely back all sub-lateral growths that have formed on them.

Vegetables.

The first sowing of Cabbages should be made on or about the 28th July in shallow drills, covering the seeds with burnt refuse; should the land be dry, water the drills without a rose on your watering pot. Lettuces and Endive may be sown at the same time. I always sow small seeds at this season, on land which has been broken with the cultivator rather than dug up. The land for Tripoli Onions can hardly be too rich; about the first week in August is the right time to sow them. Many growers sow in drills, and transplant either in autumn or early in spring, but the best bulbs I ever grew were sown in 4 feet beds and duly thinned, leaving only the best plants. The land should be heavily manured and deeply dug, breaking the soil as the work proceeds; afterwards tread it firmly, rake it, and then proceed to lay out your beds. Wherever there is room plant with the crowbar any kind of good Broccoli; everything in this way is always useful when frost visit us. I am busy stirring the ground among all growing crops with the cultivator, letting in the air and killing the weeds at the same time. Coleworts are especial favourites, but we like them white. I therefore plant them a little earlier than I otherwise would do, at 12 inches apart. The site is that just cleared of Early Potatoes, and well broken up with our cultivators, then drills are drawn and well watered, the only preparation the land requires; no digging or manuring is done.

13883.—**Grubs destroying flowers.**—Kill the grubs with the fingers, and if the leaves are very bad pick them off and burn them. Dusting the leaves with soot prevents the insects from laying their eggs, and in that way the plants may be kept nearly free from the pests.—J. D. E.

13930.—**Ants in houses.**—They are very troublesome, and I do not know of any better way to destroy them than by placing small portions of sugar in their runs; they cluster together closely to eat the sugar or carry particles of it away, when they may be destroyed by pouring boiling water over them; they are killed instantly.—J. D. E.

—— Sprinkle petroleum in their runs. If there are any ants in the pots turn a saucer upside down and then pour petroleum on the saucer and stand the plants on them; the ants will soon disappear. Since we have used this remedy we have no trouble to get rid of the strongest colonies of ants.—J. C. C.

Basket plants.—Growing plants in baskets is a most interesting system of culture. There are two kinds of baskets, viz., those which are suspended in the conservatory or room, and those which are placed as ornamental features on the lawn. The latter are frequently of large size, and usually when well planted contain several kinds of plants, those of trailing habit round the edge to hang over (as a basket in any position without trailing growth to ornament its sides lacks one of its most interesting features), and plants of erect habit in the centre, to take off what might, in some instances, be called dumpyness. Baskets for suspending in the conservatory are a necessity. No house, however small, is complete without them, and there are many plants which cannot be shown off so well in any other way. Plain wire baskets are usually the best for all trailing plants. Orchidaceous plants will often do better in baskets made of hard wood. To name a few plants suitable for baskets in the conservatory we may take the following: Achimenes, Epiphyllums, Cissus, Clematis, Fuchsias, Ivy-leaved Pelargoniums, Tropæolums. Many Ferns have creeping growth, suiting them for basket culture.—E. H.

Hints to writers for the Press.—Write on single sheets of white paper, and on one side only, leaving a margin on left-hand side of about 1 inch. A good-sized paper for the printers is 8 inches by 6 inches; any size near this will do. It is a common error to suppose that printers can easily read bad writing; it is, on the contrary, a source of loss to the printers, annoyance to everybody connected with a journal, and is often the cause of communications being rejected. All proper names of persons, places, and, above all, botanical or technical names should be perfectly clear. All writing for the press should be more plainly written than for private correspondence, as manuscript has to be read not only by the editor, but by the compositor, the reader, the reading boy, perhaps more than once, and referred to; therefore, bad writing is not an infliction on one person only, but on several. Mark each sentence clearly with a full point or stop. Finish the article or note as you desire it, not leaving corrections till you see it in type, as this leads to much needless cost and loss of time. Write your name and address on the top left-hand corner of the first page, and number all subsequent pages. Put a heading to each communication. Express your ideas in the shortest way consistent with clearness. State facts. Eschew preface. Plunge at once into your subject. Condense.

ROSES.

ROSES ON THEIR OWN ROOTS.

Having a good many of the newer sorts of Hybrid Perpetual Roses not tried on their own roots, we have been busily engaged lately in putting in as many cuttings as we could get for the purpose of testing their behaviour in this respect, and if I describe the way in which we hope to convert the cuttings into plants in a few months, the information may, perhaps, be acceptable. We have begun the work thus early in order that the plants may be strong enough to be planted out next May. In a general way we do not, however, begin propagating Roses from cuttings before August. Lengthened experience has shown that very hard and very soft growths must be avoided in selecting cuttings at this time of year, and the quickest way to promote the formation of roots is to give them bottom-heat. In order to furnish this we collected together the refuse manure found about the frame ground, and with the aid of some leaves we made a hotbed on which we placed a frame. After the bed had stood a few days we put 3 inches of soil on the surface, in which to plunge the pots, and I find there is a steady bottom-heat of about 85 degs., which, owing to the character of the fermenting materials, promises to continue for some time. The space in the frame is, however, insufficient for the number of cuttings which we intend to put in it, so I intend to utilise another frame in this way from which a crop of Melons has been taken. There is not much heat left in the bed, but still there is a nice moist temperature, and by carefully husbanding the sun heat I do not apprehend any difficulty in rooting all the cuttings which I require in it, but of course not so quickly as on a specially prepared bed.

In making the cutting we cut off the top down to a good wood bud. At the fourth bud below this we make the base of the cutting, removing the two lower leaves and allowing the two top ones to remain. On the preservation of the leaves left I attach considerable importance, as I am satisfied that they play an important part in promoting early root formation. Therefore, both in the insertion and in the after management of the cuttings, every care is taken to preserve them from injury, and to keep them green as long as possible. Each cutting is put singly in a 2½-inch pot. The compost which I use consists of three parts sifted loam and one of sand. The soil is pressed firm, so that the cutting may rest on a firm bed. I have used small pots in preference to putting several cuttings in those of a larger size, because I wish to convert them into plants as expeditiously as possible. By using single pots I shall do so, as they can be shifted on into larger ones as soon as they get sufficiently rooted without disturbing the roots; but where there are numbers of cuttings to be turned out of a large pot and separated, some of the roots get more or less injured, thereby causing a check to their growth. This I wished to avoid, and I find I have lost but little in regard to space. As fast as the cuttings are potted and labelled they are taken to the frame, in which the pots are plunged to their rims in the soil. Every possible despatch is used from the time the cuttings are taken off until they are put in the frame, for if the leaves once begin to flag, they require a good deal of coaxing to get them up again. They are well watered as soon as they are placed in the frame, and the latter is kept quite close, and shaded with a thick mat from 7 a.m. to 6 p.m. every day for a fortnight. Darkness seems to me to be one of the essential features of the management of Rose cuttings at this time of year, but the shading should be gradually reduced. The mat that has been used should be exchanged for a piece of tiffany or old fish net at the end of a month. It is, however, necessary to shade them for six or eight hours in very bright weather up to the middle of September. A good deal depends on the management as to what progress they make. If the shading is carefully attended to, the soil in the pots kept uniformly moist, the leaves and the inside of the frame syringed with water when the shading is taken off in the afternoon, I find that with the aid of bottom-heat we can root them in six or seven weeks, but without bottom-heat they will take two or three weeks longer, and we can generally reckon to save 85 to 90 per cent.,

which is a fair return for the labour bestowed upon them, and this, after all, is not great.

As soon as the cuttings are sufficiently rooted, they will be potted and taken back to the frame. We shall prepare a compost for them consisting of three parts loam to one of manure, and run it through a coarse sieve, and we shall use 4½-inch pots (with two or three crocks for drainage), in which they will remain until they are planted out. Their winter quarters will be in a large unheated house where they will be secure from severe frost, and where they will only require an occasional watering to keep the soil right about their roots. The future home of the plants will be in two long borders, which are about 10 feet wide. These spaces we hope to divide into 6-foot beds, and to plant each bed with one variety of Rose, putting nine plants in each, and then peg down the growths. At present our beds of pegged Roses are in mixed varieties, which are very beautiful when in flower, but I think groups of separate and distinct colours will be more effective. The preparation of the soil will take place early in the winter. As the subsoil is not of a kindly character, we shall have to take out a depth of 12 inches of the bottom, and substitute a more suitable compost, for Roses must have a depth of 2 feet of good earth if they are to succeed for any number of years. Early in May the plants will be brought from their winter quarters to a cold pit or frame where they can be gradually hardened off, and finally planted about the end of that month. To put them out earlier would be to run the risk of the tender growth being injured by the cold winds that frequently occur at that time of the year. J. C. C.

Standard Roses.—I see it stated that Standard Roses will not do planted singly. I have Standard Roses seventeen years old, dotted about an exposed garden, and they are still in full bearing. Standards will do on Grass, if a small circle is cut round, and the roots are well mulched and manured yearly: the Grass should not come within a foot of the stem.—A. B. T., *East Anglia.*

Roses and artificial manure.—Having seen in Gardening that artificial manure, sprinkled around the roots and just covered over with earth, was a good thing to make Roses flower well, I thought in the spring of this year I would try it, which I did to some of the largest and strongest plants. Now what is the effect of this? Almost to a plant the Roses have been defective; some never opened. Others appear as if they were blighted and falling off, while others have shown a sort of green tuft in the centre. Catch me doing such a thing again! Those Roses that I did not apply it to have been splendid.—J. L., *Cornwall.* *** *What manure was used?*—Ed.

REPLIES.

14008.—**Niphetos Rose.**—Shift your plant into a 9-inch pot as soon as the flowers which are now upon it fade. In December cut off just the point of any straggling shoots and those that have flowered, and the plant will flower again next year in April if kept in a greenhouse. This Rose requires but very little pruning.—J. C. C.

—— Repot the plant in August and grow it on in a warm sheltered place. Keep the leaves free from mildew, red spider, and green fly. Prune it in November and place in a warm house the month following. Forcing Roses early in the year can only be done successfully by keeping the plants near the glass and quite clean.—J. D. F.

—— In growing a Niphetos Rose successfully the most important point is to feed it well. The plant ought to be watered weekly with liquid manure, and occasionally top-dressed. I planted out a young plant last year in a border in a cool greenhouse, and this spring I have had nearly a hundred fine blooms, all very large, one head measuring 1½ feet in circumference. The Niphetos is all the better for being well pruned in after flowering, and the withered blooms picked constantly off. If possible it ought to be planted out, but if this cannot be managed feed it well, and it will amply repay all trouble, as it is quite the most free-flowering and easily-managed Rose I know.—N. C., *Scotland.*

13876.—**Plantains on lawns.**—The best method of destroying Plantains on lawns is to cut them off as deep down as possible with a knife or spade, and then pour a few drops of paraffin into the hole. The work requires patience, but extra care taken in the matter will be repaid.

WELL-BROKEN MARGIN OF ARTIFICIAL WATER.

Most of our artificial waters, or, as we generally call them, duck ponds, are so fearfully stiff in outline that in nine cases out of ten the places would look much better without them. Here is a little cut which shows how even artificial water may be broken in pretty little ways—ways which will help the lovers of aquatics to get suitable positions for their favourite plants. The ordinary way is to make the margin as stiff as a basin, and often more steeply graded than any well-made basin.

TREES AND SHRUBS.

SHRUBS FOR THE TOWN GARDEN.

The subjects mentioned here are taken in the order of their desirability—first, those that are sure to give good results with very little care, and then those that need judicious treatment, and that should be very sparingly introduced, except in comparatively favourable localities.

The Euonymus may be taken first. It is an evergreen, and will grow, and with a little care even flourish, in any situation. The dark glossy foliage of the plain-leaved kinds and the bright markings of the variegated varieties are almost equally effective, though the latter are, perhaps, a little more delicate, or rather less vigorous, than the former. There are several varieties, all of which are almost equally desirable; there being both broad and narrow-leaved sorts of the plain section, and of the variegated, gold and silver-edged, and one that is described as a tricolor. These will all grow in any soil that is worth the name, and in either sun or shade. To do well, the situation should be fairly drained, the shrubs supplied with water in dry, hot weather, and, when they become established, a dressing of rotten manure applied, as they are rather exhausting to the soil. Euonymuses grow well in pots, in which state they are very useful for window decoration in winter. The Aucuba japonica is another most desirable evergreen, too well known in and around most towns to need description. Many, however, do not know that there are male and female varieties of this plant, and that if plants of both kinds are grown together in summer, so that the pollen of the one is taken by insects or wind and deposited on the flowers of the other, as is sure to be the case, the female plants become fertilized, and bear large clusters of bright red berries, which greatly add to their appearance and value. Almost precisely the same remarks on cultivation given for the Euonymus apply equally well to the Aucuba; there is also a variegated form of it, which is very effective. The Ribes, or flowering Currant, is a deciduous shrub, attaining a height of 4 or 5 feet. It bears a profusion of pink blooms early in spring; but in towns, and sometimes outside, it often happens that these are almost or quite destroyed by the cutting east winds that frequently prevail at that season. But the flowers, in a favourable year, are very pretty, and the growth is very free and robust. A sunny situation and loamy soil are most suitable; but rich soil or manure is not needed. Ribes sanguineum and speciosum are both good forms. Centranthus ruber is a splendid town plant, dwarf in growth, and having attractive red flowers. It will grow well in any town, however smoky and dirty. A sunny or partially sunny situation should be chosen, and any good light soil will grow it well. Lilacs, of different kinds, may be taken next. Healthy plants that have been grown hard, and on not too rich a soil, if well planted, are sure to do well almost anywhere, though if the locality is very bad much bloom must not be expected. The Persian Lilac is usually much more free flowering than the common kinds, as well as more dwarf in habit, though it is rather more difficult to get established. A sunny position is preferable, but these will grow well in partial shade. Hawthorns (Cratægus), of several varieties, usually succeed well, though they will not produce flowers as freely as in purer air, and sometimes not at all. Still they are very useful. The common May (C. oxyacantha) is much more frequently met with than any of the others, except, perhaps, the double kinds, of which Paul's new crimson is far preferable to any other, and a splendid sight when in full bloom. But there are many other fine varieties far too seldom seen, and we would recommend Cratægus grandiflora, which bears immense flowers, and is a vast and vigorous grower. C. caroliniana, C. lucida, and C. glandulosa are quite as effective, and, excepting, perhaps, the last-mentioned one, more suitable for town culture than the common C. Oxyacantha. C. macrantha is a fine variety, with brilliant coloured fruit; and while amongst these the beautiful evergreen C. pyracantha may be mentioned, though its growth renders it only suitable for training on walls, &c., for which purpose it is decidedly the *best* thing we have. The common Sumach (Rhus glabra), as well as its still more beautiful congener, R. glabra laciniata, is a capital town shrub, or small tree. A strong plant, carefully put out, is sure to do well, and the beautiful foliage, even of the commoner variety, renders it an ornament in any garden. The cut-leaved form is still more desirable, and a well-grown specimen yields to no plant that grows for beauty. Any good loamy soil and a warm, sunny position suit these well. The Tree of the Gods (Ailantus glandulosa) may be taken as a companion to the above, which it somewhat resembles in appearance and the treatment required. The Cuba, or variegated Laurel, usually does well, which is more than can be said of the common Laurel, or of the Laurustinus. This does not seem to mind smoke and dirt much, if the place where it is planted is not too much con-

Sheet of artificial water with margin broken in a picturesque manner.

fined. The Gum Cistus (C. ladaniferus) is a very good town plant, and as it is an evergreen, or nearly so, and bears beautiful flowers as well, it is extremely desirable. We have seen these, healthy and flowering profusely, in the worst part of Southwark, not far from London Bridge. A sunny position is suitable, and good loam is the best kind of soil for this. The Arbutus Unedo makes a beautiful shrub when in a small state, and will grow almost anywhere. Acanthus of sorts, especially latifolius, may be grown well, with a little care, in most places. The foliage of these is extremely handsome. Rhododendrons, particularly robust growing sorts, will be found splendid things if well planted in proper soil, in not too confined a space, and properly cared for and kept clean afterwards. That they will do well, even in the heart of London, is abundantly testified by a sight of those growing in St. Paul's Churchyard, which are thriving, and flower profusely. The way to obtain good results is to plant with great care, in a well-drained position and good peat soil, sturdy, well-grown plants of vigorous and robust sorts.

The soil must, of course, be made very firm around the roots, abundance of water must be given in the growing season, and when the plants become established—that is, the roots obtain a good hold of the fresh soil—pretty frequent doses of good manure water may be given with advantage in dry weather, when the plants are in full growth. But the most important point is to keep the plants clean by the almost constant use (except in wet weather) of the hose or garden-engine; do not spare the water, but give it them from all sides, and as forcibly as they will bear without injuring the foliage. Powerful syringing, by some means or other, is very important for the well-being of all kinds of trees and shrubs in town, more particularly in the case of those with large or glossy leaves, but no plant is benefited by so free an application as the Rhododendron. These plants are the better for slight shade from very hot sun when the foliage is young, but this is not absolutely necessary. Escallonia macrantha is a very handsome shrub, which will succeed in all but the worst localities. It has glossy foliage, which is easily kept clean, and red or scarlet tube-shaped flowers. It is best planted in a somewhat peaty soil, in a border under a south wall, as, except in the south of England, or in favoured spots, it cannot be said to be quite hardy. It may be planted quite close to, and trained and nailed against, such a wall, very readily and advantageously. Weigelia rosea, and its variety alba, is a favourite with many, and as a town shrub should, perhaps, take place before some others previously mentioned, as it will grow almost anywhere, and flower in most places as well. But the fact of its being deciduous is somewhat of a drawback. Its flowers, however, are very beautiful, so that it is the best. A warm, sunny situation, sheltered by a wall or fence, suits it well. The common French Willow of cottagers' gardens grows well, and is very pretty nailed up to a wall. Lastly, Forsythia viridissima and suspensa are both very desirable free-flowering subjects, which will do fairly well in most places if carefully planted in proper soil and a warm situation.

In addition to the above, there are several subjects which are really trees, but in a small state may be successfully employed for the decoration of the town garden. These include the Almond, Fig, Cherry (double), Catalpa, Paulownia, Laburnum, &c., as well as some forms of Maples, such as the beautiful variegated Acer Negundo variegatum, which, grown as a standard, cannot be surpassed for effect. This, however, with most of the Japanese section, is rather more delicate than the commoner varieties, and should therefore be sparingly planted in smoky districts, though in most suburbs they would succeed well. On the borders or outskirts of cities, or wherever the air is comparatively pure and fresh, many other shrubs may be added to the forgoing list, such as Laurels, Laurustinus, Bays, Hollies, Magnolias, &c.; and such things as Lilacs, &c., will flourish with very little care. The Magnolia, however, it is only right to state, we have sometimes seen doing well in the most crowded and unlikely neighbourhoods. On walls or close places, as before stated, the Virginian Creeper in its different forms, the Vine, Jasmine, particularly the common white Ivies of sorts, Magnolias, hardy Clematis, &c., will be suitable anywhere; while many shrubs, as the Cydonia, Ribes, Weigelia, and others may be trained in such positions with good effect. A little farther out Passiflora coerulea, Wistaria, Punica (Pomegranate), and others may be added. But anywhere and everywhere, where a place for it can be found, the beautiful Cratægus pyracantha should be planted. It is sure to do well, and is a "thing of beauty" at all seasons. Cotoneaster microphylla is another berry-bearing evergreen which may be grown as a small shrub, or nailed against a wall with good effect in suburban districts. B. C. R.

FRUIT.

BUSH FRUITS.

Owners of gardens, either large or small, should pay extra attention to a class of fruits that require but the most ordinary care and repay it better than kinds that can only be grown by skilled gardeners, and whose produce even then is precarious. How frequently do we find Gooseberries and Currants neglected, and all the resources of a place lavished on Peaches, Apricots, &c., which but rarely give satisfaction. It is more the rule than the exception for bush fruits to be planted under the shade of large orchard trees, where they continue to yield moderate crops; whereas, if given really good soil and free exposure, one-half the number of bushes would yield double or treble the quantity of fruit, and of so much better quality as to be hardly recognisable as the same kind. Moreover, there is no need to wait weary years for fruit, as is the case with what are called choicer kinds. During the last two years I have planted quantities of the best market sorts, and in nearly every case they have borne fair crops the first year, and a really heavy crop the second—more, in fact, than the value of the bushes. It is useless to plant rooted cuttings simply because they are cheap, and to expect a crop. Really good bushes that have been headed down and replanted and furnished with a good head of fruitful shoots are procurable at from 6d. to 9d. each, and they are far the best to plant.

As regards treatment, the soil should be deeply trenched and well manured for all kinds of bush fruits; they should be planted 6 feet apart each way for Gooseberries, and Currants and Raspberries 4 feet from row to row. The pruning consists in keeping the centre of the bushes open, and red Currants and white varieties can hardly be too closely spurred in. But black Currants, which bear the finest fruit on the young wood, must have the oldest removed every year to make room for it. Gooseberries require some young wood left every year, but I am no advocate of severe thinning; for in case of severe spring frost, the topmost branches, if left moderately thick, shelter the fruit on the lower portion, and keep it free from harm. As to position, let black Currants and Raspberries have the most moisture. I lately saw a very fine crop on bushes overhanging a running stream with their roots in masses like Willows. Manure for bush fruits can hardly be too liberally applied, or too rich, if fine fruits are desired. Even the oldest and most decrepit looking bushes will soon recover and make healthy wood, and carry good crops if liberally treated. I find stye manure to act like magic in restoring old and apparently worn-out bushes. Although termed bush fruits, both Gooseberries and Currants are well adapted for wall culture, and scarcely anything that I have tried yields such good crops on walls of moderate height, such as are used for dividing villa and suburban gardens. These may be quickly covered by planting healthy young plants and training two shoots right and left, and others from them erect to the top of the wall. The main shoots should be about 9 inches apart, and they only need closely spurring-in afterwards. For dessert Gooseberries and red and white Currants wall treatment is invaluable, as by its aid and that of a fish net or tiffany they may be preserved until very late in the season. As regards varieties for dessert, among Gooseberries I may mention Warrington, Ironmonger, Keen's Seedling, and Lancashire Lad (red); Yellow Sulphur, Golden Drop, Yellowsmith, Green Gascoigne, Green Walnut, Whitesmith; Snowball, and Snowdrop, white. Currants—Raby Castle, Warner's Grape, Knight's Large Red, and Mammoth, red; White Dutch, white; Lee's Prolific, Black Naples, and Baldwin, black. Raspberries—Carter's Prolific and Fastolf, red; Antwerp and Magnum Bonum, yellow. Raspberries for autumn fruiting are very useful for prolonging the season of outdoor fruits; they should be cut down close to the ground in winter, as they bear on the extremities of the young shoots. Of varieties, the Belle de Fontenay and October Red and Yellow are the best I have yet tried.

Gosport. J. G.

Strawberry supports.—It is when the weather during the ripening period is rainy that the true value of Strawberry supports can be fully recognised. In a wet time not only is the fruit, when supported, preserved against the attacks of vermin which then abound, but it also colours and ripens better. But propping up the berries on twigs, as has been suggested, often results in their being scorched when a very parching period of weather supervenes. This is more especially the case with respect to kinds which, being very firm when ripe, are naturally hard and seedy in the immature stage. Sir C. Napier is very susceptible to injury in this way, and I have known a good lot of fruit of it to be quite spoilt by becoming scorched when about half grown, through the hot sun shining full upon the berries. I do not know of anything much better than plain tiles for laying the fruit on, as the berries are not then lifted up from the protecting influence of the foliage, and in a general way they certainly come finer than when lying on litter. "J. C. C." (p. 279) says the propping up should be done some days before the fruit commences to colour, but to reap the full benefit from the operation it should be performed as soon as all the berries are well set. If the fruit is well shaded by the foliage, this may not be so important, but where the plants do not grow so luxuriantly, and where the fruit is more or less exposed to the sun, the berries will often scald if moved out of their normal position after they begin to plump up. This is especially the case when the weather suddenly changes from moist to very hot. Here, where beetles eat or spoil nearly every fruit which lies on the ground, we are obliged to support them in some way, and I remember once deferring the laying up of a quantity of Marguerites until they were three parts grown, with the above-mentioned result. In plantations where the leaves touch, over-propping up the berries is without danger, and, I feel convinced, increases the size and quantity of the fruit.—B., *Surrey*.

Good Strawberries.—Except for the fact that it furnishes a few very early fruit, I do not consider Black Prince Strawberry worth growing. It certainly cannot be compared with La Grosse Sucrée, and I find but little difference in the earliness of the two. La Grosse Sucrée is also at the very top of the tree as regards forcing. Our three best Strawberries are undoubtedly this and Sir Joseph Paxton, and Dr. Hogg; but, as in the case of every other fruit, no hard and fast rule can be followed in the selection of varieties for different soils and localities. I have an idea, however, that Black Prince will succeed in a much lighter soil than is acceptable to most Strawberries; indeed, the best fruits of this particular variety I ever remember to have seen were from a light south border. Where it has a damp bottom there always seems a tendency to mildew. It is difficult to get the old Elton Pine true now; a lot of plants from a nursery that came under my notice the other day seemed very much mixed. This is a prodigious cropper, and perhaps the most valuable of all for preserving and for other culinary purposes.—E. B.

*** *A much better early Strawberry than Black Prince is Pauline.*—Ed.

Strawberries.—Having a bed about 80 feet long and 10 feet wide, I have made a little experiment on it. Last year I was advised to cut off the leaves after fruiting. Although I did not believe in it I did it, and to manure with good short dung, which I did to one-third of the bed. The second portion I did not manure at all; the third portion I manured in the spring. Now mark the result. The portion manured in the spring bore scarcely any fruit—not half a pint where there ought to have been 2 or 3 gallons.

The portion not manured at all bore a few, which came early, but no crop worth speaking of. The bed where the leaves were cut off and manure applied had a very fair crop, which has given myself as well as the master great satisfaction.—J. L., *Cornwall.*

White Currants for dessert.—There are few more useful dessert fruits than the white Currant, yet we seldom find it occupying anything but odd corners, or spaces between wall fruit trees, where it has to contend with stronger growing subjects for a bare existence. No wonder, therefore, if it does not produce very fine fruit; but give some young bushes a good position and good soil for the roots, and you will not find any fruit tree or bush that you cultivate repay you better. I find it a good plan to have some open bushes, and a few on different aspects of wall, so as to get a long season for this useful fruit. As it is not naturally a strong grower it may be treated to richer soil than the red Currant without any fear of causing too much wood and leaf growth. I find nets or tiffany far preferable to mats for protecting the latest supply, as when they are matted up the leaves drop before their natural season, and the bush is weakened for another year. On low walls, such as frequently enclose villa gardens, the white Currant may be grown to perfection; put in the young bushes, in autumn, a yard apart, and take about four shoots from each to the top of the wall, training them down horizontally, and then straight up, the only attention afterwards being to keep them closely spurred in. I have never known them fail of a crop on walls even in the worst fruit seasons, and whether fruit of other kinds are scarce or plentiful a good supply of white Currants is always acceptable.—J. G. H.

REPLIES.

14015.—**Apple trees not bearing.**—I had an Apple tree in my garden many years without bearing, though most years there was some bloom. Two years since I twisted a piece of copper wire tight round it above some of the branches. Last year it bore a few Apples; this year every branch above the wire is crowded with fruit, and not a sign of any fruit on any branch below it. The Apple is Blenheim Orange, and the tree upwards of fourteen years old.—W. J.

—— As your trees produce plenty of blossom there is evidently something wrong, and I expect the cause is climatic. Unless you are sure that the same sort bears well in the same neighbourhood you may safely conclude that my surmise is right. If so, no manner of coaxing will ensure a satisfactory crop. It is not at all unusual for one sort of Apple to bear well in one district and not in another.—J. C. C.

14020.—**Vines with air roots**—This is caused by too much atmospheric moisture, combined with a bad state of the roots. Are the roots over-dry? The vine will not be injured by the production of aërial roots. The remedy is to be found in a healthy root action, and an atmosphere not too moist. Some people cut them off. I have done this and left others on, and could not see any difference in the appearance of the vines or the quality of the Grapes. I had an early vinery in which aërial roots were plentiful; but from those same vines many bunches were cut that gained first prizes in London.—J. D. E.

—— There is nothing the matter with your vines farther than that you have kept the internal air too moist, and have not given air enough. Reduce the atmospheric moisture and give more air.—J. C. C.

14011.—**Planting Strawberries.**—Layer the plants in pots at once, and plant them out in rich soil, well manured. The manure should be trenched deeply into the ground before planting. We put a layer 13 inches below the surface, and another good layer 6 inches. Plant the strong-growing kinds 2 feet apart, and the dwarf sorts 20 inches apart.—J. D. E.

14017.—**Strawberry plants not bearing.**—Destroy the barren plants and plant the ground with runners taken from fruiting plants. I would prepare a new piece of ground as advised under question 14011, and plant it entirely with layers from the fruiting plants, and destroy the old bed, either this or next season.—J. D. E.

Perhaps the prettiest aspect of vegetation in Her Majesty's parks at present is that shown by certain windows of red Pelargoniums plunged in the masses of Virginian Creeper which cover the lodges at Stanhope Gate, Park Lane.

13836.—**Getting rid of snakes.**—Fill the holes with broken glass bottles. Break up the glass pretty fine, and they will never face it. Snakes may be easily killed. The common species are quite harmless, but there is a prejudice against them.—E. H.

OUR READERS' ILLUSTRATIONS.

The Large Pyramid Saxifrage.

This is a noble, hardy flower, which grows anywhere in this country, fully exposed to the air and sun on borders, rock gardens, or on walls. Many parts of the Alps of Europe are quite covered with it, and as one crosses over many a fearful pass in early summer one may see the wreaths of flowers of this plant adorning many an awful flank of rock where no botanist or other person can ever gather it. By the way, the fuss made by Mr. Wills and others about the plants of Switzerland being exterminated seems very funny to one who knows the enormous areas which must ever be let alone by the plant gatherer. Saxifraga Cotyledon and S. pyramidalis are the names generally applied to this Saxifrage—one being a form of the other. They belong to the group of what are called the Silvery-edged Saxifrages, which are very interesting, and perfectly hardy plants, that can be grown by anybody who does not yoke the gazelle with the elephant—by which we mean one who does not stick them under Cow Parsnips and other gigantic types of vegetation. This is a common habit of the gardener of the present day, who has been nurtured on "bedding out," and who when he comes among garden flowers often runs amuck indeed! No one can make progress with hardy plants without knowing and respecting their wants as regards their neighbours. Our illustration is a reproduction of one of the photographs sent for our first competition by Mr. W. T. Bashford, Argyle House, Portobello.

The Second Illustration Competition.—The details of the second Illustration Competition will be found in the number for July 25th. A reader has kindly suggested that inasmuch as many good things that might be shown in the photographs may not be obtainable during the stipulated time, and may not, indeed, be in perfection in that time, we should repeat the competition next year. That would enable those who may not have the opportunity during the next few weeks to secure photographs for next year. We give notice of our intention, therefore, to arrange a precisely similar competition next July.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each, showing the fruit in various stages.*

Names of plants.—*M. L. H.*—Eriogonum cespitosum.——*A. E. J.*—Appears to be a large-leaved Poplar; probably a variety of Populus canadensis. Can you not send a branch?——*T. Atkinson*—1, Tradescantia virginica; 2, Spiræa Aruncus; 3, Funkia Sieholdi.——*South Devon.*—Watsonia coccinea, sometimes called Antholyza; Lilium Parryi; Lilium californicum, a variety of L. pardalinum.——*J. Clarke.*—1, Pteris cretica albo-lineata; 2, Lastrea spinulosa; 3, Probably L. filix-mas; 4, Probably L. dilatata. You should send better specimens (with spores) of Nos. 3 and 4.——*Shoeburyness.*—1, Diplacus glutinosus; 2, Alstroemeria chilensis var.——*W. A. K.*—1, Aloe scootrina; 2, Sedum Sieholdi; 3, Mulberry (Morus nigra); 4, Galega officinalis alba.——*L. W.*—1, Veronica angustifolia; 2, Impatiens glandulifera; 3, Zenobia speciosa pulverulenta.——*J. K.*—1, Diplacus glutinosus; 2, Send in flower or fruit; probably Eugenia Ugni.——*Bedlington.*—Maidenhair Tree (Salisburia adiantifolia).——*J. C.*—If you will send us uncrushed and good specimens we will name the herbs.——*Bromber.*—Willow Herb (Epilobium angustifolium).——*J. H., Belfast*—Impatiens glandulifera.——*S. A. G.*—York and Lancaster Rose.——*Patience.*—Senecio doronicum.——*B. Harcourt*—Artemisia vulgaris.——*A. B. T., East Anglia.*—Achillea Ptarmica var.——*S. R., Aberdeen.*—Senecio macrophyllus. Not quite certain. Could you send us a larger specimen?——*J. G. K.*—Goat's Rue (Galega officinalis alba).——*E. B. Bishopp.*—Variety of Alstroemeria chilensis. Dry soil in a warm place; raise from seed or divide; not rare.——*W. M. F.*—1, Campanula glomerata; 2, Lychnis divica fl.-pl.; 3, Agrostemma flos-jovis; 4, Lindelophia spectabilis.——*H. C.*—Next week.——*Matchboz.*—No; the true Caper is the fruit of Capparis spinosa; that you send is Euphorbia Lathyris, the Caper Spurge.——*R. H. H.*—Cephalaria tatarica.——*P. A. D.*—Euphorbia Lathyris (Caper Spurge)——*F. H. R.*—1, Aspidium caryotideum; 2, Nephrolepis exaltata; 3, Pteris serrulata; 4, Variety of Soolopendrium vulgare.——*J. C. Hanham.*—Cotton Grass; Eriophorum palustre.——*Miss Mason.*—Spiræa ariæfolia; cannot name the Rose.——*Another Enquirer.*—Gout Weed (Ægipodium Podograria). Only exterminated by rooting it out.——*John Hill.*—Nepeta cataria.

Names of fruit.—*Jeff.*—We cannot tell you the name of your Gooseberry unless you send us specimens of it. Judging from your description, we should say it is Golden Drop, but you had better send us some of the fruit.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

14100.—**Clematis from seed.**—Will some correspondent oblige me by giving short directions for raising Clematis from seed, and hints as to the after culture?—J. H. G.

14110.—**Compost for young vine.**—I want to permanently plant out a vine in autumn. Will some growers kindly tell me the best compost, and give me any information that they may think useful?—T. C., *Ormston.*

14111.—**Cucumbers turning yellow.**—Will some vegetable grower kindly advise me what I should do to prevent my Cucumbers turning yellow? They grow to a very fair size, but turn yellow.—H. V. W., *Portarlington.*

14112.—**Gardening on chalk soil.**—Will any reader who has had experience in similar soil say what flowering plants, creepers, vegetables, and fruit trees will flourish on the chalk of the Wiltshire Downs?—J. St.

14113.—**Sex of Strawberry plants.**—Will any Strawberry grower kindly tell me all about the sex of Strawberry plants? For want of information in this matter I am at a loss what to do with mine.—J. L., *Cheshire.*

14114.—**Removing fruit bushes.**—I wish to remove some Currant and Gooseberry trees (part of them old) this autumn. Will any bush fruit grower tell me what is the best process, and the proper time? Will they hear fruit next year?—Dove Bank.

14115—**Destruction of winter Spinach.**—"A. S, Little Ilford," would be glad to be informed what is the special enemy which destroys winter Spinach, and what remedy is effectual? of late he has lost his crop every season. Will any grower kindly tell him?

14116.—**Killing weeds in lawns.**—Would "E. L." kindly inform me at what time of the year he applied Watson's lawn sand, and also in what manner he would apply it to eradicate Daisies, as it would prove an endless job to apply it to the crown of each Daisy, as in the case of Dandelions?—S. Campbell.

14117.—**Peaches spotting and rotting.**—I should be glad if any Peach grower would kindly tell me the reason why several of my Peaches turn red and soften at the end, while the other parts of the Peaches are still quite hard? By the time the other parts are ripe the point has split and rotted. They are grown in pots.—S. C.

14118.—**Roses for greenhouse.**—Will "J. C. C.," or some other reader, kindly state the names of the three best Roses with long-pointed, fine flowers like Maréchal Niel—one white, one darkest crimson, and one flesh colour—suitable for climbing in a cold house?—Beginner, *Ipswich.*

14119.—**Empress of India Rose.**—In "J. C. C.'s admirable article on "Roses and the Weather," in your number of July 11th (page 238), he states his Empress of India Roses have done well. Would he state locality, on what soil grown, what manure was applied, and whether hard pruned? I wish to try the Rose but hear of no end of failures.—H. R.

14120.—**Plants for chalky garden.**—I am trying to follow the kind advice of "V. C." about chalk down gardens in your paper of March 21st (p. 28), and am now planting in boxes for next year seeds of Anemones, Sweet Arabis, Snapdragon, Columbine, and Everlasting Pea. Is this right, and can "V. C." recommend other seeds to be planted now which will flourish on the chalk, and tell me also when to plant out seedlings?—Diana.

14121.—**Crooked Cucumbers.**—Will any vegetable grower kindly inform me whether the circumstance of my Cucumbers coiling up in a very ungainly fashion can be attributed to any special cause? They are of the kind called Telegraph, and in former years have been as straight as I could wish. I use hottles to some of them, but this year these Cucumbers coil just as do the others.—Gardiner.

14122.—**Rose of Sharon.**—Will any grower of this plant kindly tell me the botanical name for it?—Sr. Michael's. *** *Mr. Miller's "Dictionary of English Names of Plants" says this is the hardy flowering shrub known in our gardens as Hibiscus syriacus; but a friend at our elbow insists that it is Hypericum calycinum, a so called St. John's Wort. Perhaps someone may be able to speak authoritatively on the question.*—Ed.

14123.—**Treatment of Arums.**—Will anyone who grows the plant tell me whether the following treatment of Arums, which has been recommended to me, is the best?—"When they have done flowering abstain from watering, and when the leaves have died down lay the pots on its side in a dark cellar for the winter? If brought out again in the spring and kept well watered the plant will flower more freely from having been kept in a state of entire rest through the winter." How soon should it be brought to life again?—Sphinx. * *Arum is the Latin name of a well-known genus, and, therefore, should not be used in any other sense. "Sphinx" probably means the Arum Lily or the Lily of the Nile, which is properly Calla æthiopica.*—Ed.

14124.—**Neglected orchard.**—I have an orchard of Pear, Cherry, Plum, and Apple trees. Some of them are 15 to 20 feet high, but there is next to no fruit on any; they look starved. Will any fruit grower tell me how I should proceed to get them into a fruiting state? If I must lay manure on the Grass, when is the best time to put it on, and what manure is best? I don't want to grow wood but fruit. Young Apples are dropping off as if the trees are short of vigour.—T. C, *Leeds.*

14125.—**Mildew on Grapes.**—Will some Grape grower kindly tell me how to deal with mildew on Grapes? At present I syringe them twice a-day, and sprinkle powdered sulphur over them about three times a-week; but I should like to be told whether it is right to shut the house up tight at midday, which I am doing, as there are Cucumber plants in the same house. I have used the sulphur for about a fortnight without any result. —Novice.

14126.—**Plants for shaded greenhouse.**—Will anyone advise me what use to make of a structure adjoining a house, with a window looking into room on ground floor, and the roof glass? It was quite frost proof last winter, but, as soon as leaves came out on trees, by which it is much shaded, plants grew straggling and weak. It has more sun in winter a great deal, because of the absence of leaves. Will Ferns or anything else do in summer, and are there any flowering plants that would grow in it in winter?—H. E. S.

14127.—**Pot Daisies.**—I am much interested in pot Daisies (not the French Marguerite), and am curious to know if they are the common Ox-eye Daisy cultivated.—Diana. *** *This is a very indefinite question. "Diana" probably does mean some of the numerous family of plants that belong to the same genus—Chrysanthemum—as the French Marguerite, but it is impossible for us to reply to her question unless she sends us a specimen of the plant. We can hardly imagine anybody growing the Ox-eye in a pot. If people want such flowers earlier they should take some of the more tender kinds, which want pot treatment and are very beautiful.* —Ed.

14128.—**Adonis vernalis.**—Would you kindly inform me whether Adonis vernalis requires any special treatment, as I have had one for several years, but it has not flowered since I bought it. It has been kept in a greenhouse where Grapes are all through the winter.—Bill. *** *No wonder you did not succeed! It is surprising the poor thing has lived. Adonis vernalis is a perfectly hardy plant of the Alps of Europe, and, so far as we observe, thrives best in light or open soils in the cooler northern districts. We have never seen it so strong and well as in Messrs. Backhouse's nursery at York, and in some of the Edinburgh nurseries. About London it seldom is beautiful. If your plant is still alive plant it out in autumn or winter.*

14129.—**Japan Lilies.**—I am a lady amateur gardener, and have read with interest the article on Japan Lilies in your number of July 18th. I wish to know whether bulbs of Lilium auratum and longiflorum can, when planted as described in that article, be left with safety in the open ground in a warm sheltered border during the winter in a midland county.—M. G. C. *** *Certainly, you may leave them in the open air. On light warm soil the Japan Lilies are perfectly hardy, and in many cases do far better in the open air than when planted in pots. The most showy and magnificent flower effects we have ever seen, either in the open air or under glass, were afforded by Lilies grown for years in the open air.*—Ed.

Our Readers' Illustrations: The large Pyramid Saxifrage. From photograph taken by Mr. W. T. Bashford, Portobello. (See page 292.)

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14130.—**Geranium leaves withering** (*D. H.*).—Your Geranium is perfectly healthy, but it seems to be in a starved condition.

14131.—**Plan of garden** (*B. R.*).—We fear we cannot assist you, and by far the best plan would be to call in some practical man who could find out in a few minutes' conversation what you want. An examination of the ground would enable him to give you a plan which would aid you more than a column of directions from us.

14132.—**Procuring pink Water Lily** (*C. A. M.*).—Try Ware's, of Tottenham.

14133.—**Marigold Meteor** (*H. J. J.*).—The blooms you send are good and richly coloured.

14134.—**Procuring Solanum crispum** (*C. A. M.*).—You may get this plant from Paul and Sons, Cheshunt.

14135.—**Pruning Tomatoes** (*H. Sandwith*).—Thin out the foliage, especially around the swelling fruit, so as to let in all the sun possible.

14136.—**Stag's-horn Fern** (*J. C. Ferguson*).—Mr. Miller, in his "English Names of Plants," says this name is applied to Platycerium grande, and other species.

14137.—**Propagating Thunbergias** (*A. O. E.*).—One race of Thunbergias—the pretty annual kind—may be easily raised from seed in heat. If you do not mean these please write again.

14138.—**List of hardy flowering shrubs** (*C. A. M.*).—Your best plan would be to take a good catalogue of hardy shrubs, such as that of Waterer, Knap Hill, Surrey; Lee, of Hammersmith; or Smith, of Worcester.

14139.—**Campanula and Platycodon** (*J. S. W.*).—There is only a slight difference between these. Botanists now call Platycodon grandiflorum Campanula grandiflora, so that the genus Platycodon does not now exist, strictly speaking, although for gardening purposes it is convenient still to retain the name, as the plant is different from most other Campanulas.

14141.—**Variegated Geraniums sporting** (*W. B.*).—We think these are a very sportive lot. If you find that the new leaves do not in time change so as to resemble the old ones, why you have got a sport, and if you like it you should increase it.

14142.—**Japan Lilies** (*Subscriber*).—"Cheapness" is a comparative term, and we do not suppose that "J. B." has any means of purchasing the bulbs of Lilium auratum at a cheaper rate than yourself. You can get good bulbs at prices varying from a few pence to a shilling each.

14143.—**Unfruitful Strawberries** (*G. D.*).—Strawberries are often unfruitful because the grower tries to make one yard of land bear as many plants as two or more should. Give each plant a clear space around it; the sun will then get to the roots and so ripen the crowns.

14144.—**Work for the week** (*A Constant Subscriber*).—We do not understand what you mean. If you are a constant reader of Gardening you surely cannot be ignorant of the fact that considerable space is devoted in each number to the very subject you refer to—work for the coming week, not in flower and kitchen garden only, but in all departments of the work.

14145.—**"Apple puller"** (*J. L.*).—Will you kindly explain more clearly what you mean by the term "Apple puller," which we have not before met with. If you mean an "Apple gatherer," there are a variety to be obtained.

14146.—**Oxalis hirta** (*E. F. L.*).—Pot the bulbs now in sandy loam and peat and keep moderately dry until they begin to grow. They will begin to flower in October. It is not a hardy plant, and cannot be trusted in cold frames in winter.—J. D. E.

14147.—**Caterpillars on Begonias** (*T. Paull*).—When caterpillars get on to Begonias, or any other plants of that character, they can only be safely destroyed by hand-picking. It is very laborious work sometimes, and in the case of Begonias it should be done very carefully.—J. D. E.

14148.—**Roses with green centre** (*S. R. Aberdeen*).—The green centres in your Roses are nothing more than a peculiarity in that particular variety, and a rich soil aggravates the evil. It is not altogether uncommon in prolific flowering Roses, although not a desirable thing. Even in its best condition the variety you send is hardly worth growing.—J. C. C.

14149.—**Insects that do no harm** (*Melon cholic*).—The creatures in your Melon frames are quite harmless to plants, so there is no reason for melancholy. They live on acari, woodlice, &c., and are nearly allied to the scorpions, but have no tail. Their generic name is Chelifer, but without seeing specimens I cannot give the specific name.—G. S. S.

14150.—**Sulphate of ammonia for Chrysanthemums** (*Tiro*).—I do not care to use sulphate of ammonia; but an ounce to a gallon of water would be enough. Use it at every alternate watering. The same quantity of guano used in the same way would be much more effective. Some surface-dressing should be spread over the surface at this time. Loam and decayed manure in equal parts will do well for this.—J. D. E.

14151.—**Treatment of Pelargoniums** (*H. Worley*).—About a month after the flowering period is over, the plants may be cut down, but before this is done they should be quite dry at the roots, and no water should be applied until the wounds heal, which they will do in three or four days. This quite prevents bleeding. When growth has been made the plants ought to be shaken out of the pots, and be repotted in smaller sizes.—J. D. E.

14152.—**Camellia for exhibition** (*H. Worley*).—Allow the plant to remain in the house while it is making its wood, and during growth it should be syringed overhead with rain-water daily. The plant will also require a goodly supply of water at the roots. When the buds are set the plant may be turned out-of-doors for a time. I have sometimes kept them in the house, and at other times placed them out for two or three months. It does not seem to make much difference.—J. D. E.

14153.—**Blight on Hollyhocks** (*E. A. K.*).—Your Hollyhocks are attacked by the Hollyhock fungus (Puccinia Malvacearum), a most destructive pest, which has recently destroyed the Hollyhocks in several places. The best thing to do is to burn all plants which show any signs of the disease, and so stamp it out. If you want a remedy try washing with ½ ounce of bisulphide of potassium dissolved in 1 gallon of water; this is said to kill most kinds of fungoid diseases.—G. S. S.

14154.—**Treatment of Marechal Niel Rose** (*Jeff*).—Train all the shoots regularly over the roof of the house. Do not pinch or cut them at present; they must be allowed to grow until the end of the season. Cut the long growths back very little, some more than others. The lateral growths that are produced after they start into growth will produce flowers, but they will not flower so early as February in a greenhouse. They would require a hothouse temperature from December.—J. D. E.

14155.—**Filberts not bearing** (*Sheffield*).—Plants raised from the Nuts are not likely to give satisfactory results. Some of them may be free-bearing if their parentage is good, others would be shy bearers. The most satisfactory way is to purchase trees of good varieties, at a shilling each, such as the Red Filbert, White Filbert, Spanish or Great Cob, Cosford, Frizzled Filbert, and the Purple-leaved. You can do nothing with the seedlings except to give them good soil to grow in, and plenty of space.—J. D. E.

14156.—**Pear tree unfruitful** (*E.*).—The injury on the leaves would not cause the fruit to drop off. The tree is on a good aspect—the next best to the south. Probably it is not a free-setting variety; some sorts set their fruit very much more freely than others. Blister on the leaves is caused by the larvæ of the Pear tree

blister-moth. It appears in May or June, deposits its eggs in the leaves, and the larvæ, when hatched, feed between the outer coverings of the leaves, causing the blisters. Remove the leaves as soon as they drop from the trees in autumn and burn them. The chrysalis remains on the leaves through the winter. Syringing the trees with soapy water when the moths are laying their eggs would be useful.—J. D. E.

14157.—**Pruning on the spur system** (*F. A. White*).—As carried out in summer, this simply means the breaking off of the shoot when the wood has attained a certain amount of firmness. It is frequently, as regards Apple and Pear trees, improperly done—*i.e.*, the shoot is cut back too much. The safe way, as a rule, is not to shorten the current year's shoot lower than five or six joints from the base, otherwise young, watery growths will break out. In winter you may cut in close if need be.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

ADDRESS (*H. Norman*).—Your letter has been forwarded. ——ADDRESS (*James*).—St. Nicholas House, Scarborough. ——RABBIT KEEPING (*T. E. Smith*).—There are many cheap handbooks on rabbits and pet keeping generally. Apply to any bookseller, who will readily supply you with what you want. ——PASSION FLOWER (*Richard Bate*).—What you see is probably the fruit of your Passion Flower; if not, perhaps you will send it to us. The fruit of the common kind is exactly of the colour and size you describe.

Smithfield Market, Evesham.—List of prices realised 24th July, 1885:—Beans (broad), 10d. to 1s. per pot (40 lb.); Beans (kidney), 8s. to 9s. 6d. per pot (40 lb.); Beans (dwarf), 7s. to 7s. 9d. per pot (40 lb.); Carrots, 2d. to 2½d. per dozen; Cucumbers, 1s. to 1s. 1d. per dozen; Onions, 3s. to 3s. 9d. per cwt.; Peas, 2s. 9d. to 3s. 6d. per pot (40 lb.); Potatoes (new), 3s. 6d. to 5s. 6d. per pot; Sage, 2d. to 2½d. per dozen bunches; Vegetable Marrows, 1s. 3d. to 1s. 6d. per dozen; Walnuts (pickling), 6s. 6d. to 8s. per pot (no weight); Apples, 8s. to 10s. per pot; Cherries, 7s. 6d. to 16s. per side (63 lb.); Currants, (red), 1½d. to 1¾d. per lb.; Currants (black), 2½d. to 2¾d. per lb.; Currants (white), 2d. per lb.; Gooseberries, 4s. to 5s. per pot (63 lb.); Pears, 10s. to 14s. 6d. per pot; Raspberries, 3d. to 4d. per lb.; Strawberries, 2d. to 2½d. per punnet.

INDOOR PLANTS.

HOUSE RHODODENDRONS.

THE Rhododendrons here noticed do not belong to the hardy class, but are for the most part hybrids of Himalayan kinds that flower freely in a small state, and which may be used under glass where space is limited, as well as in some of the more roomy structures. For beauty of blossom few surpass that handsome kind called Countess of Haddington, a hybrid between R. Dalhousiæ and ciliatum. The blooms when first expanded are pale pink, but after a few days they become almost white. It is unlike either of its parents in habit, as R. Dalhousiæ is of straggling growth, and R. ciliatum forms a low bush, while the Countess of Haddington is of a bold free-growing character, well suited to show off its handsome flowers to the best advantage. As a proof of its free-flowering property, I may mention that a small plant in a 6-inch pot bore with me five large clusters of bloom. The next kind (R. Sesterianum) is of Continental origin, the result of a cross between R. formosum and Edgeworthii. It is of somewhat slender growth, and to induce it to form good bushes it should be stopped pretty freely when young. In this kind the flowers are very open in shape, pure white with the exception of a tinge of yellow in the centre, and with the edges of the petals prettily fringed. This kind seeds freely, and as its parents readily intercross with each other, numbers of seedlings have been raised from time to time in general characters much like R. Sesterianum. The Moulmein R. Veitchianum has been brought more prominently forward within the last two or three years than heretofore, and no wonder, for in my opinion its blooms are, as regards beauty, surpassed by no other Rhododendron. They are large, widely expanded, and borne in such profusion that the plants appear to be quite covered with them. The petals are white, with the exception of a greenish yellow flush in the centre when first expanded, and they have a massive, wax-like appearance. In some the edges of the petals are beautifully crisped, while in others they are almost smooth. What is regarded as the typical R. Veitchianum has crisped petals, while the smooth flowers belong to its variety lævigatum. This Rhododendron flowers as freely as the rest when young; but it is not easy to obtain dwarf bushes in small pots, as it has a tendency to grow at first straggling, but when it gets larger that character is outgrown, and as a good-sized bush its habit is all that could be desired. I have struck a great many cuttings of the varieties herein enumerated, and have found that this kind is more difficult to root than any of the others. Between R. Veitchianum and Edgeworthii was raised R. Fosterianum, a very desirable sort in habit, and much like the many hybrids of Edgeworthii that have been raised, but with flowers partaking somewhat of the character of those of R. Veitchianum. The centre of the flower is tinged with pale lemon, and it is agreeably scented.

R. Princess Alice is the result of a cross between ciliatum and Edgeworthii; it blooms freely in all stages, and the light-tinged blossoms are very fragrant. One of the most useful kinds that we grow in a small state is R. multiflorum, a much-branched, dwarf, bushy sort, with deep green leaves and pale mauve-coloured flowers, borne in compact clusters. This Rhododendron is quite hardy, but well worth pot culture, inasmuch as it makes pretty little plants, masses of blossom, in 5-inch or 6-inch pots, and some large specimens yield a handsome return in the shape of cut bloom where flowers of this kind are valued. The tubular-flowered sorts of the jasminiflorum and Princess Royal class must be included in any selection, however choice, but they may be more correctly defined as perpetual bloomers, for, if treated with that object in view, flowers of them can be had at almost any time of the year. Though beautiful when in bloom, most of the Himalayan species require a considerable space in which to develop themselves. They do not flower freely in a small state, and are better fitted for planting out in a large structure. Our Rhododendrons of this class are plunged out-of-doors during summer, the result being short, well-ripened growth and plenty of flower buds. Considerable care is needed when outside to see that they do not get too dry at the root, for when that occurs the foliage assumes a sickly tint, which detracts greatly from the beauty of the plant. T.

The Heliotrope.—This favourite flower, which is now rewarding the grower with its fragrance, has many claims upon the attention of amateurs. Its cultivation is of the simplest, its character the most accommodating, and as a cut flower it has few rivals, the exquisite perfume it possesses being highly appreciated by all flower lovers. It can be grown successfully both in the open ground and as a pot plant for the conservatory, window-sill, and within the sitting-room window—we may even also add on the town window-sill, where it will produce at the present time, if kept clean and well cared for, a profusion of deliciously-scented flowers that could only during the winter season be grown under, so to speak, elaborate warm house treatment. The Heliotrope or "Cherry Pie," as it is familiarly called, will, if well grown, now afford plenty of cuttings, and where a fresh stock is in request these may be put in at the present time in sandy soil. Properly trimmed shoots taken off under a pair of leaves and placed under a bell-glass will soon strike if kept constantly moist. These cuttings should be rather firm and of recent growth, and about 2½ inches long. Half-a-dozen will not be too many in a 4-inch pot. They should be protected from hot sun, and if allowed plenty of room in the cutting pots will soon be ready for shifting into single ones. The top should be nipped out during the growing season to ensure well shaped specimens, and further shoots so induced to form may also be stopped if between now and autumn the season prove favourable to their development, in which case they may occupy 4½-inch pots, and during winter a light window will be found a suitable position, watering only when needful with tepid water. We have grown these sweet flowers both in the open ground and in pots for years, and have never observed in them any trace of the disease which some growers have found them liable to. Our few concluding remarks must, therefore, be based upon theory, having, we confess, never seen a sickly Heliotrope. In cases where the leaves turn yellow and shed themselves, plants should be attended to in the matter of watering, as these symptoms are often traceable to lack of moisture at the roots; and in this particular instance a more liberal supply with bi-weekly manure watering will be generally found sufficient to restore them; if not, a fresh stock of young plants should be raised. Well-grown plants require a few neat stakes round the pot, so avoiding injury to the roots, and if during the growing season the shoots are carefully stopped and tied to these with thin strips of bast a large number of good trusses will delight the amateur with their sweet odour for a long period during the season of flowers.—STAMFORD HILL.

Madame Thibaut Geranium is, in my opinion, the best of all the doubles. It is such a bright rosy pink, and forms such a fine truss of bloom, that it is always welcome either as a pot plant or as a cut flower. It is very largely grown in this locality, but in many places I have visited it is hardly known. I find it makes a good winter bloomer, being of dwarf, sturdy habit, and very floriferous; and those who have not yet tried it for that purpose should lose no time in getting some young plants grown on specially. Young plants in 3-inch pots should now be shifted into 5-inch ones, using good sound turfy loam, a little leaf-mould, and sand. Set them in an open sunny position, and keep all blooms pinched off as they appear until September. Then place them under glass. A shelf near the glass is the best place for them, with a temperature of 55 degs. They will continue to bloom throughout the winter, as if it were midsummer; in fact, there is no plant grown that I know which gives such a summer-like appearance to glasshouses as the Geranium; and it is by many much more extensively cultivated for winter than for summer blooming. This variety is of such an excellent habit of growth that it may be kept for years without getting unmanageable as to size. As the joints of the wood are so very close together, and bloom is produced at every joint, it has when in full beauty a most inviting appearance. It is not new, but I do not find any other to equal it.—J. GROOM, *Gosport*.

Ivy-leaf Geraniums.—These form decidedly one of the most useful sections of the Geranium family, as they are so very distinct from all the others, and possess a most graceful habit of growth that especially fits them for the adornment of shelves, brackets, hanging baskets, or, in fact, any elevated position where they can be allowed to grow in their own drooping pendulous fashion. I find plants two years old are far more floriferous than younger ones; one-year-old plants, cut back in early spring, and pinched back, so as to induce them to develop a dozen good shoots, afterwards allowed to grow in their own way, make charming specimens, the colours being soft and pleasing, and if kept well supplied with water at the roots they do not require much pot room, very large plants being produced in 6 inch pots. During the last few years several new kinds of considerable merit have made their appearance, the semi-double kinds being very pretty. They require careful handling, for being very brittle they are easily broken off at the root. They are readily increased by cuttings, the only difference being that they will not stand such excessive drying as the zonal sorts of Geraniums, the shoots being smaller and less sappy. As regards soil, I find loam, leaf-soil, and silver sand suit them to perfection, and for hanging baskets in conservatories there are few more beautiful objects than good large baskets filled with three or four varieties of this elegant plant. Those who have not tried them have a treat in store. —J. G., *Hants*.

Useful Begonias.—Begonia Carrièrei bears pure white flowers something like those of B. semperflorens, but much smaller in all their parts, and so floriferous is it that, with liberal treatment, it will bloom continuously for months. Even from cuttings it is constantly necessary to pick off the flowers in order to induce growth. Begonias of this class are now much neglected, preference being given to tuberous rooted kinds; nevertheless, many of them are very beautiful, and they may be had in bloom throughout the winter. The following are a few of the best:—Ascotensis, a free, bushy growing kind, with pink flowers; Dregei, light

green foliage, distinct, and flowers small and white; fuchsioides, flowers drooping and of a bright crimson colour, habit of the plant free, fitting it for training to a wall or pillar; insignis and Knowsleyana, free branching kinds, something in the way of Ascotensis, but different in colour, the flowers of the first being deep pink, those of the second blush. In addition to the above may be named B. manicata, a bold kind with lobed leaves and large upright clusters of pink flowers, produced in winter; B. valida, another of the same class, but with flowers very much larger and of a deeper pink colour than those of manicata, and produced early in the spring; B. metallica is handsome from a foliage point of view, and its blush-coloured flowers are also very pretty, and contrast in a pleasing manner with the darker tinted leaves; B. semperflorens in its varying shades of white to deep pink is well known and equally effective at all times of the year; B. nitida is an upright-growing, sparsely-branching kind with blush-coloured flowers, and B. Roezli, another in the same way, has blossoms of a deep rosy carmine tint; B. Ingrami and hybrida floribunda are a couple belonging to the fuchsioides section, but both are quite distinct and well worth growing. For hanging baskets, B. glaucophylla, a rambling growing kind, is well fitted, and it flowers freely; nor must B. weltoniensis be overlooked—though one of the commonest, it is unsurpassed as a summer flowerer.—A.

Clianthus puniceus for conservatory decoration.—The Glory Pea of New Zealand is a most distinct and handsome as well as free-flowering greenhouse plant. It produces its splendid crimson-coloured, singular-shaped flowers freely, in bunches almost as large as an epaulette, during the summer months, when it is a very suitable subject for conservatory decoration, when it will last for a considerable time in bloom, and is not so liable as some other things are to be injured by being for a time somewhat confined.

REPLIES.

14006.—**Fern case.**—You may grow hardy Ferns in good loam, from a hedgerow, and silver sand—say, three parts loam and one of sand—but the addition of black fibrous peat will keep the compost sweet and open. Give 3 inches of clean broken flower pot for drainage, placing the largest pieces (an inch wide) with the hollow side down, to be covered by the smaller pieces, and a little charcoal. Place thereon the roughest soil, finishing off with a fine surface. Each Fern should stand out from the rest. Therefore your case will do better with half the number you wish to grow. Place in the centre Scolopendrium vulgare, and at convenient distances Adiantum Capillus-veneris, Asplenium Adiantum nigrum, Woodwardia angustifolia, Trichomanes radicans, Athyrium filix-fœmina, A. filix-fœmina cristata, Blechnum spicant, Lastrea cristata, Lomaria alpina, and Polystichum angulare. Most if not all of these are evergreen under glass. Do not choke up your case with creeping Lycopods, but try Hedera Helix, or common Ivy, if you require anything for the ground. The main thing to guard against is over watering. Water should be given only when the surface appears to require it. No fronds should touch the glass, and all decaying ones should be removed. Give tepid water always, and very sparingly during winter.—Stamford Hill.

14010. — **Camellia buds falling.** — Although at the time you might not have been aware of it, there is no doubt that your plant suffered from a violent change in some way, which caused the buds to drop. It might be from dryness at the roots of which you were not aware, or it might be from a change in temperature, removal from a close confined corner to a draughty position, or the reverse of this. The Camellia is very susceptible to any change, and the greater the extremes the more it feels it, and always more so after the roots have been disturbed.—J. C. C.

—— In this case there is no doubt that the plant received some check. If the roots were never allowed to become dry, the house must have been overheated at some time or other. It is certain that the buds will not drop off without cause. We grow many plants in two different houses, in pots and planted out; but the buds never drop off. Where the buds are so closely packed together they should be thinned out.—J. D. E.

13999.—**Moisture dripping from roof of stove.**—The water which drips from the roof of your stove will certainly injure tender foliage plants and delicate flowers; but the roof must be very flat or sufficient moisture would not condense to do any harm. The amount of mischief likely to be done must be measured by the quantity of water which falls. If it only falls occasionally it will not do much harm. Try a little air on at the highest point of the house both night and day. To do this, of course you will want a little stronger fire to keep up the temperature.—J. C. C.

—— The drip is generally in one place, and if it continues day after day dripping into a pot plant it will ultimately destroy it. Even to a small extent the drip is injurious. There ought to be little or no drip in a well-constructed hothouse.—J. D. E.

13997.—**Taking Cactus cuttings.**—The cuttings will strike at any time during the spring and summer months; and they succeed best if inserted in small pots, using a compost of sandy loam mixed with lime rubbish. Do not give too much water; the soil ought to be kept only moderately moist, even after roots are formed.—J. D. E.

14002.—**Cyclamens for next spring.**—The best plants to flower next winter and spring will be those raised from seeds sown early in July last year. Such plants may be purchased now, potted on into larger pots, and grown in cold frames until the month of September. They should then be placed near the glass in a greenhouse; they will do well in a temperature of 45 degs. in winter, and flower better in that than in a higher one.—J. D. E.

14000.—**Cultivation of Fuchsias.**—Spring is the best time to propagate Fuchsias. When they are rooted pot the plants in small pots, using sandy loam, leaf-mould, and a little decayed manure. This is one of the easiest of plants to cultivate, and can be grown in any greenhouse or good window.—J. D. E.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—V.

Manures and how to use them.—In a former number I counselled the non-employment of dung for window plants as being calculated to render the soil sour. Some years ago it was a rather difficult matter to dispense with it, but now we have many kinds of concentrated manures which are at the same time safe and powerful, and which enable us to grow plants in pots to great perfection without the aid of dung. Some of the largest and most successful market growers never use the latter, but rely entirely upon artificial manures, and the results are but little short of marvellous. One great advantage attending their use is that plants may be kept in the same pots for several years without sensibly diminishing in vigour, and this is a great advantage to the window gardener whose limited space does not admit of large pots. I have at the present time a variegated Ivy-leaf Geranium which has been four or more years in a 6-inch pot. It is suspended in a basket and forms a globular mass of foliage more than 18 inches through and deep. It bears several hundred flower trusses, is the picture of health and vigour, and is one of the most charming objects possible. In this instance vigour and floriferousness have been maintained by means of frequent top-dressings of artificial manure. From the time it began to grow in spring it has had about a heaped-up teaspoonful of the manure once a fortnight, and I see no reason why it should not continue to grow in the same way for several years to come if thus cared for. The great point is never to let a plant come to a standstill in the growing season for the want of food. If you have a Geranium or Fuchsia in a 6 inch or 4½-inch pot, which has filled the pot with roots, give it a teaspoonful of some concentrated manure once a month, then your plant will not cease growing, whereas, if you wait till there is an apparent decline in vigour the plant has come to a standstill, the tissues harden, and a certain period representing lost time must elapse ere the energies are again roused and a fresh start is made. There are a great many concentrated manures offered at the present time, all of which are more or less good. I should, however, mention that these artificial manures are scarcely suitable for indoors on account of the odour they emit, but are most useful for plants growing in summer on window ledges, balconies, and similar situations.

For indoor use I strongly recommend soot water, which can be freely given with no fear of evil consequences. The effect of this is to strengthen rather than to stimulate; it imparts a healthy tinge and a glossy hue to the foliage, and whereas concentrated manures, rich in nitrogen, and, consequently, of a forcing nature, are not admissible in winter, when plants are at rest, soot can be beneficially used at that time. For Dracænas, Ficuses, Acacias, Palms, and other fine-leaved plants, which one does not wish to see increase much in bulk, but the beauty of which consists in the perfect hue of the foliage, it is the very best manure that can be employed. The yellow tinge, which often distinguishes plants of this description when in a root-bound condition, soon gives way to that of perfect health when they are frequently watered with clear soot water. The proper way to use it is to tie some up loosely with a big stone in a coarse canvas bag, placing it in a tub of water. The ammoniacal properties of the soot gradually pass into the water, and in this state it may be used several times a week when plants dry out frequently. Concentrated manures may also be mixed with the soil, varying the amount according to the nature of the plant. In a general way as much as can be held between the fingers is the right quantity for as much soil as a 6-inch pot contains. An absolute rule in the use of liquid stimulants or concentrated manures used as top-dressings is never to have recourse to them until the pots become full of roots. Until the roots fully occupy the whole of the compost the plant obtains enough sustenance, and the application of any manurial substance would give an excess of nitrogenous matter, and would cause the roots to lose their healthy activity.

Insect pests.—The most formidable enemy that outdoor gardeners have to contend with is green fly, but as the plants grown in the dwelling are comparatively few, and are always under the eye of the owner, there is no difficulty in keeping it off, or, at any rate, in destroying it as soon as it makes its appearance. A great many insecticides are in use, and in skilful hands they are efficacious, but their use is fraught with danger to the inexperienced, as the strength of solution which plants will bear without injury must be varied according to their respective natures. Tobacco powder, on the contrary, is sufficiently deadly, and is quite safe. Green fly comes on the young growing shoots and tender leaves, mostly on the under surfaces, and if allowed to remain and breed the sap is drawn out, and the progress of the plant is checked. As soon as one fly is seen dust all the tender portions of the plant, and allow the dust to remain on for some days, which will either kill or drive away the destructive little creatures. Red spider is a minute insect which breeds on the under surface of the leaves, and which, if left alone, causes the foliage to assume a reddish tinge. It only comes in hot, dry weather, and is apt to infest Fuchsias, Paris Daisies, Verbenas, and Lantanas when grown in the full sun. Starved plants are more liable to it than such as are well fed and otherwise in a healthy state. A simple antidote for this is cold water, getting it well on to the undersides of the leaves by means of a syringe or rosed water-pot. If the plants are well moistened in this way twice or three times a week in hot weather red spider will never harm them.

Byfleet.

PLANTS FOR DWELLING HOUSES.

With the greatly-increased demand for plants suitable for use in dwellings that has come about in recent years, there has naturally been a run on fine-leaved kinds; for although such as bear attractive flowers are not less prized than they used to be, the bloom of most things is of short duration when the plants are subjected to the dry and often gas-impregnated atmosphere of a living room. Elegant forms of leaf plants, such as Palms and Ferns, will no doubt always be appreciated as they deserve to be, but in addition to this a certain amount of colour beyond that afforded by plants with green leaves is wanted, and this is secured by the use of those with variegated foliage, so far at least as to much reduce the number of the more fugitive flowering kinds required. Unfortunately, most of the plants with brightly coloured leaves are species that require a considerable amount of artificial heat in order to grow well, and on that account they do not keep in good condition so

long in the cool, dry atmosphere of a house as they would if they were naturally able to thrive under cool treatment. The way in which even stove plants are able to bear trying treatment will, however, depend upon how they have previously been grown.

The coloured-leaved Dracænas, of which the old D. terminalis may be taken as the most familiar representative, and which are so much employed for the purpose under notice, will not only live, but make growth in an ordinary living room during the warmer half of the year, provided the plants have previously received treatment that will impart strength and solidity to their foliage, while such plants as Cyperus alternifolius variegatus, the variegated form of Curculigo recurvata, Begonias with variegated foliage, Coleus, Acalypha, Pandanus variegatus, and P. Veitchi, Panicum virgatum, and Crotons will last for a considerable time; even Caladiums, notwithstanding their naturally soft leaves, will keep in their presentable condition for two or three weeks in a room in summer when they have had suitable treatment beforehand. Than these, no plants with which I am acquainted better serve to illustrate the difference that exists in the same kind of plants when grown in a way that enables them to bear up under hard usage and the soft, flabby condition in which they are often seen when not grown well.

In horticultural shows Caladiums often look the most uncomfortable of all plants, drooping, after standing a few hours out of the place in which they have been grown, much as if they had been frozen. The way in which the leaves of those Caladiums grown for Covent Garden Market keep up erect and crisp, even when exposed to a drying wind, would probably surprise those who continue to treat these and other plants of a like character under the old enfeebling conditions of bottom-heat, which, more than anything else, induces soft foliage, incapable of bearing the trying usage which plants are required to undergo. The debility caused by this treatment is equally apparent in the flowers borne by plants so managed, which do not last half the time they would do were they to receive better treatment. T. B.

The arrangement of cut Roses is a matter of taste, in regard to which there does not exist a unanimity of sentiment, else we should be wearied with a continual sameness. But there are certain fixed laws that regulate the decorative art in flowers. Too many blooms are used for single baskets and bouquets, where they are crowded together promiscuously, exhibiting a mass of petals, the form and colour of each separate flower being indistinct, with little of its own foliage to render the proper effect. The more nearly Roses are shown as they naturally grow the handsomer they are. The stiff artificial stem, without the leaf of the flower, propped up by Smilax, Ferns, and other green things than its own, is not like Nature. Hand bouquets of Roses and buds are more beautiful when made of one variety, with its own foliage, stems long and loosely bunched, having a small number, well chosen, of sweet odour. A collection in basket form, or for parlour decoration, had better lack a flower than have one too many, the object being to form a graceful, refreshing, and suggestive picture, preserving an "easy negligence mixed with art." Show each bloom separately, reposing in its own green, and a few colours have a better effect than many. If a combination is thought to be desirable, red, white, and buff form a pleasing one. The beauty of Roses is much enhanced when displayed in masses. As a rule, if there are to be many flowers use the delicate shades; if few, the deeper tones. Large and choice Roses are always more effective when displayed in proper standards for their reception as single specimens.—J. H. Bourn.

Rose Camoens is beautiful and new, and the scent is delicate and delicious. Mr. George Paul is growing it as a Rose for cutting, and its buds and flowers are curiously varied and pretty for this purpose.

13348.—Exhibiting cut blooms.—Biscuit boxes cut down and such rough-and-ready arrangements will not do. The stands should be made as advised at page 228. Those for Pansies, Pinks, Ranunculus, Carnations, &c., should be 15½ inches long by 13 inches wide, the depth 4½ inches, containing three rows of four holes, 3¾ inches apart. Dahlia stands are 2 feet long by 18 inches wide, the holes 6 inches apart for twelve blooms.—J. D. E.

MAKING A FERNERY.

It very often happens that the lover of flowers and plants has no suitable window to grow them in. But if he has nothing better than a north window to his room, he need not be without the pleasure afforded by a daily sight of "green things growing," for he may have a fernery. Some persons have the idea that it is very difficult to make a fernery, or the case in which Ferns and other moisture and shade-loving plants can be successfully grown, and that it requires a "knack" for that particular branch of plant culture to keep a fernery in good condition after plants have been established in it. This is a mistake, for nothing is easier after you know how, and this "know how" is not hard to acquire. A Fern-case can be made cheaply if one has the "knack" of handling tools, but if this "knack" is not possessed, I should not advise the attempt at home, for quite likely the result will be more expensive and far less satisfactory than it would be if given to a carpenter who knows how to go to work to do what is to be done. In most towns it is cheaper to buy a case ready for filling than it is to have one made, for those for sale by florists are just what you want, and the article you get made by a carpenter, no matter how good a workman he may be, may be "just the thing," and possibly not. The cost of a fernery, small, but large enough to afford a vast amount of pleasure, is not great. But do not buy one already filled with plants if you are anywhere near the woods, for obtaining plants for yourself, and arranging them to suit your own taste, is one of the most delightful of all undertakings. A Fern-case should have a zinc bottom from 3 inches to 6 inches deep, to contain soil, and the glass must fit snugly. One with a roof-like top is preferable to those having a flat top, for the plants are given more space to reach up without coming in contact with the glass.

The best soil for a fernery is the fibrous earth which you can obtain plentifully in any wood by scraping away the covering of last year's leaves. It is mostly leaf-mould, with some fine loam in it, and it is so full of fine roots that it is impossible to make it into a compact, inelastic mass by pressure. It has exactly the porous quality necessary for the basis of success in the fernery you are about to establish. Fill the zinc pan with this soil, heaping it somewhat in the centre. Then you are ready for the plants. I advise you to select a cloudy day for your trip. Take a large and shallow basket to bring back your Ferns and Mosses in. Arm yourself with a trowel, and start for the woods. You will find large and luxuriant specimens of Ferns, and you will be inclined to select such for your Fernery, but do not do it. Get small plants. They will adapt themselves to the new conditions more readily than larger plants, and will soon become fine specimens. You cannot transplant a large Fern successfully; that I have found out by experience. With your trowel you can get fine plants without mutilating the roots in the least. Put them in your basket carefully, and if water is near by sprinkle them well as fast as dug. The Mosses growing on old logs and rocks are just what you want to cover the soil after you have planted your Fern roots. There are many plants to be obtained in the woods which can be used in a fernery, but do not select enough to crowd it. Most persons do that, and the result is never satisfactory. Give the plants room to spread and develop in, and they will be much finer in every way than when you put too many plants in the case.

When you come home from your trip to the woods, put your Fern roots carefully in the soil, being careful not to bruise them in handling. Place the large ones in the centre. Do not plant any Ferns near the edge, but reserve that place for some low-growing plants. When you have planted your roots cover with Moss, and then give a thorough watering, after which put on the cover of your case and let your fernery take care of itself. A north window is a very desirable one for it, for sunlight is not necessary in growing such plants as will flourish under the conditions which govern a Fern-case. It will not need watering often; once a month will do. Open the top once in a while, to give fresh air, and be sure to keep all decaying leaves removed. This is really all the care a fernery requires. Such a case of growing plants is a most admirable substitute for flowers, and it will be the source of great pleasure to any one who cares to watch the development of plants under peculiar conditions. A room can have no finer ornament. *Vicks' Magazine.*

BEDDING OUT.

On page 254 I observe an article, signed "J. D.," containing so many gratuitous insults to intelligent members of a delightful calling, that I hope I may be excused if I ask permission to reply to some of its exaggerated statements. "J. D." assumes such a dictatorial and contemptuous tone when addressing those whose views differ from his own, that his writings are deprived of any little value they might otherwise possess. As a gardener, and one who practices the bedding-out system, I decidedly object to being dubbed "ignorant," "infatuated," "silly," and "foolish," and for no other reason than that I follow my own inclination and that of my employer in practising a system that gives me ample returns at a minimum of cost and labour. I admire herbaceous plants as much as anyone, and have a good representative collection under my care, but I would certainly never dream of using them to the exclusion of bedding plants, because my doing so would undoubtedly require an increase of the working strength of the establishment. Although a young gardener it has been my fortune to be connected with several large establishments throughout the country, and I give a flat denial to the statement that herbaceous plants are cheaper in the end than bedding plants. I was two years in a place where we used thousands upon thousands of bedding plants, and during that time I never knew of a single halfpenny being spent in their purchase. The herbaceous ground (although not occupying one-tenth part of the space that did the others) was large and well furnished, and yet this herbaceous ground cost double, both in labour and money, of the whole bedding out about the place. I have not space at my disposal to enter so fully into this question as I could wish. I will now, however, direct attention to one of the most unfounded statements I ever read, viz.: "The public have, however, practically settled the question of bedding-out by abandoning it." In connection with this I would say either "J. D.'s" knowledge is very limited (and if so he has no right to pose as an authority), or else he is guilty of a gross misrepresentation; and I will make bold to say that nine out of every ten gardeners, in a greater or less degree, depend on bedding plants for their main summer and autumn display; and I am confident that the readers of Gardening will endorse my statement. My own opinion is that the two systems should never be pitted against one another—there is plenty of room for both, and let every individual fill his beds with whatever gives him most pleasure. The greater part of "J. D.'s" effusion is, however, taken up with lamentations over the perverseness of his fellow-townsmen, who, it appears, still practise bedding out. If, as "J. D." would fain make us believe, his object is to educate the public taste, why, in the name of all that's wonderful, does he not begin at his own door? One would have thought that the presence of an individual possessing the abilities of "J. D." would have been quite sufficient to convert the inhabitants of a small country town without the aid of gardening literature. Woe, woe, unto you, ye fellow-townsmen of "J. D."! Why will ye so long remain in darkness, while so bright a light is shining in your midst, or why will ye turn a deaf ear to one who, having passed so many public examinations, is willing—aye! and eager—to instil into your minds the beauties and secrets of refined decorative art? In conclusion I have no wish to indulge in personalities, but if a person will persist in throwing about indiscriminately such words as "ignorance," "infatuation," "silly," and "foolish," he must expect to get a few hard raps in return.

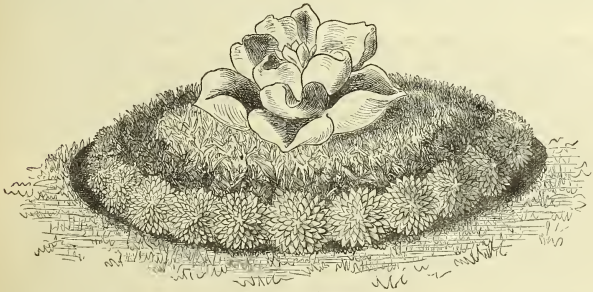
G. Watt.

—— "J. D." has entirely missed the point of my last letter, which was that courtesy and good temper should be the rule in writing with assumed authority on taste. I wish to correct a statement in his article which may mislead many. The people who

took up their spring plants at the usual time were perfectly right, as they knew a week—even a day—of such blazing sunshine and dry heat as we had this year the first week in June would reduce their beds to a mass of seeds and dry stalks. "J. D." assumes that when spring plants are three weeks later than usual coming into bloom they would continue in flower as long as usual, whereas any practical gardener could tell him that the increased heat will hurry them to maturity in half the usual time. I have a fine collection of Campanulas and Irises, which usually afford me a mass of flower for about a month. This year, being late, the Irises were spoiled in a week, and the Campanulas are nearly over already, but the Geraniums and Calceolarias, owing to the heat, have been flowering profusely for the last month, and this is the case everywhere here, though our climate is not usually reckoned a mild one. —A. B. T., *East Anglia.*

BED OF SUCCULENT AND COLOURED-LEAF PLANTS.

This illustration shows a kind of bed often met with in small gardens. It consists of a margin of Echeveria glauca, next Alternantheras, then Pyrethrum, with Echeveria metallica glauca, or sometimes a small Agave, for a centre. Thus, it will be seen, four sorts of plants, and all without flowers, fill the bed. That this sort of bed should be common when there are such hosts of good flowering plants is a matter to be regretted. It is not that the plants are bad; on the contrary, they are, individually, all very good, but



Bed of Echeverias and other leaf plants.

their beauty is much enhanced by association with flowering plants, and a bed constructed as here shown lacks variety. In the space occupied by these plants I have had fifty or sixty sorts of Sempervivum, Sedum, Saxifraga, Thyme, Androsace, and Draba; and there is the advantage that these will live through the winter, while those in the bed here figured must be removed every season. J. C.

Echeveria secunda glauca.—Few of those who use this pretty compact little succulent for bedding purposes are aware that by so carefully picking off each flower stem as it appears they are depriving themselves of half the pleasure which this plant affords. A well-developed plant will throw up half-a-dozen flower stems, which, being of a bright coral red, and bearing a profusion of orange-red, wax-like flowers, contrast pleasingly with the glaucous tint of the foliage. The blooming period is a long one, lasting from the middle of May to the end of August, and the flowers are able to stand any amount of wet weather.—B.

Spanish or Tree Moss (Tillandsia usneoides).—Your engraving of Tillandsia in Gardening Illustrated (p. 231) is graceful and pretty as a picture, but it conveys only a faint idea of the habit and beauty of the plant. It is much more abundant on the trees, and the swaying filmy streamers are much longer, reaching often 10 and even 20 feet from high branches to the ground. A cut in steel is needed to do it justice, it is so fine, and yet I wish you had a good drawing. How would a photograph be? Perhaps I can get either that or a drawing from friends in New Orleans.—H. Hendricks, Kingston, N.Y. *** *A good photograph would be best.*—Ed.

THE VILLA GARDEN.

(Continued from page 266.)

Horse-radish.

This is usually relegated to some out-of-the-way corner, and there left, and I confess that the temptation to do this is very great, for when once it gets into the soil it is very difficult to get it out, and this makes it an awkward plant to fit into any particular rotation. Wherever grown there is no excuse for not starting right, and a comparatively small bed, if well done, will produce a good many sticks, as they are commonly called. On the whole, it pays better to deepen the soil in one particular spot, plant the Horse-radish there, dividing the plot into three parts, trench one part each year, and pick out all large enough for use. In three years' time the pieces left in the bottom of the trench will have formed crowns, and have grown large enough for use. The soil should be fairly light, as it is so difficult to dig it out of clay. In the beginning, if the land is not quite right it may be made so by adding ashes; burnt earth or soil may be brought from any other part of the garden to give the requisite depth. Light stuff may be wheeled on the Horse-radish bed any time when it can be obtained, as the crowns will soon push through. In making new plantations, the crowns may be planted a foot deep with a crowbar and the holes filled with light, rich soil. Another way is to plant the long straight pieces selected for the purpose when the old plantation is trenched over, and plant them in rows 18 inches apart and 9 inches from each other in the row. Before planting, all small fibrous roots should be rubbed or cut off, as long straight stems without forks are the best. Horse-radish may be planted any time between November and March. The stems or sticks selected for use should be laid in thickly in a cool piece of land, where it can be drawn and used as required.

Kohl Rabi.

Though not generally grown in gardens, it is, as may be inferred from its origin, a wholesome vegetable. As most of my readers know, the Kohl Rabi, or Turnip-rooted Cabbage, is intermediate between the Turnip and the Cabbage, both being highly esteemed vegetables. The seeds may be sown in July towards the end of the month for standing through the winter, or the sowing may be made in spring—in March—in rows 18 inches apart where the plants are to remain, and thin out to 12 inches or 15 inches apart. The July sowing will probably produce the largest bulbs, but those raised in spring will be most appreciated in the kitchen, as possessing the qualities most esteemed there—viz., tenderness and succulency. The plants raised in July or August should be planted out in spring, and will grow to a large size, and should be allowed more space.

Capsicums and Chillis.

I once had to cater for a gentleman who always had a green Chilli cut up in his soup every evening; and for mixing with and giving tone and flavour to pickles they are often in demand. They should be sown in a warm frame or pit in March, and when large enough to handle should be pricked off either singly into thumb-pots, or three or four plants round the sides of a large 60. Grow them on in heat till well established; harden off in May, and plant out about the end of the month at the foot of a south wall in a sunny corner, 15 inches apart. Mulch between the plants and water when necessary. Some of the plants may be kept in pots, potting them on into larger pots as they require more space. Others may be planted out in a frame from which early vegetables, such as Potatoes, Carrots, &c., have just been cleared. They thrive best in rather a light soil; turfy loam of average quality, enriched with some leaf-mould or old manure, will do them well, and a little of this or similar compost may with advantage be worked round the roots when planting them out. The varieties are now somewhat numerous, including several, such as the Prince and Princess of Wales, which possess considerable decorative merit. The long red and long yellow and the small red Chilli are best for mixing with pickles. When growing in a suitable temperature, and not starved or neglected in the matter of food, they are not much subject to insects or diseases. Green fly will attack them, and so will red spider, if they are kept in a starved condition. Tobacco, in the shape of wash, fumigation, or powder will destroy all forms of aphides, but the syringe is the best implement to bring to bear upon the red spider.

Sorrell.

A few roots of a good variety should be grown in every garden, as most people who have a fair knowledge of good cookery use it for flavouring. It requires no special soil or culture, and is easily increased by division of the roots in spring, or it may be raised from seeds sown in March or April. Plant either in single rows or in beds from 12 inches to 15 inches apart. Keep the flower stems cut away, but do not cut all down at one time, or the supply will be stopped for a time. It is not necessary to divide the roots every year, though they should not be allowed to stand too long in one situation. If there be a demand for Sorrell in winter, it may easily be forced in pots or boxes in a warm genial temperature. The plants for forcing should be potted or boxed in autumn and sheltered in a cold pit till introduced to the forcing structure, a few at a time, as required.

Parsley.

I shall have a chapter on herb culture presently, but I think Parsley is of sufficient importance to be treated in a separate article. If I were asked which is the best time to sow Parsley, if only one sowing were made, I should say from the middle to the end of July; and if I only sowed Parsley once a-year I should sow at this season in preference to spring, especially in cold, backward situations. The advantage of sowing now is that but very few of the plants run to seed the following year, and those few can be pulled up and a good even bed will still be left. In the villa garden there should be a place for everything, and everything should be in its place, and Parsley should be sown in some easily accessible spot. The soil should be deep, and the site well-drained, especially for winter use. It is best to sow in drills, and, as the seeds take a long time to germinate, the drills may be a good half inch deep—more rather than less when sown in July. Sow thinly, as few people really thin Parsley enough, and there is in some places a prejudice against transplanting Parsley, though I don't know why. I have transplanted Parsley all through the growing season. If we sow in spring the land should be in good condition before the seeds are committed to the ground. There is not much gained by sowing before February, even in favoured situations. In dealing with a choice new sort I have sown in a box or pan, and started the seeds in a gentle hot-bed, and pricked out as soon as large enough when properly hardened off. When we sow in summer the drills are soaked with water (liquid manure if one can spare it), the seeds are scattered thinly in the drills and covered with fine soil inclined to dryness, as this will keep the moisture in the drills, and the seeds will quickly germinate. The thinning should be done before the plants begin to spread much—from 5 inches to 6 inches apart will suffice; sometimes more space is given, but when picking begins it will be kept within bounds at the distance apart I have named. Some people sow it thinly, and never thin or disturb it at all, but it is best to thin moderately. It is very important to have a good supply in winter and early

spring. I think it often puzzles gardeners more to produce a good supply of Parsley in February, March, and April than at any other season, especially if we have a long period of dry, frosty weather. Unless we already possess a good supply on some warm, sheltered spot for winter, a bed might be planted by taking up some of the early-sown plants in August, cutting off the strongest leaves, and planting in a warm, sheltered corner, where protection can easily be applied. A row at the foot of a south wall or fence will be sure to come in useful. If a frame can be spared some roots may be planted where the frame can be placed over them, the lights to be placed over just before frost sets in. Another way of growing winter Parsley is to take up some of the strong roots in August, remove the largest leaves, and plant them all over one or more wire baskets, working the roots in at the bottom and sides of the basket, as well as at the top, stuffing all the interstices full of Moss and filling up the centre with good soil. A fine-curled kind, such as Carter's Fern-leaved, will have a nice effect when in good foliage, hung up in the greenhouse or anywhere. In hot, dry, porous soils the soil between the rows should be mulched with a mixture of charred refuse and short manure; this will be a great help, for, though Parsley likes a well-drained site, drought in summer is injurious to it.

Varieties.—Almost every good seed firm has a good strain of Parsley of its own selection and growth, so that it is not easy to go wrong, and the plant seeds so freely that anyone who has once got hold of a good strain may easily save his own seeds. Carter's Perpetual and Carter's Fern-leaved are good varieties, so also is Sutton's Matchless; but, as I have already said, every good firm makes a specialty of Parsley. The Hamburgh Parsley, a plain-leaved kind of rather large growth, is sometimes grown for its roots, but they are not much in demand, and consequently are not much grown.

E. Hobday.

THE KITCHEN GARDEN.

The old Ash-leaf Kidney Potato.—We are glad to note that this is in cultivation in Marston gardens. A lady was complaining to us the other day that while people offered her every kind of improvement on this old Potato, she could not get the real article. We must say that we are doubtful of the quality of many of the newer Potatoes, and the quality of the Potato is perhaps the main thing about it. A great many Kidney Potatoes seem to us not worth growing, unless lumps of soap are worth growing.

Onion maggots.—I copy, with reference to the paragraph on page 281, the following from "Garden Pests and their Eradication":—"Onion Fly (Anthomyia cepurum).—This fly deposits its eggs in the leaves of the Onion, and from them issue little conical, smooth, white maggots. When hatched the larvæ descend to the bulb of the plant, and feed upon its substance until it is quite soft and worthless. The grub now undergoes its transformations either in the bulb or descends to the earth, and emerges from the pupa state in summer in from ten to twenty days. The larvæ of this fly do much damage to the Onion crops on light soils, but less often on those of a stiffer nature. It is rather difficult to contend with, as the expense of hand-picking is too great, and no generally effectual remedy has yet been discovered, although in some places the following are successfully used to a great extent. As, however, prevention is better than cure, it is a good plan to sow Onions on different ground each year. When in large crops, Onions should only be grown once in three years, and should follow Turnips or other cruciferous plants. On small plots the acid plan is a good and effectual one. All infested plants should be pulled up and immediately burnt. In autumn the ground should have a good watering with sulphuric acid, diluted with about twelve times its bulk of water. It is only available for small crops, however, the cost being rather heavy, as the acid is about threepence per pound; but it is effectual, as it will kill every living thing in and on the soil, both animal and vegetable. *Nitrate of Soda.*—This should be applied at the rate of 4 cwt. to the acre, or, for safety, rather less than that quantity, but not more than three times in the season, and only when the foliage is dry. If before a shower so much the better: otherwise it should be watered in. Whenever nitrate touches a wet spot on the foliage it burns or shrivels it. *Soot and salt.*—This, applied in the proportion of 2 cwt. of salt and 40 bushels of clean soot to the acre as a broadcast dressing, will tend to prevent the fly, but it should be done early in the season. After the Onions are attacked they cannot be saved; but by destroying all infested plants the second crop of grubs will be prevented. *Gypsum.*—We once applied this at the rate of a ton to the acre during dry weather, and the cure was effectual, but the ground had to be hoed after the first rain. It is a cheap remedy if it be found to answer generally; but as to this we cannot speak, as we had only one chance of using it. The grubs were all dead in the plants about a couple of days after the application. *Various.*—Soap suds, soot and lime, common salt, and other remedies are used with varying success by different persons. The above are, however, as good as any in our experience, and, therefore, we should advise those troubled with the fly to try them before others."—Celer et Audax.

14007.—**Spinach going to seed.**—This is, doubtless, owing to the hot, dry weather. If a quantity of leaf-mould could be obtained or decayed stable manure to dig into the ground it would be beneficial to the plants. The plants do not start well in the heavy soil, and run off to seed instead of forming leaves.—J. D. E.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XV.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Walnuts.

This fruit has long been cultivated in England, and when ripe is accepted as the most digestible and palatable Nut supplied for dessert. In its unripe state it makes an excellent pickle, and is a useful and appetising addition to many culinary preparations. It furnishes a delicate sweetmeat, and a savoury ketchup. An oil is also extracted from the Nut, which is sometimes used as food; but owing to the tendency of this oil to become rapidly rancid, it is more frequently used by painters, to whom it is known as Nut-oil. Before describing the method of pickling Walnuts we will proceed to give a few hints as to the precaution and care that are necessary to be practised when making any sort of pickle. In the preparation of pickles the greatest care must be taken as to the utensils used. Avoid, if possible, using any metal except iron or, preferably, silver, as the acid of the vinegar will act upon the lead used in tinning saucepans, and also upon copper or brass, producing upon the two latter the rust known as verdigris, which is poisonous. Porcelain lined saucepans are likely to be cracked if used for heating vinegar. No doubt it is inattention to these little things which so often causes pickles to disagree with delicate digestions. In preparing pickles the best and strongest vinegar should be used. When it is necessary to heat the vinegar, put it into an iron saucepan or into a stone jar placed in a saucepan with hot water around it. As soon as the vinegar reaches boiling point, remove it at once from the fire, as the heating process very much diminishes both the strength and the flavour of the vinegar. In the case of pickles, as in that of preserves, air must be carefully excluded, and they should be stored in a dry place to ensure their keeping for any length of time. Pickles should be kept in stone jars or bottles. Never use glazed jars, as the salt and vinegar in the pickles will dissolve the small amount of lead which is used in glazing. A wooden spoon with holes in it is the best instrument for lifting the pickles from a large jar, and a small quantity for immediate use should always be kept in a separate vessel, so as to avoid opening the jars too often. Be careful to keep all pickles covered with vinegar, or they will become dry and unfit for eating.

Pickled Walnuts.—Take three hundred large full-grown Walnuts, before any of the hard shell has formed, which fact may be ascertained by probing each Walnut in every direction with a long needle. Should there be the slightest tendency to hardness cast the Walnut away, as no strength of vinegar or length of time in pickle will soften the shell when once it is formed. Make a strong salt and water brine by boiling four pounds of common salt with one gallon of water, removing the scum as it rises. When this has ceased to rise pour the brine into a pan to get quite cold. Wipe each Walnut separately with a coarse cloth and throw them into the cold brine, cover and let stand for three days, then drain off the brine, boil it again, and when quite cold pour it over the Walnuts for another three days and repeat the same operation. On the ninth day pour away the brine and lay the Walnuts separately on a coarse cloth in the sun to dry and become quite black, which in good weather may be accomplished in two days. Take 2 ounces of long pepper, and 1 ounce each of black pepper, whole ginger, and allspice; twelve blades of mace, a quarter of an ounce of cloves, half an ounce of mustard seed and red chillies. Crush these all rather small and put first a layer of prepared Walnuts into a stone jar, and then a layer of spices, and so on until all are used. Boil three quarts of strong vinegar with six Shallots, finely minced, and one stick of Horse-radish grated; pour this hot over the Walnuts, and see that they are well covered; tie tightly down, and store in a cool, dry place. They will be ripe and ready for use in about six weeks, but will improve by keeping. When all the Walnuts are eaten, the pickled vinegar that is left will be found a very valuable addition to many hashes, soups, and sauces.

Walnut ketchup quickly made.—Take two hundred green Walnuts before the shell is formed, and ten fresh Shallots; pound these in a mortar as small as possible, and then through a coarse cloth wring out as much liquor as you can. To every gallon thus obtained add one pound of salt, half a pound of anchovies, four ounces of long pepper, two ounces of whole pepper, one ounce each of chillies, ginger, and mace, half an ounce of cloves, and the same quantity of allspice; boil these altogether for half an hour, stirring occasionally; turn into a pan to get quite cold, and then pour the ketchup into clean bottles, cork tightly, and cover the corks with melted resin; store in a cool place, and in one month it will be ready for use.

Walnut ketchup.—A lengthy process.—Take enough young green Walnuts to three parts fill a stone jar. Wipe each Walnut with a coarse cloth before putting it into the jar, and when they are all in fill the jar with strong alegar (a sour ale); cover and seal them tightly; put into a cool dry place, and let them stand unmolested for one year; then strain off all the liquid from the Walnuts, and to every quart thus procured allow half an ounce of garlic, three ounces of anchovies, two ounces of salt, one pint of port wine, half an ounce each of ginger, long pepper, chillies, and whole pepper, a quarter of an ounce each of cloves, mace, and allspice; boil these altogether with the lid on the pan for one hour; strain, and turn into a large bowl to become perfectly cold, and then carefully bottle it, cork and seal tightly. The longer this ketchup is kept the better it will be; it has been used with great success after five years' keeping. One dessert spoonful is sufficient to flavour one pint of sauce.

Preserved Walnuts.—Take fifty perfectly sound green Walnuts before any hard shell has begun to form. Rub them singly with a very coarse cloth, so as to remove the first or outer skin. As each one is thus pared throw it into cold water, and when all are ready drain them and plunge them into boiling water, with two ounces of bruised ginger, or the rind and juice of two Lemons. Let these boil gently until the Walnuts are soft, and then lift them into a basin with a perforated spoon, so as to take no liquid with them. Press one Clove on the top of each Walnut. Put three pounds of Demerara sugar into a preserving-pan, with half a pint of cold water; let it boil and skim it thoroughly; add the Walnuts and boil for twenty minutes, stirring all the time; then pour into small dry jars, cover with bladder dipped into warm water, tie tightly down and store in a dry place. This will be found a most useful preserve for children, being slightly laxative and agreeable to the taste.

Rice cakes (with butter).—Have four ounces of flower, one ounce of rice flower, one ounce of ground rice, four ounces of pounded sugar, four eggs, a ew drops of the essence of

lemon, and as much volatile as will lay on a threepenny-piece. First line the cake tin with buttered paper, then squeeze up the butter in water until soft enough to be workable; press out all moisture, and put the butter into a basin and beat it up to a cream with a wooden spoon for fully twenty minutes; next add the sugar, and beat a few minutes longer. Drop in an egg, beat a few minutes, then drop in two more, along with a teaspoonful of the flour—adding the flour prevents the eggs curdling—beat five minutes, then add the other egg, beat ten minutes—it being understood that the flour is added with the one egg also—then add the essence of lemon. You now mix the flour, rice flour, and ground rice altogether, and very gradually stir it into the mixture. Lastly, mix in gently the volatile, and at once pour into the cake tin and bake in a moderately-heated oven not more than an hour. When done turn out of the tin to cool.—Practice.

Preserving eggs.—A correspondent of a trade journal calls attention to the fact that lime-water has been shown to be the best agent—all things considered—for preserving eggs. This has been proved by the prizes given for best preserved eggs at the London Dairy and Birmingham Fat Stock Show. A pound of lime should be stirred with a gallon of water, and the eggs, perfectly fresh, immersed therein in barrels or jars; points downward, I should feel certain, is the better way of placing them. This excludes air, and destroys any germs that might otherwise cause mildew or mould; it also prevents evaporation, so that the contents of the egg are not reduced in bulk. The barrels with the eggs should be kept in a cool, airy place. Eggs may also be preserved by taking them warm from the nest and embedding in a thick paste of lime and water. Thus preserved, they can after six months hardly be distinguished from those newly laid.—J. W. G.

BEES.

SEASONABLE NOTES.

On a swarm leaving a hive a period of nearly three weeks generally elapses before any eggs are laid by the young queen left in possession. It is, therefore, a great advantage to a colony that throws off a late swarm if a mature queen be at once introduced to it; the introduced queen begins at once to lay, no time is lost in waiting for the young, unfertilised queen to come to maturity, there is no cessation in the increase of the population, and the colony becomes strong before the close of the season.

Introducing queen.—To successfully introduce a queen to a colony it is necessary to use a queen cage, in which to confine the queen when first placed in the hive, otherwise the bees will not receive her well, but will very usually press about her in a compact cluster till she dies; but if she be confined to the cage and placed between two of the combs for a time, and then set at liberty, she is generally well received and accepted as the future mother and monarch of the colony. The cage containing the queen is pressed into a comb containing uncapped cells that she may have a supply of food at hand, the bees are then sprinkled with thin syrup. In twenty-four hours the hive is opened and the bees again sprinkled with syrup, and the cage removed. The queen, now at liberty, is watched for a few moments to see if the bees attack her; if they do so, she is again caged and the next day again released. If it be wished to change an old queen for a younger one, the old queen is searched for by removing the combs one by one, and when found she is placed in the cage and introduced between two of the combs for about six hours, when she is removed and the young queen placed in the cage, and in two days released, when she is, as a rule, favourably received by the bees. It is best to release the queen in the evening, and not to disturb the hive till the next day, when an examination should be made. If a hive has been queenless for some time the queen should be caged for three days. There are several kinds of queen cages; the best is, probably, that made of wire net, with a flange on the top to prevent it entering the hive too far. It has an entrance on the top in which to insert the queen, and by pressing a wire down a little door is opened at the bottom which allows the queen to escape into the hive. Hives which have been some time queenless should, if possible, have some frames of brood inserted, and the queen to be introduced caged on one of them.

Late swarms.—Swarms that leave the hive late in the season should be well fed for the first fortnight or so, that combs may be rapidly built, and all kept in a state of progress and breeding encouraged, that the population may become strong before the close of the season. After the first part of July swarming should be prevented by removing frames of brood and cutting out queen cells. A late swarm from a bar-frame hive can be returned in the following manner:—First remove the bars of comb, and cut out all queen cells, then take the skep containing the swarm, and by a sharp and sudden movement drop the bees on to the top of the frames and throw over them a cloth, which remove after the bees have gone down among the combs, and replace the quilt; or the bees may be thrown on to a sheet in front of the hive, which must be propped up an inch or so in front. The queen which led off the swarm, now finding no royal cells in the hive, will not again leave it. The queen cells are easily distinguished, being quite different in construction from the worker and drone cells; they are somewhat like an Acorn in shape, and hang from the sides or bottom of the comb with the entrance downwards, being about an inch in length.

Queenless colonies.—Hives that have given off swarms should be carefully observed for the first ten or twelve days after the swarm has left for signs of queenlessness, as young queens are sometimes lost during their flight, or on their return fail to recognise their own hive, and on attempting to enter the wrong one are destroyed by the bees. The signs of the loss of a queen are a great agitation in the hive, and the bees running about over the front of the hive. This commotion takes place for two or three mornings, when they gradually settle down, but do not work with the will and vigour they formerly did. In a hive that is queenless the drones are not destroyed at the close of the honey season as they are in perfect colonies; but, there being no increase of population to take the place of the bees dying off from natural causes, the stock dwindles and dies out. A colony in this condition may, however, be saved if on the appearance of the signs above stated a queen cell, containing a young queen, be introduced into the hive, placing it between the combs, to which the bees will soon fix it. The embryo queen, receiving proper attention from the bees, comes forth in due course, and is accepted as the ruler of the hive. A frame of comb containing eggs and brood introduced into queenless hive will also be the means of saving it, as the bees will immediately begin to fashion royal cells round some of the worker eggs or grubs, and rear queens from them. The best and most expeditious way, however, of setting up a queenless colony, is by giving it a fertile queen.

Boxworth. S. S. G.

REPLIES.

14158.—**Brood in super** (*R. L.*).—Your super should have been furnished with queen-excluder zinc. This would have confined the queen to the hive, while the workers only would have passed through its long perforations, and stored pure honey in the super. The great value of this excluder lies in its permitting the soft abdomen of the worker bee to pass through its perforations, while the hard thorax of the queen cannot be squeezed through it unless she be unusually small.—S. S. G., *Boxworth.*

14159.—**Handling bees** (*Stingo*).—It is a well-known fact among bee-keepers that bees gorged with honey seldom sting. When a swarm is about to leave a hive every bee fills itself with sweets, and if the swarm is hived as soon as it has clustered it is very rarely indeed that the operator gets stung. To make bees harmless, therefore, it is simply necessary, before opening a hive, to alarm them by puffing smoke into the entrance, and by rapping upon the sides of the hive. This causes every bee to run to an uncapped honey cell, and gorge itself with honey. Should there not be enough uncapped honey-cells in the hive some thin syrup must be sprinkled over the bees, which they must be allowed to suck up before beginning to handle them. It is quite a false idea that the manipulators at the bee shows put some chemical upon their hands which the bees like, and therefore do not sting them. The two golden rules which must be observed in handling bees, if we would be free from stings, are to be sure that they are well gorged with honey or syrup, and never to irritate them by quick motions, but to be slow and deliberate. It is, however, a wise precaution for the novice in bee keeping to use both veil and gloves until he has obtained that coolness and confidence so necessary in the successful manipulation of bees. Carbolic acid, no doubt, is an abomination to bees, and as a bee-quieter is very useful. Two ounces of strong cabolic acid to one quart of water makes a solution of the requisite strength. It should be well shaken before used, and applied with a goose-quill to the tops of the frames while gradually removing the quilt. It would not be prudent to rub the hands with carbolic acid.—S. S. G., *Boxworth.*

POULTRY.

CHICKEN RAISING.

Although most poultry keepers indulge more or less in chicken raising it is more than probable that if everything in the shape of food be valued at a fair price, by the time the birds are sold or killed they will have cost much more than they are worth. The reason of this, in my opinion, is not because the pursuit is on the whole an unprofitable one, and that chickens cannot be made to pay their way, but because the undertaking is not carried on as systematically as it might be. The birds are not always fed with the most suitable food, and in many cases they have to take their chance with the older birds, for even if the food be placed under a guard out of the reach of the other fowls, it is simply hard grain taken from the same supply as that given to the hens. Chickens, it need scarcely be said, require far more generous treatment. In the first place they should be supplied with food suitable for their age; and secondly, they ought to be kept in a run or yard apart from the older fowls. The object of the feeder should be to keep them steadily progressing from their birth, and to take no more time than is absolutely necessary to get them ready for the market.

These results are the more likely to be obtained if the birds are kept under the circumstances I have stated. When they are differently situated, and knocked about and run over by the other poultry, the fattening process is a slow one, and the chickens are several months old before they can be got off. Before this end can be obtained it is necessary for the chickens to be put up specially to fatten, and it is the slow growth of which I have spoken, and the special fattening process, which rob the breeder of his profit. To rear chickens successfully they must be so fed that when of sufficient size they may be picked up off their runs at any time in a fit condition for the table. Less food is required in this way, and an article of much better quality is produced than when the bird has been confined. But it is impossible to get chickens with plenty of meat upon them unless they are well supplied with suitable food, and kept quiet. Another thing not to be forgotten is to kill them as soon as ready. Too many poultry-keepers allow their cockerels to remain in the yard with the breeding stock long after the period I have stated. The result is that the chickens, in consequence of the attentions they pay to the hens, deteriorate, and if they are to have any flesh whatever on them when killed they must be put up for a fortnight or so and fattened. I do not wish to say that chickens should not be kept until some months old if the family is a large one, and birds of a substantial size are therefore required for the table, but if this practice be adopted the cockerels should be placed in a separate run. Late hatched chickens, too, should be guarded against. Hens are often set in the late summer and early autumn months, and a large proportion of the chickens die when the cold weather comes on, and the remainder lead a miserable existence. It is almost superfluous to add that during very warm weather the water must be carefully looked after, and no soft food be allowed to lie about and get sour.

Doulting.

Poultry keeping for profit.—I have been very much interested from time to time in the questions and answers in Gardening relating to the management of fowls—so much so that I have felt it my duty to give my experience for the benefit of your readers. At the outset I may say that I am only a working man, and at the time referred to lived in a cottage with a very small garden. My first idea of fowl keeping was simply for a hobby, as everybody told me that they would not pay, and this I proved to be quite correct under my first twelvemonths' management, or I should say mismanagement, for I began in perfect ignorance of fowl keeping—so much so that if I were to relate some of the incidents in my experience, I should call forth some remarks from your readers that would not be very complimentary to myself. After the first year I began to feel that fowls ought to be made to pay, having in the meantime purchased a small book on "Poultry Keeping for Profit," so that I began to take account of my receipts and expenditure; and although I never realised the success that was shown in poultry books, I was so successful as to be encouraged to persevere in my small way. About the fourth year after I started I had nine pullets, and these commenced to lay in October, and in the twelve months they laid 1,500 eggs. These were fowls of no particular breed, and I may say that I never kept any but what are called barn-door fowls. The nine I kept in a house 8 feet square, with a run of 10 feet by 3½ feet. Gradually I increased my stock until the last two years I kept 20 fowls, but I made the run as large again, and at certain times in the day I let them out in a meadow close by. From my 20 fowls I made a profit of £6 a-year. At this time I removed to a house in the town, which is now two years ago, but so convinced am I that fowls can be made to pay, even if they are shut up, that I am about to begin again in a roosting place 7 feet by 4 feet, and a run 24 feet, and, if I am spared, at some future time I will give an account of my success or otherwise for the benefit of your readers. And now the question will be asked—How did you make them pay? In the first place by liberal feeding; but I never gave them more than they would pick up, and if I found they were off their appetite I would change their food. In the second place I kept them very clean, taking up the droppings every morning and dusting with ashes. I also kept a box for old mortar rubbish, and also broke up some chalk, which they are very fond of; their drinking water I kept clean and fresh. I went in almost exclusively for the eggs, which I never sold under a penny each, and for which I seldom got more than three-halfpence. Should any of your readers wish to ask any questions about the food and feeding I will state the plan on which I proceeded.—A Lover of Fowls.

The Scotch grey fowl is a first-class all-round fowl, and for that reason very suitable indeed for farmers. It is a good layer of large white eggs, not, of course, rivalling the non-sitting breeds in this respect, but laying an average of over 100 eggs per annum, which is by no means a bad total for a hen that attends to maternal duties, and is also a good table fowl. It must be remembered that 100 eggs of the size that Scotch Greys produce are quite equal to 150 of those laid by some other breeds. They are eggs which require a larger egg cup than is usually sold. Hens of this breed are also capital mothers, but not clumsy, and are good sitters and very attentive to their chickens. As table fowls they are very little inferior to Dorkings in the quality of their meat. The frame is not quite so large, nor perhaps the keel or breast bone so deep, but there are very few persons who could tell the difference between one and the other on the table. Then the Scotch Greys have a very decided advantage over their cousins, if we may call the Dorkings by that name, in that they are much hardier, and can therefore bear being kept on cold soils where the others would die off. They are small eaters, and, on the whole, wonderfully healthy. They cannot be said to bear confinement well, in this respect resembling the Dorking. They are small eaters, but one thing they must have, and that is green food. If they do not get it they do not thrive, and often contract the habit of feather eating. But where space and green food can be given them, I know of no better fowl than this for farm purposes. Their admirable qualities make them most valuable where both a chicken and egg-trade is carried on.—*Country Gentlemen.*

Colour in eggs.—This cannot be considered of little importance. There is no comparison between deep and pale-coloured yolks. For example, in making a custard several of the latter will scarcely impart the rich colour of one of the former; so that the maker, in sheer despair, may fly for help to "custard powder" (alias arrowroot and ground saffron—the latter, for the sake of its colouring, too abundant to allow of its flavour being unperceived). To have healthy fowls and eggs of a good colour, fresh air, fresh water, good ground, and sunlight are imperative. Let the hen-house have a sunny south aspect, and a plot or field of green grass for the hens to run upon. Or supply them with fresh sods, bunches of Grass, and all spare vegetables and parings, cooked or otherwise, in addition to the usual grain food. Eggs of better colour, better size, in greater number, and affording purer nutriment will be our reward.—M. H.

Eggs.—Eggs are produced from what may be termed surplus food, such as is not absolutely required for the sustenance of the bird, and if the food is given in excess, or of too stimulating a nature, the result is in the one case that the organs are clogged up with fat, and the egg-laying machinery is stopped, or in the other that the ova are produced too rapidly. In the ordinary course of things only one ovum should be generated in 24 hours, and the fowl ought not to lay more than five or six times a-week. If two ova are produced in one day many eccentricities are the result. Sometimes the two ova pass into the oviduct together, and then a double-yolked egg is formed. If this egg is set, and the yolks have been fertilised, then come some of those freaks of nature which are regarded and communicated as great wonders. Occasionally two perfect chickens are developed and hatched out of one shell, but as a rule only one ovum comes to maturity, and thus we have the four-legged and two-headed monstrosities. Another result of over-feeding is the production of one perfect egg within another. This is caused by an irritation of the oviduct, which, contracting in front of (instead of behind) the perfectly formed egg, forces it back until it meets another yolk, when the two join company, and in this way are coated with the white and the shell, thus producing the wonder spoken of. Soft eggs result from too much fattening and two little exercise, the ovum passing down the oviduct too rapidly for the secretions to be properly made. Or, on the other hand, they may be caused by absolute want of lime, without which the shell cannot be properly made. None of these irregularities are found in wild birds, and they must be put down as one of the results of domestication. But, knowing what to avoid, it is not very difficult to so feed and manage the birds that their organs may work in proper and natural order. Birds, when wild, lay very few eggs, and it is only by the handiwork of man that they have been made so fecund; but it has been gradually done, and with no apparent injury to them. It must, however, be borne in mind that overstepping the boundary soon brings its own punishment, and therefore the greatest care needs to be taken in the feeding of poultry, so as to maintain them in full health and vigour.—S. B.

Poultry in confined runs.—One of the problems in poultry-keeping is the matter of so confining the hens as to keep the largest number in the smallest possible space with the best results. The question is, "Does the size of the yard have anything to do with the laying qualities of the hens?" It is well known that some breeds, such as the Leghorns, Houdans, and Hamburghs, begin to pull feathers if not given a full range, which is a sure indication that the conditions are not favourable. If we coop up a lot of fowls to be fatted, and especially turkeys, which delight in foraging, they will gain rapidly in flesh for about ten days, when they will begin to fall off, and no amount of food given will cause them to increase in weight. The conditions of confinement in the yard are very similar. No matter how well their wants are supplied, the hens will not lay as well as other hens equally cared for and given liberty. Confinement consequently affects the disposition of the hens, and causes them to become discontented and unhappy. How can this be remedied without requiring a large area for a number of flocks? is a natural inquiry. We know of no method but that of having changeable yards to the houses, one in the front of the poultry-houses, and one at the rear, the fowls being changed from one yard to another as fast as green stuff can be grown to the height of two inches, which will keep them busy and occupy their time. This calls for frequent spading of the unoccupied yards, which, of course, turns under the filth, and keeps off disease. To keep hens in confinement means to keep them at work, either foraging or scratching, and the floors of the poultry-houses, and portions of the yard, should alway be littered with cut straw, leaves, dirt, or some other suitable material, into which the grain food should be thrown, and the hens made to hunt for it. The temptation is to economise by utilising the space with a large number of hens, but such a system does not pay, as the smaller the number of hens in one lot, the greater the number of eggs in proportion. —F. G.

In the dry summer season every country resident should secure several loads of road dust. It is worth many times its cost as an absorbent. Those who keep poultry secure by its use a valuable fertiliser, nearly as strong as guano, with none of its disagreeable odour. Place an inch or two of road dust in the bottom of a barrel; then, as the poultry house is regularly cleaned, deposit a layer an inch thick of the cleanings, and so on alternately, layers of each till the barrel is full. The thinner each layer is, the more perfect will be the intermixture of the ingredients. If the soil of which the road dust is made is clayey, the layers of each may be of equal thickness; if sandy, the dust should be at least twice as thick as the layers of droppings. Old barrels of any kind may be used for this purpose, and if previously soaked with crude petroleum or coated with gas tar they will last many years.—A. R. H.

Meat for fowls.—It is not always convenient to procure a supply, but it has never occurred to some, however, that the carcasses of dogs, cats, horses, etc., that are destroyed by reason of running at large, or old age, could be utilised and used as food for poultry by being boiled and prepared for that purpose. One of the cheapest articles is the "lights" or "plucks" of sheep, and also the well-known "meat puddings" sometimes seen on the stalls of butchers, which are seldom fit for any other purpose in reality. Fresh bullock's blood thickened with ground grain will keep for quite a length of time if cooked in the shape of bread, while the scraps from the butcher can be cooked as a soup, and thickened with Potatoes and meal to advantage. It is not necessary to feed expensive meat to poultry, though it pays to use meat, even when a good price must be given for it, especially when eggs are high and scarce.—*Farm and Garden.*

Peculiarities of fowls.—The feathered-leg fowls are the Cochins, Brahmas, Langshans, and Sultans. The yellow-legged breeds are the Brahmas, Cochins, Leghorns, Wyandottes, and Plymouth Rocks. The hens that lay the darkest coloured eggs (shells), are the Cochins and Brahmas, followed in order by the Plymouth Rocks, Wyandottes, and Langshans. All the non-sitters, such as Leghorns, Hamburgs, Black Spanish, Houdans, and Polish, lay white eggs. The rose-comb breeds are the Hamburgs, Dominiques, and Wyandottes; the pea-combed breeds the Brahmas; and the straight, or single-combed breeds, are the Cochins, Games, Plymouth Rock, Black Spanish, and Leghorn. The French breeds have horn-like combs.—D.

14057.—**Gapes in chickens.**—If plenty of lime is thrown about the run for the fowls they will soon lose the gapes. Gapes are caused by a little worm in the throat; the chickens eat the lime and cure themselves.—S. F. M. L.

BIRDS.

14110.—**Canary losing feathers.**—Will any of your readers kindly inform me as to what I should give my bird (hen canary)? It is continually moulting. Its food consists of mixed seed, varied at times with a little green and bread. I occasionally give it a little saffron in its water.—P. M. C.

Feeding blackbirds.—In the issue of 18th July someone says that if blackbirds are well fed they will not attack the fruit—I suppose, so voraciously—as they do when left to provide for themselves. If any of your readers will kindly tell me what food blackbirds specially like I shall be glad to try the experiment.—Warne.

GARDENING ILLUSTRATED.

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OUTDOOR PLANTS.

WINTER-FLOWERING JASMINE.

At a time when we have so many beautiful flowers about us it is perhaps not amiss to think of a good friend that cheers us when there are very few others in bloom. We refer to the winter-flowering Jasmine (J. nudiflorum), of which we present an engraving from a drawing made at Mr. P. Chaplin's, Feltimore, Harlow, Essex, in December. The naked-flowered Jasmine is a very distinct and handsome species of a trailing habit of growth; the stems are from 10 feet to 12 feet long, slender, very numerous, and much divided into small twiggy branches. In the warmer parts of China (whence it was introduced here), and under glass in this country it is sub-evergreen, but in the open air it is invariably deciduous. The flowers are large, bright yellow, and borne in great profusion along the sides of the young shoots. In mild seasons this fine shrub begins to develop its showy blossoms as early as December, but the usual time is from the beginning until the end of January, the flowers continuing to expand for nearly a month. When in full bloom it is a beautiful object, and the blossoms are all the more appreciated for their appearance when there is, out-of-doors at least, an almost entire absence of floral beauty; it is also worth cultivating for the sake of its leaves alone. Its free-growing habit makes it peculiarly suitable for covering walls, and as it is very hardy it is equally valuable for planting on bowers or trellis screens. It is also spoken of as a good town plant, enduring London smoke very well.

A winter-flowering Jasmine (Jasminum nudiflorum), flowers bright yellow.

Hardy flowers in Hyde Park.—We are pleased to see rather a pleasant border of these near the Victoria gate in the Bayswater Road, having a good many Carnations and other pretty things. A border, however, in front of a shrubbery is never well placed, as regards the kinds that require high culture. Wood and copse plants delight in such places, but the many hardy flowers that are worth good culture, and require it, are placed at a disadvantage when too near trees and shrubs, which are apt to rob the ground.

The Tree Poppy (Romneya Coulteri).—This has an enormous white flower and rich, yellow centre. The habit of the plant is tall, broken, and most picturesque, and a more beautiful and distinct plant it would be difficult to imagine. It is shrubby, and seems to love a warm, sandy soil. It is remarkable that so distinct a plant from a much warmer country than our own should thrive so well. It is a native of California, and we have never seen it thrive so well as in the warm sandy soils in Surrey. It is as yet rare.—J. H.

Belladonna Lilies are very disappointing unless their proper treatment is understood. We have tried to get them to flower planted at the foot of warm walls in several places about the garden, but they invariably refuse to do so, except in one particular spot, and that is against the outside wall of a stove which is always heated. Here they bloom regularly every year. As they come into flower we take up the bulbs and put them in pots for the conservatory, and as soon as they go out of bloom the bulbs are put back in the same place again. This seems to show that they like more warmth than an ordinary south wall affords.—J. C.

HARDY FLOWERS FOR BUTTON-HOLE BOUQUETS.

It may be useful to direct attention to a few hardy plants, which will supply bouquets of this kind, and which all who have a garden may grow. Their flowers may not be considered so choice as those grown under glass, but, for all that, there are some hardy plants well adapted for the purpose, and in naming them I cannot do better than commence with

January.—During this month we can hardly expect many outdoor flowers; but, should the weather be open and mild for a week or two, the single Russian Violet will be flowering if grown on warm borders; at least, it does so in the south and western counties, and few flowers are more welcome than are early Violets. Common Hellebore, if protected with a hand-light, may also be had in flower this month, and a single bloom of this plant, neatly placed in an Ivy leaf, makes a charming button-hole bouquet, as does also the Winter Aconite. Moreover, single flowers of Tussilago fragrans, neatly wired and set in a green leaf, are not to be despised this month, and, if grown close to a warm wall, this Coltsfoot is generally in flower in January. Those who can devote a warm wall to Chimonanthus fragrans will have no difficulty in getting plenty of its curiously-formed, sweet-scented flowers, with about four of which, fixed on wires, and a bit of green, a seasonable button-hole may be had.

February.—In the western counties the beautiful Anemone fulgens is sometimes in flower this month, and, when it can be had, few things are more brilliant. The foliage is also very handsome. Towards the end of the month Snowdrops will be coming on fast. Three or four of these, and the same number of their own leaves, associate together very well. In ordinary seasons Erica carnea will be available, as will also the white Arabis; but the last-named requires to be neatly trimmed and nicely set in a deep-lobed Ivy leaf. It is then quite presentable.

March.—This month will furnish many flowers suitable for our purpose. The first will be the Hepaticas in several colours, both double and single, but the double ones are the most suitable; half-a-dozen of the double pink or double blue set in their own leaves make a very neat bouquet. The single white Violet will also be plentiful, as will also the dark varieties, such as the Czar and Victoria Regina. The pretty little Scilla sibirica and Chionodoxa Luciliæ will be available this month, and the white and blue Forget-me-Nots. In the shrubbery there ought to be Berberis Darwinii, and B. dulcis, the flowers of which, when nicely mounted, are always welcome. Ribes flower bunches, when reduced to half their size, both red and cream, set in their own leaves, make a nice change, which some like.

April.—Many fresh plants will be now coming into flower, and amongst them early in the month none is prettier than Cyclamen Coum. This should be grown near a wall in a warm corner, and then it will flower freely. It has purplish red flowers, and when neatly arranged, several flowers together in one of its own leaves, it is difficult to find anything to surpass it during the month. Many of the Saxifrages flower in April, and their flowers may be made up into light and attractive button-hole bouquets. The double white wood Anemone is unsurpassed amongst white flowers this month; the double form of Cardamine pratensis also makes a good change, and it is not difficult to make up into a bouquet with its own leaves. Phlox frondosa (pink), P. Nelsoni (white), and P. procumbens (puce), all flower this month, and afford variety.

May.—No difficulty will be found in getting flowers during this and the succeeding three months. The first for the month will be the common white garden Pink, a favourite with most people; later in the month the better forms of the late Pinks will be available. The grass of Pinks should be used with them, in preference to other foliage. The Grape Hyacinth must not be overlooked, being handsome both in form and colour. Amongst Primroses the flowers are variously coloured, and with their own leaves they make up into pretty bouquets.

June.—Pinks will still be available, and against warm walls the old monthly and crimson China Roses will be in flower. Later in the month Roses of all colours ought to be available. The better forms of Aquilegias of the cœrulea type should be plentiful during the month, and not many other plants are more striking either in form or colour. The pretty little Azalea amœna will be valuable as a change. The double-blossomed Cherry flowers this month, and, as regards beauty and effectiveness, the choicest hot-house flower cannot surpass it; its blossoms are as perfect in form as it is possible for blossoms to be, and their colour is of the most snowy whiteness.

July.—As many of the flowers just named will still be in perfection, I shall only name a few for this month. Quite early in it Kalmia glauca and K. latifolia will be charmingly in bloom, and there is a kind of waxy appearance about the flowers which is very attractive. Carnations and Picotees, too, should be plentiful. They are always much admired, and they will last well in a cut state. The lovely Ixias and Sparaxis, when neatly arranged, answer admirably, as do also Mule Pinks and double crimson Sweet William. The Valerian and any of the white Spiræas associate well together, their feathery growth being sometimes needed. The double-flowered Potentillas are exceedingly handsome, as are also the flowers of double Larkspurs, if nicely wired; but the best of all flowers for this month is the double white Campanula persicifolia, which is simply charming, each individual flower looking like a wax shell—perfect in outline and of the most pearly whiteness. It requires no manipulation, as one flower neatly set on its slender stem is quite sufficient.

August.—It is unnecessary to make a long list for this month, as a variety of flowers will be available; but I wish specially to mention Tea-scented Roses. They make admirable button hole flowers during the early autumn months. If a wall about 6 feet high can be de-

voted to them, they will flower both early and late; and in warm sheltered gardens they are fairly reliable when grown in the form of dwarf bushes. The best varieties for this purpose are Letty Coles, pink; Isabella Sprunt, canary yellow; Perle de Lyon, deep fawn; Niphetos, white; and Souvenir d'Elise, white, slightly shaded with blush.

September.—Autumn flowering hardy Cyclamens will commence to bloom this month, and will continue to do so for several weeks. Set in their own foliage, the flowers work up very well into bouquets. Schizostylis coccinea is also a useful flower for that purpose; but it requires a warm sheltered corner, and then it will continue to furnish flowers until frost cuts it down. Several of the hardy Heaths continue to flower late in the autumn when well established. Michaelmas Daisies will be available during this and the succeeding month. They are not very showy, but make a change. A few Hybrid Perpetual and other Roses should also be provided. Amongst high-coloured Perpetuals, Annie Wood, Charles Lefebvre, and General Jacqueminot usually flower well in the autumn. The best light-coloured Roses for the autumn, not belonging to the Tea-scented section, are Gloire de Dijon and Souvenir de la Malmaison.

October.—Pompone Chrysanthemums may now be added to our list, and these will finish up the year. Some of them are so pretty that they are well deserving of special culture for this purpose. In order to insure satisfactory blooms, they ought to be grown against a wall which faces the south or west. Then they may be relied upon to supply flowers for fully two months if a good selection of varieties has been made. The following are the best for the purpose—viz.: Bijou de Horticulture, creamy yellow, and very pretty; Snowdrop, white; Jesse, crimson; General Canrobert, yellow; Lilac Gem, late flowering; Bob, dark crimson; this is the latest of all. Model of Perfection should also be added—this is correctly named, for it is a perfect model, colour lilac with white edging.—*Field.*

The Spanish Goat's Rue (Galega officinalis alba) is a very handsome plant, perhaps a little too tall for small gardens, but owing to its neat, compact, pyramidal habit it does not take up much room. It is now literally covered with neat racemes of pure white flowers, which continue to expand for several weeks together. In addition to its value as a cut flower for vases, it is very pretty as a button-hole bouquet in combination with a cluster of Everlasting Peas, the latter forming the centre, and the Galega on either side dressed with its own leaves.—R. M.

White Everlasting Pea (Lathyrus latifolius albus).—This is quite a plant for every garden, being a vigorous and constant bloomer. Even near large towns this white Everlasting Pea somehow keeps clean and robust. Many are unaware of its perennial duration, and class it with annuals. A row of it 12 yards in length, consisting of plants three years established, is accommodated with a few stout stakes and light bars into which fresh twigs are stuck every spring. These Peas thus treated grow 6 feet or more high, and at present form quite a hedge of bloom. They are almost the only pure white flowers from which we can cut largely just now. This Pea hedge forms a capital screen to two rows of summer-flowering Pæonias, and the effect of a bed of coloured Roses on the sunny side is improved by having a heap of glaucous foliage and white bloom as a background.—D. J.

Zenobia speciosa pulverulenta.—This hardy shrub is extremely attractive as a flowering plant under glass, both from its large Lily of the Valley-like flowers, and also on account of the bluish silvery tint of its foliage. Out-of-doors it shows its colour well in a moist, peaty spot, but under glass the peculiar tint of the foliage is, if possible, more pronounced. Hardy plants of this character are extremely useful, as they do not occupy space under glass during winter, but may then (unless needed to be in bloom unusually early) be kept out-of-doors. After flowering the plants should be plunged in the open, and care taken to keep them well supplied with water, otherwise a crop of flowers the following season need not be looked for.—A.

LAYING OUT A GARDEN.

(Answer to Question 14025.)

As "A Wee Bit Lassie" gives no particulars of the size and shape of her garden, it is impossible to give anything but general principles of arrangement. Even with a detailed description, precise instructions as to planting could only be given on the spot. In placing trees and small shrubs, for instance, it might be judicious to place a thicket just where it would hide the prettiest bit of distance visible, and a little distant view might come in best from the garden just where, in reality, there was an ugly factory, or some other objectionable object requiring to be hidden if possible. The first thing to be planted are the trees and shrubs, these being permanent features which will increase in beauty year by year. Unless the garden is a very large one, it is best to avoid large trees. Fruit trees combine beauty and utility, and in a moderate-sized garden these and flowering shrubs and trees alone should be planted. Apples, Pears, Damsons, Cherries, and Medlars make handsome low-growing trees. With these may be planted the rose-coloured Horse-chesnut, double-flowering Cherries, Laburnums, Bird Cherry, Scarlet Thorn, Spiræa Lindleyana, Spanish Broom, Common Broom, Mock Orange, Weigelas, and Lilacs in variety. These will be quite sufficient, with a few Rhododendrons and a Holly or two for evergreens. Let these be planted in beds of varying width round the garden, so as to leave the centre of the plot as open as possible. Do not plant the shrubs and trees closely, but in small groups and singly, with plenty of open space between them. Even when a screen is wanted it is better to arrange the bushes so that they cover each other, and hide what is behind them, while plenty of space intervenes, than to plant them in the form of a wall. Many hardy plants do best when properly planted and allowed to grow and spread for years; others do best when regularly fed with leaf-mould. For both these kinds of plants large beds, with a few trees in them to supply shade in summer and leaf-mould in autumn, are the best places. These large beds should be thoroughly dug two spits deep and plentifully manured to begin with, after which the only care they will require will be hand-weeding and regulating of the plants when any of them run into places where they are not wanted. The leaves should be allowed to rot as they fall, and only seed vessels need be removed from the plants. These large beds, treated in this simple and natural way, will be less and less trouble every year. I notice in old woods, where the ground has been undisturbed for many years, there are few objectionable weeds. These are Nature's cultivators, breaking up the soil with their strong roots and enriching it with their plenteous foliage. When they have done their work they disappear. It is only in newly-disturbed soil that all the races of plants which are such a continual trouble to the gardener grow. Give up disturbing the soil and allow the plants to enrich it with the products of their own decay, and these weeds disappear.

These large beds should come right up to a surrounding walk. There never was a more tame and unpicturesque kind of garden than that to be seen in so many public places, in which great banks of low growing shrubs are separated from the walks by belts of turf with small beds cut out in them. The slightest approach to beauty is impossible with that kind of arrangement, and any attempt to grow flowering plants in a mere strip of soil between shrubs and turf always results in the most ludicrous failure. Unless the soil is positively marshy all beds should keep the natural levels of the ground. If any raising is necessary the walks should be raised, not the beds. If these bounding beds can be made large a broad belt of dwarf plants varying in width can form an edging to them, and this edging can be further varied by having clumps of stones sunk in the soil, and furnished with rock plants. This edging should be almost wholly of evergreen plants so as to form a rich carpet of flowers in spring, and a velvet band of greys, greens, and russets for the rest of the year. Properly planted it requires neither clipping nor mowing, and has all the advantages of a belt of turf without any of its disadvantages. Stiff, formal edgings of one plant should always be avoided; they completely ruin all efforts to produce true beauty in a garden. Behind and among this carpet of dwarf evergreen plants should be planted boldly contrasted foliage-plants; plants with sword-shaped leaves, like the Irises, and plants with broad, bold leaves, like Acanthuses, Funkias, and Megaseas. These should not be planted in regular spots or in bands, but in groups. In a small garden these great mixed beds should contain almost all the flowering plants which require no special culture. With regard to

The centre of the garden there are two totally distinct kinds of treatment, against neither of which anything can be said, while there is much to be said in favour of both. The modern English style is to fill a large space of the garden with well-kept turf, and to bring that right up to the windows of the house, so that the house looks as if it were set down on the turf. The best old Scotch style of garden was utterly different. The principle was that the house was only to be seen peeping through trees and shrubs, a window or two from one point of view, a door and part of a window from another. The houses I refer to had no architectural pretensions, and their only decorations were climbing plants, usually Roses or fruit trees. Grass in these old gardens was never an ornamental feature, but only a convenience to play games, or take the air on, or to bleach the linen on. The flower beds were usually brought right up to the house. Perhaps the prettiest garden would be a mixture of the two. Have flower beds next the house, partly filled with climbers, to cover the walls, and with bushes, to carry down and spread the group formed by the buildings over the ground. Have the centre of the garden filled with lawn, with a judiciously-placed clump of trees to shade a patch of turf in summer. Then, judiciously placed here and there on the outer fringes of the lawn, a large bed or two for florists' flowers and Roses, and you have a pretty and interesting garden, arranged in the best possible way, both for effect and for a minimum of trouble in cultivation. The mixed beds of trees, shrubs, and flowers will give every variety of position from full sun to deepest shade, and if the florists' flowers are kept by themselves they can have the special culture they require without disturbing other things. A great many beautiful plants can be raised from seed, and the present is a good time to begin. A garden can hardly contain too many Pansies. Sow the seed now about an inch apart from seed to seed in boxes of light soil and leaf-mould. The reason of this open sowing is that, though most of the plants will be good, the most beautiful flowers, as a rule, will be got from those seeds which are the last to germinate; therefore, the stronger plants should be removed, when large enough, to give the weak ones room. Biennials should be sown now. Campanula Medium, Calycanthema (a fine kind of Canterbury Bells), Sweet Scabious, Sweet Saltan, Sweet Rocket, Hunt's newest Sweet William, Delphiniums, Œnothera Lamarckiana, Digitalis gloxinoides (a fine variety of Foxglove), and Verbascum Chaixi (a tall plant with pale yellow flowers), are all good. Sow at once colored Primroses in great variety—these are sports of common Primroses but crimsons, purples, lavender, pink, and white—Alpine Auriculas, Polyanthus, Primroses, and Giant Polyanthuses. The first plants which should be purchased are those which require time to grow and bloom their best—Hepaticas, Day Lilies, Christmas Roses, large-leaved Saxifrages, English and Spanish Irises, and hardy Lilies.

Roses should be got in as quickly as possible. A revolution in Rose growing is in progress. Hitherto a Rose bush has been made from a single bud of a Rose inserted into the stem of an inferior Rose, the object being to make a Rose bush quickly and cheaply. It is now found, however, that large cuttings of strong wood make Rose bushes almost as quickly, therefore, the best way to make Rose bushes is to purchase and plant budded dwarf plants and make your own permanent plants from strong cuttings. There are Roses and Rose Exhibition Roses are required to produce large flowers, which are useless for button-hole bouquets, and most decorative purposes. Garden Roses should be good decorative shrubs—handsome plants, with plentiful foliage, bushy growth, and plenty of flowers. The best

handsomest, and most sweetly-scented Roses are the old-fashioned kinds. These have the unfortunate drawback of flowering but once, while the newer Roses flower twice, and in some cases three times. It is advisable to keep these old Roses before the public, as they form a great contrast to the newer kinds, and are quite as beautiful in their own way. A very beautiful Rose is Harrison's yellow, a very prickly Brier with small leaves, like the Sweet Brier, and a profusion of brilliant yellow Roses, which make even Maréchal Niel look pale by comparison. This is best on its own roots, and should be trained with its shoots bent down. It requires no pruning, but should be well fed while in flower, as the new wood is formed immediately, and it is advisable to get that strong, as no further growth takes place until the following year; all wood which has flowered has to be cut out. Madame Plantier is a white Rose, of a very accommodating nature, which should be treated in the same way, but need not be so severely thinned out, as two-years'-old wood will flower fairly. This produces a perfect profusion of blooms. Céleste is a beautiful, small, semi-double pink Rose, produced in clusters. It is, perhaps, the most powerfully-scented Rose in existence, the scent being very sweet. The Scotch Roses are pretty bushes, nearly as well furnished with leaves as a Box-tree. The flowers are very plentiful, miniature Roses of good shape, not much bigger than a large filbert, and very sweet; the colours are straw, white, pink, and lavender blush. Ayrshire Roses are slender, free-growing climbers, which will run up trees; they are best planted in well-prepared soil, and then left alone. Evergreen Roses are very useful after a few years' growth. They have plentiful glossy green foliage and large clusters of white or pink flower. Felicité Perpetuelle is the one most commonly grown, and a very beautiful climber it is.

The common pink China, Rosa semperflorens, is a very useful decorative Rose, which will flower on a north wall. The old crimson China, a deep-coloured variety, is equally useful. Very dwarf China Roses with deep velvety crimson flowers are pretty small bushes not exceeding 2 feet high. Madame Bosanquet is a cream-coloured China, and Ducher a good pure white. Bourbon Roses are good garden Roses flowering best in autumn; Noisette Roses are hybrids of Tea and Musk; Aimés Vibert, white, and Céline Forestier, yellow, are good kinds. Both these are best as standards unless trained as climbers. Not many Teas can be trusted out-of-doors in the north of England. Gloire de Dijon, Reine Marie Henriette, Cheshunt Hybrid, and perhaps Homère, will do. Hybrid Perpetuals as a class are not good shrub Roses. Their growth inclines to be stubby and upright after the manner of the wild Dog Rose. Many persistently refuse to produce round bushes. After years of growth on their own roots, however, they would, I have no doubt, be very beautiful. They would most likely develop into large stools, sending up a sheaf of whip-like shoots drooping at their tips. If they could only be grown among shrubs as the Dog Rose grows they would be grand, but they require too much manure for that. The best for gardens are La France, Baronne Prevost, Boule de Neige, Alfred Colomb, Duke of Edinburgh, Duke of Connaught, Glory of Waltham, Elizabeth Vigneron, General Jacqueminot, Victor Verdier, Comtesse de Serenye, Prince Camille de Rohan, and Princess Louise. A sheltered nook should be found for Marie Baumann, an exquisite Rose. The best garden Roses are the Albas. They require only ordinary care. They are handsome, free-flowering shrubs, with double flattish flowers very sweetly scented. The foliage is a dark, bluish green, and is not glossy. The best are the old white. The old Maiden's Blush, Madame Legras, Madame Audot, La Séduisante, and Diadème de Flore. The Damask Roses are very sweet, and no garden should be without them. Madame Zœtmans, Madame Hardy, and La Ville de Bruxelles are good kinds. The striped Roses are also good. The old York and Lancaster and the Village Maid are good kinds. The Cabbage and Moss Roses require good cultivation. The old Cabbage, the White Provence, the common Moss, several white Mosses, and one or two of darker shades are all useful. Soupert et Notting is the best of the autumnal flowering Moss Roses.

Florists' flowers are very beautiful, and should be used extensively in the decoration of small gardens. They are the product of high cultivation, and consequently many of them do not mix well with other plants, but they are grand in beds by themselves, and kinds the requirements of which are similar can be mixed with advantage. "A Wee Bit Lassie's" soil will suit most, if she keeps hotbeds and Cucumber frames going so as always to have a good stock of old rotted manure. Phloxes and early flowering Chrysanthemums do well together; both require propagating in early spring. Gladioli require taking up in November. Carnations and Pinks should have a well-drained place. English and Spanish Irises only require moving every few years. With regard to expense the best way is to settle what you would like. Get a priced catalogue from a first-class firm, which will be a good guide. Then work gradually to what you want. Roses are very cheap, considering the amount of ground they will fill; and annuals and biennials will fill up all blanks until the hardy plants are got together. Bulbs are a capital investment. Narcissi, Dahlias, Crown Imperials, Tulips, Lilies, and Anemones are all good stock.—J. D.

Lavender in town air.—We are glad to find from occasional advertisements in Gardening that this sweet-scented garden shrub is not forgotten. We commonly meet with it in old-fashioned country gardens, where it is often seen several feet in height. It is, too, a favourite with many cottagers. Our object, however, is to recommend it to the amateur whose garden is quite in town, where it may be grown, provided its simple requirements are satisfied. These are a moderately airy border, good soil, and a little root nourishment. Strong roots of the old English variety are to be had at most seasons, and this we grew for years in a partially shaded border facing south. It is also suited to a position in the full sun. In the situation described our plants put out in March have soon grown into good-sized bushes, and have borne a large number of their quaint-looking blooms. The plants should be strong—those with a woody main stem, with a compact bushy upper growth, being desirable. The soil should be deep and well dug, and receive a liberal addition of rich old stable manure—that in which Vegetable Marrows have been grown the previous season being the very thing. With this treatment we have had better Lavender in town air than we were able to grow in clay soil in a situation contiguous to miles of open country, where the plants made no growth, and therefore never bloomed the whole summer. This experience must, we think, prove that good soil rather than pure air is necessary to their well being. The town amateur, therefore, who would have a few neat clean bushes need not apprehend any chance of failure. Though not deciduous in many favoured rural spots, we have found that town air will sometimes blacken and kill the plants in winter, but the roots are so extremely cheap that this should hardly be considered a shortcoming, and a few plants might be put out annually at a trifling cost. It also succeeds well in 6-inch or 8-inch pots, shifting into the latter when well established in the first-named. The soil recommended should be used, and a little manure water given once a week during active growth. This will increase the size and number of the blooms. It is thus useful for balconies, and the leaves alone are desirable for cutting and placing in small vases with flowers. In open suburban situations it is quite hardy, and of easy propagation in summer, and is well worth a place both in town and villa gardens.—Stamford Hill.

Spiræa (Hoteia) japonica.—I notice that this plant has at last come to be known as hardy, pot plants of it being sent to Covent Garden in June and July. The plant is so popular that growing it both as a forced plant for spring and as a hardy plant for early summer must be an advantage to growers for market, as it gives them a double season for the sale of it. The note on Dielytra spectabilis on page 254, Gardening, July 18th, should have been headed "Spiræa japonica." The two plants require similar treatment in the open ground, and, thinking of them generally together, I sent my note under the wrong heading inadvertently —J. D.

NOTES ON A FEW PLANTS SUITABLE FOR THE WILD GARDEN.

Of the old double Pæony (Pæonia officinalis) I have three colours—pink, a bright rosy crimson, and the old dark maroon, and a white I think not quite so robust (I should like to know whether there are any other colours). They like a rich, deep loam, but will live and bloom in soil not quite so good. For effect they are best planted on a moist bank side quite above the eye. The flowers are heavy and sprawl about, and would be lost amongst the Grass. They are much better under the shade of trees, as the flowers fade in the full sun. If in a garden, they should have three or four sticks and a cord round to support them. The Oriental Poppy (Papaver orientale) and its var. bracteatum, flowers a brilliant scarlet and crimson, size of a dinner plate; would make glorious masses of colour. They are tap-rooted and rather difficult to transplant, but when once rooted are not easy to get quit of. Lyme Grass (Elymus glaucifolius) is a grand-looking Grass, quite tropical in appearance, and worthy of a prominent position. I believe it is naturally a marsh plant. At first it was planted on my rockery, but it ran about so that I was obliged to have taken up. I then had a large sanitary pipe sunk in the rock, in which it was planted, and here it has flourished for some years past without a drop of water, excepting what it gets from the clouds. Its beauty is, however, somewhat hidden by the encroachment of another fine plant, Solomon's Seal (Polygonatum multiflorum), a plant that will grow in the worst soil and situation possible, but worthy of the best; it is best planted on a level with the eye, and you then see the beautiful arching of the stems, and the lovely pendant white bells beneath. It seems to like stony, dry places. There is a pink Spiræa (S. venusta), I believe, a splendid plant when well grown (all Spiræas like moisture). It should have plenty of room to develop its beauties. As a contrast to this, but equally fine, is Lythrum roseum superbum; in any soil, but plenty of moisture, it will make a mass of rosy colour. The Day Lilies (Hemerocallis fulva and flava), easily grown; the foliage is rather coarse for a border, but then what lovely flowers! tawny yellow and yellow, the latter fragrant withal; and then, if you have a damp, or, better, wet spot in your garden, what so beautiful as the Marsh Marigold (Caltha palustris)? The single form is finer than the double. A few plants together glitter like gold in the sun. The small leaved Cotoneaster (C. microphylla) is one of the most useful shrubs I know. It makes a nice covering for a wall where more choice and tender things would not grow; but nowhere does it look more lovely than when rambling about amongst old logs, or hanging over a low wall. All the above are hardy and robust, and will hold their own when established, and will increase in beauty from year to year. H.

Adam's Needle in Hyde Park.—Perhaps the finest effect in Hyde Park at present is the bed of Yuccas in flower near Hyde Park Corner. It is a group of Yucca recurva on the Grass in a large bed by itself, and nothing could surpass the grace and fine form of the foliage and the stately beauty of the large branches of flowers. Developing good hardy plants of such value in that way is real gardening, and much better than the bedding-out and the hen-scratchy mode of cultivating hardy flowers generally followed in the same park.

The variegated Negundo.—This well-known foliage plant, that makes such a conspicuous object among sombre-foliaged evergreens, is most useful as a pot plant at this time of the year, as in plant decorations it has a striking effect. Plants lifted from nursery beds in autumn, potted, and plunged in tan or ashes, will be well-rooted in spring, and, if placed under the shelter of a glass roof just as they burst into leaf, to avoid injury from the cutting winds that usually prevail, they will make very handsome plants, most useful for making up groups, while for central plants in large flower-beds they have a good effect, in conjunction with Coleus and other foliage plants that come in for late summer bedding —J G. H.

The Siberian Larkspur.—With exceeding pleasure I read in the last number of Gardening the account of a great favourite of my early days, and one that for many years past I have feared I should never see or hear of again—the Siberian Larkspur—for in no catalogue or gardening dictionary have I been able to find it, and no one ever seems to have heard of it. So many Delphiniums come from Siberia that without its botanical name it cannot be identified. I never knew it but in one garden, of the "old-fashioned" type, plants growing in great perfection in large beds, cared for and loved for their individual merits, where the one rule observed was that large plants should be behind, small ones in front. The soil was deep and rich, and where the Siberian Larkspur grew there was but little afternoon sunshine. I do not remember that slugs attacked it, or that there was ever any attempt to divide or propagate it. If Mr. Knox will kindly say where a plant of it may be procured he will confer a very great favour on—C. B.

Bedding-out.—I imagine I am one of the unfortunates who would come under "J. D's." courteous designation of "ignorant," "silly," and "foolish," when I confess that bedding-out is still practised in my garden, together with herbaceous plants—and in this scorching weather which looks the best? Why, the bedding out! I have an herbaceous border in my back garden, and also one in the front garden. They are very pretty and very bright, but they require constant watering with the hose, and each individual plant does not last long in bloom this hot weather. Now, on the contrary, my bedding-out plants were put out in bloom on the first of May. They have bloomed continuously ever since. They are seldom watered, and yet they attract the eye of every passer-by. My house and front garden are exposed to the sun's rays from 12 o'clock until it sets, and the Grass was dried up and looked so bad that I made twelve little beds on each side of the path in the lawn; these are filled with Geraniums, Lobelias, Asters, Mignonette, and in one I have a purple Clematis covering the bed. The consequence is that my garden looks bright and gay, and everyone who passes stops and admires it. Were I without these beds my garden would look only green with burnt-up Grass. The Roses are over until the autumn blooms come, and in the meantime I have plenty of colour in the garden, and, though I have passed no examination, neither am I an artist, I defy anyone to find anything arranged in the garden which would do violence to his taste, be he the greatest artist living. To fill the little beds with herbaceous plants would be to stand over them with the watering-can all day. As for the public having abandoned bedding-out, one has only to go to Hampton Court or to one of the London parks to see it in every form, good, bad, and indifferent. I have not spent a penny in buying bedding-out stuff for several years, so the expense has been only the labour of having it put in. If "J. D." will adopt "Live and let live" for his motto it will be better for everyone, and let each follow his own individual taste; or, if he does copy his neighbours' gardens, he, maybe, bears in mind that "Imitation is the sincerest flattery."—C. F. Davis, *Leatherhead.*

Sowing Anemone seeds. — Perhaps some readers of Gardening have found a difficulty in separating the seeds of Anemones before sowing. A correspondent says, "rub them in dry sand." I failed to separate them in this way. If your readers will spread out the seed masses flat in a pan or plate, cover them with dry sand, pour enough water on to moisten the whole, then rub them together, the seed will be effectually separated. Sow sand and seed together in drills, and cover with more sand.—J. L.

Paris Daisies.—I see mention is made on page 243 of the large size which the Paris Daisy attains in the Isle of Wight. I think "F. H., Ventnor," may be interested to hear the size of my bushes in the north of Devon. I have several which measure over 7 feet across, and one or two reach 8 feet. They would thus be about 21 feet and 24 feet in circumference. They have been out in the same place for three years. My bushes are single plants, not clumps, and would, I expect, grow larger, but they are confined by other shrubs. They are covered with bloom.—J. T. T., *Bideford.*

REPLIES.

14063.—**Flowers for bees in spring.**—The different varieties of Crocuses planted in September are the earliest and best bee flowers. Wallflowers planted out now will succeed them; the seed should be sown early in June. Also plant Aubrietia purpurea and græca. They can be obtained by sowing the seed early in the spring, and afterwards increased by divisions. Limnanthes Douglasi, sown at once, will succeed the above.—A Gardener and Bee-keeper.

13873.—**Weeds on garden paths.**—The best and cheapest way of preventing growth of Grass and small weeds on garden walks is to salt them during dry weather in March and April. Any common kind of salt will do, and it may be sprinkled all over the surface except near the edges. If the walks are edged with Box there will be danger of killing the Box. If walks are turned over every spring, put into the best shape (slightly convex) for throwing off the water, there will not be much trouble with weeds. A boy or a woman, after a shower, will soon pull out any weeds which show, and the roller will make all firm again.—E. Hobday.

14078.—**Laying out garden.**—A neglected garden is not a bad investment if it has been thoroughly neglected, but the worst of most garden neglect is that the crops of weeds are regularly cut up and burned, and no manure is given to make up for the loss of vegetation and the food it contains. Peckham is a wide word. North of the Queen's Road the soil is a good alluvial loam in the old river bed; south of that, or, at least, as soon as the ground begins to rise, the soil is London clay. Digging two spits deep and liberal manuring will do good, but if the soil is clay, the bottom spit should only be turned over, not brought up to the surface. There is no necessity for immediate planting, as Roses would not do; but Day Lilies, Daffodils, the best of the German or bearded Irises, may be planted. For the rest trust to annuals and biennials. Sow now Sweet Williams, Canterbury Bells, Sweet Scabious, Sweet Sultan, and Stock-flowered Wallflowers. Other things can be sown in the spring. As the soil gets into a good state permanent planting can be carried out. With regard to fruit trees, as usually planted they are simply a nuisance. I presume they are orchard trees, which have no business to be planted in such a small plot. An illustration has been given in Gardening of a small garden in Paris, with fruit trees, which showed the only way in which they can be introduced into a small garden. They should be trained on walls or wire fences, or kept to small standards or pyramids.—J. D.

13995.—**Plants for vacant beds.**—A little forethought would have relieved "A. P." of his difficulty. Hardy plants cannot be used as bedders; where it is required to fill a bed with one sort of plant bedding plants are the only thing available. Hardy plants, and annuals and biennials, which are only a short while in bloom, have to be arranged in a totally different way. Antirrhinums there is no occasion to move, they are hardy plants, and will flower again later if not allowed to develop seed. Biennials, like Campanulas, should either be followed by young plants of some other biennial, or a trailing plant, such as a Verbena or Tropæolum, should have been planted to fill the vacant space when the plants were removed. The best way is to have large beds with broad edgings of evergreen plants. Then later flowering plants, such as late Lilies and Chrysanthemums, can be made to hide vacant spaces left by early flowering plants without these spaces being actually filled, and the whole bed can be kept gay almost throughout the year. This cannot be done with small beds and narrow borders, therefore these should not be introduced into gardens. Injudicious planting and bad cultivation have a good deal to do with a short blooming season. It will not do to plant biennials in spring, as is often done. Florists' shops in London are in April and May full of plants of Campanulas, Sweet Williams, and similar things, which should have been in their places early in the previous September. The consequence of planting these things is a miserable and short-lived bloom. As the *Standard* put it, "When Whitsuntide arrives paterfamilias takes off his coat and digs"—just eight months too late if good flowers are wanted. Another bad practice is that of forking and hoeing the soil while the plants are growing, on the pretence of making the surface look fresh. The surface of the soil should be covered with plants, then it is of no consequence how it looks.—J. D.

GARDENING ON CHALK SOILS.

(Answer to Queries 14112 and 14120.)

As I am at present engaged in laying out a garden on the chalk perhaps a few remarks may be useful both to "J. St." and "Diana." The soil on the chalk formation is thin but good, and of a fine texture, and of itself would grow almost anything. The peculiarities of a garden on the chalk are caused by the nature of the subsoil. Chalk drinks up water with avidity until it is completely saturated, when the water runs over it, as it would the most impervious rock. The effect of this peculiarity is that in ordinary seasons the roots of plants find moisture in the chalk, but in a scorching season like the present, following a dry winter, things get terribly parched. Success in a chalk garden depends greatly on the available water supply. If that is plentiful, so that things can be kept moist in scorching seasons, almost anything can be grown. Where there is likely to be a scarcity of water planting must be restricted. Much, however, may be done by preparing stations—holes cut out several feet deep and filled with suitable soil will not become undrained cisterns as they would in stiff clay. A plentiful supply of road parings and ditch cleanings should be got in if rich soil is not available. In the valleys or bottoms on the chalk the soil is usually deep, it is also fairly deep on many of the levels; it is on the slopes that the soil is thinnest. There should be no stint of manure, as chalk soil is hungry stuff, and manurial matters are quickly carried down into it, so that mulching is very useful for things requiring high cultivation; top-dressings are much more useful than on heavy soils. All products of vegetable decay should be preserved and rotted, not a withered leaf or an ounce of Grass mowings should be wasted. Of vegetables all do fairly well with plenty of water and manure. The dry soil suits winter things, such as Celery, Cauliflower, Winter Cabbage, and Broccoli. French Beans of all kinds do well. Peas, Radishes, and Lettuces are difficult in dry seasons, and Turnips the same. Carrots, Parsnips, Beets, and Potatoes are a great success. Of fruits I can say nothing, not having grown them on chalk. Roses require special preparation, and should be own root plants, struck from large cuttings. Turf is a difficulty in dry seasons. I have seen it recommended to leave the mowings laying on it in parching seasons; it cannot otherwise be kept fresh and green without plentiful waterings. With regard to flowers, the great and certain success on chalk soils is the garden from Christmas to Midsummer-day. After that date we must be content if we can keep up a respectable show of flowers. Before then we must take care the woods and lanes do not beat us. On the chalk a great deal should be made of cushion-forming and carpeting plants. Arabis albida variegata, Arabis lucida; all the Aubrietias, Perennial Phloxes, Alyssum saxatile compactum, Perennial Iberis, Sedums, Saxifrages, Sempervivums, Antennaria tomentosa, dwarf Achilleas, and creeping Veronicas, Primroses, Polyanthuses, Auriculas, all hardy Primulas, Campanulas of most kinds, Irises, except a few aquatic sorts, Anemones of almost all kinds, Columbines, Statices, Pentstemons, Delphiniums, Gladioli, and Œnotheras, Pinks, and Carnations, grow like weeds. Stocks are particularly suitable. Wallflowers and Antirrhinums grow better on the chalk than anywhere else. Almost all bulbs do well. Daffodils require moist soil, but Poet's Narcissus and Polyanthus Narcissus do well. All annuals do well, both hardy and tender. Phloxes, Dahlias, and Chrysanthemums are a great success if well supplied with manure and water. Christmas Roses are simply splendid when established. Of climbers, trust to the Clematis family and the Everlasting Peas more than to anything else. Most flowering shrubs do well. The Mock Oranges, Weigelas, and Deutzias are particularly good. Autumn-sown annuals and biennials are very useful.

Sow now Sweet Williams, French Poppies, Canterbury Bells, Iceland Poppies, Foxgloves of improved kinds, Double German Scabious, Wallflowers, Biennial Stocks, Sweet Sultan, Lychnis Haageana, Œnothera Lamarckiana, Verbascum Chaixii, and as many Pansies as you can find room for.—J. D.

FRUIT.

INSECTS ON GOOSEBERRY BUSHES.

As some of your correspondents do not seem to understand the life history of the caterpillars and grubs which attack the foliage of Gooseberry bushes, perhaps the following account of these insects, and the best means of destroying them, may prove interesting to the readers of Gardening. There are two kinds of insects which destroy the Gooseberry leaves in the same manner, but many persons do not realise this, or, if they do, unfortunately omit to state in their communications which they allude to. One is the caterpillar of the Magpie, or Gooseberry moth (Abraxas grossulariata), the other the grub of the Gooseberry sawfly (Nematus Ribesii). They somewhat resemble one another in general form, and in being of a pale colour with black spots, but they are so unlike in many respects that no one who is aware of their differences can possibly take them for the same insects. The following descriptions will, I hope, enable the readers of Gardening to determine which insect it is that is attacking their bushes. It is important that they should, as in some points the treatment of the attack is different. The Magpie, or Gooseberry moth, lays her eggs in July or August on the undersides of the leaves, from which the caterpillars are hatched in due course. They at once begin to feed on the leaves, but are too small to do much injury. When the leaves are nearly ready to fall they join the edges of the leaf they are feeding on together with threads, and in this shelter pass the winter. These leaves either fall with the others, or, as is sometimes the case, remain attached to the branches by a few threads. When the weather becomes warmer in the spring, and the young leaves are beginning to appear, the caterpillars leave their winter quarters, and attack the leaves. They attain their full growth in May or June, and towards the end of that month each spins a thin, transparent cocoon on the stems, leaves, or on any palings or posts that may be near, within which they become chrysalides. From these the moths emerge in about three weeks' time. The caterpillars are more than an inch long when full grown, and are of a pale brownish-yellow colour, with a black head. Each joint of the body has a large black spot on the back, below which, on either side, are two small black spots, side by side. Then there is a longitudinal orange stripe, beneath which again is a double black spot. The first three, the ninth, and the last alone bear legs. To destroy this insect, all the dead leaves should be collected and burnt as soon as they have fallen, and particular care should be taken to pick off and destroy any which are still hanging on the trees. If this were carefully done there would be few, if any, caterpillars the next year. A ring of gas-lime, or ashes soaked in tar, laid round the stems about 3 inches from them, will prevent the caterpillars ascending the bushes. Dusting the bushes with various powders after the leaves are attacked has been found a very efficacious remedy; the operation should be performed in fine weather, or the powder will soon be washed off; but unless the leaves are wet with dew, or have been wetted artificially, the powder will not stick to the leaves. Powdered white hellebore is much recommended, but I do not think it should ever be used when there is any fruit on the bushes, as it is very poisonous, and it is difficult to make sure that the fruit, when eaten, has none adhering to it. Flowers of sulphur, quicklime, or soot are perfectly harmless, and very effective. Various mixtures may be applied with a syringe or watering pot with a fine rose, with much success. Boil Elder leaves in just enough water to cover them, and use the liquid when cold. A solution of alum and water, bi-sulphide of potassium (quarter of an ounce to one gallon of water), are all much recommended; also soap-suds and Tobacco-water—this last, I should fear, might give the fruit an unpleasant flavour, unless it was afterwards very carefully washed. But the best way of all of ridding the bushes of these caterpillars is by hand-picking after shaking as many off as will fall and killing them with the back of a spade. The moths may be caught in a butterfly net.

The Gooseberry sawfly is a small insect with four transparent wings rather more than a quarter of an inch in length, and hardly measuring three-quarters of an inch across the wings; it deposits its eggs in the spring on the underside of the leaves, fastening them into small slits which it makes with its saw-like ovapositor. The grubs are hatched in about a fortnight, and at once begin their work of destruction; in about three weeks they are full-grown and fall to the ground, into which they work their way to the depth of an inch or perhaps two, and enclose themselves in a thin papery cocoon and become chrysalides, from which the saw-flies of the second brood emerge in about three weeks, and the above-mentioned transformations are again gone through, but the chrysalides remain during the winter, the saw-flies not coming out until the following spring. The grubs when full-grown are about three-quarters of an inch long. They have black heads, and their bodies are of a pale greenish grey colour, and the back and sides of each joint are covered with small raised black spots, from each of which grow fine hairs. Every joint of the body except the fourth and eleventh is furnished with a pair of legs. From this description it will be seen that the sawfly grub is smaller, has many more legs, and is spotted in a very different manner from the moth caterpillar. The cocoons are oval, blackish, and of a papery consistency, and may sometimes be found in large numbers fastened together. A very effectual way of destroying this insect is by removing the earth under the bushes to a depth of 2 inches at least, and burying it 6 inches or more below the surface. The receipts for dusting and syringing the bushes already given are equally useful when applied for the destruction of this insect, and hand-picking will be found no less efficacious as a means of getting rid of the grubs than it is in the case of the caterpillars. G. S. S.

—— I can quite confirm "R. W. R.'s" (page 242) conclusions of the experiments with the sawflies, having conducted them in the same manner myself; but there is another species quite distinct (which I described in No. 107), which infests the Gooseberry equally as much as the Currant bushes, although it is called the "Magpie," or Currant moth. Enclosed is a moth, chrysalis, and caterpillar which I have taken off Gooseberry bushes this morning, and which, you will observe, retain the same bright black and yellow colours in all three stages. The eggs were deposited last autumn, hatched, and exist on the branches in the most sheltered parts, even through the severe winter of 1880-1, when I found some of them about a quarter of an inch long on the back of the branches near the wall when I pruned about a week after the frost broke up, as I stated in a letter at that time. The moth flies only in the evening, unless disturbed, and the caterpillars when shaken from the bushes hang suspended by a silken thread, by which they will soon ascend again. That is not so with the larvæ of the sawfly.—L. A. G.

The Gooseberry or Magpie Moth (Abraxas grossulariata)

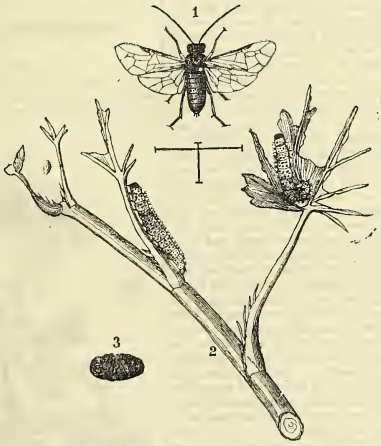


Fig. 1.—The Gooseberry Sawfly (magnified). Fig. 2.—The grub (natural size). Fig. 3.—The cocoon (natural size).

Preserving fruits in winter.—The following method of keeping Peaches, Apricots, and Pears is practised in France:—The fruits are gathered before they are quite ripe, and wrapped up separately in pieces of well-sized tissue paper. They are then placed in tin boxes, which are divided into compartments, one for each fruit. The lid is kept closed by lapping a piece of wire round the box, and the air is excluded by melting bottle-wax round the edge. The boxes are then laid in a large wooden chest, raised about 6 inches from the ground on four feet. The bottom of the chest contains a layer of powdered charcoal a foot deep, on which rests a wooden frame-work of pigeon-holes, each

about 4 inches larger in diameter than the tin boxes, the frame-work itself having a space of 10 inches between it and the sides of the chest, which is filled up with powdered charcoal. The tin boxes containing the fruit having been deposited in the pigeon-holes, the whole is covered with powdered charcoal to the depth of a foot. There is thus at all points a layer of charcoal 10 inches or 12 inches thick between the tin boxes and the external air. The chest is closed with a well-fitting lid and placed in a cellar with a constant temperature of from 35 degs. to 45 degs. Fahr. By this means Peaches and Apricots have been kept perfectly fresh up to the 1st of January, and Doyenné and Beurré Pears up to the beginning of March. The only precautions necessary to be observed are that the fruit should be gathered before they are quite ripe, they should be carefully wrapped up, without rubbing them, in dry and well-sized tissue-paper, that the tin boxes should be wiped perfectly dry, and that the fruit should be placed in them within twenty-four hours after gathering. The only expense is in the first outlay, as the charcoal can be dried and used again the following season.

ORCHARD MANAGEMENT.

The writer of the article quoted on page 280 bewails the condition of our orchards. He says their treatment is bad; nothing could well be worse. Now, from some considerable experience, I feel constrained to say that not one in a hundred practical fruit growers would think of adopting any of the remedies which he proposes. His main reliance as regards improvement consists in frequently clipping the Grass with a lawn-mower, and leaving it to fertilise the soil. As to removing the early crop of Grass for hay in June, whether it is done with the June Grass (Poa pratensis) or any other Grass matters not. Every grower of experience is agreed that one cannot grow hay crops and good fruit together, for hay is more exhaustive to the soil than growing vegetables or even cereals between the trees, as you must of necessity manure for these crops, and the trees get their share of it; in fact, until the trees get well established, cultivating and light cropping is probably the best course to pursue, but as soon as the trees are ten or twelve years old there can be no question that it is best to lay the soil down in permanent pasture, and keep the Grass fed off closely by sheep or calves. Never introduce a scythe or mowing-machine into the orchard if you wish for fruit, but make the orchard the winter as well as summer quarters of farm stock and poultry. Such a course will help the fruit crop, for, as the writer says, it is a question of manuring and under-draining, and, I would remark, very much more a question of the former than the latter; for, except where stagnant water prevails, under-draining does more harm than good. Forty feet apart is mentioned as the minimum distance for orchard trees. Well, they will fill that space in time, but it is wasteful to plant them so wide. Better far plant at 20 feet apart, and when the trees require the space take out every other one; but that necessity need never arise, for by planting large strong-growing kinds in alternate rows with those of less robust growth, both will get plenty of space and do better than if set out at such extreme distances apart. There cannot be a doubt that young trees help one another in the matter of shelter, and therefore it is quite possible to plant too widely apart. That there is plenty of room for improvement in our orchard management I readily admit, but I fear the writer of the article in question has not seen the best examples. J. G. H.

Birds and the fruit.—I do not know how the owners of gardens in other districts may have suffered from the depredations of the birds on their fruit, but from the district where I write the outcry against the birds is very bitter, and certainly not without good reason, for they have devoured fruit of all kinds before it was half ripe, and even with nets it has been a difficult job to keep it, for they have crept through every little hole. It is certainly very hard upon cottagers to lose their fruit in this way, and yet they are powerless in preventing it, as the law does not allow anyone to kill the birds in the close season. In many villages I am sure that £50 would not pay for the fruit they have eaten this season in cottage gardens alone, yet no doubt landlords and law makers will expect their rents.—J. C. C.

REPLIES.

13891.—**Insects on young Strawberry plants.**—There are upwards of 500 species of beetles indigenous to this country, and all of them live upon vegetable substances either living or dead. Lime or soot will not kill them, though it may make their food distasteful, dusted on the plants when damp with the morning dew, and so cause the insects to shift their quarters. They dislike gas tar, and a narrow strip of canvas painted with tar stretched round the bed will probably keep them off. Frequent hoeing among the plants will be beneficial.—E. Hobday.

13896.—**Insects on Gooseberries.**—Will readers of Gardening kindly take note of this question. The author of "The Gardener's Assistant," who gives a very complete list of insect pests, does not mention a maggot that bores into the Gooseberry. I have referred to all the principal authorities, and only find it in "Loudon's Encyclopædia of Gardening," but he does not give its name or say how it can be destroyed. I have never seen it, but would suggest gathering all the berries that drop off, picking off all the fruit that has been bored, and burning it. This would destroy the pest before it arrived at the chrysalis state.—J. D. E.

THE KITCHEN GARDEN.

ANGELICA.

This plant (Archangelica officinalis) is but seldom found in its wild state in Britain, although it has been seen growing most luxuriantly in several places in Devon; and, about Exmouth, it grows on the high banks, under the cliffs, high up on the shelves and crevices, and on the top of the cliffs, most luxuriantly. Owing to its winter and very early season's growth, with its clean, shining foliage of such a beautiful green, and its very early flowering, it really makes a most handsome and interesting plant for the wild garden, nooks of shrubberies, and wood-side walks. In warm districts it commences its growth in autumn, grows on the whole of the winter while the weather keeps open, commences starting its flower-stalks in February, and is in full blossom early in March. It grows from 3 feet to 4 feet 6 inches high, and is really a very interesting sight, with its fine foliage, luxuriant stalks, and large heads of bloom, as seen in the Primrose-blooming season, and before even the wild Parsley is in bloom. It is more used in confectionery than otherwise; yet many like to have a bed of it for the sake of its appearance, and it grows very well on almost every kind of garden soil, but best in those that are moist and deep. It is readily propagated from seed, which should be sown thinly in early autumn (August or September), or in spring; and, as it is a very strong grower, each individual plant should have plenty of room to grow—3 feet apart will not be too much. It should not be allowed to go to seed, unless in the uncommon case of seed being required. It is stated to be a biennial in the gardening books; but we have found it endure from year to year like any common perennial. It would be more likely to exhaust itself if allowed to flower. The stems, if required for candying, should be cut down in May. In the north of Europe it is used as a vegetable condiment, but in this country chiefly for confectionery. W. S.

Angelica (Archangelica officinalis).

REPLIES.

13894.—**Erecting Mushroom house.**—The Mushroom beds will do very well on the ground if the site is well drained. If the situation is a dry one, I think I should excavate a couple of feet or so, and build substantial walls with the earth, as Mushrooms like an equable temperature. The walls might be lined inside with boarding, and the roof might be shingle also; and if Ivy be planted and trained over it a house will be constructed that will not require much heating. In that case a couple of paraffin stoves will give sufficient heat, and if several beds are kept going at one time the heat from the fermenting manure will almost suffice.—E. Hobday.

13890.—**How to force Rhubarb.**—If the crowns of the Rhubarb plants are strong place the roots in the frame about the first week in December, or any time from that onwards. They may stand close together, but all the interstices between should be filled up with light rich soil firmly rammed in. Keep it well supplied with moisture, and cover the frame with mats, to economise the heat. Rhubarb forces best in the dark.—E. Hobday.

14072.—**Keeping Peas true.**—Having hybridised Peas largely by hand I feel competent to reply to this question. What "R. G. P." fears is evidently the contamination of his stock by bees and other insects. It is doubtful whether the setting of the Pea flower is ever done by this means, for the impregnation is accomplished while the bud is completely inaccessible and before the flower opens. The Pea, however, is naturally inclined to sport, and no variety can be considered permanent until it has remained so for several years. If any one will examine a row of Peas he will always find one rogue among them; and during the first year of a new hybrid will find many. It would be well, of course, to keep varieties intended for seed apart, but the Peas will come as true if not apart.—W. H. O.

13882.—**Caterpillars on Cabbages.**—Hand-picking and dusting the plants with newly-slaked lime are the only known means by which they can be destroyed. The butterflies may also be destroyed in the winged state.—J. D. E.

13879.—**Procuring Locust Beans.**—I should think Locust Beans might be heard of at some of the seed shops in the neighbourhood of Covent Garden—say Messrs. Barr's, King Street, for instance.—E. Hobday.

Iron garden stake.—I send you a galvanized iron garden stake, which I think most suitable for amateurs. I happen to have a lot of old wire fencing, which I took to the blacksmith's shop, got twisted, as you see, and welded at the bottom. I use scores for marking where bulbs are planted, and for supporting anything not very high. Its simplicity and durability are not the least of its properties.—North Lincoln. *** *The stake is simply a piece of iron twisted, joined at the bottom and looped at the top. We should be glad if "North Lincoln" would say in what respects it differs from any common stakes. People would, we fancy, find it expensive to make such a thing, and Bamboo shoots, Willow stakes, and various other things are handier. It is durable certainly, and very heavy, but does not appear to us to have any particular advantage over any common stake. As regards stakes generally, we trust all lovers of hardy flowers will do what they can to avoid their use, and let them be seen as little as possible. The loop in the head of this would make it rather visible unless it were kept much below the level of the foliage.*—Ed.

CATS v. GARDENS.

It strikes me that some of the readers of Gardening are giving way to an amount of irritability hardly warranted by the troubles they complain of. I will not enumerate the varied epithets that have lately appeared in your paper, as applicable to cats; but to-day, as I again read of them under the title of "wretched, useless abominations," I thought it was time to say a word in poor pussy's favour. I fully admit the existing fact of a plague of cats in the suburbs of London. No one has suffered more from their depredations than myself, and not knowing how to stem the torrent, I flew to my oracle (Gardening Illustrated), and, as usual, found a simple and effectual remedy. By its direction I split up sticks of firewood into thinner pieces, thrust pins through one end of them so that the points stood nearly upright, and, sharpening the other end, stuck these in and about any part or plant which seemed to be a favourite haunt of these domestic blessings. Since that time the trouble has entirely and completely ceased, so that every winter I begin by degrees, during the long evenings, to make a fresh supply for the spring and summer. The advantage of this method also is that after a week or so these defences cease to be visible, for the wood, which should not be more than an inch above the ground, turns so nearly the colour of the earth that its presence is quite hidden, and pussy once pricked seems to shun the neighbourhood altogether. Your complainers, therefore, have the remedy in their own hands. Now for a word in favour of this much-abused blessing in disguise. Mice infested my kitchen and larder. We tried traps, and I caught six in two days, only to have their places filled in double quantity a week or two after. I then tried poison, and ten were killed one morning, in various stages of horrible torture, as they crawled from their holes. In less than a month after the swarm was as large as ever. "A cat! a cat! My kitchen for a cat!" She came, took possession of the situation, and in a short time not a mouse was to be found, and we have not had one since the cat has had the run of the premises, which is now three years ago. My fowl run was visited by rats, who walked off with nearly all my eggs. A splendid tom-cat, belonging to my neighbour, caught two; we shot a third, and the rest, if there were any, also disappeared. I therefore repeat that the term "domestic blessing" can much more appropriately be given to these poor creatures than the names they have been called by some of your readers.—S. L. S.

—— Those who trap their neighbours' cats or destroy them can be prosecuted for the value of the animals, which in some cases may be considerable. I never had any seed-beds scratched up by cats or any damage done by them. Those who are fond of gardening, and reside in neighbourhoods where everybody keeps cats, should do as their neighbours do. Cats while kittens are easily trained, and very intelligent and docile, and if kindly treated will not do anything they are made to understand is objectionable, except, perhaps, steal fish. Cats have a perfect knowledge of their masters' premises, and know just where they end and where they begin, and the garden or grounds of any person who keeps no cat is the common meeting-place of all the cats within walking distance. That is the real cause of the trouble with cats in gardens. Keep a good strong, healthy tom-cat on the premises, and train him from infancy to keep to the walks in a garden, and all your plants and seeds will be safe.—J. D.

—— I have subscribed to your paper for five or six years, and am under many obligations to it, but I strongly object to the barbarous suggestions as to the destruction of cats, birds, &c., which are now permitted to appear in your columns, and which, besides being direct incitements to the commission of illegal and unlawful acts, are grossly selfish, cruel, and wrong. Sometimes it is a method of wholesale bird-poisoning, which in one case at least you inserted with a warning. Again, a mode of trapping cats is allowed to be advocated, with details and observations of a revolting and cold-blooded kind. It makes the paper very unpleasant reading to those who, like myself, are willing to "give and take" in gardening, and who, in pursuit of their own hobby, are not disposed to demand the extermination of the hobby of their neighbour. Besides, your correspondents are not altogether consistent in their complaints. One complains of sparrows and cats, another defends the sparrows, and accuses the cats of driving them away, and so occasioning his being eaten out by insects; and none take any account of the useful service rendered by cats in keeping down mice, rats, moles, &c., of which, in my own case, at least, I have frequent evidence. But, apart from such considerations, remains the fact that one person has as much right to keep a cat as another has to keep a garden, and the fact also remains that the domestic cat is an absolute necessity in a large number of houses, and in its way accomplishes a work which is a benefit to mankind at large. Therefore I hope you will have some regard for the sensibilities of those of your readers who wish to conduct their gardening on principles of mutual toleration and forbearance. And if any of your readers lose their cats, and especially anyone at Bromley, I trust they will endeavour to identify "Amateur" and others who have supplied their initials, and if they cannot get sufficient evidence to teach those persons the law upon the point, they can, at any rate, accord them that proverbial "cold shoulder" which those people are fairly entitled to. And above all, I hope, Mr. Editor, you will see your way to close your columns to incitements to brutality and law-breaking which must, I am sure, be shocking to a large number of your readers, and which, in my humble opinion, distinctly tend to lower the tone of your valuable paper.—Vigornia, *Worcester.*

*** We have slightly toned down the remarks of "Vigornia," who is not, we think, quite fair to previous writers on the subject. We fear he has never experienced the troubles of the London suburban gardener. He says that "one person has as much right to keep a cat as another has to keep a garden." The just complaint of the London gardener is that those individuals who keep cats *make it impossible for him to keep a garden*, and he has a perfect right, as "Vigornia" admits, to resent interference with his own hobby. The views that our readers express are their own, and we are willing that all sides should be heard. There is a tendency to permit the needless multiplication of animals which people have in their houses and so, naturally, become fond of. Take the case of dogs for instance. Before the dog tax was imposed it was impossible to move along the roads in many places with any kind of comfort, and there are whole states in America in which sheep-keeping is impossible owing to the ravages of brutal dogs. We have known as many as 49 sheep to be killed by two young dogs in one night in England. The howling of a neighbour's dog is often distressing to sick and sensitive persons, and so again is the Pandemonium-like concert of cats in London squares, cock-crowing, &c. People sometimes keep pets to such an extent that they become a perfect nuisance to their neighbours, and lately the law officers in London closed by force a house which had, owing to the number of animals kept in it, been a nuisance to the whole neighbourhood for many weeks. On the other hand, the gardener does not interfere with other people and often improves their houses and views, so that "Vigornia's" comparison is not just. As regards the other matters touched upon, the vermin question is now very much simplified by the use of concrete below and in the bottoms of the walls.—Ed.

—— Living in a cat-infested neighbourhood, I think my experience may be of some use to your readers, as the trap I describe may be made very cheap, is effective, noiseless, and may be made by anyone. Obtain a box 54 inches long, 14 wide, 14 deep; take out one end, and nail some pieces across the top about 2 inches wide; put them close enough to prevent the cats getting their paws to the bait; next nail two smooth pieces to each side to form a groove for the door or slide, rather longer than the box is deep; fit in a strong piece of board to work up and down, nail a cross-piece on to form a catch, then get a lath about 44 inches long, and fit it in a piece 2 by 2, 7 inches long, so that it will work nearly on the balance, being rather the heaviest on the side next the door. Nail the upright piece on the top to one of the cross-pieces, then get a strong piece of wire to form the hook, and fix to set on the same principle as a mouse-trap. Bait with rabbit's garbage or a fresh or red herring. When caught immerse the cat in a tub of water for a few seconds, and a spade soon settles the job. We caught 13 the first week, and have since cleared them out at the rate of three and four in a night. Any further particulars I shall be happy to furnish.—A. P.

—— I fear very much that if we were to entirely rid ourselves of the "plague of cats" we should be visited by a plague of a much more serious nature, and one which we should have a much greater difficulty in eradicating. I mean a plague of mice. Mice are very destructive in flour mills, granaries, and provision stores; also in gardens and the open cultivated fields. They, when let alone, multiply at a fearful rate. They cannot be kept down by trapping, for after a few are caught the rest get too wary to be entrapped, and they often get too wise to eat poison, especially in provision stores. If we look at the question in its moral aspects we cannot but come to the conclusion that to clandestinely poison, or entrap and destroy a neighbour's cat, is an un-English, as well as a dishonest act. It creates suspicion and ill-feeling among neighbours, and the worst of it is that the suspicion rarely falls on the right person. Cats have a prescriptive licence to roam at large, and it is a right possessed by all without invidious distinction (!). I have lived both in town and in country. Twenty years of my time was spent in towns, and I have always had a flower garden, but all the loss and annoyance I have suffered in my whole life put together, I feel sure, would not in any way counterbalance the pain that is often caused in a single household by the sudden disappearance of the feline favourite. I could always make them keep the road by inserting among the flowers strips of deal with pins inserted in one end of each. I cut the pin off under the head and forced it into the wood with a pair of cutting pliers. It must be admitted that where a householder sees that cats are become a pest it would be decidedly wrong for him to keep more than one. He should also (in such a case) keep his cat indoors at night, when its service is required to catch the mice, and when his neighbours are asleep and cannot defend their property.—L. C. K.

—— I have noticed with much regret the many communications which have lately been made to you on the subject of cats; these communications involve ignorance of the law, ignorance of the utility of cats, and a want of right feeling. The law does not permit the destruction or injury of your neighbours' cats. A lady, the wife of a late M.P., with very large garden and grounds, was not long since fined by the magistrates in the city from which I now write for setting traps by which her neighbours' cats were maimed and injured. The law on this matter is clear; I would suggest to your correspondents to beware. On the subject of cat utility I can speak from long and ample experience. My garden is a large one, abounding with all the best sorts of plants. The seeing to their proper cultivation and growth gives me the greatest pleasure. In this work I am assisted by my two garden cats, which I have kept for many years, and without whose assistance my bulbs would be destroyed by field mice. The quantity of mice these cats destroy is remarkable, and they appear quite aware that they are doing their duty, for they nearly always bring them to the window of my private room for me to see. They also perform another very important office by checking the growth of too great a quantity of birds, for I never allow a bird to be shot; the birds they eat, and sometimes the mice. I am quite sure the injury done by cats is most trifling, if any—not such as to justify the language used about them by your correspondents or the illegality of trapping them.—X. Y.

CEDARS OF LEBANON AT HOME.

THE CEDAR OF LEBANON AT HOME.

APART from the unequalled effect which this Cedar has in a wide range of landscape, there is no place possessing grounds of even moderate extent that is not improved by its presence, and its beauty was admirably shown in the engraving in GARDENING, May 2nd. It is preferable to almost all the newer kinds of evergreen trees, not only because of the distinct horizontal lines of its plume-like branches, but also because of its hardy, vigorous constitution, which enables it to keep on thriving in any fair description of soil until the full size has been reached. The only objection that can be raised against it is that when its limbs get old and straggle far out from the trunk, they are liable to break down when laden with snow, and in this way some of the finest of the old examples of this tree have been sadly disfigured. The breakage usually occurs in branches which grow upward for a time after they issue from the trunk, and then take the usual horizontal position, and this character of growth could probably be corrected when the trees are young. In planting either this Cedar or the Mount Atlas variety near a dwelling, it is important never to place them too near. If planters made more general us e of these Cedars and discarded for their sake som e more recent introductions that are not nearly so valuable, gardens and pleasure grounds during the coming generations would be furnished with trees of much higher decorative merit. The illustration gives some idea of the appearance of the Cedars of Lebanon in their native habitat. T. H. B.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

14161.—**Manure water for greenhouse plants.**—Will someone kindly say what is the best manure water for greenhouse plants? Is diluted ammonia of any use?—A. P. C.

14162.—**Rosa sulphurea.**—I see that on page 272 "J. D." speaks of Rosa sulphurea as an aquatic. Will he kindly give some hints as to its culture, and tell me where I would be likely to get a plant, as I have long wished to grow this Rose?—H., *Durham.*

14163.—**Maiden-hair Fern.**—Will some experienced gardener kindly tell me how Adiantum cuneatum, such as one sees at shows (sometimes nearly 30 inches across), are reared? I should be glad of any information respecting the shifts of the plants, and how they may be grown from seed.—GREENHOUSE.

14164.—**Cost of asphalt lawn tennis court.**—Can any reader give me an idea as to what the cost of laying down an asphalt lawn tennis court will be?—CELER ET AUDAX.

14165.—**Flies.**—Can any of your readers tell me how to keep off these pests, which are very troublesome to an invalid? I have not found Golden Lilies or Castor Oil plants of any service.—AN INVALID.

14166.—**Gardening mottoes.**—Would any readers favour me with an address where I could get a book of mottoes, &c., suitable for country flower show decorations, or would they give me a short one or two of the kind?—F. W.

14167.—**Obtaining Yellow Foxglove.**—Will any reader tell me where I can procure plants of a yellow Foxglove which will flower next year?—E. F. DE S. **** *You will probably have to raise this plant from seed.*—ED.

14168.—**How to exhibit cut Chrysanthemums.**—Will any reader tell me the size and dimensions of the "cups" used for exhibiting cut Chrysanthemum blooms in, or give me any information as to the manner in which they should be shown?—F. E. P.

14169.—**Repairing indiarubber garden hose.**—Will anyone kindly tell me how to repair this? It is leaking through several cracks.—DRIED UP.

14170.—**Heating greenhouse.**—Will any practical man inform me whether it is necessary, in heating a span-roof greenhouse, 34 feet by 10 feet, to have the pipes all round, or could it be successfully heated from one side only? How much 4-inch piping would he required? I should use either a "Horseshoe" or "Loughborough" boiler.—AMATEUR.

14171.—**Plants for London conservatory.**—I should feel much obliged if anyone would kindly name a few flowering plants and evergreen Ferns that would look bright in a conservatory, 10 feet by 6 feet, from October on through the winter. It is heated during cold weather.—ST. JOHN'S WOOD.

14172.—**Ivy on clay soil.**—I should like to be told what kind of Ivy does best on clay soil; also, what is the best time for cutting Ivy?—J. J. **** *Irish Ivy certainly does very well on clay soils, and we have no doubt that other green kinds would also flourish. Spring is our favourite time for cutting back Ivy and trimming it.*—ED.

14173.—**Mildewed Strawberries.**—I should be glad if any grower of Strawberries could tell me how to prevent or get rid of mildew on mine. Outside the leaves shrivel up, and the fruit does not come to perfection. They are planted close to a gravel walk in good soil, and have had some manure water and some clear water.—W. W. S.

14174.—**Failure of Vegetable Marrows.**—I am at a loss to know where I have failed in growing Vegetable Marrows. I have some half-dozen most luxuriant plants, but no fruit are to be seen; there is any quantity of male flowers. I have pinched them occasionally, but have no sign of fruit. I have grown them in common garden soil, with a liberal quantity of manure. Will any grower tell me what I am to do to make them fruitful?—R. F.

14175.—**A Strawberry question.**—I have a quantity of James Veitch Strawberries which have not fruited this year at all. Owing to the ground being occupied, I planted runners on April 1st this year. I did not expect a crop, but I am told they will do no good next year; they are now fine plants and making a number of runners. Will any grower tell me whether the runners of these non-fruiting plants will bear fruit next year?—LEEDS.

14176.—**Weeping Tree.**—"W. H. J., Swansea," would be obliged by the Editor kindly telling him what sort of Weeping Tree would be best for a garden visited by occasional south-westerly gales, a wall about 7 feet high affording some protection. A quick grower preferred, as shade is wanted. Would Mountain Ash he suitable? **** *The Weeping Ash or Weeping Willow would suit you, but the latter should not be planted unless the situation is moist enough.*—ED.

14177.—**Fruit for north wall.**—What fruit other than Morella Cherries would grow on a wall facing north? Soil, clay.—J. J., *Southall, Middlesex.* **** *Apart from the question of what fruits will grow—which some of our readers will no doubt answer—we may say, generally, that a fruit grower of our acquaintance finds it wise to plant on north walls kinds of Plums and Cherries which he also has on warmer aspects. He thus gets a succession, and sometimes, he says, fruit of a much better flavour.*—ED.

14178.—**Heating greenhouse.**—Will any GARDENING friend tell me his experience with a stove and piping for heating his greenhouse? Mine is warmed by a flue, but I find it troubles me sometimes, generally when it is urgently wanted. A little iron stove for coal and a piece of piping to traverse the whole length of the greenhouse would be more convenient, and would warm sufficiently, but I am afraid injuriously, if not carefully managed. I shall be glad to have the opinion of some practical gardener on this matter.—AMATEUR.

14179.—**Flowers for south window.**—I have a large bay window, south aspect, partially shaded by a tree in front, in which I am desirous to grow a few flowers. I possess a large wirework stand which just fills up the recess, and I should like to be advised what flowers would grow best in such an indoor situation. Also, whether it would be best to have a zinc tray or wooden box made to fit the stand in which to grow the flowers, or to employ only ordinary flower pots? This latter course seems somewhat unsightly. The flowers will have to be of an inexpensive kind.—A. T., *Clapton.*

14180.—**Heating greenhouse and shop.**—I have received some excellent advice through the columns of GARDENING, and should be glad now if any practical reader would tell me what length and bore of piping would be required to heat shop 23 feet by 16 feet by 11 feet, and lean-to greenhouse 13 feet by 9 feet and 9 feet high at the highest point. I purpose using a saddle boiler to he placed in the cellar under the shop. The shop would only have to be heated during winter, and the greenhouse would be used for forcing Tomatoes or Cucumbers and growing Maréchal Niel Roses in. Also, what size of boiler would be required?—T. C.

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14181.—**Gladiolus segetum and G. communis** (*Mrs. R.*).—They are distinct, but very much alike.

14182.—**Propagating double Sweet Williams** (*W. H. J.*).—Propagate them by division and cuttings taken now.

14183.—**Book on Tomato culture.**—Mr. Iggulden has written a hook that will probably suit you. You can get it through a bookseller.

14184.—**Seedling Pansies** (*Llwynypia*).—This is not the season to judge of the quality of Pansies. Those you send do not seem to be better than most others.

14185.—**Flies on Vegetable Marrow plants** (*A Beginner*).—Put a handlight over the plants and fumigate with Tobacco. This treatment will kill the flies.

14186.—**Deformed Rose buds** (*Mrs. R.*).—A rich soil has probably something to do with such deformity, to which some varieties of Roses are more prone than others.

14187.—**Liquid manure** (*Canonbury*).—The liquid manure we best like to use is made from sheep's droppings; but there are many artificial manures which are said to be good.

14188.—**Seedling Pelargoniums** (*Northumberland*).—Communicate with Messrs. Cannell, Florists, Swanley.

14189.—**Paper for pressing flowers** (*T. K. L.*).—There is a very absorbent paper specially prepared for this purpose. Any stationer could, no doubt, supply you with it or get it for you.

14190.—**Culture of Stephanotis** (*C.*).—You will find an article on the culture of Stephanotis on page 96, April 25th. Mr. Baines' book treats of greenhouse and stove plants generally.

14191.—**Building greenhouse** (*W. Kent*).—By far your best plan would be to consult a good horticultural builder, who could give you sound advice, and tell you the probable cost of what you want.

14192.—**Gardening books of reference** (*North Lincoln*).—The best thing you can do is to get Mr. Baines' recently published work for the greenhouse and stove plants and "The English Flower Garden" for the open air flowers.

14193.—**Leaves scorched** (*Anxious*).—The leaves you send appear to have been scorched while the plants were wet during the late intense heat. You should be careful to ventilate the house well during hot weather and when the plants are wet.

14194.—**Geraniums becoming double** (*A Puzzled One*).—This is the way in which doubles are usually obtained, and they are termed "sports" from single varieties. Your plant may revert to the single form, hut probably it will not.

14195.—**Gloxinias after flowering** (*A. H. S. V.*).—They should be grown well and kept clean in a warm temperature till they go to rest, and kept moderately dry during the winter. They will come into fine leaf and vigour in the coming year.

14196.—**Geranium Volonte nationale var. alba** (*W. W. Fleming*).—The writer of the article informs us that this plant can be obtained from Mr. F. Perkins, nurseryman, Leamington. If you are unable to obtain it from him write to us again.

14197.—**Pampas Grass not flowering** (*Mr. J. Scott*).—We should say that if the plants are healthy it is a question of time. The Pampas Grass does not throw up its spikes until late in the autumn, and probably you may still have some flower this year.

14198.—**Fuchsia blossoms getting smaller** (*A. W.*).—You have probably been over-dosing the plant. Try the alternative treatment of keeping it in a comparatively starved condition. You will find that if you give it a rest by drying—but of course not so as to injure it—the plant will be all the better.

14199.—**Planting bulbs early in August** (*St. John's Wood*).—If the bulbs are ripe and ready we think you may plant them early in August, placing them in a cool sunless position; but some bulbs would do quite as well if planted at the end of September. It would have been better if you had stated what they are.

14200.—**Building span-roofed greenhouse** (*J. Pardon*).—We know of no book that would give you the information you require. An article (illustrated) on the "Construction of Greenhouses" appeared in GARDENING, March 24th, 1883, and in the same volume (Vol. V.) are questions and answers relating to the erection of lean-to and span-roofed houses.

14201.—**Vegetable Marrows failing** (*T. Humble*).—Your plants are probably suffering from the effects of the excessive dry weather. Vegetable Marrows, being so rapid in growth, require copious supplies of water, particularly if the soil, as dung-heaps generally are, is so light that it does not retain moisture for any great length of time. Try more copious waterings.

14202.—**Worn-out Currant bushes** (*Clapton*).—We should advise you to get a few healthy young bushes from a nursery, as they are cheap. If you struck cuttings you would have to wait a few years for fruit, and it is probable that the old plants are worn out and will never get thoroughly over their removal. The best time to get plants from the nurseryman and to plant them is during October and November.

14203.—**Lilies in autumn** (*G. G.*).—You can have Lilium auratum, L. Batemanniæ, and L. superbum, and various others in full flower in August, and around London they frequently carry their flowers into September. You cannot do much in retarding your bulbs, because growth will develop itself under any conditions, and if you keep the bulbs shaded or cool you will weaken the growth. You may do something towards getting later flowers by planting the bulbs in a northern exposure.

14204.—**Failure of Lilies** (*Lily*).—It is a difficult matter to advise you in this case. If the pots are tolerably full of roots you have done no harm by copiously watering the plants. On the other hand, if the bulbs have made but few roots, and by continually watering you have got the soil into a soddened condition, that would probably account for the failure. Excessive dryness during the late period of drought has been the cause of many failures in growing Lilies, and the symptoms are exactly those you describe—leaves turning yellow and the buds dropping off. The mischief may be done in a very short time, even in a day, so that if the bulbs suffered from dryness so that the roots were injured, no amount of water subsequently given would remove the evil. There is no remedy so far as this season is concerned, and your best plan would be to keep them tolerably dry, so as to thoroughly mature the bulbs, which may produce healthy growth next season.

14205.—**Manuring and cropping** (*Mrs. Keegan*).—The five crops a-year referred to by you were probably managed as follows:—The Hyacinths were grown for cutting, and would be planted before Christmas, the Radishes being sown over them shortly after. When the Radishes were drawn and the Hyacinths cut, the beds would be planted with French Beans at rather wide intervals, with Gherkin Cucumbers between to fill up all space. Both these crops would come off in time for Cabbages in autumn. The question of manuring and cropping is a very large one and could hardly be satisfactorily dealt with in a brief note, but as the quality of the land varies in different localities, so as regards the application of manure each garden and its wants should be considered without reference to any other garden. As a rule scarcely any private garden is manured to excess, or even sufficiently, for the simple reason that the manure is not available. Two crops of Cabbages may be taken from one piece of land in one season, or if the old stems remain and the ground be top-dressed with manure, after the first crop has been cut from them, a third crop of small hearts may very well be had. Market gardeners generally clear away the first crop when ready, manure the land and start afresh; in this way two crops a year are very easily gathered.—E. HOBDAY.

14206.—**White lice on Cucumbers** (*R. T. Bird*).—The white lice on your Cucumbers are young mealy bug (Dactylopius adonidum), and a very difficult pest to get rid of. Sponge the leaves with tepid soft soap and water, or touch each insect with spirit of wine applied with a camel hair brush. Destroy the plants as soon as you are able.—G. S. S.

14207.—**Excrescences on Lime leaves** (*J. Scott*).—The excrescences on your Lime leaves are commonly called nail galls, and are formed by one of the gall mites (Phytoptus tiliæ). The mites are very small, and are not visible to the naked eye. The only cure, or rather preventive, is to pick off and burn the leaves as soon as they show signs of being attacked.—G. S. S.

14208.—**Caterpillars on vines** (*T. T.*).—Your vines are attacked by the caterpillars of a small moth, one of the tortricidæ. A smart shake of the leaves will probably cause some of them to fall and hang by a thread, those must not be allowed to return to the leaves. They may be dislodged from the fruit by a long-haired brush. Kill any small moths you may find about the vines.—G. S. S.

14209.—**Diseased Rose leaves** (*E. D., N. Wales*).—The leaves you send are covered more or less with a fungoid growth in its last stage of development, the result, no doubt, of some sudden change in the atmospheric conditions, over which you have no control. It is not at all unusual for Rose leaves to be so affected, and you need not be alarmed at their condition. You can only prevent its appearance another year by keeping the roots well supplied with water in dry weather, so as to enable the plants to resist such attacks and to lessen the evil.—J. C. C.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each of various sizes, and showing any variation of form that exists.*

Names of plants.—*H. C.*—1, Oxalis corymbosa; 2, Tunica Saxifraga; 3, Hypericum pulchrum; 4, Dianthus sp. Send larger specimen.——*K. P.*—Abelia rupestris.——*A Smith.*—1, Spiræa Filipendula; 2, Sedum album; 3, Stachys lanata.——*R. C. Barr.*—1, Adiantum Sanctæ Catharinæ; 2, Platyloma flexuosum; 3, Phlebodium aureum.——*James S., Bromley.*—Seems a species of Mamillaria.——*Miss Latham.*—Please send us specimens; we cannot name from the drawing.——*Mrs. R.*—3, Yes; it appears to be Hemerocallis fulva.——*A. Cumming.*—Lysimachia vulgaris.——*P. P.*—One of the numberless species of Willow.——*W. C. J., Cork.*—1, Triphasia trifoliata; 2, Agave americana variegata; 3, Shark's-tooth Aloe; 4, Choisya ternata.——*J. F., Stour.*—We do not name Roses.——*E. F. Shaw.*—It is known as the Sugar Pea; there are several varieties. The pods are eatable.——*A. Kerr.*—Cladiolus Colvilled.——*T. Turner.*—Appears to be a kind of Yarrow (Achillea); no flowers sent.——*R. T. Stroud.*—Enchanter's Nightshade (Circæa lutetiana).——*Faldonet.*—Lithospermum prostratum.——*Florist.*—Linaria vulgaris.——*A. E. P.*—1, Philadelphus grandiflorus; 2, Marygoourpus setosus; 3, Asplenium Filix-fœmina.——*Miss Latham.*—Triteleia laxa (native of California); other is Cyrtanthus sanguineus.——*W. G. C.*—1, Hemerocallis fulva; 2, Campanula persicifolia; 3 and 4, Both Carnations. The red one is called a self, the other flaked.——*W. Dundas.*—1, Onoeorum tricoccum; 2, Nicotiana glauca.——*W. Kent.*—Periploca græca.——*A. S. B.*—Send when in flower; nobody could discover even the genus from the specimen you send.——*W. Johnston.*—Vicia sylvatica.——*Ruth.*—1, Sedum arboreum variegatum; 2, Inula salicina; 3, Veronica decussata; 4, Hypericum calycinum.——*Mary.*—Bocconia cordata.——*R. C. S.*—Calycanthus occidentalis.——*W. W. P. S.*—Broom Rape (Lathræa squamaria).——*W. Johnson.*—Fern Aspidium angulare; Campanula fragilis.——*J. G. K.*—Veronica angustifolia.——*W. N.*—Adiantum macrophyllum.

Names of fruit.—*M. F. Smyth.*—The Strawberries you sent were unfortunately mildewed when the box reached us.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

How shall i grow aquatic plants? (*O. X. R.*).—You must tell us what plants you want to grow in the water. You name none, so we cannot give you any help.

Catalogues received.—*Hyacinths, Tulips, Narcissus, Roses and Clematis, Alpine and Herbaceous Plants.* Little and Ballantyne, Carlisle.—*Forest and Ornamental Trees, Shrubs, Roses, Fruit Trees, &c.* Godwin and Son, Rosarium, Ashbourne, Derbyshire.

Book received.—*Familiar Trees.* Cassell and Co., Belle Sauvage Yard.

Too many flower beds.—Mr. Groom and I (see page 270) are not likely to quarrel when we understand each other. The gardens he speaks of are not the gardens my remarks referred to. I wrote of hundreds of gardens in suburban London separated by walls or fences, and from 20 to 25 feet wide, and between the backs of tall houses, about 90 feet apart from back to back.—J. D.

TREES AND SHRUBS.

SHRUBS IN GARDENS.

Wherever groups of tall trees are planted or exist in grounds, although it may be advisable to fill the space up under them with bushes of dwarfer growth, such plantings can never become healthy shrubberies, whether they be evergreens or deciduous bushes, because none of the ornamental shrubs used in gardens will succeed satisfactorily under the shade of trees. They will grow for a time, and Hollies, Yews, and Rhododendrons will do better than most other subjects; but when the shrubs are intended to flower and make handsome specimens, they must have full exposure. The common Portugal Laurel makes a handsome, compact, glossy-foliaged bush in the open, and in the South of England even young bushes flower with remarkable freedom; while under the shade of trees it becomes a straggling and poor shrub, frequently requiring to be cut down to keep it green and dense, and it never flowers. It is the same with all shrubs, but in planting grounds the fact is often lost sight of, and shrubs are planted merely to fill up between deciduous trees which present a bare aspect in winter. The proper places for evergreens and dwarf deciduous shrubs are the open spaces on the margins of groups of tall trees and on the backgrounds of lawns, but always where they are not shaded. Under such circumstances the growth is healthy, and evergreens look bright and clean in winter when they are seen most, and all flowering species flower in due season, because their growth is properly matured. Most kinds of shrubs will grow in ordinary soil if they have head room. In the course of a few years rich mould from the annually shed leaves soon accumulates on the surface, and is as good or better than any manure that can be applied. In cutting some very old Rhododendron bushes not long since, a rich leaf-mould 6 inches deep was found under the branches, which had rooted into it as natural layers, and the roots extended in all directions on the surface, satisfactorily accounting for the luxuriance of many of our Rhododendrons here, which were originally planted in the natural soil—a poor, thin loam. Indeed, the practice of

Clearing the leaves out from beneath shrubs cannot be too severely condemned, because they are the natural and only provision for the roots, alike protecting them from cold, and providing them in time with the very kind of food which they require. All evergreens shed their leaves annually like other trees, and as their foliage is very abundant, it soon forms a deep layer on the ground. But, as has been hinted, the greatest disappointment results from planting them under trees. In winter the nakedness of deciduous plantations is an eyesore, inducing proprietors to plant, and they act on the impulse of the moment without due reflection. By far the best way to produce cover in deciduous woods is to mix the deciduous with tall growing evergreens, like Hollies, Yews, Deodars, and Spruces, planting these not under the other trees, but in spots amongst them where they will have light above all the year through. In this way the two, deciduous and evergreen, grow up together without injuring one another, and the result in the end is far more satisfactory than attempting to grow one kind of tree under the other; as a rule, however, notwithstanding how well things may have been done at first, a few years give the most rampant growers the advantage, and before the opportunity occurs of making the necessary thinning, many things are smothered and others get drawn up weakly. In numbers of pleasure grounds conditions have altered since the grounds were first laid out and planted. Trees have grown up and become crowded, and shrubs of a strong growing character have usurped far more than the space allotted originally to them. By this time, however, objections to removing the larger trees are raised, the thinning out is not well done, and little improvement is effected. It cannot be too clearly impressed upon persons not practically acquainted with such matters that the only difficulty they have to surmount in such cases is to make up their minds where they will have good lofty and luxuriant evergreens and flowering shrubs, and where they will have tall trees—for they cannot have both on the same spot. The furnished appearance of pleasure grounds in winter depends almost entirely upon the arrangement of the evergreen plantations, and one requires to see a garden well stocked with these to understand what a blank they fill in the landscape, however limited the view may be. A garden has always two aspects. It looks best in summer, when both deciduous and evergreen trees are in their prime; but if too many deciduous subjects are used to the exclusion of evergreens, a naked appearance will be presented in winter. One can see far through the leafless branches of deciduous trees, unless the backgrounds are well packed with evergreens, which should be disposed so as to block the view in all objectionable directions after the leaves fall off deciduous trees. J. W.

Eurybias.—Thanks for pointing out my oversight (p. 276), but what I said about the likelihood of the reader soon being able to obtain E. Gunni applies also to E. stellulata—perhaps more so, because the latter has been longer known and grown, and exists already to a considerable extent, though not in anything like the quantity it ought. There are those, who know what they are about, who are growing plants under both names, with at present an impression that the plants are identical, or with at most but slightly varying bloom qualities; in the young plants of a foot or so in height there is no difference. I have not bloomed E. stellulata yet, but I have been informed by those who have that the description of Gunni exactly answers for it. I can go no further with facts, but a little more patience will clear up the point in the way that we most enjoy such tests, *i.e.*, in one's own garden. In the meantime I should be glad if anyone who has either grown both, or has access to authoritative descriptions, would furnish to these columns particulars of the differing features of the two. I can assure the reader that even the nomenclature of what, for the time being, I will call E. stellulata is worth investigation; it is likely that hundreds of amateurs will grow it ere long.—J. Wood, *Kirkstall.*

The Willow-leaved Veronica.—For mild seashore districts the various shrubby Speedwells from New Zealand and Tasmania are important garden plants. Some of the species are now becoming tolerably common; for example, there is scarcely a commoner plant in the garden along the south coast, and particularly in the Isle of Wight, than Veronica speciosa and its fine dark variety, imperialis. V. Traversi, too, is one of the best of evergreens, and so hardy as to thrive unprotected even in the midland districts. One of the least common, though among the earliest introduced, is V. salicifolia, or the Willow-leaved Veronica. It is an extremely elegant and pretty plant, the flower-spikes being pure white and feathery-looking on account of the numerous protruded stamens. In a garden in a mild locality one might make a most interesting collection of the various New Zealand and Tasmanian Veronicas. Some are showy as well as elegant in growth, and not a few are highly curious.—R.

14122.—**Rose of Sharon.**—The botanical name for this is Hypericum calycinum, or St. John's Wort.—C. F. Davis, *Leatherhead.*

Fruit and vegetables in suburban gardens.—"H. S." (p. 267) must have taken my remarks meaning more than they said. There are only a few points on which I disagree with him. Strawberries, I found, always developed a sooty flavour, but I did not grow the hard-skinned kinds which are sent to market. Cauliflowers and Broccoli get utterly spoiled as the sooty rain gets into the flower. Cabbages, of course, one can do with, but the coarse common kinds of which plants can be had are not worth growing. Scarlet Runners do well, and Vegetable Marrows can be made to grow in many places. I should like to know where "H. S." gets a Pea worth growing, such as A. F. Wilson's Champion of England, or Telephone, at one shilling a pint. "H. S." is perfectly right about manure, but how many people will be persuaded to do as he does? As I pointed out, however, the difficulty is in getting seeds and plants in sufficiently small quantities and of the most improved kinds. It is all very well to grow a few things as a pastime, but, price for price, it will be found dearer to buy seeds than to buy vegetables already grown.—J. D.

INDOOR PLANTS.

VARIEGATED SCREW PINE.

The variegated Japanese Screw Pine (Pandanus javanicus variegatus) is well worth growing wherever room can be afforded. A finely-grown specimen of it, well furnished with its prettily-variegated pendant leaves, is highly attractive; but it should never be too much crowded, for if it cannot stand quite clear of other plants half its beauty is lost. Even in a small state this Pandanus is attractive, but it is only when it acquires a height of some 4 feet, and is as much through, that it is seen in its proper character. It is of easy culture, a small healthy plant in a 6-inch pot, if potted in February or March into a 10-inch or 12-inch pot, well-drained, using good turfy loam, with the addition of one-sixth of clean sand, making a nice hardy specimen in a year. It requires ordinary stove treatment with a night temperature of from 70 degs. to 75 degs. during the growing season, and a rise of 10 degs. in the daytime. The soil should be kept moderately moist, and the plant syringed in the afternoon, and elevated near the glass. Small plants may be used for house decorative purposes, but they must not be kept long out of heat, or they will suffer.

MY GREENHOUSE AND FERNERY.

When I was single I hardly knew one flower from another, and I doubt not that many of the readers of Gardening, like myself, turned their attention after their marriage to the delightful occupation of the cultivation of flowers. I began with a small greenhouse that I made myself—merely a case heated by a small lamp underneath—and I well remember with what pleasure I filled it with small pots filled with cuttings, and how I watched them, and, persevering, succeeded as well as I could expect, though my miniature plants suffered from want of air. My next venture was in building a small greenhouse 9 feet by 6 feet. At first I tried the lamp and paraffin oil for heating, but though I took every precaution with regard to cleanliness, trimming, &c., I found this plan of heating most unsatisfactory. My plants did not do at all, so I had a flue. With this, so far as heating went, I was quite satisfied, but it was too small, and the soot soon filled up the corners. I succeeded especially with Geraniums, Lilies, and Camellias in my little house, and grew a Lilium auratum well in a pot for two years, and, since, I have wondered that I had such flowers, for my house was so shaded by buildings that from November to March I had not an hour's sun; nevertheless, by perseverance and patience, and a regular attention to watering, &c., I made my small greenhouse look well and very attractive. In 1881 I moved into my present place, where there is a small garden and a wall facing west. I planned a lean-to greenhouse 24 feet long, 12 feet wide, 10 feet high at back, 5 feet at front, and made a small border at the back; then the stage, path, and front lattice work bench. I also divided the house into two divisions, making a glass division, the larger 18 feet and the smaller 6 feet, so making two separate houses under one roof. In passing, I would advise all who intend to put up these places that, as in everything else, the best is the cheapest. I was obliged to give up the hot-water idea, because I could not afford it, and planned a flue. I made my furnace of fire-brick, arched, and the largest size grating and door, and carried my flue quite round the house, the end of the flue going over the furnace into the chimney. Thus I have a flue 24, 24, 9, 9—66 feet long. Many persons told me it would not draw that length, but I said I would risk it. To heat the small house I had a supplementary flue same size as the main (viz, 1 foot in width) running from one side to the other, and both regulated by dampers. The furnace was quite at the back on the south side of the house. Over the furnace I built a pit 3 feet wide and 3 feet deep, partly filled it with rubble, and the rest with earth. This soon got very warm, and I raised seeds, cuttings, &c. I planted my border at the back with Ferns, and the wall, 4 feet high, I covered with wire netting nailed to uprights, filling up with earth, peat, leaf-mould, &c.; and never shall I forget the trouble I had to keep the mould in the wire. This I have planted with Ferns, Lycopodiums, &c., and they cover a bare wall nicely. Up the back above this I have shelves on which I put cuttings or anything during the winter months. In the centre of this back wall I planted a Maréchal Niel Rose, and now it has run over the roof, and at the proper season we cut daily splendid blossoms of this most lovely Rose. I have also other Tea Roses in pots. Madame Falcot is splendid in bud, Madame Lombard, Anna Ollivier, and Alba Rosea are, when in full bloom, a sight worth seeing. I have had eight Azaleas (indica), splendid plants, in full bloom for six weeks, one mass of flowers, entirely hiding the foliage. These I find I can manage much better than the Camellias, for do what I can in such a mixed collection I must have some heat, which causes their buds to drop off. Speaking of unheated houses, there may be some pleasure in them, but in a house with a little heat and so economical if the right fuel is used, and the dampers attended to properly, the satisfaction is tenfold, and it is so much easier to keep out that enemy damp than in a place without heat. To all I would say, have heat—by hot-water if you can manage it, if not, by a flue; but have heat. There is pleasure even in getting the fuel and stoking up, if you love the work. Contrary to the prophecies of many, my flue draws splendidly, and, my furnace being large, I can make up a large body of fire, which is blocked up about ten, or if very sharp frost at eleven, and the flue is nicely hot in the morning. No getting up to stoke in the middle of the night for me—I have never had to do it yet. My specialties during last winter were my Cyclamens, which are among my favourite flowers. I raised a large quantity from seed, and again I say to all, as I said about my house and Roses, get the best you can. My white Cyclamens were a sight, one plant especially, not so much for its number of blooms but for their size. Many gentlemen came and said they never saw such fine bloom, and they were quite equal to those shown in catalogues.

Variegated Screw Pine.

And now, with reference to my Fernery—the pit I have named was much too large for what I wanted, and the bare wall at the back, so difficult to get at, was an eyesore to me, so I determined to convert it into a fernery. I put up strong shelves, set window boxes on them, covered all with virgin Cork, and planted Ferns—large growing sorts, chiefly Woodwardia radicans—in the boxes; this covered up the back. The pit itself I built up with some stones, on each side rustic small terraces, put a strong board along the back 2 feet from the top of the pit, covered the front of the board with the Cork, and put my largest Ferns along this shelf. In the centre I placed my treasure—a Cape Tree Fern (Alsophila capensis), sent me, with several others, by my brother from Cape Town; also the Tree Fern, Lomaria gibba, and Dicksonia antarctica; also Davallia canariensis and D. Novæ Zealandiæ. At the sides I made pockets of Cork, and planted them with Adiantum cuneatum, which thrive especially well; also I have a nice plant of Adiantum Victoria and A. Farleyense, and a very fine one of A. Sanctæ Catherinæ. On the left side of the pit, higher up, I have two shelves, the lower one, of course, wider than the upper, covered also with Cork, for the smaller Ferns, and six Palms, which are the picture of health. In the centre of the pit I had a zinc tray made, and in this I placed a fountain, supplied from a tank in the larger house, and various jets make it very pretty. My fernery, being quite over the furnace and pit, gets nicely warm, and I am therefore enabled to keep the stove and other Ferns better than in any other part of my small house, where the average temperature at night is 50. I have done all this myself, and described it simply to show what may be done by any one with a little patience, tact, and perseverance, and to encourage anyone like myself who loves the work, but who finds in it not a work, but a sweet relaxation from business, for I have only odd times to devote to my house, as I am in business all day. At night I get my lamp in my potting house, and work and enjoy myself there, for this is my hobby.

J. G., *Suffolk.*

HOW FUCHSIAS ARE GROWN FOR MARKET.

In reply to queries 14000 and 14021 the following brief description of the way Fuchsias are grown for the London market may be useful. The writer being well acquainted with all the best market nurseries (at least, on the south side of London), and being also a market grower to some extent himself, may perhaps be able to indicate some of the points in which Fuchsias, &c., grown for market differ from those generally produced in private establishments. "Pugh" says he was quite surprised by the appearance of the market plants he saw in London, and his statement is quite credible, for there is no doubt that the finest pot plants (generally of the 5-inch or 48 size) that are produced anywhere in the world are sent to the London market; in short, they are the perfection of cultivation in all respects, and how they can be profitably grown for the small sum they are often sold at is simply marvellous. It is only done by growing in large quantities—a small grower could never produce them at the price; but there is no reason why similar plants could not be turned out in almost any private garden where there is a house suitable for their culture. The writer was, only a few weeks ago, through the nursery of one of the largest, if not the very largest, growers in the country. Here there were a dozen or more of houses, each about 200 feet long by 12 feet wide, and entirely filled with Fuchsias in various stages of development. Only two or three varieties were being grown, and as a rule only one kind, all in precisely the same stage, almost to a bud or leaf, occupied any one house, while the evenness in height and size were simply marvellous, there being scarcely an inch difference between any two plants among the thousands in each structure. Market growers always endeavour to obtain an open piece of ground for their operations, as far from the smoke and dirt of London as possible, while still within reach of the market. The fuller and purer the air and light of the district are, the dwarfer, sturdier, and more floriferous will the growth of the plants produced be. The houses in which they are grown are almost invariably span-roofed, usually about 12 feet in width, from 60 feet to 200 feet or more long, and only just high enough for a man to work in comfortably, so that the plants are always near the glass, and can never become drawn. The panes of glass are made as wide as possible, from 1 foot to 18 inches, or sometimes 2 feet, between the bars being generally allowed, with lenty of ventilators both along the apex of the roof and sides. In the construction of the houses there is a great difference, those of one grower being little more than glazed pits with a trench cut down the centre for the pathway, and just one 4-inch flow and return pipe to keep out the cold, while other growers erect expensive houses with glazed side-lights as well as glass roofs, 2 or 3 rows of ventilators, well constructed stages of wood or slate, several rows of hot-

water pipes, cemented pathways, and all the latest improvements. Perhaps the plants grown in such houses as these are better "finished" than others, and certainly the houses last longer and are more easily worked, but the secret is in the growing.

Cuttings of Fuchsias are struck at almost any time of year, but the most usual times are autumn, winter, and early spring. Some growers push their plants on much faster than others, and indeed very nice plants in 48's, fairly well flowered, are often produced in about three months from the time the cuttings are put in; but these are soft sickly things compared with those that are allowed another month or two, and grown with less heat and more air. For the earliest batch, to bloom in March or April, cuttings will be put in about September, or else a late spring-struck lot may be made use of, which have been in thumb-pots for some time, well hardened, and cut back before potting. These are generally considered to make the best plants. Another lot of cuttings will be put in about Christmas, of course in pretty warm quarters, to bloom in April, May, or June, while cuttings struck in March will make nice little sturdy plants in July and August with little trouble. Some strike their cuttings in 5-inch pots, a dozen to twenty in each, others put six or eight in a 4-inch pot, while others again put them singly into thumbs, and so dispense with the potting off process. In any case they are put in light, sandy, porous soil with good drainage, and if in winter or early spring a heat of 60 degs. to 70 degs. is necessary, keeping the house close till struck, with a fairly moist atmosphere. As soon as fairly rooted they are plentifully watered, and never allowed to starve in the cutting pots, but potted off singly into thumbs, or 60's (3-inch pots), as soon as possible, and again kept close till rooted out. At this stage a little rest will do them no harm, but, as a rule, they are kept moving on pretty quickly. They are not, especially when being grown quickly, generally stopped at all in the small pots, but put, as single stem plants about 4 inches high, into the 48's.

The soil for the final potting is a matter of great importance; the best growers use a peculiar lumpy loam, of a somewhat heavy nature, that does not readily crumble up finely. This is laid up for a year or so with a third of stable manure, and with a slight admixture of leaf-mould or old hotbed stuff, and a dash of rough sand, makes the best of potting material. Others use decayed turf, and others almost all leaf-mould, but, whatever the compost consists of, it must be fairly rich, sweet, and thoroughly open and porous in character, or no plant will flourish in it. Nearly every grower has also some pet artificial manure of which a proportion is mixed with the soil. The plants are carefully, but quickly, potted into the fresh stuff, very little drainage being required if the soil is properly porous, and the latter being firmly pressed, sometimes rammed hard, round the old ball. A house being quickly filled with the newly-potted plants is kept close for a time, and slightly shaded from hot sunshine, if such should prevail shortly after. The plants are only very moderately watered at the root at first, but plentifully sprinkled overhead, a nice sweet moist growing atmosphere being constantly maintained. As soon as the plants begin to get hold of the fresh soil and grow a little, they are cut down, or headed back, almost to the soil; the moist atmosphere, however, with the artificial heat afforded if requisite, soon starts them into growth again, and a number of vigorous shoots quickly break up from the base of each plant. Whatever be the season, a warmth of 60 degs. to 70 degs. is maintained, with plenty of moisture. When well in growth, moderate ventilation is afforded, more or less according to the state of the weather outside, but the house is generally closed early in the afternoon, at least in the earlier stages, which greatly promotes growth. As soon as the pots become pretty well filled with roots, the plants need a little assistance of some sort, as it is essential that they should be in full vigour when the bloom is produced—so feeding is commenced. For this purpose many different stimulants are employed, some growers using soot, others guano, others sewage, sulphate of ammonia, and so forth, anything answering the purpose that will keep the plant going steadily on to bloom. Others use two or three of the above manures alternately, but in any case it is used weak at first, and the strength is gradually increased until the bloom is expanding. A slightly drier atmosphere generally induces bloom to show itself, or a very little dryness at the roots will have the same effect, but this must be very cautiously tried, or the foliage will suffer. Any very strong shoots are pinched back during growth, or if sufficient do not start at first they are increased by this means; but stopping is not always necessary. When far enough advanced the shoots are carefully looped up by mere threads of raffia to a single central stick. Grown as above, even such Fuchsias as Mrs. Marshall, which has naturally a drooping habit, produce shoots as straight as a hazel-rod, and form elegant pyramidal plants, clothed with foliage down to the rim of the pots, and laden with large well-formed blossoms above. Of course, however, it is a difficult matter to hit just the right medium in all points. Too rich a soil, or over-feeding, will throw the plants too much to leaf or growth, and they will be too tall when in bloom. Too little air, or too much shading, makes them soft and weak, while the reverse causes the lower leaves to fall before the plant is in perfection.

There are only a few Fuchsias really considered worth growing by the market growers. The old Mrs. Marshall is a general favourite, and can scarcely be beaten as a light kind. Scarcity and Sedan are two of the best dark singles, though there is a comparatively new variety now largely grown called "Try-me-oh Improved." This possesses a splendid habit and needs no pinching, branching naturally from a single stem, and forming a perfect pyramid, covered with richly coloured blooms of fine shape. Lady Heytesbury is another fine light kind, erect and very profuse. Of doubles, Avalanche, dark, and Lucy Finnis, Little Alice, Princess of Wales, and Madame Marie, with white corollas, are the general favourites, but they are not nearly so plentiful as the single kinds. The great superiority of good market plants over others is their vigour, and this is caused simply by good cultivation from the first—rapid propagation, and never allowing the plants to receive a check of any kind from first to last—by keeping the roots always active, and constantly supplying them with nourishment enough to keep the plant in full vigonr.

B. C. R.

Anthurium Scherzerianum.—Any large specimens of this brilliant-flowered Aroid in want of more root space cannot receive it at a better time than now. Its best growth is made in the winter; consequently, if potted at this season, the full benefit of the new soil will be reaped. There is no necessity to give it a great depth of material, as it is a surface rooter, but plenty of drainage is of the first importance. It is not advisable to allow young examples that it is desirable to grow on without delay into large specimens to seed, their growth being much retarded thereby. Immediately the flowers commence to fade they ought to be removed, unless the intention is to raise young stock from seeds. Though the different forms of this Anthurium do not reproduce themselves true from seed, still it is not well to raise seedlings from any but the best flowered sorts. The seeds are not fully matured for eight or nine months from the time when the flowers first open; wash them out of the pulpy mass that encloses them before sowing. They succeed best in very open, porous material; fine chopped Sphagnum, to which has been added sand in the proportion of one-fourth its bulk, will be found to answer well. Take a good-sized ordinary seed-pan; half fill it with drainage, over which lay as much of the Sphagnum and sand mixture as will come up to the level of the rim; press this firmly down, and give a good watering to settle the surface, again pressing it quite smooth to keep the seeds from getting washed down by subsequent waterings, for any that get below the surface do not come up freely. Scatter them on the material, and put the pan in a house that is kept about 60 degs. by night; shade from direct sunshine, and keep them damp. The young seedlings will begin to show themselves in a few weeks, and should then have more light, but they should not be exposed to the full sun. They ought to be pricked off when large enough to handle into pans drained similarly to those in which the seeds were sown, adding to the Sphagnum and sand one-half chopped fibrous peat. Let them be kept on growing, and as soon as large enough put them singly in little pots, using the same sort of soil as that last described. Particular care ought to be taken of the strongest plants, for it will be found that those which take the lead will continue to be the best growers, and will also bear the finest flowers.

Zonal Pelargoniums. — Why are not Zonal Pelargoniums better cultivated as pot plants than they are? Few things repay so liberally for a small amount of trouble, and all they want is rich soil, plenty of room, and plenty of water—to be kept freely growing, in fact; and with such treatment I have numbers of plants, cuttings of last year, that by the end of autumn will be from 3 feet to 5 feet high—large bushes, in 9-inch, 11-inch, and 13-inch pots, with stems as large as one's finger, and covered with huge trusses of magnificent blooms. They form a long line round the east and south of my house, a grand display.—C. B.

REPLIES.

14002.—**Cyclamens for next spring.**—It is now too late to think of growing young plants for blooming next spring—they should have been potted quite two months ago; but if you can get one-year-old bulbs in good condition this is the moment for starting them into growth. Put them in 4½ pots, in two parts loam and one part leaf-soil, with quite one-fifth of white sand. Place in a cold frame, shade from hot sun, give air in fine weather, keep the soil just nicely moist, and sprinkle morning and evening on sunny days. After the middle of September they will bear full exposure to the sun. In default of a frame an ordinary greenhouse will do.—J. C. B.

14068.—**Orange tree.**—Your Orange tree is probably suffering as much from a low temperature as from want of nourishment, as, although Orange trees will live in an ordinary greenhouse, they do better in a higher temperature. But no doubt a little stimulating manure will bring back the green colour to the leaves. Give your plant a dressing of Clay's fertiliser at once, at the rate of half a tablespoonful for a 7-inch pot: strew it on the soil, and with a stick stir up the surface, and very gently water the soil; repeat the application in two months' time, and do not give any more until early next spring.—J. C. C.

13895.—**Aubutilon becoming double.**—It is not easy to say why flowers change from the single to the double state, or *vice versâ*. High culture will sometimes cause single flowers to become double, while poor cultivation has an opposite tendency. Do not give any manure, and do not prune much; it would be interesting to note the result of that treatment next year.—J. D. E.

13899.—**Begonia Rex leaves dying.**—The leaves become spotted if they are too much exposed to the sun, which burns them in places. If they are kept in a close warm atmosphere and syringed, they will also be spotted. They would succeed best in a warm greenhouse in summer. If they are kept in a stove keep the leaves dry and leave the ventilators open a little at night.—J. D. E.

13887.—**Begonia blooms dropping off.**—They are almost, if not quite, as sensitive to change of temperature as the Fuchsia. They will not drop off if the plants are kept in the temperature they like. At present an ordinary greenhouse is the best place for them, and they must not want for water at the roots. Under these conditions the blooms will not drop off. Shade from bright sunshine.—J. D. E.

ROSES.

14067.—**Highly-perfumed Roses.**—The following will suit you:—Catherine Bell, colour deep rose; Duchess of Connaught, bright crimson; Duchess of Sutherland, delicate pink; Cheshunt Hybrid, carmine red; Harrison Weir, dark crimson; Henrich Schultheis, light rose; Madame Knorr, deep pink; Marchioness of Exeter, bright rose; Mons. Boncenne, dark crimson; Mrs. Jowitt, crimson; La France, rosy lilac; Louise Darzens, white. The above are Hyhrid Perpetuals. If you want other hardy Roses for the garden select the old Cabhage Rose, Souvenir de la Malmaison, Maiden's Blush, Solfaterre, and Safrano.—J. C. C.

—— The perfume of Roses depends a great deal upon good cultivation. Out of a stock of 130 varieties of Hyhrid Perpetuals and Teas, however, I did not find any to equal any of the old Damask and Alba Roses. With the single exception of a Blush white Rose, named

Madame Bellenden Ker, Céleste is by far the most powerfully-scented Rose I know of. The Cabbage, the Moss, the Alba, and the Damask Roses are all very sweet, and so are the little Scotch Roses.—J. D.

13875.—**Mildew on Roses.**—To get rid of mildew on Roses there is no better way than to dust with flowers of sulphur, as recommended by the Editor. To prevent the appearance of mildew is a different matter, and may be summed up in two words, "better cultivation," and deeper soil, more manure, heavy mulchings, are all factors in the prevention of mildew; and when Roses are badly attacked it is a sure sign that a severe check has been felt, which better cultivation would have obviated.—E. Hobday.

14064.—**Roses for garden near Leeds.**—Mdlle. Bonnaire (pure white), Souvenir de la Malmaison (flesh), Gloire de Dijon (fawn, shaded salmon), Baroness Rothschild (light rose), Duke of Teck (bright crimson, scarlet), Duke of Wellington (dark crimson), do well with me three miles from Leeds.—A. H.

—— Boule de Neige (white), A. K. Williams (carmine red), Madame Charles Wood (crimson), Duke of Teck (dark scarlet), Baroness Rothschild (rose), Magna Charta (pink). —J. C. C.

—— You cannot do better than select Glory of Waltham (red), Baronne Prevost (pink), Charles Lefebvre (crimson and purple), Boule de Neige (white), Prince Camille de Rohan maroon), and Gloire de Dijon (maize yellow).—J. D.

THE COMING WEEK'S WORK

Extracts from a Garden Diary, August 10th to August 15th.

Staking and tying Chrysanthemums, and placing them in a sunny position. Putting in cuttings of Verbenas and Alyssum variegatum for Stock. Stopping Carnations in pits. Propagating Pelargoniums in boxes. Putting Primulas into their flowering pots out of 3-inch ones. Nailing vines to walls outside. Going over Grapes and taking out all shanked berries. Trenching ground for Strawberries. Netting Plums in order to preserve them from birds. Planting out bed of Strawberries. Pruning shoots of Pears on walls. Potting Strawberries for forcing, and layering a few more for planting out. Sowing Turnips for autumn use between Gooseberries. Sowing Enfield Market Cabbages. Planting Cattell's Eclipse Broccoli. Sowing Early Heartwell and Defiance Cabbages; also Flat Italian and New Giant Rocca Onions. Tying and stopping Cucumbers. Thinning out Parsley and Lettuces. Sowing Mustard and Cress; also Hammersmith Hardy Green and Wyatt's Green Curled Lettuces, and Chou de Milan Cabbages for succession. Pulling up Broad Beans and hoeing and cleaning the ground ready for next crop. Sowing winter Cucumbers. Planting Snow's Winter White Broccoli after Potatoes. Digging ground for winter Spinach. Planting ground after Broad Beans with Garnishing Kale and Little Pixie Savoys. Gathering all Scarlet Runners ready for use. Removing superfluous wood from Tomatoes on outside walls. Hoeing ground between last-planted Cabbages.

Glasshouses.

Conservatories and greenhouses.—During this and the ensuing month there is usually a less amount of bloom in these structures than at other times. To make up for this, if there is at hand a sufficient stock of such things as the coloured-leaved Dracænas and Begonias, Eurya japonica variegata, Elæagnus variegata, Aspidistra variegata, and others with coloured foliage, judiciously arranged, with a selection of handsome green-leaved kinds, including Ferns, and the flowering plants that are at hand, an appearance can be kept up little inferior to that which is present when more flowers are forthcoming. One of the principal things to aim at in houses which have to be kept gay is that the inmates should be clothed with healthy foliage. Where this is wanting no amount of flowers will make up for the defect.

Campanula pyramidalis.—This Campanula is one of the most useful decorative plants in cultivation for a greenhouse or conservatory. When well managed it will grow to a height of 8 feet or 9 feet, producing quantities of its pale blue or white flowers. It is well for those who cultivate it to grow both varieties. Plants that have been raised from seed sown in spring must not be kept confined in the first stages of their growths in pots that are too small, for no subsequent treatment will make up for the deficiency. If the little pots the seedlings were first put in from the seed-pan are fairly full of roots the plants must be at once moved to others large enough to keep them in free growth through the autumn. The plant likes soil that has been well enriched by the addition of a liberal amount of rotten dung with a fair quantity of sand. If the pots are kept plunged in ashes from this time forward until they have done growing for the season it will be better, as not only will this reduce the amount of attention required in watering, but the growth will also be freer.

Perpetual-flowering Carnations.—Young stock of these useful winter flowers that were struck in winter, if not already moved from the small pots in which they were placed when newly rooted, should be put in others about 6 inches in diameter. They like good strong loam, with some rotten dung and a little sand, but not so much as many things require. In potting, press the soil moderately firm in the pots; the loose system of potting practised by some cultivators for soft-wooded things generally does not answer for Carnations. In selecting the varieties of this now numerous class of Carnations weak-growing sorts should be avoided, as not only are such more difficult to get along with, but they never can be made to yield the amount of flowers that the freer-growing varieties will. As a rule, the broader and stronger leaves a variety naturally makes, the better constitution it has; and the narrow-leaved sorts are generally weakly growers—such, for instance, as very many of the yellow-flowered sorts. These plants are not much subject to the attacks of insects, but it is necessary to see that the stock is free from aphides, as if these are allowed to infest them they will make little progress, and upon the plants being kept in a free-growing condition their ability to flower satisfactorily depends. Where these Carnations are grown on the planting-out system through the summer months, and to be moved into pots in autumn, see that they do not want for water during such scorching weather as we have lately had, for although they do not show the effects of a deficiency of moisture like some things, they do not make much progress when they do not get enough.

Bouvardias.—Everyone who has a greenhouse should cultivate Bouvardias, for though they give the most flowers where they can have a fair amount of fire-heat in winter, still they will keep on blooming nicely in the temperature of a warm greenhouse. They make much the finest plants when turned out in a bed of prepared soil through the summer season, and then transferred to pots; so treated the shoots get double the strength of those in pots, and yield proportionately larger bunches of flowers, and also proportionately more of them. It is not well to keep these plants closely stopped in as some growers do; a plant with eight or ten stout shoots, 15 inches or 18 inches long, is much preferable to the little bushy short-shooted examples one often sees, as, in addition to the finer heads of bloom the strong plants yield, they will keep on flowering longer. These, and other winter blooming stock that are at all liable to the attacks of red spider or aphides, should be syringed overhead each evening. In the south of the kingdom, or other parts where Bouvardias will thrive freely in the open air in summer, if the stock happens to consist of plants that were late struck and are at all backward, it is well to have them in pits or frames where the lights can be kept over them when the weather happens to be cool and dull, as by this means they will make more progress.

Callas.—These easily-grown plants deserve better treatment than they sometimes get, for though they are naturally so accommodating that they will live with indifferent usage, there are few things that give a better return for fair management. They do best planted out in rows in summer on any piece of ground where they will not be either too much exposed to rough winds, or be drawn up weakly through insufficient air and light. If planted in a shallow trench this will be an advantage, as the liberal supply of water they require can be better given them. If grown in pots, the pots should be confined to single crowns and plunged in ashes in a moderately open place, so that the leaves will not become drawn, for if this occurs the plants have an untidy appearance, besides which the leaf-stalks are apt to get broken when the plants have to be moved about. Callas are more liable to the attacks of aphides than most things, and if these are allowed to remain long on the young leaves they disfigure them so that the plants look unsightly. Syringing with Tobacco or quassia water will quickly destroy the aphides, or soapy water from the washhouse will answer.

Veronicas.—These pretty autumn-blooming shrubs are also best planted out in summer, except where the plants are large, in which case unrestricted root-room such as they have when turned out of pots will cause them to get too big for ordinary decorative use. Spring-struck plants are generally the most useful. If these are planted out in moderately-light open soil, so that when they come to be taken up for potting they can be got up without their roots receiving much injury, they will make nice bushy little specimens that will flower through the autumn up to Christmas with just as much shelter as will keep them out of the reach of frost. When grown outdoors in this way the shoots will not require any further stopping, as the plants will branch out sufficiently without this being resorted to.

Berry-bearing Solanums.—Plants of these, whether grown in pots or planted out, must have regular attention in syringing overhead, being careful that the water reaches the undersides of the leaves, as these plants are more liable to the attacks of red spider than most things, and if it ever gets much hold on them the lower leaves fall off, and their appearance is spoilt. If grown in pots they should now have manure water given them once a week.

Lilies.—Late autumn-flowering Lilies, such as the different varieties of L. speciosum, should have a neat stick placed to each shoot for support. Manure water ought to be given them once a week from this time onwards until they come into bloom. If this is regularly attended to, the soil never allowed to become too dry, and the leaves kept free from insects, the plants will retain their foliage fresh and healthy until the flowering is over. T. B.

Flower Garden.

General work.—Weeds on walks and roads are very troublesome. In the case of some gravels—those that do not bind down hard—hoeing may be had recourse to; in that of hard gravel hand-weeding only should be practised. For Moss-grown spots under trees, &c., a winter dressing of salt is desirable; it kills the Moss, and adds brightness to the gravel. Now that they have completed their growth, shrubs and branches of trees overhanging walks should be trimmed up. Portugal and common Laurels, Yews, and Rhododendrons, are some of the kinds that now need cutting back. Shrubbery weeding and hoeing constitute another important item of labour at this season, and if, as is frequently the case, time cannot be spared to go through them thoroughly, an effort should at all events be made to prevent the weeds from seeding by going through them with a rip-hook.

Sedums.—The hardy varieties of Sedums are admirably adapted for rockwork, and when so treated they are more at home than when used in any other way, but a few of them are so well suited for the parterre, and their use saves so much time and space that would otherwise be required in the propagation and wintering of tender plants, that we have come to regard certain varieties as indispensable in summer bedding arrangements. The dwarf section are invaluable as edging and carpeting plants; the best kinds are S. acre, green; acre elegans, cream coloured; corsicum and glaucum, bluish grey; and Lydium, deep green. The best of the tall and trailing growers are altissimum, spectabile, Sieboldi variegatum, and telephioides; these varieties look well planted in lines or clumps, and continue in flower a long time, rain or wind doing but little injury to the flowers. All the kinds are readily propagated by division, early spring being the best time for splitting up the plants.

Sub-tropical plants.—Quick-growing sub-tropical plants should be looked over every week, to see that they are properly staked and tied. Peg down the undergrowth and keep the beds free from weeds; should the weather be dry, they will require abundance of water to keep them in vigorous growth. The regular removal of decayed and seeding flowers will also greatly tend to retention of vigour. The common kinds of bedding plants also require frequent looking over with the view of removing bad flowers and foliage, and regulating their growth by pegging down and pinching. Verbenas, Petunias, Calceolarias, and Pelargoniums can only be kept in presentable condition, especially during showery weather, by oft repeated picking over. Keep the lines and edgings of foliage beds in trim condition and well defined. Sedums and Saxifrages only need little manipulation with the

fingers; other plants may need clipping. Echeverias may require to have the flowers removed, and the same remark applies to tricolour Pelargoniums.

Hardy flowers. — Larkspurs, Achilleas, Columbines, Potentillas, Spiræas, and Phloxes are a few of the most conspicuous of those now in bloom. They need an occasional tie to support them, and require to have the bad flowers removed. Annuals in the same borders also need support, and to be thinned out. Sweet Peas will continue flowering the whole season if not allowed to seed, and a good way of securing a succession of flowers is to pinch out the tops, a plan which conduces to lateral growth, on which flowers equal to those of the main stem are produced. Two sowings of Sweet Peas—January and March—are all that we ever make, and yet by this plan we always have an abundance of flowers till sharp frost cuts them down. Scarlet Runners and the Canary Creepers are amenable to exactly the same treatment.

Fruit.

Cherries.—Let early forced trees have full exposure to the elements by the removal of the roof-lights to the paint room, where they can be properly overhauled and painted, if needful, before they are again wanted to ward off heavy autumnal rains. See that spider is kept off the foliage by occasional washings with the engine, and dip the points of the shoots in Tobacco water to free them from black fly. Look well to internal borders, and, while guarding against forcing a second growth by giving too much water, see that the roots do not suffer from drought. If the lights cannot be taken off, ventilate to the fullest extent, mulch inside borders to keep the surface roots cool, and give a moderate watering occasionally. Attend to pot trees now in the open air, and syringe well after bright days. Mulch the tops of the pots with rotten manure; cover up the sides with Fern or litter, and give just enough water to keep the roots progressing in the new compost.

Plums.—Remove early kinds to the open air as the fruit is gathered, and treat as Cherries, always bearing in mind that cleanliness from this time until the leaves fall must be insisted upon if the trees are to start fresh and free from insects in the spring. Give later kinds more room in the house, and continue the syringing with pure soft water until the fruit begins to change for ripening. It is hardly necessary for us to say that an easily excited tree like the Plum cannot have too much air at this season, and that pots now full of hungry roots cannot have too much water. Late kinds may be set out-of-doors for a time, but this is not necessary under good management.

Vines.—Early houses in which the wood is getting ripe may now have free ventilation by night and by day, and more mulching may be spread over the inside borders to keep the roots moist and actively working in the surface dressing. Syringe well every evening to preserve the foliage as long as possible, and while gradually shortening back all strong laterals to strengthen and plump up the fruit-bearing buds, allow weaker growths to have full play until the main leaves begin to ripen. If any of the Grapes have not finished well, the roots should be lifted and relaid in fresh soil, or a portion of the old compost may be taken away and replaced with rich loam before this month is out. Black Grapes now ripe will keep best where the foliage is dense, but, lacking this, some light shading may be thrown over the roof until the fruit is cut. On the other hand, white varieties colour and keep well, and Muscats lay on the finest amber where sun-heat and light can play freely through the foliage on and around the bunches. Keep the foliage clean by putting in a syringeful of clean, soft water whenever it can be applied without damaging the Grapes. Damp the floors well on fine days and see that the inside roots are kept in a moist, healthy state by the application of warm water whenever needful. Muscats and late Grapes now colouring will stand a high day temperature with plenty of air and sufficient moisture to keep the foliage fresh and healthy.

Hardy fruits.—Complete the thinning of Pears and stop all lateral growths, as every ray of sun and light will be needed by the fruit, and even then many of the choice kinds may be found deficient in flavour. Cut away the old canes as soon as Raspberries have done bearing, and thin out all the weakest shoots of the current year to let in light and air. Tie up those left to prevent them from being injured by the wind, and keep the beds free from weeds. Trim off all damaged leaves, also the runners when the Strawberry crop is over. Mulch with rotten manure or good rich loam, and give the beds a thorough soaking with the hose. Get the plants for new beds in without delay. If ground intended for new plantations is still occupied by other crops, turn the newly-rooted runners out of the pots into nursery beds, where they can be regularly watered, and defer planting until spring. At the present time we are gathering very good Oxonians from plants treated in this way, and, although growing on a north border, the fruit is superior to that produced by older plants which have made too much foliage.

Vegetables.

Lettuces for cutting through the winter, and Tripoli Onions may be sown now; when the young seedlings appear protect with netting, or the wind will ruin your crop. Have a good breadth of Parsley for the winter supply. Cut all herbs that are in flower, spreading them out to dry, but not bunching them green, which spoils their flavour. Begin now to get the manure together for the October Mushrooms, water it with manure water, and sprinkle with it a little salt. Ground cleared of Peas, Potatoes, French Beans, and similar crops should at once be sown with Turnips; not a day should be lost in getting the seed in, as upon this depends the crop reaching a useful size before growth is stopped by cold weather. Make another sowing of Cabbage. To make Cabbage crops pay the plants should have plenty of room, and when planted after Onions without any digging they should be strong and of one size. Every three weeks a small sowing of Radishes should be made in rich ground. Where Mustard and Cress are required, they should be sown every ten days; these, with Radishes and Lettuces, must be regularly well watered. Celery, more than most crops, will now need to be well soaked with water. After a good soaking, 1 inch or 2 inches of soil may be put to even the late crops; it will prevent the roots, which lie close to the top, and are still further encouraged to the surface by watering, from being so soon dried up. Late Peas should have a ridge of soil drawn on each side of the row, and within 2 inches of it, so as to confine the water, which should be applied without stint, or it will be impossible to keep them from becoming a prey to mildew. One good drenching, so as to moisten the soil down as deeply as the roots descend, will be of more service than many small waterings. Scarlet Runners must be similarly treated. These and all other crops will be much benefited by mulching 3 inches thick with littery manure.

Smithfield Market, Evesham.—List of prices realised 31st July, 1885:—Beans (broad), 6d. to 8d. per pot (40 lb.); Beans (kidney), 4s. 6d. to 5s. 6d. per pot (40 lb); Beans (dwarf), 4s. 6d. to 4s. 9d. per pot (40 lb); Carrots, 3d. to 4d. per dozen bunches; Cucumbers, 7d. to 11d. per dozen; Onions, 3s. 6d. to 3s. 9d. per cwt.; Potatoes (new), 3s. 6d. to 4s. 3d. per pot; Vegetable Marrows, 5d. to 7d. per dozen; Walnuts (pickling), 4s. 6d. to 5s. per pot; Apples, 4s. 6d. to 5s. 6d. per pot (64 lb.); Cherries, 23s per side (63 lb.); Currants (red); 1½d. to 1¾d. per lb; Currants (black), 2½d. to 2¾d. per lb.; Currants (white), 1½d. to 1¾d. per lb; Gooseberries, 4s. 3d. to 5s. 3d. per pot; Pears, 8s. to 11s. per pot (72 lb.).

Beautiful Larkspurs.—Having sent you some little time ago blooms of the old Siberian Larkspur, I now send some of *the two* of its modern rivals, which I think among dark-coloured varieties are the most distinctive and valuable, Barlow's Versicolor and Pompone Brilliante. The main spikes of the former are "off;" what I send are only side shoots, but they will show the shape of the blossom, which is rather unique among Delphiniums. Owing to the great dryness of the season the spikes of this family have been much shorter than they generally are and curiously compressed. A variety I have for the first time this year, Voltaire, I think very highly of. The purple colour is very fine and the blossoms are immense.—Denis Knox, *Ireland.* *** *Both these Larkspurs are beautiful and Pompone Brilliante is one of the finest double Delphiniums we have ever seen—a brilliant blue purple.*—Ed.

Sparrow plague.—You ask if anyone has experienced the depredations of sparrows. Well, I have given them credit for a great deal of damage in a garden in the outskirts of a country town. For several years the Gooseberries were a complete failure from the buds being picked off the bushes in winter and spring by these intelligent birds, and when they should have been all foliage there were only nudless branches, and consequently there was no fruit. At the close of last year I got a sensible cat, and have this year a good crop of fruit. A friend recommended the following plan for the sparrows, which I have never yet tried, but which some of your readers might try and let us hear the result. Put some old Cabbage or Turnip seed for a short time into a small quantity of alcoholic spirits (whiskey will do), and then spread it out on the ground when the sparrows congregate (they will devour it greedily); when you see the bait has been taken, go out with a bag, and you can easily catch as many as you choose, and dispose of them at your pleasure. Of the morality or legality of the procedure I say nothing. I give the information as I got it.—Roxburgh.

—— You asked in your last issue for the opinion of your readers on the subject of sparrows. My experience is this—in a small garden in the west of London—that it is impossible to bring up any sort of plants from seed in the open unless under an elaborate arrangement of netting. Roses are also most difficult to grow, as these birds have a great partiality for the young buds, which are cleared off entirely in the early spring, and if there should be a weak growing shoot which escapes it is generally broken off during the summer by these lubberly birds, who do not seem to know their own weight. It is impossible to grow Primroses, as all the flowers are eaten out before they appear. Add to this the hideous chattering and the mess that is made, and I think the indictment is complete.—C. R. C.

—— In the discussion of the sparrow question, the fate of our beautiful bright-flowered Crocuses should surely not be forgotten. Planted by those who care for them, regardless of expense, protected from the mice and other enemies in the winter, when they come out to gladden our eyes in spring they are torn to pieces by these chattering creatures, whose only function is to eat and destroy, as far as I can see. Other birds I love, because they make the air musical for us, but I never could see any beauty in the sparrow—certainly not in a London or town sparrow. It is to me typical of the useless man who lives for his meals.—H. B.

—— Apropos of what I said about English sparrows, it seems that New Jersey is going after them in dead earnest, the law protecting them having been repealed there. The Moorestown Agricultural and Industrial Society offers the following prize:—"A premium of 5 dols. will be awarded for the greatest number of English sparrow heads at the spring fair, heads to be strung on strings or wires of twenty-five each." They are so much in earnest about it, indeed, that they add that if one string contains the head of any other bird the whole exhibit will be disqualified. I am strongly in favour of protecting all birds that are in the least degree useful to the farmer and the gardener, and the most of our native birds are so; but the sparrow has proved himself to be worse than useless. His taste for bugs and caterpillars seems to be a little too fastidious for such as we have to offer him.—*Rural New Yorker.*

Tired of him!—A correspondent of an American agricultural paper, the *Cultivator*, writes from Wisconsin as follows: "I have been a staunch friend of the sparrow, but am obliged to give up and pronounce him an intolerable, pugnacious little nuisance. I know he eats all sorts and kinds of insects, grubs, worms, &c., but I also know that he is a thieving rascal generally. My bluebirds, which visited me for ten years or more, have been driven away, my pretty little southern travelling swallows are nonplussed entirely, and the combative sparrow is seen and heard everywhere. He is a saucy, impertinent, audacious little scoundrel. I no sooner drive him away than he is back again, foraging and stealing, fighting, &c. To me, now, he is only tolerable as a winter bird that would seem to be almost invulnerable to our fearfully cold weather."

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—VI.

Air giving.—Two mistakes are apt to be made by window gardeners—*i.e.*, not giving enough air to ensure robust growth and solidity of tissue, and recklessly exposing plants when the outside temperature and atmosphere are such as rather to check growth than to foster it. If plants could speak how they would tell of chills contracted when the genial influence of the spring sun is counteracted by a drying current of air, which draws the sap out of the foliage, contracts the sap vessels, and checks the flow of sap, causing a crippled condition to take the place of healthy development. There is nothing more deceptive than those bright days which come in spring before the sun has power to sufficiently temper the atmosphere, and to draw from it its harsh and moistureless nature. The occupant of a living room, influenced by the rise in temperature therein, puts his plants out on the window ledge, in the full hope and confidence of benefiting them, whereas, unless the position is well screened from winds and currents of air, more harm than good is done. Up to the beginning of June there are but few days suitable for exposing plants to the open air, and the rule should be to admit air in sufficient volume to allow of healthy growth without allowing a cold current to play on the foliage. One difficulty in the case of plants grown in living rooms is to harmonise the needs of the plants with the convenience of those who inhabit them, but this difficulty is in reality not so great, for in a general way what is pleasant to human beings is agreeable to plants, so that if you can with comfort sit at the open casement you cannot be wrong in admitting that amount of air to your plants. The form of the window and the manner in which air is admitted will have to be considered in regulating the amount of ventilation. In the case of those frames which slide up and down the amount of air can be perhaps better regulated, as on bright but windy days the needful ventilation can be given from the top, so that the more or less harsh drying air does not directly hit the plants, but comes to them in a measure tempered by the warmth of the room. Casement windows that open in the ordinary manner are not quite so manageable, but if it is always borne in mind that a current of dry cold air playing on the plants is dangerous, there will be no difficulty experienced in so arranging the ventilation that enough fresh air is admitted, while the evils which may arise from its admission in too great volume are avoided; and here I would caution amateurs against a practice which is very common, and which, more than anything I know of, throws plants into an unhealthy condition. In cleansing living and other rooms it is customary to throw the windows wide open while this operation is being conducted. As this takes place in a general way in the morning there is an influx of keen air when the weather is cold or cool, and even if a door is left open a draught of cold air will be playing on the foliage just long enough to chill, and in a measure paralyze, its functions for the remainder of the day. A series of checks of this description will quite suffice to neutralize any amount of loving care bestowed in other directions. Everyone knows how deadly is the effect of a chill on the human frame, and that thousands of debilitated constitutions are created by the sudden transition from a warm genial atmosphere to one just the reverse. It is therefore easy to understand how a plant enclosed in a warm room must suffer, when suddenly and for some time exposed to a current of cold air oftentimes strong enough to turn a small windmill. The harm this exposure effects is most keenly felt by plants which naturally possess an element of tenderness, and which in the hands of professional gardeners are treated as warmhouse subjects. Ficuses, Dracænas, Aspidistras, and other similar things love an even temperature and a still atmosphere, and they feel more or less keenly, according to their respective natures, any such changes of atmosphere and temperature. Whenever it is necessary to open windows under such circumstances, the plants in them should be placed in a corner of the room until they can again be closed. The only time when it is admissible to expose plants grown in rooms to the outside air is when one might sit comfortably in the open without feeling the need for an overcoat, but such days are rare before June. The position of the windows will determine the time for giving air, for where they face the east the sun will shine fully on them at an early hour of the day, and unless ventilation is attended to at that time the temperature will rise suddenly, and the plants will draw up. A little air should be given as soon as the first rays of the morning sun shine on the foliage, increased as the warmth therefrom becomes greater, and taken off sooner than where the windows face full south.

Windows facing east are for this reason the most favourable for plant culture. All the year through, as in spring, they catch the first beams of the morning sun, and in summer the inmates escape the fierce heat which prevails from noon till three p.m. Plants grown in such windows, with the exception of Ferns, rarely require shading; whereas, on the south and west, all kinds of fine-leaved plants absolutely need it for several hours, and many flowering plants are the better for being screened from the fiercest rays of a summer sun. I have seen Ferns grown to great perfection, the fronds exhibiting the deep lustrous hue indicative of perfect content with their position, and I have seen them looking yellow and miserable, the difference in condition being simply due to the absence or otherwise of shade from the sun just when its rays falls most directly upon them. In winter, plants in cool rooms require but little air, but in the constantly-heated apartment which serves as a storehouse for tender plants, or such as fear frost, the temperature is apt to rise too high in periods of mild weather if some air is not given, and plants which ought to be resting are making spasmodic efforts to grow which render them unfit for a vigorous effort when the proper time arrives. The weakly condition which many window plants exhibit the year through is frequently caused by undue confinement and stimulation at the resting period.

Cleanliness.—In glasshouses plants are frequently syringed and washed to keep the foliage bright and clean, and if such care is needful there how much greater is it required where the air is so much more impure, and where dusty particles are continually settling on the foliage, choking the pores and hindering them from performing their allotted functions? Twice a week every plant grown in a living room should get a shower bath, using perfectly clean and tepid water; and once a fortnight they should be carefully sponged, cleansing the under as well as the upper surface of the leaves. Plants really seem to enjoy this washing, the leaves appear to at once take on a healthier tinge, and the whole plant seems to expand. Then there is the enjoyment to the grower of looking on lustrous foliage free from stain and blemish, which alone is enough to compensate for the trouble and labour incurred. When plants grow in the open air Nature takes care that they are cleansed from time to time, and in glasshouses the syringe and rosed water-pot is called into operation to imitate, however imperfectly, Nature's work in the open. Frequent washing of the foliage is also needful in the case of plants grown on window-ledges and similar places, which oftentimes, looking on to a dusty road, become smothered with fine dust. Every evening in fine weather they should be well sprinkled. Byfleet.

New Zealand Speedwell (Veronica Hulkeana).—The delicate mauve-tinted flowers of this plant render it very attractive in the greenhouse during spring. They are produced in great abundance, and in colour are very distinct from those of any of their associates The wonder is that this beautiful Speedwell is not more extensively grown than it is, for it is equally floriferous whether in the form of small plants in 6-inch pots or in the shape of larger specimens. The tall branching spikes are very useful in a cut state, as they last a long time in good condition in water, and have a light and elegant appearance. It is a plant of the easiest culture; indeed, in several parts of England it is quite hardy, as are also many other natives of New Zealand. V. Hulkeana can be readily increased by cuttings or seeds, which under favourable conditions ripen freely.—H. P.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XVI.

(By Annie M. Griggs, Edinburgh School of Cookery.)

French Beans and Scarlet Runners.

These vegetables somewhat resemble Peas, inasmuch as they are gathered when young and tender, and both the pod and seed served and eaten as a green vegetable; they are also preserved in this young and green stage, so as to be available all the year round. The matured seed of the French Bean (Haricot) when carefully dried and thoroughly cooked produces a wholesome, nutritous, and valuable food, and is much used and appreciated on the Continent, but at present is comparatively little known and used in the British Isles. The ripe Bean of the Scarlet Runner is not so good and pleasant to taste, nor is it considered so wholesome, as the seed of the French Bean. When the Beans are quite young and fresh the only preparation they require is for the top and stalk to be nipped off and the Bean broken in two. If old, the string which runs down the back of the Bean must also be removed and the Bean cut in two lengthways; but if older still, after the stalk and top are removed, cut the Bean in thin strips, or slantingly into long diamond shapes. After the Beans are thus prepared let them lie in fresh cold water for at least half an hour before they are cooked. If they are to be plainly boiled lift them from the cold water into a large pan of boiling salt and water, and let them cook with the lid off the pan for at least twenty minutes; but, like all other green vegetables, the exact time for cooking cannot be told, as age and freshness will decide the question. They must be quickly boiled until tender, which can only be known by trying them from time to time. When they are sufficiently cooked, drain the Beans; put them into a hot vegetable dish with a small pat of butter, pepper and salt, and serve at once.

French Beans with Parsley and butter.—Boil one pound of Beans as previously described, and, when they are drained, put them into a stewpan with two ounces of fresh butter, one tablespoonful of very finely minced Parsley; stir with a fork over the fire until the butter is melted; put on a tightly-fitting lid, and stand by the side of the fire for about fifteen minutes, shaking from time to time, but do not lift the lid; pile them high in the centre of a hot dish, and serve separately, or with cutlets or kidneys.

Cold French Beans make an excellent salad, either fancy or plain. The Beans that are presentable and tender when the seeds are advanced in ripeness make the prettiest salad. The simplest method is to thoroughly drain them, and then sprinkle them profusely with salad oil and vinegar, cayenne pepper, and salt; let them stand for at least half an hour, and then pile high in the centre of a cold dish, sprinkle on the top with one tablespoonful of finely-minced Chives and one teaspoonful of dried and chopped Tarragon leaves. They may be made into a more elaborate salad by the addition of a few Anchovies, cooked Beetroot, cut in dice, hard boiled eggs, Lettuce, or any other green vegetable, and a more tasty sauce served with them, such as Mayonnaise, Hollandaise, &c.

French Beans to be served without meat.—Take sufficient Beans for four persons when cooked, choose them small and tender; remove the top and stalk with the fibres or threads at the back of the Bean. When thus prepared throw them into fresh cold water; should you have any large Beans cut them so that all may be of uniform size; throw them into plenty of boiling salt and water, and cook very fast, so as to preserve their green colour; when they are thoroughly cooked refresh them, *i.e.*, pour away the hot water and throw the Beans into a quantity of fresh cold water and let them lie for ten minutes, during which time melt two ounces of butter in a stewpan, add two Shallots very finely minced, and toss them over the fire, but do not allow them to become brown, sprinkle in one dessert spoonful of flour, and when thoroughly mixed add one gill of good broth or milk, stir until boiling; then add one tablespoonful of finely minced Parsley, and the same amount of chopped Chives or young green Onions. Let these cook by the side of the fire for ten minutes. Drain

the Beans and put them into the saucepan with the above-mentioned ingredients, and pepper and salt to taste, and so soon as they boil draw it to the side of the fire and throw in the yolks of two eggs previously well beaten with one gill of milk or cream, stir until thick, but do not allow this mixture to boil after the eggs are added. Have ready a slice of hot toast nicely buttered upon a hot dish, and the moment before serving squeeze the juice of a small Lemon amongst the Beans and pile them high upon the buttered toast and serve very hot.

To preserve French Beans for winter use.—Select five pounds of young and tender Beans; remove the top, stalk, and string from the back; wash well and boil them in strong salt and boiling water for five minutes, drain again, and put them into a wooden barrel or stone jar, and when quite cold cover them with strong salt and water brine which has been previously boiled and allowed to stand until quite cold, and is strong enough to float a fresh egg; cover lightly and let stand for two days, then drain the liquid from the Beans and boil it again with half a pound more salt, strain and let get quite cold; return the Beans to the jar and pour the cold brine over, and take care that it is enough to cover them; close the jar with a tightly-fitting cork, covered with resin or bladder; store in a cool and dry place. When these Beans are required for use, wash them carefully in fresh cold water, so as not to break them, plunge into boiling water, and finish cooking them—which will take from five to ten minutes—and serve them as desired.

Various methods of cooking dried French Beans, known under the name of "Haricots," will be given later on in the season, when most green vegetables are over, and all dried and old vegetables sought after and appreciated by those who miss the luxury of running to the garden for any vegetable that may be required.

14210.—**Non-effervescing lemonade.**—Will someone kindly give me a good receipt for non-effervescing lemonade?—Celer et Audax.

14211.—**Tarragon.**—Will Miss Griggs or any other reader tell me in what form Tarragon should be placed in vinegar for flavouring purposes—that is, in a green state or dry?—X. P.

Bread jelly.—Take the crust from, say, six slices of bread, and toast them well, but do not blacken them. Put the crusts into a clean saucepan, pour over them fully two quarts of boiling water, add two thin slices of Lemon, if liked, and let the whole boil to a jelly; then strain, and sweeten to taste. If Lemon have not been added you may add a little wine along with the sugar.—M. P.

POULTRY.

14212.—**Plymouth Rocks.**—Out of a sitting of Plymouth Rock eggs purchased this season, I have three pullets which are quite black, with the exception of yellow on the edges of the beak and under-sides of the claws, and one which has a white feather in each wing. I am informed that this is a common occurrence with pure-bred fowls of this class, and that these black pullets are usually (as mine are) larger than any of the others. Assuming this to be correct, will "Doulting," or some other correspondent, kindly say whether eggs from these black pullets are as likely to produce well-marked chicks as eggs from pullets which have the recognised mottled plumage and clear yellow legs and beaks which are characteristic of this breed.—C.

*** As "C." is probably aware, Plymouth Rocks are a breed of fowls of recent American origin, and, like all manufactured varieties, could not, for some years, be relied on to produce chickens of a uniform type. In the early days of the breed black pullets were often seen, but they are now rare amongst well-bred fowls, unless the parent birds have been injudiciously mated. For dark pullets a very light-coloured cock should be selected, for if the latter be of the same tint as his mates the chicks will be nearly black. I expect "C.'s" birds have been bred in this way. I do not think that black pullets, however carefully mated, would produce such well-marked chicks as birds of the recognised Plymouth Rock type. That some of the produce may be perfect in points I do not doubt, but the latter, in their turn, would be more likely to breed imperfect specimens than if there had been no stain on their own escutcheon. Breeding for points requires considerable care, for if blemished stock birds are used, the probability is that it will take some years to eradicate the fault from their progeny. If "C." intends breeding for exhibition purposes I think it would be unwise to use his black pullets for the reasons I have given, but if his fowls are kept solely for profit he need not hesitate to breed from them, taking care to mate them with a light-coloured cock.—Doulting.

BEES.

14213.—**Ripening honey** (*B. B. B.*).—Many sustain loss by extracting unsealed, consequently unripe, honey, on account of its liability to ferment. It is far better to wait till the combs are sealed before beginning to extract. The labour of uncapping, with a good uncapping knife, is so small that one can afford, by waiting a little, till all be sealed, to run no risk that one's honey should ferment and become unsaleable. Your jars of honey should be kept in a dry warm room, or a mild heat be applied to thicken it, and so escape all danger of fermentation. It would be better if your jars were quite uncovered. The fact of honey granulating is the best test of its purity, and it can be reduced to a fluid state, without injury, by heating it, not letting the temperature rise above 200 degs. Fahr. It may be done by placing the vessel containing the honey in another containing water, and set on a stove, keeping the honey vessel from touching the bottom by means of pieces of wood to prevent burning. A tall vessel of tin or galvanised iron, with a treacle-tap at bottom, forms a capital honey-ripener. If the newly extracted honey be allowed to remain in it for a few days, the small bubbles and watery honey rise to the top, when the ripe honey can be drawn off at the bottom.—S. S. G., *Boxworth.*

14214.—**Supering** (*Apis*).—Excepting in the neighbourhood of the moors, where Heather abounds, it is now too late to put on a super. On the moors large quantities of surplus honey are obtained during August. Should your stock throw off a swarm so late in the season it would be advisable to return it; otherwise it must be liberally fed to enable the bees to build comb rapidly and fill them with brood. Indeed, breeding should now be encouraged in all hives intended to be kept for stock another year, as all hives filled with brood in July and August will be strong and populous during the following winter and spring. There is, however, very little probability of your May swarm throwing off a virgin swarm so late in the season. In the spring, when the honey is coming in abundantly and the bees are crowded, a piece of straw-work, about 3 inches in diameter, may be cut out of the top of your hive, and the bell-glass (containing a little guide comb) placed on and warmly covered up; the bees will in all probability store white comb honey in it before throwing off a swarm.—S. S. G., *Boxworth.*

14215.—**Uniting straw-hive colonies** (*Mrs. A. Godley*).—Colonies strengthened at the end of the honey season by having bees of driven hives united to them are worth much more than those receiving no addition of bees; they are far better able to stand the severities of winter, and swarm sooner the following spring, their first swarm in good seasons filling their hive with comb and stores before hives not so strengthened in autumn begin to swarm at all. If your hives are all heavy with honey, it would pay you to drive and unite them, putting two or three lots together into new hives, and liberally feeding them, giving each hive about 30 lb. of sugar syrup, keeping the hives warm to promote comb building. Sugar-fed stocks (providing a sufficient quantity of syrup be given them) always do well, but the combs made from sugar syrup are more brittle and easily broken than those made from honey. It would save you much trouble, however, and your bees great labour, if you were to drive two or three of your hives and unite the bees to the other colonies, taking the honey from the driven hives only. The hives to be united must be gradually brought together, a few feet every day that the bees are able to fly abroad. If moved more than 3 feet at once many bees will be lost through not being able to recognise their own hive, and in trying to enter other hives will be destroyed.—S. S. G., *Boxworth.*

13939.—**Ants in houses.**—Where fruit such as Peaches or Wall Pears are grown, ants will at times inflict damage, and therefore they should be kept away. But this is a comparatively easy matter, as the placing of an obnoxious substance along the base of the walls and around the stems of the trees will deter them. Where ants are troublesome indoors, some method of destruction must be resorted to, and of all the remedies given perhaps the arsenical solution is the best, but it is the most dangerous. *Lime.*—Owing to the form of the feet in the ant, it cannot pass over a belt of loose, dusty chalk or lime, and a little line of fine air-slaked lime an inch high will keep back a whole colony so long as it is dry, dusty, and of a conical form. A thick chalk line drawn round a smooth tree, or across an upright board or post, will render it impassable. Air-slaked lime plentifully dusted over and around the hills and other places infested, will cause the ants to vacate them in a short time. It should be placed about in warm, dry weather. *Arsenic.* — Before giving this recipe we would point out the great danger attending it, as a poison most fatal to animal life. The way to prepare it for ants is as follows:—1 ounce of arsenic is placed in an old iron pot with a quart of water, and then boiled until reduced to a pint or a pint and a-half of liquid, to which is added half a pound of coarse sugar. This mixture can either be dropped about the runs and around the nests, or placed in saucers in the ants' haunts. We have cleared many houses by this plan, but, as we have said, it is highly dangerous. *Ferrocyanide of potassium.*—Like the last, this is a very dangerous preparation, and also very good for the purpose. Take of ferrocyanide of potassium 1 drachm, raspings of quassia 1 drachm, and enough sugar to form a syrup. Use in the same way as the preceding. *Calomel and sugar.*—If one part of calomel be carefully incorporated with ten parts of finely powdered loaf sugar, and placed in little heaps near the nests and runs, the ants will eat it and die. When they first get about strongly in spring is the best time to apply these agents for their destruction. *Guano.*—Fresh guano well sprinkled on and around their quarters will cause ants to remove elsewhere, and it will also destroy a great many. *Camphor.*—If a piece of camphor, about the size of a Filbert, be placed in a couple of quarts of hot water, and when cool enough, applied to pot or other plants infected with ants, the insects will be destroyed without injury to the plants. *Bones.*—Lay a quantity of partially pickled bones in the haunts of the ants, and they will be quickly covered with them. As soon as this occurs throw the bones into hot water, and before laying them down again let all superfluous moisture drain off. This is a cheap remedy, and if persisted in is very effectual. *Carbolic acid.*—This, if of good strength, diluted with about ten or twelve times its own bulk of water, and well sprinkled over paths or other places where there is no vegetation, will keep the ants away; but it is of most use in buildings where the smell is not too objectionable. *Paraffin or coal oil.*—Paraffin, mixed with six times its bulk of water, and sprinkled over the nests every few days, will kill and drive away ants, but the oil renders the soil a bad absorbent of water. *Quassia.*—4 oz. of Quassia chips, boiled in a gallon of water for about ten minutes, and 4 oz. of soap added to the liquor as it cools, if used like the preceding, is fairly effectual, but, like all other remedies, must be persisted in for some time. Flat pans or saucers nearly filled with thin honey or sweet oil attracts ants, and holds them fast or drowns them. There are dozens of other specifics, but we have generally found the preceding answer, and, in fact, use no other, unless it be water, turning over and flooding all accessible nests as often as possible. Ants are very hard to effectually clear out of a place, and therefore it is very desirable in all attempts to be rid of them to persist in the remedies applied. When found away from the roots or stems of plants, the best and surest remedy of all is to flood them out or scald them with boiling water.—From "Garden Pests and their Eradication."—Celer et Audax.

Single-flowered white Rose.—If the correspondent who made enquiries for this Rose will send me his address I shall be pleased to send him a plant when it is safe to remove them.—J. C. C.

GARDENING ILLUSTRATED.

Vol. VII. AUGUST 15, 1885. No. 336.

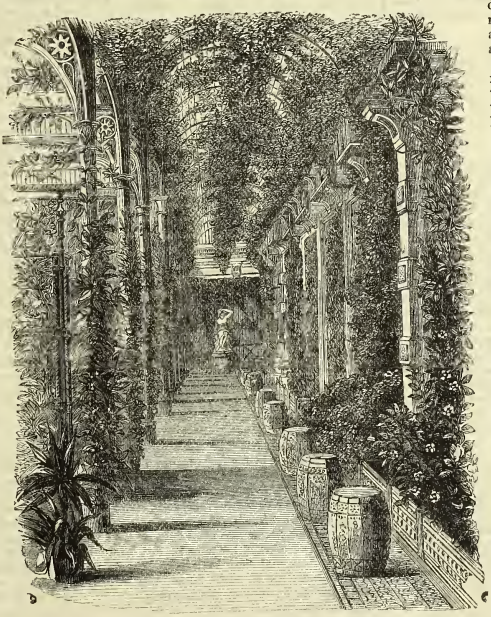
HOUSE & WINDOW GARDENING.

CORRIDOR NEAR WINTER GARDEN.

This engraving is suggestive of the pretty corridors that one might make instead of greenhouses in various places. In some cases it is nice to connect glasshouses in this way, and such a corridor could be used as part of the house itself—say, to connect two wings. Such a structure lends itself to very pretty treatment with climbers of all kinds, and even gives a better effect than the greenhouse, with its fearfully stiff stages, red pots, and all the rest of the ugliness of it!

WINDOW GARDENING IN TOWN AND COUNTRY.—VII.

Geraniums and Fuchsias. — These being two of the most important families of plants grown in windows, a chapter devoted to them will scarcely be out of place. The Zonal Geranium, in its many shades of colour, and embracing single, double, and semi-double kinds, all of which are more or less floriferous, some of them being exceedingly so, and possessing that compactness of habit so desirable in plants which have to be grown in a limited space, is assuredly the most popular window plant in cultivation, and will probably never have to give way to a worthier rival. In a fairly light window, and with proper attention to ventilation, Geraniums will do as well as in a glasshouse. I lately saw some plants in 6-inch pots on the window ledge of a cottage which in floriferousness and general health could not possibly be surpassed. They were simply perfection. In one respect the window gardener possesses an advantage—*i.e.*, that his plants are not liable to damp in winter, the atmosphere in the dwelling being so dry that they can scarcely suffer from that disease of the tissues which good management is required to ward off under a glass roof. Geraniums will grow and bloom for several years in the same pots, but it is advisable to have some young plants coming on to take the places of such as become too large. From the beginning of April to the end of August cuttings will root freely. Plants which have flowered through the summer will generally have long shoots, which should not be pruned back if it is possible to accommodate them, as they may make the best of material for propagating, being strong and sufficiently hard to guarantee them against rotting. Take them off with three joints, and put them singly in sandy soil. The only art in striking Geraniums is in the watering; they only need a slight moistening now and then, just enough to keep them from shrivelling. Put them in a light place, and in a warm room they will make roots in the course of a month. If grown along, shifting when the pots become fairly filled with roots, they will become well established in 4½-inch pots by autumn. If you want a show of bloom early in the spring this is the sort of plant to give it, but the buds must be pinched out, so that the blooming power is reserved until that time. Such free-flowering kinds as the Vesuvius varieties, Henry Jacoby, West Brighton Gem, Wonderful, Madame Amelia Baltet, and the Duke of Wellington will furnish quite a blaze of bloom during April and May, and if top-dressed occasionally, and liberally watered in hot weather, will continue to flower freely all through the summer. Plants which have become too large can be cut back if so desired, the best time for so doing being about the beginning of April, and when they break and have made shoots an inch long they should have some of the old soil shaken away and be repotted. These old plants flower with great freedom, and if there is a garden to decorate they make a grand show planted out. By putting in a few cuttings now and then and growing them on in the manner suggested there will always be some such old specimens to be disposed of. In hot weather root-bound plants require a considerable amount of water; they should never become quite dry. If fully exposed to the sun they will need looking to three times a day. It is only in this way that the same plants can be made to continue blooming all the season. They must never know the want of moisture or food. Another important point is to pick off the trusses as they commence to fade, never allowing them to go to seed. A dozen seed pods allowed to ripen will do more towards exhausting a plant and arresting continuity of blooming than six times that number of flower trusses removed as they fade can do.



Corridor leading to a Winter Garden.

Fuchsias, when in good health and blooming freely, although not so showy as Geraniums, are so graceful and attractive as to yield to few things in the pleasure they are capable of affording. I know of a window which is furnished with a broad ledge with a protecting canopy, and which every year contains a number of large Fuchsias, which, blooming with great freedom, present quite a charming appearance. These plants are evidently "old stagers," being probably stored away for the winter in a cellar or some similar place, and brought out again when they begin to grow. It is astonishing the amount of bloom old Fuchsias will produce when allowed to grow naturally, not forcing or coddling them in any way, but letting them come on with the season. The advantage one has in growing Fuchsias is the little accommodation and care they require in winter. Store them away in November in some dark cool place where the frost does not come much, and in a general way they will need no looking to until pruning time arrives. If they can be stored in a cool cellar they will need no water until the middle of March; but if they are put away in the corner of an unheated room, they will probably become so dry as to need a little water once or twice in the course of the winter. If kept in this way they will need to be looked to in very severe winters, covering them a little, as, although they may not be killed, the extremities are often much injured and the fair proportions of the plants spoiled. About the middle of March they should be pruned, as the sap will then commence to rise. In the first place cut back all the strong shoots to two eyes from the base, and then cut clean away all small, sprayey shoots, as they will yield no flowers worth speaking of, and only crowd the plant with useless growth. If they are dry, water them so as to thoroughly moisten the soil through, not giving a drop more until it is quite dry again.

Repotting is not absolutely necessary; plants may remain in the same soil for several years, their vigour being maintained by liquid manure or by top-dressings at frequent intervals, but the best results are obtained when the old soil is shaken away and the plants put into new compost. The right time for doing this is when the new shoots are about an inch long. Care must be taken not to render the fresh compost sour and close before the roots have taken full possession, which will not happen if it is not watered until it is dry. Young plants from cuttings of the previous year should always be thus treated, as they then come along more quickly. The soil for Fuchsias should be lighter than that used for Geraniums, and it should not be so firmly pressed in. Two parts fibrous loam to one part of leaf-soil forms a good mixture, adding plenty of white sand. The best time to strike cuttings is when the plants are making free growth, and before there are any signs of flower buds. The points of the free-growing shoots then strike very freely, and there is time to grow them along into nice little specimens by the autumn. Fuchsias like plenty of light and air when growing, but they enjoy, and even demand, a larger share of atmospheric humidity. For this reason it is preferable to give them a position in summer where they are not subjected to such a strong heat as Geraniums enjoy. An east aspect is the best, but they will do excellently in a north exposure. Not only do the plants grow better in a partially shaded position, thus keeping up the show of blooms for a longer period, but the flowers individually last longer. In a sun-baked situation the foliage at the base of the plants is apt to turn yellow and fail, and there is not that appearance of content which characterises plants grown in a cooler, moister atmosphere. When Fuchsias get no change of soil they should be top-dressed with some concentrated manure as soon as they begin to grow, not putting off feeding them till they get into fine growth, as the stronger they stand away the greater chance is there of a good show of bloom later on. Frequent complaints have been made of the buds dropping before they expand. This is invariably caused by debility, for which there are several predisposing causes. It is a want of

vigour brought about by defective root action, too little air, or not enough moisture at the roots. Plants which have had liberal culture, and which get plenty of air, do not drop their buds, those which are most liable to do so being such as are kept in the house. A good remedy is to stand the plants in the open air for a time in a shady, sheltered situation, taking care that the soil never becomes very dry. The invigorating night air soon imparts a renewal of vigour which will enable them to perfect their blooms. The doubles are most liable to cast their buds, the double whites being the greatest offenders. They seem to possess an element of weakness which good culture only can conquer.

BYFLEET.

Plants for passage.—"J. G." has a passage room with a glass door leading into a glass-covered and glass-sided passage, which faces east, and a glass door which faces west on the other side, and opens into a flower-garden and conservatory. There are slated shelves on the north and south sides of the room, where there grow Ferns in pots. The floor is tiled, but a border is going to be made 2 feet wide under the shelves, which are only 14 inches wide. In this border "J. G." wishes to plant creepers (for the walls are unsightly), if possible evergreens. Would a red Lapageria grow without light from the top? The room is not cold, but there is no artificial heat. And can anyone kindly recommend any evergreen climbing plant likely to thrive in such a place?

Varieties of Musk.—I have to thank Mrs. Gostage and Mr. E. Hewett for their answers to my query. I would also be glad if any other reader would let me know through GARDENING if he has raised or possessed of any new kind of Mimulus moschatus (Musk). I am forming a collection, and shall be glad of early replies.—A. G. N. L.

FRUIT.

PYRAMID PEARS IN SMALL GARDENS.

THERE are, I am convinced, thousands of persons who, if they knew how little trouble and how much pleasure can be derived from this description of gardening, would at once enter into it. I venture to hope that this little treatise may induce some few, at all events, to follow in my footsteps, persuaded as I am that the result will be one of unmixed pleasure, and that pleasure combined with profit. I address myself solely to that numerous class whose means, whose time, and whose space is limited, and who have little or no knowledge of gardening, as they are precisely the conditions which apply to the million in this country. To the working man in the town with half an hour to spare at meal times, &c., to the well-to-do cottager in the country with a rod or two of ground, to the hundreds of residents in neat villas, who, engaged in business all day, have but little time for recreation, this method of cultivation recommends itself. What I aim at is to supply a handy guide, short, simple, easily arranged, and digested, so that persons entirely unacquainted with gardening operations may at once clearly understand and comprehend the directions laid down. Now I shall sermonise a little, and divide my discourse into heads, and I shall explain from the beginning the course to be pursued.

Soil and situation.—If your garden is only 20 feet square, and you have light and air, you may have a few trees. But you must ask yourself a question about soil. Much depends on this, but a great deal may be done by yourself. If it is light, with a gravelly subsoil, break it up in the autumn (or at your convenience), and, if possible, three spades deep, mixing it with some loam or stiff soil, the first if possible (if near a brickyard very often the toppings make a good mixture), with a little manure, and incorporate the whole thoroughly. If your soil is stiffish or clayey the opposite course must be adopted, and some light soil liberally dug in. If you are fortunate enough to have a good loamy or meadow soil to work on, nothing is needed except the digging, no manure being then wanted. If not inclined to undertake the labour of digging all the ground thoroughly, then holes, 3 feet to 4 feet over, and not less than 2 feet deep, may be prepared; and if your soil is unsuitable, you can fill the holes with the proper description of compost as directed above, giving the preference to good loamy or meadow stuff. Stagnant, undrained land, I need hardly say, would not repay cultivation. As a rule, stiff soil suits these trees best; poor sand is of no use.

Selection of trees.—Assuming that your ground is prepared by the middle or end of October, the next thing will be to get your trees. Now, never mind what you hear about this, *be sure to get your trees as soon as you can*—during November at the very latest; for two reasons if not more. One is that your trees, if planted before the winter sets in, will be settled and doing; the other is, that if you go early to the nurseryman you will have the pick of his stock. If you have an opportunity earlier you can select your trees, have a tally put upon them, and have them lifted in the autumn when you are ready. Those who plant late have only the inferior trees to pick from.

The sorts to select from.—A great deal depends on soil and situation, both for fruitfulness and flavour. But you must at once admit that one fine, delicious, well-ripened Pear is worth a bushel of half-grown, ill conditioned rubbish. By "rubbish" don't misunderstand me. Where one description will do well another will fail. On different soils, in different situations, and in different summers, the same Pears vary much, and give very different results. I append a list that will not disappoint you, and that will with care and attention prove all that the lover of good fruit can desire. List of Pears and date of ripening:—*Williams' Bon Chrétien, September; * Louise Bonne of Jersey, September and October; Beurré Superfin, October; *Comte de Lamy, October; Beurré Hardy, October; Duchesse d'Angoulême, November; Baronne de Mello, November; *Thompson's Pear, November (altogether the most delicious Pear I know); Alexandre Lambre, November to January; Beurré d'Aremberg, December and January; *Winter Nelis, December and January; Josephine de Malines, January to March, or later; * Bergamot d'Esperen, March to May. Be sure to grow the six marked thus (*) if no others. The great nurserymen will hand you lists with a hundred different sorts to choose from. Take the advice of the best man you know as to those most likely to do well in your neighbourhood.

Planting.—Presuming that space is an object, I will take as example a plot of ground 10 yards square. In this you may plant fifteen trees at equal distances, thus:—

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15

You will have fresh soil to move them in when the time comes for lifting them, of which I shall speak presently; and this method of placing the trees gives the greatest facility for getting between them, and for circulation of light and air. If planted in a row or border, 6 feet to 8 feet between each tree will suffice. Before placing the trees in the ground, carefully trim away with a sharp knife all bruised, torn, or jagged roots, and don't be afraid of using the knife freely, taking particular care to cut away any large tap-root that may be left on the tree—as what is desired is to get a large mass of fibrous roots near the surface of the ground.

Cultivation.—You have now your stock fairly in hand, and with the exception of a few little matters nothing will be required at your hands for a long period. The winter months steal by, your trees are slowly but surely progressing. In the month of March the buds will be swelling grandly, and in April you will probably have the pleasure of seeing the blooms expand in the sunshine. Please to observe there are two kinds of bud—one containing the blossom, the other the leaf. The first is rounder, fuller, and plumper in appearance; the second more pointed. This observation is sometimes of use in deciding about cutting out branches, moving trees, &c. Very likely you will find your trees have a much larger number of blossoms than they should be allowed to carry. You must limit them according to the size and strength of your trees. The first year six, eight, or ten to each tree will be sufficient. Thinning out the blossom may be done partially in April and May, by taking a finely-pointed pair of scissors and carefully clipping out, a day or two after they expand, two or three of the blooms from each bunch. You will soon have an opportunity of seeing what fruit are likely to set, or hold on, and swell properly. When you have ascertained this, which will be in a week or two, thin out the young Pears *unsparingly*, leaving the number I have indicated on each tree, and no more, for the first year especially. The young shoots begin to push nicely now, and as your trees are exerting themselves so you must gently keep up their supply of food. This may be done—on poor soils especially—by hollowing out a little basin-like place, 18 inches to 24 inches round the stem of each tree, and filling it with well-rotted compost. This serves a double purpose. It supplies the young fibrous roots with nourishment, and, if watered in dry seasons, keeps the earth in capital growing order. The soap-suds and slops from the house are excellent for this—the latter well diluted.

Pruning.—On this and the moving depends, in a great measure, failure or success. It is the life and soul of the whole art and mystery of growing these pyramid trees. I shall endeavour to lay down the directions so plainly and simply that you cannot go wrong, and then, if I amplify my instructions a little afterwards, it will be merely as a sort of finishing lesson. You will by this time have got to take an affectionate interest in your little trees. To see them in the first year of your possession begin to repay with gratitude your time, trouble, and expense is a delightful sensation, and you in your turn must devote five minutes to them every day. But this I need not insist on—you will not require any stimulus from me. Towards the end of June you must go over each branch, and carefully pinch off every shoot down to four or six full-sized leaves, except the leading ones—*i.e.*, those at the end of each branch, which may be left till October. Be careful to leave the lower branches an inch or two longer, and stop the upper ones rather more closely in proportion. By this method you insure a more symmetrical shape. Certain strong growing sorts you may leave six buds on; for other slower and more dwarf-growing kinds four will amply suffice. This work may be carried on at the end of June and all July, or a fortnight later if a backward season. Very likely some of the shoots thus stopped may sprout again. Let them alone till the first or second week in September, and then shorten them back to two or three leaves from the place you pinched them back, always leaving the top and end of the leaders. Get all the wood you can to grow as near the ground as possible, so that the stems of the trees are nicely covered. It is a great mistake to trim the stems half-way up, as the best fruit is borne on the lower branches; or, rather, one ought to say the ripening power of Mother Earth is felt by them in a more forcible way.

While on the subject of pruning let me direct your attention to the knife pruning. After the leaves are off go carefully over your trees, and trim them neatly to the shape you desire, bearing in mind for the pyramid shape to cut the top shoots in closer than the lower ones; and for those (if any) of the bush shape to open them out well in the centre, letting in sun and air. In the matter of using the knife there is not a great deal to learn. Have the blade very sharp, so that it will cut cleanly and well, as a rough, jagged cut will not heal either in tree or man so easily as a clean cut. Cut over the buds at an angle of, say, 45 degs.; do not let the cut be too slanting, so as to expose unnecessarily too much cut surface, but by no means cut horizontally. Always manage to leave the bud on the *under* or outside; by thus doing the trees have a better appearance, and the new growth follows the proper shape of the tree.

Moving or lifting.—This operation seems so opposed to one's notions of trees doing well that you may well feel nervous about it at first. However, don't hesitate. For instance, I had a Plum tree which, though moved twice (at intervals of three years), never had a blossom on it. I moved it in the early autumn, severely root-pruning it, and then, altering my plans, moved it again the next year. It is at the time I write this covered with blossom, and there is every prospect of a large crop. This moving, or lifting, may be done (in some cases *must* be done) every two years; but, as in the case of the pruning, a little common sense must be exercised. The object of moving the trees is to restrain the superabundant leaf and woody growth, the root-pruning the same, and to assist

the trees in forming fruit rather than wood and leafage. Trees that are doing well and not getting too woody may be left to the third year. If stout, fast-growing sorts, and they do not show for fruit, move them every two years. A different method may be used to effect the same result, and one in which so much labour is not required; but this is an alternative plan, and should only be done where the other cannot be carried out. In the autumn take a sharp spade and cut straight down 2½ feet from your tree half-way round, and then cut about the same distance directly under it; this stops the downward striking or tap-root. Now get some fresh soil of the sort described before, and put a barrow load to each tree, fill up and settle down as before. Next year do the other half of the circle, and the following year repeat the operation, making the circle 9 inches wider. You thus encourage the formation of a mass of small fibrous roots. Moving the trees entirely is the better plan, as you have the root pruning more under control. Now as to the reward of your labour.

The fruit. Gathering—storing.—I think I may say that, without exception, all Pears must be gathered *before* they are ripe—the very early varieties two or three days, those a little later ten days to a fortnight before putting them on the table. The late autumn and winter sorts may be left on the trees with advantage till the middle and latter end of October. All are better gathered thus than left on the trees to ripen. The difference in flavour, &c., is surprising in most cases. A good test as to when fruit is fit to gather, is to lift a fruit up gently; if it comes off the tree without any pulling, then they are ready. This applies especially to the earlier sorts. Be careful always to gather only when the fruit is quite dry. For keeping, a dry, cool, dark place, is necessary, with air enough to keep the fruit sweet and free from all chance of frost. A very good plan, and not expensive, is to lay them out separately on lath shelves, no two Pears touching each other. Keep each sort separate. Look them over every day or two; a gentle nip between finger and thumb at stalk end, the change of colour, the scent, &c., in most sorts will be a very sufficient guide. At your leisure prepare a little leaden or zinc label, with a number on, and affix to each tree. Make a memorandum of the name and corresponding number in a book, in case the trees are removed to a distance. Now all I have to do is to wish you success, and may you find as much pleasure in growing pyramids as I have done. Apples, Plums, Cherries, &c., may all be cultivated on these lines:—

Classified list of Pears, with date of ripening.—*Ripening from July to September.*—Summer Doyenne, Jargonelle, Tyson, Beurré Giffard, *Williams' Bon Chrétien, Beurré Superfin. *Ripening during October, November, and December.*—*Louise Bonne of Jersey (and very often in September), *Comte de Lamy, Suffolk Thorn, *Marie Louise, Beurré Bosc, *Thompson's, Baronne de Mello, Alexandre Lambré, *Beurré d'Aremberg, Passe Colmar, Chaumontel (on a wall or warm place), Forelle, Conseiller de la Cour. *January to March.*—Beurré d'Aremberg, *Winter Nelis, Josephine de Malines (Mr. Rivers reckons this the finest-flavoured Pear he grows; I have never succeeded entirely with it), *Zepherin Gregoire, *Bergamotte d'Esperen. *Give the preference to these.

REPLIES.

14125.—**Mildew on Grapes.**—The fact that you are trying to grow Grapes and Cucumbers in the same house is a sufficient explanation of the cause of your vines getting mildew; as you say you are a novice you are not likely to succeed with both. If you cannot root out the Cucumbers you must give more air and less internal moisture and persevere with the application of sulphur; you have done quite wrong in shutting up your house close at midday. When mildew attacks vines the house should not be quite closed either night or day.—J. C. C.

—— It was quite right to dust the vines with sulphur, which is the only remedy for this pest; but in syringing them daily it has probably been washed off again. Go over them and lightly dust the affected parts, allowing it to remain on for a month, which will cauterise the fungus. Many good Grape growers never syringe their Grapes, and it is not absolutely necessary to do so, as by damping down the house well in the afternoon when closing it the requisite amount of atmospheric humidity is obtained. Another year watch for the first symptoms of the mildew, and dust at once, which if done will check its ravages. There are two things which bring mildew, viz., a moist, stagnant atmosphere and draughts. A current of cold air blowing on the foliage will bring on an attack very quickly.—J. Cornhill.

14077.—**Unfruitful Strawberry plants.**—There is more than one cause for barrenness in Strawberry plants. They may either grow too strongly, or, suffering from insufficient moisture, may fail in forming their flower-buds. As this is the first season of their growth the best way will be to leave them where they are, and it is very probable that the barren plants will fruit next year; indeed, it is possible that they may give the heaviest crop of fruit. Judging from our own experience, a plant may fail to yield one year, and be equally fruitful the next—that is, if the soil is a good one.—J. C. B.

13952.—**Melons turning yellow.**—The fruits are not fertilised, which may arise from the absence of pollen. The fine health and the splendid leaves perhaps arise from over-feeding, and this may explain why the fruit does not set. Melons do best in a rather heavy, compact soil—I do not mean a poor soil, but a sound, somewhat adhesive loam. In light soils they often make splendid leaves and luxuriant growth, but the organs of generation are not in the most perfect condition. Add a little fat, heavy loam, press it firmly down, keep the growth thin, ventilate freely, and the fruits will yet set and swell all right.—E. Hobday.

13878.—**Quince trees shedding bark.**—Old Quince trees sometimes shed their bark. Taken by itself it is not evidence that anything is wrong in the condition of the tree. It should be considered in connection with the tree's general condition. If the tree looks healthy, and continues to bear fruit and make wood, the bark shedding may be regarded as a healthy sign rather than otherwise.—E. Hobday.

14124.—**Neglected orchard.**—If the branches of your trees are crowded thin out the weakest shoots during the winter, and some time before the new year comes in lay on the surface a layer of farmyard manure, 3 inches thick, 4 feet to 6 feet away from the bole of the tree all round. It is the poorness of the soil and the prolonged dry weather which causes the fruit to drop. If you keep pigs or sheep let them have the run of the orchard all the winter and so far on in the summer as is safe without their eating the fallen fruit. The most productive orchards which I am acquainted with belongs to small farmers, who often keep so many pigs in their orchards that the surface is trodden into a quagmire during the winter, and the keeping of so many pigs means a continuous rich surface dressing of the soil.—J. C. C.

14113.—**Sex of Strawberry plants.**—This question is not very clear, and I feel disposed to ask what does "J. S." want to know? If he means that his Strawberries have been barren this year, I do not see that it in any way affects the sex of the plants. The flowers of Strawberry plants are sometimes destitute of anthers, and then the fruit do not get fertilised, unless by some other agency than the flowers themselves. Overcrowding of the plants and a poor soil is a frequent cause of the sterility in Strawberry flowers. Some sorts are more liable to fail in this way than others. The largest early Strawberry ever raised dropped out of cultivation in a few years, because many of the flowers came destitute of anthers, consequently it was a poor cropper. I allude to the Princess of Wales (not Prince of Wales), raised and sent out about twenty years ago by Mr. Knight, of Battle, Sussex.—J. C. C.

—— Strawberries are not unisexual; every flower is perfect in itself. They only require to be let alone, and with good culture will bear abundance of fruit. Good varieties, such as Keen's Seedling, President, Sir J. Paxton, and Loxford Hall Seedling ought to be planted.—J. D. E.

14110.—**Compost for young vine.**—The best material for a vine border is turfy loam, add to it a hundredweight of crushed bones to every eight cartloads, or an 8-inch potful to each barrow-load. A sixth part of the compost may be composed of decayed stable manure. The best time to plant the vines is in spring before they start into growth. Train up two or three shoots from near the base of the plants to form fruiting canes for next season.—J. D. E.

THE VILLA GARDEN.

(*Continued from page* 298.)

Herbs.

Without herbs our dinners would be flavourless. The best and most skilful *chef* could not do much without the little finishing touches which herbs supply in the way of flavouring. Herbs are of sufficient importance in the kitchen to have a small compartment of the garden set apart specially for themselves, and this compartment should be set out in 4-feet beds, one or more beds to be planted of each kind, according to the demand likely to arise. But though a part of the garden should be given up to herb culture, "rotation of crop" is as necessary here as elsewhere. Young plantations are the best and most prolific. Sage, for instance, should not be permitted to remain on the same bed more than two years. Thyme, Mint, and Tarragon should be frequently renewed. When an old bed of any kind of plant is done away with, the ground should be manured and turned up deeply in winter, leaving the surface rough to pulverise and rest till spring, when it might be occupied with one of the annual herbs, such as Knotted Marjoram or Basil. Then the next season it might be planted with cuttings of Sage or Thyme. With judicious management the herb garden might continue to occupy the same site at the same time that a constant rotation was going on among the various plants cultivated, and at no time would it be uninteresting if rightly managed, so the herbs need not be relegated to some out-of-the-way corner.

Angelica.—This is a handsome plant, not commonly cultivated in this country, flowering early in spring. Used more especially in confectionery. It is easily raised from seeds, which may be sown either in August or in March. The plants should be thinned from 2 feet to 2½ feet apart. They will grow from 3 feet to 4 feet high. If all flowers are removed the plant becomes perennial in duration. It likes a damp soil.

Aniseed.—This is another little-grown plant; used chiefly in medicine. Sow in pans or boxes in a warm frame in March, harden off, and plant out 6 inches apart in May in the same way as Basil is commonly grown.

Balm.—This is not a culinary herb, but it is in demand for flavouring claret cup, &c. It is easily increased by division in spring. It should have plenty of space, when it will stand a number of years without transplanting. A root or two may be potted, and forced on gently in spring or at any other season, should there be a demand. For drying cut just before the blossoms open. Dry in an airy room.

Basil.—There are two annual forms of this valuable herb commonly grown—the Sweet and the Bush. There is not much difference in flavour. One is more dense in habit than the other, and this constitutes the chief difference. Both are annuals, and to obtain them in a condition for use early they should be sown in heat in February or March. I like to sow a pinch of seeds early in February, and grow on in pots for early use. Another sowing is made towards the end of March, which is hardened off in May, and planted out in a warm sheltered situation, 6 inches apart. The seeds may be sown on a south border and covered with rich, light soil early in May, and be left to grow on the seed-bed all through the summer; it is used in a green state, but for winter use it should be cut when showing flower, dried, and placed in wide-mouthed bottles, and tightly corked. If green Basil is required in winter, a sowing may be made thinly in June, the plants being pricked into 5-inch pots, and plunged out all the summer, having all flowers picked off. They should be moved into a house where a little warmth can be given before frost comes, as the Basil is a tender plant.

Borage.—This plant is very easily naturalised; I have not sown any seeds for years, yet always have plenty. It may be sown in March and again in April or May. It has a pretty blue flower, and has a showy appearance in early spring in pots in the greenhouse. It is chiefly used for flavouring cooling drinks in summer, such as claret or champagne cups.

Burnet.—This is a native plant; it is not particular as to soil or situation, but does best in rather light soil. It may be raised from seeds

in March, thinned out to 8 inches or 9 inches apart, or it may be propagated by division of the crowns in spring. The plant is a perennial, and is used chiefly in flavouring salads, cooling drinks, &c. The flowers should be removed as they appear.

Carraway.—This plant is chiefly grown for its seeds, which are used by confectioners. The plant has ornamental Fern-like foliage, and will grow freely anywhere in good land of a free open texture. It is best sown in drills 9 inches apart in spring, the plants to be thinned when large enough to 8 inches apart, and kept clean by frequent hoeings. There is a tuberous-rooted Carraway which will probably become popular when better known. It is very prolific, the tubers being white, from 2 to 3 inches long, and about half an inch in diameter. It may be eaten raw, and may be cooked in various ways and used in soups.

Chamomile.—This is a white-flowered native plant, much used in medicine. There are two varieties, one bearing single and the other double flowers; the latter is the kind chiefly grown. It is propagated in spring by division and sub-division of the roots, which are planted on well-worked land in April, early in the month, one foot apart each way. Fix the plants firmly in the ground. After they have become established, if the land is at all loose, it is a good plan to tread the bed over to firm it; the feet may pass over the plants as well as the intervals; select a time when the surface is quite dry, and stir up the surface with the Dutch hoe immediately after, to prevent a hard crust being formed. Gather the flowers, when fully expanded, on a dry day. Dry them in the sun, stirring them frequently until quite dry, and then store them in paper bags, suspended in a dry room.

Chervil.—The curled variety is the one most commonly grown. Make the first sowing about the middle of February on a south border, and sow in succession as required till the middle of September. The last sowing will stand the winter, and should, like the early sowings, be made on a warm border. Sow in June on a north border, as in the hot weather it soon bolts unless sown in a cool position. It may be sown broadcast, or in drills. I prefer the latter plan best; I draw the drills about 9 inches apart, and thin the plants to 6 inches apart in the rows. In summer, if the plants show a tendency to run up to flower, pinch these off. In very severe winters it is a good plan to have a few plants in pots (they will lift safely) in a frame or in a cool house, as it is in almost daily demand for flavouring salads, &c. Seeds for home growth may be saved with great facility if desired.

Chives.—This plant used to be more largely grown than it is at present. It is an old-fashioned plant, and is generally found in old-fashioned gardens, where it is used to flavour salads, having a mild Onion flavour. It is easily grown, being propagated by division in spring, and may be planted from 6 inches to 8 inches apart. The young tops only are used, and they are cut off near the crowns.

Fennel.—This is a very ornamental plant, and will grow 6 feet or more high in good soil. It is easily propagated by division in spring or from seeds. The latter should be sown in April. I remember that one cold winter some years ago killed every plant we had. I immediately sowed some seeds in a pot, and placed them in a warm pit, where they quickly germinated, and were potted off and grown on in pots till they got strong, when they were planted out. A very few plants will be sufficient for a moderate-sized establishment. In summer the plants two or three at a time should be cut over in succession to have young growth coming on. It is a good plan to lift a few plants in autumn, pot and place them in the greenhouse, pushing them on in heat if required.

Horehound.—This is thought much of in some country districts as a medicinal herb, and is grown and used largely among cottagers, being considered a specific for colds, and an agreeable effervescing drink is manufactured from it in summer. It is easily propagated from seeds, and cuttings and slips, taken off with a piece of root attached, soon make large plants. It thrives in any good garden soil. Should be cut and dried when coming into flower.

Hyssop.—This is another medicinal herb, of a shrubby character, but not unornamental in appearance. It is easily raised by cuttings in April, and from seeds sown in spring; the young plants should be placed from 12 inches to 15 inches apart.

Lavender.—This is a most interesting and ornamental plant, partaking of the character of a small, low bush, with woody stems. Groups of 10 or 12 plants are very effective on the lawn. They look best in some retired spot on some shelving bank, where the soil is dry and warm. It is easily propagated from seeds sown in spring and by cuttings in autumn in a shady situation, and will root with more certainty if a handlight is placed over them. The value of the flowers is too well known to need any comment. The spikes should be cut as soon as the flowers are open.

Mint.—There are several varieties of this plant, but all require the same treatment, so I need not separate them. The one chiefly grown for culinary purposes is the Lamb or Spear Mint. It is a native plant, and therefore is quite hardy. I have found it an advantage to have beds in two aspects, one on a south border for early spring use, and the other a cool, shady border, to produce green Mint in summer. It is easily propagated by division of the roots when growth is just commencing in spring; or by cuttings, which may be taken with a root attached when the young shoots are 3 inches or 4 inches long. I like the latter plan best. The cuttings are easily taken by thrusting a knife into the ground, severing the underground stem, when the little shoot will lift up a perfect plant with plenty of roots, and may be at once planted on a new bed, 6 inches apart each way. For winter and early spring green Mint may be obtained by potting up some roots and placing them in heat. The stock for drying should be cut when in flower in August. A top-dressing of old leaf-mould will be beneficial early in spring, just before the young shoots break through the soil. E. Hobday.

WATERING IN DRY WEATHER.

The prolonged dry weather has brought the watering-pot into frequent use, but I feel sure that in some cases its use does more harm than good; this is especially the case in poor soils. Where the soil is poor all plants suffer more from drought than those growing in deep and rich staple, more especially those of a succulent nature. I therefore maintain that very little good is done to vegetable crops by repeated waterings when they are growing in a staple that is destitute of plant food. As I have just said, such subjects are suffering as much for the want of nutriment, other than moisture, as they are for the want of that element, so that it is not rational to expect that repeated doses of ordinary clear water will sustain them in vigorous health; but add to the water some quickly dissolved fertiliser, where ordinary farmyard liquid cannot be had, and both food and moisture will be presented to the plants in a manner which they can quickly take up and assimilate, and then the cultivator will be pursuing a course from which he may hope to reap some reward. These remarks, it will be understood, apply to growing crops, and not to any plant or tree recently planted. Having recommended the use of some fertilising stimulant, where it is desirable to give repeated supplies of water, let me describe my own practice in this matter. Supposing I have a Vine border, or a Peach tree, or a row of Peas, which requires watering: the first half of the quantity to be given is done with clear water only; with the remaining half I add a half-ounce of guano to each gallon of water. My reason for not using guano in all that is given is to prevent more of that stimulant being given than what would be safe for the welfare of the plants.

To growing crops in very poor soil the same quantity of guano given twice a week would not be too much. In regard to plants of any kind already established, where the land is in a fairly rich condition, copious supplies of water will be beneficial. There may be exceptions, but in the kitchen garden such crops as Peas, French Beans, Vegetable Marrows, Celery, Cauliflowers, &c., will be benefited by it, and amongst fruit trees Peaches and Nectarines will be grateful for a plentiful supply of root moisture in dry weather from this time to the end of September. If we turn to the flower garden we shall find that many of its occupants will require plentiful supplies of water, and none will sooner show the good effects of it than Dahlias, German Asters, and Hollyhocks. Many herbaceous plants, too, will require watering at the roots, for they are already much distressed. Whether it is advisable to use stimulating liquids of any kind in these cases depends entirely on the condition of the plants. Any plant that has to perfect its fruit or flowers would, in most cases, be benefited by it; but any subject which has passed that stage may be thrown into an unnatural state of excitement by the application of stimulants. In such cases sufficient clear water to keep the roots right without being unduly excited is no doubt the right course to pursue, because we have arrived at that part of the year when many plants have passed the perfecting process, and are quietly going to rest, and although under the trying conditions of heat and an absence of rain the roots may want moisture but nothing more. To what subjects these remarks are applicable it is not possible to refer to in a short note, but sufficient has been said to direct the attention of observant cultivators, and they will do wisely to act on the principles so briefly laid down. J. C. C.

13057.—Is red-lead injurious to plants?—The red-lead has done the mischief. It was very foolish, to say the least, to put such a poisonous matter in a water-tank.—E. H.

Cotton Lavender for edging bouquets.—Anything that proves useful for cutting, and that is perfectly hardy and accessible every day in the year, deserves notice; such is the Cotton Lavender (Santolina incana). This must not be confounded with the rather rare Sea Cotton (Diotis maritima), that possesses none of its merits. I recently observed a lady making a bouquet exclusively of hardy flowers. For the customary Adiantum cuneatum or A. gracillimum she substituted this, and as it contrasts well with almost any colour, except pure white—which she kept towards the centre—and holds fresh for fully a month if necessary, its merits certainly deserve recognition among hardy flowers for this purpose.—W. J. M.

Crotchets in gardening.—There are few intellectual pastimes in which injury has not been done from time to time by the persistent airing of crotchets, and gardening is no exception to the rule. So long as the crotchety man confines himself to his own practice no great harm is done; but when he begins to air his fancies, and try to get other people to adopt them, he begins to work mischief. It is a simple matter to assert a false principle, but often a very difficult matter to prove it to be false. The whole use of flower gardening is to enable us to have the most beautiful flowers and plants growing near us and under our care; and the whole pleasure of gardening consists in the contemplation and enjoyment of the beautiful works of nature. So long as we endeavour to appreciate the beauty of plants, and grow them so as to allow them to develop all the beauty they are capable of producing, we have hold of the right and true aim in gardening, and the pleasures of it as an intellectual enjoyment will increase year by year. The moment we lose sight of that aim and introduce another we are going wrong, and that wrong path may lead anywhere. Of these wrong paths the principal are running after paltry and artificial arrangements of the plants in a garden, such as geometric bedding, standard Roses, clipped shrubs, ribbon borders, basket beds, and similar unnatural things. Then there are the hard lined florist, and his exhibiting crotchets, the staking, tying, and training crotchets, and the pot-growing crotchets. All these things do harm to gardening if advocated as things to be adopted and followed by anybody whose head is not full of the particular crotchet advocated. The most odd thing, however, is that the crotchetmongers not only wish to make our gardens a collection of their several crotchets to the exclusion of everything else, but try to dub as a crotchet the advocacy of the only true and beautiful style of garden possible—namely, that in which artifice is conspicuous by its absence, and all art is hidden by the skill of the artist, so that everything appears as if it had grown naturally where it is placed.—J. D.

INDOOR PLANTS.

CULTURE OF SIDE-SADDLE FLOWERS (SARRACENIAS).

Plants whose chief value consists in their singularity of form or structure may be found in nearly every large collection, and are always interesting. The Sarracenias, which have been

Trumpet Plant (Sarracenia flava).

in cultivation for many years, are natives of North America, where they grow by the margins of streams and in mossy bogs and swamps; they will withstand any amount of cold, but not fluctuating, dry winds, sharp black frost, or drenching rains, and our variable climate is the chief reason why they are not quite hardy with us. They grow best in a compost of fibrous peat pulled to pieces with the fingers and mixed with chopped, living Sphagnum, and broken, well-washed crocks. The whole must be on a well-drained bottom, as they cannot endure stagnant moisture, and if they are well drained so that all superfluous moisture passes away readily it is almost impossible to give them too much water at the root. In potting it is best to elevate the crowns a little above the rim of the pot, pack the base of the stems with fibrous peat, and surface the whole with fresh living Sphagnum. They require the temperature of a greenhouse in summer, and a little heat in winter, and they should be kept in a moist corner, as near the glass as possible, and given air and shading when necessary. They enjoy a full share of light, but cannot endure bright sunshine. Sarracenias are readily propagated by division, offsets being freely produced by well-established specimens. Among the varieties best worth growing may be mentioned S. purpurea (the Huntsman's Cup), S. flava, S. Drummondii (one of the most robust), S. psittacina, and S. variolaris. This last, of which an engraving is here shown, is not so attractive as some of the others, but is well worth growing. G. H.

Dipladenia boliviensis.—Less showy than most of the hybrid Dipladenias now commonly grown, this is, however, a pretty kind, and possessed of a good vigorous constitution that fits it for employment as a stove climber where the more delicate sorts might not succeed. Its blooms are smaller than those of most of the others, and less open in shape; in colour they are a beautiful clear white, relieved by a central blotch of orange. It is by no means of recent introduction, and may well be classed among neglected plants. From no list of select stove climbers, however, should it be omitted, as, besides having the desirable qualities mentioned, it is very free flowering. Cuttings of it root more readily than those of the others; indeed, a stout stem secured to a damp wall pushed forth roots along that portion of it that was immediately in contact with the wall, and in sufficient numbers to hold the stem in position after the manner of Ivy.—H. P.

COPROSMA BAUERIANA VARIEGATA.

Though generally employed with good effect in summer in leaf or tapestry beds out-of-doors, in contrast with Alternantheras, this Coprosma is equally useful indoors as a pot plant, and half-hardy or greenhouse shrubs possessing the bright, glossy beauty and rich variegation of this New Zealand evergreen are not at all numerous. It is a plant of easy culture. It grows well in any good compost in which turfy loam is the chief ingredient; the drainage must, however, be good, and watering must be done with care. We have more than once lost fine plants of it through reckless watering; it cannot endure stagnant moisture about its roots. As a pot plant it is peculiarly well suited for growth as a standard, being naturally of a drooping habit, and in that form it is very serviceable for conservatory embellishment; 4 feet is a very good height for the stem, which must be trained to a stake. When sufficient height is gained pinch off the terminal end of the leading shoot, and also gradually remove all side growths from the bottom, but leave nearly a foot of stem at the top, whence side shoots should be encouraged to form the semi-pendulous head. Very little subsequent attention will be needed beyond nipping the points out of the strongest growths, and keeping all sides of the plant equally exposed to light. By shifting into larger pots when needful, and watering carefully, handsome plants may be obtained in three seasons. For vases out-of-doors in summer, for room decoration at any time, or for the ordinary greenhouse stage, the best form is that of a natural bush. This may be secured by repeated pinchings of the strong shoots, or if it is desired to give the plant a loosely pyramidal shape, these strong growths should be looped up to a stake placed in the middle. Side growths break freely from every joint, and a useful and handsome decorative plant is in time the result. The bright colours of this shrub—deep green, with broad, creamy, marginal variegation—are well defined; therefore the plant looks well under artificial light, and it may be used with good effect in dinner-table decorations associated with any dark-foliaged plant, such as the deep red velvety Gesneras. For this purpose little spreading plants, grown in 2½-inch pots, having several growths, are most convenient. Fasten a little fresh green Moss round the pots with a bit of bouquet binding wire, and place them on the cloth in default of suitable small receptacles in which to place the pots. Another purpose for which I think this plant eminently adapted is planting it out to cover a pillar, or pier, or a bit of wall in the conservatory. I mean to try it in this way, for which its habit seems well fitted, and, like other plants, its health and longevity would doubtless be increased by being planted out in proper, well-drained soil. The propagation is not difficult; where good numbers of it are wanted, it is well to keep a few bushy old plants from which to get cuttings, which they will yield for years. Put them in the warmest place available early in spring; they will soon push young shoots in abundance, and these in their soft state root readily with us in a forcing house without the pots being plunged in bottom heat; the cuttings are inserted in very sandy peat, well watered, and carefully shaded from the sun. Cuttings of a harder and more woody character, taken from out-of-doors in autumn, strike in heat very reluctantly; they must be rooted by a slower process, as, for instance, in a close, cold frame. Spring propagation is best. This plant enjoys a special immunity from insect pests.

A. M.

Spiræa palmata in pots.—The common white-flowered Spiræa japonica has long been a popular pot plant, as well it may, for it can be had in flower at any time from Christmas till June; though, of course, in winter severe forcing is needed, and for midsummer blooming it may be necessary to retard it somewhat by keeping it in a shady position as the season advances. Spiræa palmata under the same conditions will not flower so early; indeed, it is seen at its best about June, though it may be forced much earlier. It is invaluable for conservatory decoration, its bright crimson flowers being admired by everyone. Our plants of it received liberal treatment, the result of which was fine, plump, well-ripened crowns. They were potted up during the winter in the same way as the white-flowered Spiræa, and were afterwards kept in a cold frame, just to protect them from frost. When starting into growth they were shifted to the cool end of the forcing house, the result being a fine display of bloom much sooner than those out-of-doors. Like its commoner relative, this Spiræa needs a copious supply of water when growing, and is benefited by a little liquid manure occasionally.—H. P.

Neriums, or Oleanders.—We seldom find these flowering freely. Many say they have grown them for years, and never have had an expanded flower. They show bloom-buds, but they drop off. That there is no difficulty in growing the Oleander is well known, for good plants of it may be found in all sorts of receptacles that will hold soil together. It appears to me that the buds drop from want of nourishment just when their flowers begin to swell. If, therefore, the pots or tubs in which the plants are growing were plunged so as to prevent too rapid evaporation, and a little manure water were given, the flowers would expand. Oleanders are evidently moisture-loving plants—in fact, semi-aquatic—and I find that if the pots are set in large pans, kept filled with liquid manure, the flowers attain a great size. They also enjoy a rather high temperature, but, as before stated, they

Parrot's-Bill Side-saddle Flower (Sarracenia variolaris).

will live under almost any conditions, even in the open air. I would, however, advise anyone who wishes to flower them to keep them under glass, give them a light, sunny position, and be sure that the roots are never dry at any time. A good drenching of tepid water overhead does them good, and they must be kept clear of scale and green fly. Thus treated they will be found to flower freely.—J. G. H.

Planting out Chrysanthemums.—The beauty of Chrysanthemums is so frequently tarnished by early frosts or drenching rains, that, as a rule, it is advisable to shelter them under glass. After growing Chrysanthemums in all sorts of ways, I am convinced that, as regards quantity of bloom, the planting-out system has a decided advantage over pot culture, for the Chrysanthemum is such a gross feeder and strong rooter that, unless watering is carefully attended to, the plants lose their lower leaves, and their beauty as decorative plants is thus greatly impaired. Planting out economises labour. Having a quantity of Chrysanthemums to grow for supplying cut flowers and for general decorative purposes, I propagated the cuttings as they could be obtained during the months of February and March, and as soon as large enough they were potted off in 3-inch pots and set in a warm vinery until well rooted. They were then hardened off in a cold frame, and planted out in April in rows 2 feet apart each way. Some were also potted in 7-inch pots and kept well watered, but the planted out ones are by far the best plants, though they have not had a tithe of the labour bestowed on them; therefore I shall adopt the planting-out plan for the future, and I recommend others who have not too much spare labour to do the same.—J. G. H.

REPLIES.

14012.—**Cultivation of Maiden-hair Ferns.**—The Maiden-hair Fern of most people is the Adiantum cuneatum, and thousands of this species are grown for every one of any other. They are easily raised from spores sown on rough peat, kept moist. The peat may be placed in pots or pans, and the fertile fronds, when approaching maturity, should be gathered and placed on the pans, the latter being set in a darkish corner of a close moist pit. I have often had a good crop of seedlings by laying large pieces of turfy peat beneath large specimens when the spores have been falling. A stock of plants may be rapidly worked up by dividing a few old plants into single crowns, potting into small 60's, and growing on in a close pit near the glass with a little shade on bright days, till well established. The best soil for Maiden-hair Ferns is three-fourths fibrous peat and the remaining fourth made up of turfy loam and leaf-mould, with a sprinkling of silver sand and a little crushed charcoal. Maiden-hair Ferns should be repotted annually in March, and as they are evergreen they should never be dried off, and neither should the plants be denuded of their fronds till they have ceased to be useful to the plant, except to satisfy requirements for bouquet making, &c. When the plants are well grown they will do very well in a greenhouse temperature.—E. Hobday.

14126.—**Plants for shaded greenhouse.**—It seems that your side-light is a window looking into another room, and therefore would afford no air; but if you can let in a little occasionally from the top you might grow a few early bulbs, such as Roman Hyacinths, single early Tulips, and Grand Monarque Narcissi, and a few Croci; in fact, most of the early bulbs should flower before any shading occurs. When the trees cast a shadow you may grow many beautiful hardy ferns in 6-inch pots, and a few plants of the Monkey Musk would do well in shade if given a little air. Dracæna australis and hardy Palms are also likely to suit the position in summer, and are cheap and effective.—Stamford Hill.

13881.—**Red spots on stove plants.**—In default of better information respecting the Croton and Plumbago, I should say the spots on the undersides of the leaves are probably caused by thrips or red spider. The thrips are very fond of the leaves of both the plants named. The syringing, if well done, should keep down red spider; but fumigating with Tobacco will be necessary in the case of thrips. If there are only one or two plants, sponge with soft soap and water.—E. Hobday.

14004.—**Water plants in aviary.**—Some instinct seems to tell birds which plants are poisonous, and which are not, for though they build their nests in poisonous trees they do not eat any part of them which is poisonous; and I have had birds flying about in a conservatory in which plants with poisonous qualities were growing, yet never knew of a case of bird poisoning. Most of the water plants are perfectly harmless, and I do not think your correspondent has much cause to fear injury to his birds from this source. Birds are fond of Lettuce leaves, and this would satisfy all craving for green food.—E. H.

14014.—**Water plants for fountain basins.**—The following aquatics will do well in the fountain. Put them in pots or baskets and sink them in the water. Plant in rough turfy loam and manure; lay some stones on the surface to keep down the soil:—Alisma Plantago (Water Plantain), Aponogeton distachyon (Water Hawthorn), Butomus umbellatus (Flowering Rush), Calla æthiopica, Cyperus longus, and the white and yellow Water Lilies.—E. Hobday.

14027.—**Treatment of Cape Bulbs.**—All Cape plants, not only bulbs but others, do best in the open air for two or three months in summer to ripen growth. This is the chief cause of their not flowering. A vigorous growth is necessary in order to obtain strength, but without regular, steady, and complete ripening there will be no flowers, and this also applies to Amaryllis Johnsonii.—E. Hobday.

13963.—**Failure with plants in greenhouse.**—There is too much heat and too little ventilation. As the heat cannot be diminished the ventilation should be increased. The house is better adapted for Ferns and foliage plants than flowers, unless a second house was at hand to grow the plants on.—E. H.

THE COMING WEEK'S WORK.

Work in the Town Garden.

Chrysanthemums.—The time has now arrived when Chrysanthemums need constant care up to the flowering point. The plants are all by this time presumably well established in the flowering pots (which should be from 7 inches to 12 inches in diameter), and growing away freely. Supposing these pots to be fairly well filled with roots, as they probably are by this time, a stimulant in the form of liquid manure of some description must now be given, as the growth is rapidly approaching the point when the flower buds are produced, and no pains should be spared to bring the plants into the most vigorous state of growth until this is accomplished; anything like a check or starvation at this season is fatal to the production of good blooms. Care, however, must be taken not to administer any rank manures, especially decoctions of horse or sheep droppings, or the like, unless the new roots are so abundant as to really require it. If the plants are at all newly or over-potted, or if the soil be the least sour or over-watered, liquid manure of this description will undoubtedly do more harm than good. Guano has, however, a decidedly drying effect, besides encouraging the production of fresh roots, and I have seen a weak solution applied to plants that had become a little sodden at the root, with the best effects. In short, unless thoroughly pot-bound, a little guano water, or a weak solution of sulphate of ammonia, just to encourage a sluggish growth, is all that can possibly be given with safety. If the pots, however, are well filled with healthy, active roots, and the soil is sweet, porous, and well-drained, the Chrysanthemum can hardly be over-fed, and horse or sheep manure water, guano, soot, sewage, sulphate of ammonia—any or all of these may be used freely, taking care not to employ them too strong at first. I prefer using the first-named ingredients alternately during the earlier stages. The guano will keep the soil sweet and the roots active; the soot will impart a deep healthy hue to the foliage, and render it to some extent distasteful to greenfly, &c.; while the liquid manure or sewage will afford abundant supplies of solid nourishment to the plants. Afterwards, when the buds are swelling, I would gradually discontinue to use these, but make use of a solution of sulphate of ammonia, beginning with a strength of a full quarter of an ounce to the gallon, and by degrees increasing it to half or three-quarters of an ounce. This will keep the vigour up steadily until the blooms expand, and, given a good foundation, cannot fail to produce the finest quality of flowers. Carefully stake and tie out the shoots of the plants as they grow, affording as much space as possible to each. Cut out any weak or useless shoots, and break away all side growths unless quality of bloom is no object, but if large flowers are wanted there must be only one to each shoot, however strong. Cut out all suckers from the base of the plants, and trap and destroy earwigs, or they will do a lot of damage. Thrips are often troublesome in dry town gardens, and, if not kept down, will render many a promising shoot blind shortly. Plentiful syringing will generally keep them at bay, but if really affected the plants must be syringed with, or the points of the shoots dipped into, a mixture of Fir-tree oil, or carbolic soap and water, or a good dusting of fresh, strong, Scotch snuff is often very effectual.

Propagation of Pelargoniums of all kinds—zonal, show, fancy, and French—must be proceeded with as rapidly as possible. It is of the greatest importance, especially in town air and confined localities, to get all such cuttings thoroughly rooted and strong, and except perhaps the common bedding varieties, it is advisable to have all potted off singly and well established in 60's before the dark days are upon us, or dire will be the losses during a severe winter. Pelargoniums, commonly so called, must of course be in 3-inch pots early in October at the latest, as they should be placed in their flowering pots early in the new year for early summer blooming. Indeed, these are better inserted in single pots (thumbs), shifted from these into small 60's, and thence into 48's or 32's for flowering. They are not by any means free-rooting subjects—by which I mean that they do not, as a rule, produce a mass, or often indeed more than two or three main roots each, though they are easily propagated if done rightly, and the less their roots are disturbed the better. The best soil to root them, or any kind of Pelargonium (or Geranium), in, is about three parts loam, one of coarse sand, one of Cocoa-nut fibre refuse, and perhaps a very little leaf-mould. The fibre keeps the soil open and porous, and there will not be nearly so much fear of damping where this is used. Cuttings from pot plants are much better than those from the ground, but all should be dried for a few hours before insertion.

Primulas that are fit should be potted into 48's or 32's to flower by Christmas. Keep them close for a week or so; then ventilate freely, and sprinkle overhead frequently to encourage growth. Cinerarias may also be shifted on, but it is as well not to give the final potting till November, as they do not open in town air at all well at midwinter, so it is of no use having them too forward.

Roman Hyacinths (early white) should now be procured and potted, also early Paper-white Narcissus; if white flowers are in request these will be fit to cut in November. Cover them up well with ashes, or Cocoa-nut fibre, in the coolest and shadiest place you can find. Pot seedling Cyclamens raised this spring into as large pots as they will be likely to fill, and grow them on rapidly with plenty of moisture; Corms from seed sown last year should also be repotted and started afresh. Loam and leaf-mould, with a little sand, is the best stuff for these; they must never be allowed to get thoroughly dry when in growth. B. C. R.

Glasshouses.

Stove and intermediate house.—Twining Clerodendrons, such as C. Balfourii, that have flowered in the spring, must be encouraged to make free growth. The shoots are best trained up, their strings stretched under the roof so that they can receive plenty of light, in which way they get solidified in a manner that enables the plants to bloom profusely the ensuing season; whereas, if allowed to grow into an entangled mass, at the end of the season they are in a soft, spongy state, and less disposed to give the requisite amount of bloom.

Allamandas and Dipladenias that have now been flowering for a lengthened period will be much benefited by applications of manure water given at intervals of a week or ten days. By keeping up the strength of the growth in this way these plants will continue blooming as long as there is heat enough in the house to keep them moving freely.

Achimenes that have done flowering must be supplied with water sufficiently to prevent the tops dying down prematurely, otherwise the tubers will be small and weak, and not in a condition to do much service another season.

Gloxinias raised from seed sown in the early part of the year will now be in flower, and if kept in an intermediate temperature will continue blooming for some time. These plants should be stood near the glass at all times, and have as much air given them as the other inmates of the house in which they are grown will bear. So treated, not only will their season of

blooming be prolonged, but the flowers will be found to stand much better when cut than they are capable of doing where the growth is soft and wanting in substance through an insufficiency of light, accompanied with more heat than necessary.

Syringing.—Continue to use the syringe freely every day for some time yet to such plants as require it, without which it is difficult to keep down red spider and thrips. A small yellow coloured kind of the latter insect is usually troublesome on Allamandas in the summer season, persistently attacking the young leaves on the points of the growing shoots, and unless it is kept down by syringing it interferes with the progress of the flowers, causing many to fall off in the bud state. Crotons also are much subject to this little pest, the only remedy for which on these plants seems to be an occasional washing with insecticide, and daily syringing with water so long as the season of growth lasts.

Roof climbers.—Where climbing plants are largely grown on the roof they should now have the shoots reduced, so far as the kinds cultivated will admit of, for if through this and the ensuing month they are allowed to unduly shade the plants underneath, the latter will not be able to mature their growth before the short days and reduced temperature prevent the requisite progress in this direction being made.

Mignonette for winter and spring flowering.—Where tree Mignonette is grown the plants must not want for pot room; when this occurs it is difficult, even with the help of liberal applications of manure water, to keep the leaves from having a starved, sickly appearance, in which case the plants look uninviting, however full of flower they may be. If they are not already in pots large enough to prevent this, no time should be lost in moving them into others that will give the requisite room. As to the shape in which the plants are trained, some prefer the standard form with bare stems and Moss-like heads; so managed they come in very well for standing amongst lower growing things; yet something in the way of a bushy pyramidal style will usually be found to look the best. Some seed of Mignonette should now at once be sown in 6-inch pots, using good loam, to which has been added about one-sixth of rotten dung. The pots ought to be stood in cold frames, and as soon as the seeds have vegetated the young plants should be exposed to plenty of light and air, but with the lights at hand to place over them if heavy thunderstorms occur, as if the soil gets soddened with water before the plants are large enough for their roots to get well hold of the soil, I have often found them unable to grow freely afterwards. Three or four plants are enough to grow in pots of the size named, for if too much crowded the spikes of flower will be small.

Myrtles.—These sweet-scented plants now appear to be somewhat out of favour, yet, independent of their pretty white flowers, they are deserving of cultivation for the fresh, green appearance which the plants have, and the usefulness of their shoots for mixing in bouquets and other arrangements of cut flowers. They strike readily from cuttings made of the points of the young shoots either in spring or now, when in a half-ripened condition. Where a sufficient stock does not exist, cuttings may at once be put in, six or eight together, in 5-inch or 6-inch pots, half filled with a mixture of loam and sand or peat and sand, the remainder all sand. The cuttings must be kept moist and closely confined under propagating glasses in a greenhouse temperature until the base is callused, when they will root more quickly if placed in a little heat. When rooted, where there are means at hand to keep them slightly warm through the winter, they may be put singly in small pots; so managed they will make nice little plants for moving on in spring.

Autumn and winter-flowering Salvias.—Independent of their usefulness in giving a supply of cut flowers at a season when these are not plentiful, there are few things that associate so well with Chrysanthemums as do the different autumn-blooming varieties of Salvia. Where the plants are altogether confined to pot culture they should now occupy the pots in which they are to flower. Attend to the necessary stopping, but after this time it is better not to carry this further than taking the points out of any shoots that may be getting an undue lead; as where a general course of stopping is continued late it interferes with the flowering by reducing the strength of the shoots too much. When the planting-out course of treatment during summer is followed, see that enough water is given them. It is especially necessary to attend to this if we have a continuance of such dry parching weather as we have recently had, for if soft, free-growing things such as the plants in question ever suffer for want of root moisture the leaves are sure to be affected in a way that will make the plants look unsightly. In addition to the red-flowered varieties which most growers cultivate, the blue-flowered S. Pitcherii and the pink S. Bethelli should be grown, as they are both desirable for the beautiful colour of their flowers and their distinct appearance generally. S. gesneræflora is one of the best of the late flowering kinds, blooming when most of the others are over. This is a very strong grower, and is most suitable where large plants are required, such as in a roomy conservatory. To grow this variety well it needs plenty of room, as if an attempt is made to restrict the size of the plants by confining their roots too much the flowers will be poor.

Pot Roses.—Plants of the Hybrid Perpetual and other large flowered sorts in pots that have been forced, and are now out-of-doors, should receive regular attention with water, and be kept clear from insects, so as to enable them to make free growth. If neglected in these matters it is useless to expect them to give the requisite amount of flower next spring, as upon the progress they make during the summer depends their ability to bloom again. Tea Roses, also, that were subject to more or less forcing, and are now out-of-doors, should have their roots looked to with a view to giving larger pots if required, or removing as much of the old soil as can be got away without injuring the roots, after which they should be encouraged to make as much root growth as possible. Where such a course is followed the plants will go on improving for a number of years. Tea Roses that are subject to pot culture, where well managed, keep on growing more or less all the year round, and where encouraged to make plenty of roots, during the summer and autumn they will flower proportionately. The plants ought to be kept syringed freely overhead, otherwise the leaves are sure to become a prey to red spider. When let to suffer in this way, or through the attacks of mildew, no amount of after attention later on, when they are being brought into bloom, can make up for the neglect. T. B.

THE KITCHEN GARDEN.

Remedy for Onion maggot.—I have noticed of late several communications and inquiries in Gardening regarding the Carrot and Onion maggot, and in this week's issue "Celer et Audax" says that no general effectual remedy has yet been discovered. I have to state that in this the writer is quite mistaken, as I have discovered and applied a certain and effectual remedy for a number of years past with complete success. My remedy is both novel and, so far as I know, quite original, and is based on strictly scientific principles. Instead of treating the soil as "C. E. A." and all others have done and advised since the days of Adam, I treat and deal with the atmosphere in a very simple and inexpensive manner, and the results have always been entirely successful. Before adopting this new remedy I had experimented with all the nostrums recommended by "C. et A." and others, besides trying many other so-called remedies based on the same haphazard lines; but generally by the middle of August the vermin had cleared off the crops and left the ground as bare as it was at seed-sowing time. But since I adopted this new remedy I have not only not lost a single Carrot or Onion by the maggot, but the appliance has improved and stimulated the growth of the plants to such an extent that has only to be seen to be believed.—C. M. D., *Arbroath.*

*** *Why not tell us your remedy? Why keep it to yourself?*—Ed.

14111.—Cucumbers turning yellow.—As usual, no information is given as to where the Cucumbers have been grown, whether they are in a house or frame, or perhaps planted out-of-doors. Not a word as to the treatment they have received. Perhaps it is the white or rather pale yellow-coloured variety of Cucumber that is grown. In that case no system of culture would make them green. A low temperature, and a close, moist atmosphere, would cause the ordinary kinds to become yellow. Want of sufficient water at the roots would have the same effect.—J. D. E.

13953.—**Gathering Mushrooms.**—It is certainly best to pull up the Mushrooms with a twisting motion of the hand. If the stalk is left in the ground it will decay, and the decay will spread. Very little harm is done in pulling them up, and that is more than compensated for by a little gritty compost pressed into the cavity left.—E. H.

Cats, cocks, etc.—There is among us a species of dog and cat and pet worship that in its worst phases is less pleasant to see than the idol worship of savage and ignorant races. Alas! it is also cruel to the animals themselves, and is a cause of suffering to many human beings from the insufferable noises and other consequences of these mostly useless creatures. Unquestionably many are so inconsiderate of the feelings of others that life in our civilised Europe would be quite intolerable if the State did not step in and control the varied-resulting nuisances to some extent. The assumption that people may do what they like in the breeding of various animals, irrespective of the feelings or rights of others, as expressed by a recent writer in Gardening, is monstrous. A mass of legislation in Europe, resorted to under pressure of necessity, answers such a statement. There is no doubt that as cities get larger the scope of this legislation will have to be widened, and that those who keep animals for their amusement will be obliged to pay for the privilege, and to respect the feelings of others. The cock crowing nuisance in many parts of London is very severe, and has been repressed in some instances of late. Is there any sound in the world so unpleasant as the bark of a dog in a near yard? The cat in certain moods is an agony to hear, and wonderful it is that a thing so small should be able to get up a concert such as one would think only possible in hell, but for painfulness the miserable yelper beats it! I say so much to show that there are other objections to a redundance of "sweet creatures" besides their doings in gardens.—J. B.

—— If those of your complaining correspondents regarding the nuisance of cats and their flower borders would try Orange peel cut into the smallest possible pieces, and sprinkled over the borders, I think they will find the cats seek other places. I live in a village where cats are legion, and suffered much damage from them on all newly-dug flower borders; but, knowing that cats have an intense dislike to smell of Oranges, tried sprinkling the borders with Orange peel and the pips, and now am perfectly free from any annoyance. The Orange should be renewed once or twice a month.—J. B. C., *Leighterton.*

13938.—**How to build a greenhouse.**—There are several questions which ought to be considered in connection with the erection of an amateur's greenhouse. First: Is it to be a tenant's fixture? Will the owner have to remove it at any future time? Is it to be a lean-to or a span-roof? It has a more substantial appearance when resting on brickwork foundations, but very useful houses may be constructed with stout Larch poles set firmly in the ground for the wall plates to rest upon, wooden ventilators to run the whole length on both sides near the ground line. In all large towns there are saw-mills where sash-bars and rafters can be purchased of any length and strength, and the glass can be purchased cut into squares ready for glazing. I was in a vinery the other day which has been built by an amateur, himself buying the stuff in the way suggested, and doing all the work. A man with leisure might put up a house very cheaply in such a case. It often happens in glazing houses that amateur workmen fit the squares of glass too tightly, leaving no room for expansion, and many of the squares in the course of a year or two break. In glazing, if the squares are bedded in putty and each secured with a small brad, there need be no top putty at all, but a couple of good coats of paint will fill in all cracks, and keep the wet out. There should be ventilation along the ridge in addition to the ground-line ventilation.—E. Hobday.

DUTCH BULBS FOR FORCING.

Already the bulb catalogues are coming to us, and it will soon be time for amateurs to think about buying their stock of bulbs if they wish to have a gay display of these beautiful flowers during the dreary days of the waning winter and early spring months.

Narcissi.

Besides Hyacinths, some varieties of Polyanthus Narcissus, early single and double Tulips, Crocuses, Scillas, &c., should be grown in pots for early spring blooming. The Polyanthus Narcissus is invaluable for the decoration of the conservatory or greenhouse, on account of the profuse way in which it blooms and its exquisite fragrance. Few bulbs, too, are so capable of taking care of themselves, and so persistent in flourishing under adverse conditions, as the

Bunch of White Polyanthus Narcissus.

Polyanthus Narcissus. Two bulbs of one variety should be placed in a 32-sized pot, and three in a larger one. They require to be in couples or threes to show themselves off to advantage, and the better they are grown the larger will be the trusses of flowers. A soil similar to that recommended for Hyacinths suits them well,

Polyanthus Narcissus.

and they succeed under the same treatment. Such varieties as Bazelman major and Gloriosus, Grand Monarque, Sir Isaac Newton, and Soleil d'Or cannot fail to give satisfaction. Polyanthus Narcissi should be buried about three-fourths beneath the soil, and Tulips just beneath it, or with the points only protruding through it.

Hyacinths.

To have Hyacinths in flower as early as possible, say about Christmas, is a consideration, and wants a little management. For the earliest batch of all, the Roman Hyacinth, which has come greatly into repute during the last few years, is the best. In fact, the common Hyacinth cannot compete with it in this respect, for it may easily be had in full flower early in November, nearly two months sooner than it is possible to flower the other. The Roman Hyacinth is pure white, and not unlike our common wood Hyacinth in the size and form of the flower, or a large sample of Lily of the Valley, for which it is substituted sometimes for button holes. It cannot, however, compare in magnificence or general excellence with the true Hyacinth, and of course it is not recommended except for very early use. The bulbs, which are cheap enough, should be potted by the beginning of September, putting five or six bulbs into a 5-inch pot, or at that rate, as one or two spikes only in a pot look insignificant; therefore, pot thickly. We have not yet tried the plan, but the sparse foliage of the Roman variety, and its sometimes lanky habit when forced, has led us to think that a few leaf buds of Lily of the Valley inserted in the pot, among the bulbs, would set off the group of white flowers wonderfully. Lily of the Valley itself does not force into flower very early, but the foliage grows away readily enough in a little heat at any time, and would make suitable furnishing in the way mentioned. Leaf buds are easily procured, and after grouping the Hyacinth bulbs pretty thickly in the centre of the pot, the Lily buds could be inserted round the sides; thus the Hyacinth flowers would be encircled by a wreath of the most pleasant green that we possess among pot plants. Light loam, plenty of sand, and some rich leaf-mould suits the Hyacinth, and the soil should be made tolerably firm beneath the bulb in potting. Good drainage, but with few crocks, is also essential. After potting we always plunge the pots in ashes in a perfectly cold frame or behind a wall, covering them over 6 inches deep, and using straw for further protection when it is necessary. They are not looked at till the beginning or middle of October, by which time they have generally rooted well, and grown about 2 inches. The most advanced are, at this stage, lifted, cleaned, and set on the shelf in a cool house for a week or so till the leaves acquire their green colour, shading for a few days at first with a sheet of paper if the weather is bright. After this they are introduced to the Cucumber-house, or early vinery, keeping them near the light, and the flowers usually throw well up and expand in a short time, when they are again moved back to the cool greenhouse or conservatory, where they will last a month or six weeks. The common Hyacinth forces reluctantly before the close of the year, and the double varieties are also useless for this purpose. If a good display is desired from December to March, single ones only should be employed. As regards soil and potting, they require the same treatment as the Roman kind, but one bulb to a 5-inch or 6-inch pot is sufficent. The most important point is to get the roots by the end of August, if possible, or at the latest by the 1st of September, and pot them at once. Cover them with ashes, as before directed, in a glazed frame, having a southern exposure. The gentle heat communicated to the ashes by the sun excites growth, and by the middle of November the bulbs should be pretty well rooted and have grown an inch or two. They should then be introduced to the light in a cool house, with the precaution recommended above, and after they have recovered their green colour, put into heat and pushed on as fast as they will bear. Too much heat produces foliage only, without raising the flower-spike out of its socket. When this is observed, less heat must be given, and the plants should be kept near the light. When pressed for time, we have often pinched the leaves back, which has a good effect. A good flower is never secured along with very long leaves, which, in a perfectly grown Hyacinth, should be short and erect. It is hardly possible to get a good flower by forcing, if the spike is not well up before the plant is lifted from the ashes. At the same time, if too much growth—say 5 inches or 6 inches—is made under the ashes, the result will be equally unsatisfactory. Above all, pot early, lift in time, and force gently. With the Tulip, Narcissus, Crocus, and Snowdrop, the same rules hold good, only that they force more easily than the Hyacinth. The Tulip and Crocus, however, make but a fleeting display if forced into full flower in heat. They, therefore, should be removed to a cool and light structure as soon as the buds are visible, and allowed to open gently.

Select varieties.—As a matter of course, such early blooming kinds as the early white Roman, and also the single red L'Ami du Cœur, the white Grand Vainqueur, and the blue-grey Charles Dickens, together with a few early-flowering Scillas, Tulips, Crocuses, and Narcissi, should be potted the first or second week in September,

Single flowered Hyacinths.

and on to the end of that month; but for common Hyacinths there is no better time than that just named. Generally they are too early potted, before the bulbs have recovered from the effects of the long, close confinement during the transit from Holland to this country, and ere they have become thoroughly matured. That is why it is I always like to lay my Hyacinths out on a shelf in a greenhouse until the embryo roots swell out in a kind of circlet round the base of the bulbs; and then, that stage reached, as soon as they come into contact with the soil they at once send forth stout roots, and make strong growth. I have known cases of early potted Hyacinths rotting owing to their being placed in contact with the soil too soon after being imported; and, after all,

Double flowered Hyacinths.

nothing is actually gained by such early potting, except in cases where it is intended the bulbs shall be forced. Some of the exhibitors at our large Hyacinth shows pot them about the middle of October, and onwards; but the greater part

of show Hyacinths are placed in their pots in November. I would, however, always impress on cultivators the necessity of obtaining their bulbs early from the dealers; not only because the finest bulbs are invariably selected for the earliest orders, but also because they can look better after them, preparatory to potting them, than dealers can. In what is termed the red class there are now some fine kinds, such as Cavaignac, salmon, striped with bright rose; Princess Helena, delicate rosy-pink; Beauty of Waltham, carmine with white centre; Garibaldi, bright scarlet; Howard, brilliant pale red; Koh-i-noor, a semi-double variety, with bright salmon-pink flowers; Lina, bright crimson; Linnæus, bright orange red; Pelissier, crimson-scarlet; Prince Albert Victor, shining red-crimson; and Von Schiller, deep salmon-pink. Several of these furnish fine deep hues of colour that do not characterise the cheaper varieties. Among blue flowering kinds some are surpassingly beautiful. Of these the best are Blondin, silvery-grey, the reverse of the petals blue-purple; Czar Peter, pale lavender-mauve; and De Candolle, lilac and mauve, a distinct and fine variety of darker shades of blue and mauve. There are, too, General Havelock, rich glittering purple; King of the Blues, rich dark blue, one of the most beautiful of Hyacinths; Lord Melville, indigo-blue, with a large white centre to the bells; l'Honneur d'Overveen, deep mauve, compact and beautiful; Mdlle. Thérèse, deep mauve; and Sir Henry Havelock, purple-mauve. Among pure white flowers may be mentioned La Grandesse, a

Pot of Double Tulips as grown by London market gardeners. Drawn for GARDENING at Mr. Bullens', Lewisham.

magnificent variety; l'Innocence; and Snowball, a fine variety, with magnificent bells of great thickness. Among yellow flowers there are Bird of Paradise, rich primrose, and Ida, pale primrose—both fine kinds. Some of the above bring rather high prices, but, happily for those who cannot afford to purchase comparatively new Hyacinths, there are many old varieties of excellent quality that can be obtained at a cheap rate, though they lack the rich and varied colouring to be found in the high-priced kinds. A selection of really good moderately-priced varieties can be made from the foregoing, and it may be stated that some of these are always found in the best collections staged for exhibition purposes. In the red class, including rose and pink flowers, there are Lord Wellington, double; Fabiola, Le Prophète, Noble par Mérite, double; Norma, Princess Helena, Susanna Maria, double; l'Etincelante, very bright coloured; Lord Macaulay, Robert Steiger, Princess Clotilde, Solfaterre, Queen Victoria, Victor Emmanuel, and Victoria Alexandrina. Among pale blue flowers may be found such well-known varieties as Couronne de Celle, Grand Lilas, Grand Vainqueur, Leonidas, Orondate, Van Speyk, double; and, among darker flowers, Albini, double; Argus, a beautiful dark blue variety, with white centre, somewhat difficult to grow, but when well done very beautiful; Baron von Humboldt, Baron van Tuyll, Charles Dickens, Feruck Kahn, Garrick, double; Laurens Coster, double; Lord Palmerston, pale blue with white centre, a lovely Hyacinth; Madame Coster, Marie, Mimosa, Shakespeare, and William I. Of white varieties, there are alba maxima, alba superbissima, Baroness van Tuyll, a white sport from the old blue Baron Van Tuyll; Crown Princess of the Netherlands, La Franchise, Madame Van der Hoop, Mirandoline, Mont Blanc, Paix de l'Europe, of the pure white flowers; and of the cream-white, Anna Paulowna, a single form of the old double Groot Voorst; Cleopatra, Elfrida,

Pot of Single White Tulips as grown in London market gardens. Drawn for GARDENING at Mr. Bullens', Lewisham.

Grandeur à Merveille, Lord Granville, and Séraphine. In the yellow section may be named Alida Jacoba, Anna Carolina, Duc de Malakoff, generally classed with the single red flowers; Heroine, La Citronnière, and L'or d'Australie. The introduction of several fine mauve-coloured flowers has made it necessary that they should be grouped under a section in catalogues, and it includes Haydn and Sir Edwin Landseer among the cheaper kinds.

TULIPS.

There are many varieties of early single and double Tulips that are well worth cultivating in pots. A few varieties and successional plantings, if there be convenience for forcing, will give a supply of flowers from Christmas till May. A rich, free, sandy soil should be used for Tulips, and pots about 6 inches in diameter, capable of holding three bulbs, which should always be of one variety, should be selected for them. Some bulbs of the early single Van Thol should be put into pots in September; or, better still, placed in a box, so that the most forward can be potted up three or four in a pot and pushed on into flower in heat; these will furnish blooms by Christmas, and subsequent plantings of scarlet Van Thol, Coleur Ponceau, white Pottebakker, and Gold Prince, among the single varieties, and Tournesol among the double ones,

Flowers of Purple Dutch Crocus (Crocus vernus).

will yield a succession of flowers. When grown in a greenhouse Tulips should be placed on the coolest, shadiest side, to preserve them in bloom as long as possible, and if a piece of silk thread were placed around the flowers when fully developed the bloom would be materially prolonged. Tulips can be grown in sitting-room windows with the greatest ease. They should have plenty of light and air, be kept freely watered when required, and be shaded from the sun. In addition to the varieties just named, the following single flowers, which are very pretty, may be used, viz.:—Coleur Cardinal, Vermilion Brilliant, Purple Crown, Van der Neer, Proserpine, Thomas Moore, Duchesse de Parma, Keizer Kroon, Rose Grisdelin, Rosa Mundi, Bride of Haarlem, Van Vondel, Monument, and Marquise de Wessenrode. The second, fourth, fifth, seventh, eighth, and twelfth of the foregoing list are of large size, fine quality, and great beauty. The double varieties that are most valuable for the purpose are Imperator Rubrorum, Rex Rubrorum, La Candeur, Yellow Tournesol, Duke of York, Gloria Solis, and La Belle Alliance. A gorgeous show of Tulips may be had for a merely nominal sum. Few Tulips can be induced to bloom before the new year, but by careful treatment many of the Duc Van Thol class are brought in very early, and March sees a wealth of Tulip blooms brought into the market daily. Amateurs are often troubled with green fly on their Tulips, which sometimes quite spoils them before they bloom at all. This is caused by too dry an atmosphere, and sometimes by want of sufficient warmth to keep the growth advancing properly. Growers for market plant their Tulips in boxes, with only 2 inches or 3 inches of earth, cover them over with fibre until thoroughly rooted, and then bring them, as required, into a warm moist house, where they stand on a comparatively cool bottom of

Siberian Squill (Scilla sibirica.

damp ashes; but a brisk growing temperature above them soon induces a rapid growth, and when nearly expanded the blooms are either cut, taken to market, roots and all, and sold by the dozen, or potted four or five together into 5-inch pots, often with a small Fern in the centre, and a ground-work of Lycopodium. Some of the London market-growers dispose of nearly a quarter of a million Tulips in a single season, and out of so large a number scarcely a failure, or a single aphis, can be seen. Even when in bloom, Tulips stand transplantation well, and, if carefully done, and well watered, will scarcely show any signs of having been disturbed, though, of course, the bulbs suffer subsequently, but this is of no consequence. The accompanying woodcuts represent pots of Tulips as grown in the London flower market-garden.

CROCUSES.

Crocuses should not be forgotten; six or eight bulbs of them, according to size, should be placed in a 6-inch pot. In order to secure dense masses of bloom and uniformity of appearance, the bulbs should be all of one variety. The following are well adapted for cultivation in pots, viz.:—Large Yellow, Albion, and Sir Walter Scott, striped varieties; Prince Albert, David Rizzio, Othello, Lilaceus superbus, and Ne plus ultra, purple; Princess Alexandra, Mont Blanc, and Mrs. Beecher Stowe, white. For early blooming, C. biflorus (Scotch Crocus), C. Susianus (Cloth of Gold), and C. versicolor (Cloth of Silver) should be used. There is nothing like pot culture for bringing out the superb beauty of the Crocus; and I know of

nothing more interesting than to obtain a collection of Crocuses such as are annually imported from Holland, say in twenty-five varieties, and to grow them in pots.

A few other bulbs are also suitable for pot-culture. A pot or two of the early-flowering Bulbocodium vernum should be included, for the sake of its unpretentious yet cheerful pink and white blossoms, and Scillas bifolia and sibirica, both blue flowered gems in their way, must not be overlooked. Six bulbs each of the Bulbocodium and Scillas should be placed in every pot. The pretty yellow Narcissus nanus, together with its equally pretty companion, Narcissus Bulbocodium, known also as the Hoop Petticoat Narciss, and the chaste Triteleia uniflora, which blooms most profusely in pots, should also be included. There are bulbs belonging to other genera useful for pot culture; but those just enumerated are such as are best adapted for general cultivation in that way.

D.

ROSES.

SUITABLE GARDEN ROSES.

The time has, I think, arrived when our selection of garden Roses should be revised in order that those who wish to grow Roses to be effective in the garden may not be burdened with varieties only suitable for exhibition. It may of course be said that a Rose that is worth cultivating for exhibition is also a garden Rose, but that is not my view—not that I disparage the merits of any Rose, but what I wish to maintain is that there are some sorts of Roses better adapted for garden decoration than others, and in the interest of the general Rose-loving public I think the best for both purposes should be selected and classified, and amongst the readers of Gardening there must be many both competent and willing to do this. I am quite satisfied that it would be a relief to many if the best twelve or twenty-four Roses, and for larger growers perhaps an increased number, were pointed out for each purpose. The weather during the present season has certainly helped us in this matter. The drought that extended from April to nearly the end of June, associated as it was through the latter month with almost tropical heat, brought Roses on with a rush, so that many varieties which are not as a rule available for exhibition purposes in other years until a fortnight later were in capital condition for all the early shows. I was, therefore, almost tempted to disbelieve the old dictum that "every Rose has its season of flowering," for there was certainly no distinction this year. Even such late flowering varieties as Madame Lacharme, Baroness Rothschild, and Mabel Morrison were well in flower in the west of England at the end of June. Then down came the rain and the temperature, too, affording a capital opportunity for making notes of such varieties as defied the wet and the reduced temperature. A very little observation served to show that there are some varieties better adapted for garden decoration than others, for they expanded their blossoms quite as freely as when exposed to continuous sunshine, while others refused to open, and remained upon the trees until they became hard balls of decaying matter. Noteworthy was the fact that the varieties remarkable for fine form when grown under favourable conditions were conspicuous amongst those that refused to open.

The first lesson to be deduced from these observations is that the finest-formed Roses are not the most reliable for garden decoration. For our purpose we may take La France as the type of a good Rose, and I could name many more perhaps more perfect in outline, but still less valuable for the garden, because with a low temperature and a damp atmosphere they refuse to expand. As examples of sorts that partake of this character I may name Madame Eugene Chambeyran, Madame Noman, Pierre Notting, and Camille Bernardin. Nevertheless, I would not alter the form of these if I could. All that I desire is to be of service to those who have not opportunities of making observations for themselves. I have also been much interested in the behaviour of the large varieties with flat flowers, and what has struck me as remarkable is the fact that although many of them contain a large number of petals, that is to say, they are very full flowers, they have, as a rule, opened better than those that are considered to be better in form. I do not, however, like these for the garden, for unless the temperature is fairly high and the air dry, we rarely get them to open satisfactorily. Such varieties as Captain Christy, Marie Finger, Comtesse de Nassau, and Madame Lacharme are varieties that cannot be depended upon; in fact, they are fine-weather Roses, and therefore only suitable for those who are content to look leniently on their capricious character. They want substance in their outside petals. They are so delicate, in short, that a heavy storm of rain or rough wind is sufficient to injure them to an extent that prevents their expansion, or rather, I should say, the injured petals begin to decay, thus enveloping the bud in a strong band, and the plants have not sufficient force in them to cause the decaying part to give way. Many varieties may be found in this condition after rain. Amongst these I may mention Peach Blossom, Hippolyte Jamain, Berthe Baron, Bessie Johnson, Louisa Darzans, Marquise de Castellane, Miss Hassard, and Marchioness of Exeter. It is worthy of remark, too, that more light coloured Roses than dark ones suffer from this defect. In my own practice I have tried stimulating the roots, but was only partially successful. The less number of petals a Rose is composed of the better it opens. The average number of petals should be about fifty, a number sufficient to make up a good flower. When this number is greatly exceeded the flowers require very favourable conditions to enable them to open. Empress of India or Charles Lefebvre are good types of garden Roses; the number of petals in a flower of either of these does not often exceed fifty-five; they therefore open better under all sorts of conditions than those with a larger number. Such very full flowers as Marie Finger, Comtesse de Nassau, Madame Lacharme, and Captain Christy, vary from eighty-five to one hundred and thirty, and therefore these and many others remarkable for their very full flowers are not in my opinion adapted for the garden.

My selection of twelve varieties would be Annie Wood, Empress of India, Charles Lefebvre, Exposition de Brie, Emily Laxton, Jules Margottin, Elie Morel, François Levet, Boule de Neige, Mdlle. Catherine Soupert, A. K. Williams, and Nardy Frères, and if I wanted more I would shun the full cup-shaped flowers and select from those that had reflexed petals.

J. C. C.

Tea Roses.—Own-root Teas have long been recommended for walls. They remain longer in vigorous health than worked plants, and send up more robust and vigorous suckers, and the latter under these conditions become new plants of exceptional vigour. But dwarf Tea Roses on their own roots have been as yet but little used in the open, and where this class of plant has been employed they have proved the very best for yielding a profusion of Roses of the very highest quality. A slight protection in winter preserves the crowns alive, and if the cultivator is content to wait till July for his sweet harvest of beauty, the crown of the Rose is all he need concern himself about. For though killed back to that it will speedily start forth anew and produce shoots and flowers in abundance. If, however, Roses are wanted earlier, there must be more care taken of the old tops, and these may readily be protected by a thin screen of litter or boughs, which mostly carry the Rose tops through the winter in safety. As soon as the first cuttings from these advanced shoots are secured, the shoots themselves may be cut back close and sharp, and this results in a second break of stronger shoots, which yield finer blooms for a longer period than the first.—D. T. F.

Roses and artificial manure.—If the remarks of "J. L." (page 290) are allowed to go unchallenged, lovers of flowers may be led to think that there is something very injurious in the artificial manures commonly recommended, whereas I can most emphatically state that when judiciously used they are very beneficial. It is only when used in excess that they do harm, and this is just what "J. L." has done, there cannot be a doubt, or the Roses would not have suffered in the way he relates. Why it has done so is easily explained. If he has been using manures of known manufacturers, he has exceeded the quantity prescribed according to space, and has failed to supply the roots with sufficient moisture. I have many times proved in practice that for several weeks after any plant has been treated with artificial manure it requires more water than a plant that has not had any. The forcing nature of the stimulant causes this, and when the required degree of root moisture is not forthcoming the plant suffers more from drought than it would if it had not had any. I daresay "J. L." will be surprised to hear that Roses have been exhibited in London that had been grown for two years in the same pots without being disturbed at the roots; the only assistance they had was a judicious supply of "Clay's Fertiliser," and the same plants took a prominent position in the prize-list, so that "J. L." must look in some other direction for the cause of failure in his Roses. Certainly he will require to waste a lot of ink before he convinces practical men that the ordinary artificial manures, when judiciously applied, are injurious to Roses.—J. C. C.

Roses and artificial manure (p. 290).—If "J. L.'s" Roses do "splendidly" without manure he had better leave well alone. My experience with artificial manure is just the reverse of his. With a dredger I go round twice in spring and early summer and dust each Rose round the stems some 15-inch or 18-inch circle; the rains take it down, and I have Roses that satisfy me. I should think he has much overmanured them.—J. C.

REPLIES.

14119.—**Empress of India Rose.**—The remarks referred to by "H. P." were made in the west of England, and the particular plants mentioned are growing in a well-manured, rather heavy soil. The plants are dwarfs budded on the Manetti stock, with the point of union of stock and bud buried 3 inches under the surface. The plants have not been pruned further than the tops of the flowering shoots where cut off in the spring; all other new-made shoots were pegged down, or, rather, bent over, and the shoots near the top buried under the soil. Next to Duc de Rohan the Empress is the best grower of all the dark Roses, and for that reason a favourite with us. It is certainly a beautiful garden Rose.—J. C. C.

14118.—**Roses for greenhouse.**—Niphetos is the best white; President, as a climber, is the nearest representation of flesh colour suitable for your purpose; Reine Marie Henriette is not a dark crimson, but a dark red, and probably as near the colour as you desire; anyway, to secure that peculiar tapering bud, there is no other red Rose that comes so near to what you want, and certainly you cannot have a better growing Rose. There is a new Tea Rose, Souvenir de Therese Levet by name, of a rosy crimson colour, but I cannot say that it will suit you, as it is yet under trial.—J. C. C.

13962.—**Treatment of Banksian Roses.**—I have always found the Banksian Rose do best on an eastern aspect. Plants of several years' growth flower more freely than those which have not filled their allotted space, and are perhaps growing strongly. The Banksian Rose flowers on the young wood, and if they are pruned like other Roses the flower will be cut away. If too thickly placed the young wood may be thinned, leaving the moderately strong growths for flowering. These latter may be tied in to the wall. The pruning should be done when flowering is over.—E. Hobday.

14162.—**Rosa sulphurea.**—"H." has misunderstood my remark about Rosa sulphurea (the old yellow Cabbage). I only meant it was a Rose which likes a moist situation. Like "H.," I have never grown the Rose, or even seen it, as ever since I have had a garden I have been obliged to live on the driest soils I could find. But as Rosa sulphurea is a Rose I mean to grow if I ever have a place where it is at all likely to succeed, I have collected a good deal of information about it out of old garden books, the sum and substance of which is that it likes a damp cool nook facing east, with plenty of moisture at the root; but along with that it likes to send up its shoots to ramble over the top of an old wall and bask in heat and sunshine there. It has been successfully grown as far north as Ballater, near Balmoral, and all the successful plants one writer could hear about were growing in the kind of situation described. It can neither be budded nor grafted, and is a thoroughly wild, wayward beauty, which must

be allowed to grow in its own natural way. It will not submit to pruning, that always sends it out of bloom, and it does better if little or no attempt is made to train it. The principal Rose nurseries advertise plants.—J. D.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XVII.

By Annie M. Griggs, Edinburgh School of Cookery.)

Vegetable Marrow.

This light, wholesome, and agreeable vegetable may be cooked in many various ways, and when properly prepared is delicately flavoured and easily digested. The long-shaped, smooth-skinned Marrow affords the most delicate flavour, although there are many different kinds and shapes used in the culinary art.

Boiled Vegetable Marrow and Sauce.—Peel the Marrow very thinly, and cut it into quarters; carefully take out the seeds so as not to break the fruit; wash in fresh cold water, and plunge into a saucepan of boiling water and salt with a small pat of butter or dripping; let the water boil with the lid off the pan for about fifteen minutes; then try with a fine skewer if the Marrow be quite tender; if so, lift each piece separately from the saucepan with a slice, and drain away all the water. Have a piece of hot buttered toast with the crust removed, in a hot vegetable dish; lay each piece of Marrow on this without mashing, or breaking it, and serve with sauce made as follows: Take two ounces of butter, one ounce of flour, one small Carrot, a spray of Parsley, the white part of three small fresh Onions, half a teaspoonful of salt, and two breakfast cupsful of new milk; melt the butter in a small pan over the fire, wash and cut the vegetables, add them to the butter with the salt, put the lid on, and let them steam for five minutes (give them a shake now and again to prevent their burning); next stir in the flour and mix thoroughly, then pour on the milk by degrees, stirring all the time until the sauce boils, when it will be ready to strain over the Vegetable Marrow. Should you be cooking very small and young Marrows, simply peel them and cook them whole. Fully matured Marrows may be kept good for a long time if a piece of string be tied round the stalk and the Marrow hung in a cool, dry place; but as soon as it is cut or broken let it be cooked at once, for it very quickly deteriorates when the skin is broken.

Stuffed Vegetable Marrow.—Take two medium-sized Marrows and peel them very thinly, cut in halves lengthways, and scoop out all the seeds. Make a forcemeat with six ounces of cooked white meat—*e.g.*, veal, chicken, or rabbit—three tablespoonsful of bread crumbs, one tablespoonful of finely chopped Parsley, one teaspoonful of Lemon Thyme, a little grated Nutmeg, one teaspoonful of salt, and cayenne pepper to taste; mince the meat small and mix all the ingredients; moisten with two well beaten eggs or one gill of stock. Put a fourth part of this mixture into each half Marrow, and then place the halves together again as though they had not been cut; tie them round at each end and in the centre with a piece of tape, not twine, as that is liable to cut the Marrow. When thus prepared place them in a stewpan with a few young vegetables, such as Carrots, Turnips, and Onions, with a little Parsley, pepper, salt, and enough broth or stock to cover the Marrows; put a close-fitting lid on the saucepan and place it by the side of the fire to cook gently for about one hour; try the Marrows with a skewer, and when they are quite tender lift them on to a hot dish, remove the tape, and cover with browned bread-crumbs, and keep hot while you boil the stock in which they were cooked very fast without a lid for about ten minutes, and then add one tablespoonful of vinegar, strain it round the Marrow, and serve hot.

Stewed Vegetable Marrow.—Take one fully ripe Marrow, peel it very thinly, and cut it transversely into slices about one inch thick, remove the seeds so as to form rings of the Marrow; place these, without washing, on a deep dish, sprinkle with cayenne pepper, salt, and a little grated nutmeg, and pour over these one tablespoonful of Mushroom ketchup, two tablespoonsful of vinegar, and one tablespoonful of salad oil or butter melted; cover and let these stand for one hour, during which time put one pint of good brown gravy over the fire, and when boiling add the pieces of Marrow and all that remains of the mixture in which they have been soaking. Let all stew by the side of the fire for about three-quarters of an hour, and then turn into a very hot deep dish. Garnish with sippets of toasted bread and serve hot.

Another way.—Cut the Marrow as described above into rings, and toss each one in flour. Have one pint of milk in a porcelain-lined saucepan over the fire, and when it is quite hot (but not boiling) throw in the Marrow, with a pinch of white pepper, a teaspoonful of salt, and a little grated nutmeg. Cover with a lid and stew gently for three-quarters of an hour. Then lift the pieces of Marrow on to a hot dish, thicken the milk by gradually shaking in a handful of bread crumbs and stirring all the time until it boils; then lift away from the fire, add one tablespoonful of white vinegar, and pour all over the Vegetable Marrow on the dish; sprinkle one tablespoonful of finely-minced Parsley over the top, and serve hot.

Mashed Vegetable Marrow.—Take one large or two small Vegetable Marrows, and peel thinly, but do not cut them. Boil them in salt and water until tender, then cut and remove the seeds, and place the Marrow in a clean dry saucepan with two ounces of butter, one teaspoonful of salt, a pinch of white pepper, and two tablespoonsful of cream. Beat these by the side of the fire until thoroughly smooth and tolerably dry. Pile high in the centre of a hot dish, garnish with crusts of fried bread, and serve hot. Any remains of cold boiled Vegetable Marrow may be used up in this manner, and the cold sauce substituted for cream.

Fried Vegetable Marrow.—Take one Vegetable Marrow, peel, and cut in rings, as described for stewed Vegetable Marrow. Plunge into boiling salt and water, and boil rapidly for ten minutes, drain, and let it get quite cold. Then toss in a little flour so as to make them quite dry. Dip each ring into a well-beaten egg, and after that into fine bread crumbs. When they are all covered fry in boiling fat to a bright golden colour. Drain on porous paper, and dust well over with powdered white sugar. These may be served either hot or cold. They should be arranged round a dish in such a manner that the centre of each ring may be filled in with some dark coloured jelly or preserve, which must not be added until just before the moment of serving. If the sugar be omitted the fried Marrow may be served crisp and dry, as a vegetable, with hot or cold meat.

Bread jelly.—This receipt is very vague. Will "M. P." please to state whether his "about six slices" mean six rounds 2 inches thick from a 4-lb. loaf, or six slices bread and butter fashion from a 2-lb. loaf? The ½-gallon of boiling water seems an enormous quantity for the small amount of flavouring.—A. B. T., *East Anglia.*

REPLIES.

14210.—**Non-effervescing lemonade.**—The best non-effervescing lemonade is made by peeling two juicy lemons as thinly as possible, so as not to cut off any of the white; use peel of one; squeeze the lemons well, and use the juice of both; then add about a quart of cold water, with loaf sugar to taste. It is better made about twelve hours before wanted; it can then be strained before bringing to table.—A. B.

14211.—**Tarragon vinegar.**—It is rather late to make this, but perhaps "X. P." lives in the north. Cut the Tarragon down to the ground, lay it to dry three days in the shade, a north window does very well; strip the leaves of the large stems and put them as well as the fine shoots in a glass jar, fill it, well pressing the leaves and shoots down; pour in enough vinegar to cover the leaves, &c., cork the jar, and let it stand about a fortnight; then pour into bottles through a wire strainer. The jar may be filled up again, but the second supply should stand a month to get well-flavoured. I have used this receipt many years.—A. B. T., *East Anglia.*

14165.—**Flies.**—The following, from "Enquire Within," may, perhaps, be of use to "Invalid":—"Mixture for destroying flies: Infusion of quassia, 1 pint; brown sugar, 4 ounces; ground pepper, 2 ounces. To be well mixed together, and put in small shallow dishes when required. To destroy flies in a room, take half a teaspoonful of black pepper in powder, one teaspoonful of brown sugar, and one teaspoonful of cream; mix them well together, and place them in the room on a plate when the flies are troublesome, and they will soon disappear. Cold green Tea, very strong, and sweeten with sugar, will, when set about the room in saucers, attract flies and destroy them." I also copy the following with reference to house flies (Musca domestica) from "Garden Pests and their Eradication":—"*Arsenic.*—When this can be used it is an excellent thing to clear them off." (I do not, however, copy the recipe as "there is great danger attending it, as a poison most fatal to animal life," C. et. A.) *Papier moure.*—A bibulous paper soaked in a solution of cyanide of potassium. Although largely used, it is quite as dangerous as the last. Blotting paper soaked in a decoction of quassia may also be used. *Traps.*—Paper thickly smeared with treacle or boiled oil, to which a small quantity of raw oil has been added, is a good trap. Bottles containing a quantity of beer or weak syrup also catch many, and the traps advised for wasps are useful. The traps like those manufactured by Messrs. Westwood and Moore, of Brierley Hill, are very effective. Syrup, or beer and water, is placed inside, and the flies, attracted by the scent, find the opening underneath, and, ascending, are unable to find their way out again. Christie's Myocom, a very sticky stuff, which is applied to string or sticks, and placed in the haunts of the flies, will catch vast numbers of the pests." The following are advised for wasps:—"Wide-mouthed bottles, half filled with treacle and water, or sugar and water, to which a little rum has been added, attracts wasps, flies, and other flying depredators to their destruction, as they get drowned in large numbers." *Traps.*—These are various. For all practical purposes the following is, however, as good as any:—Take two 12-inch cloches or bell glasses, having holes in the top, and stand one on three half bricks placed on the ground. Over this place the second, stopping up the top hole to prevent exit. On the ground under the bottom glass place some partially-decayed fruit or a saucer of syrup, and keep fresh enough to be attractive. The flies, after regaling themselves, will invariably fly upwards, and pass through the hole in the lower glass into the space beneath the two, from which they cannot escape, and soon perish."—Celer et Audax.

12942.—**Lawn mower.**—A 16-inch lawn mower is too much for one man and not quite enough for two. A strong lad and a man ought to work it if the machine is kept in good going order. Except in very showery weather in summer, once a-week will be often enough to pass the machine over the Grass.—E. Hobday.

A rabbit lawn mower.—I have a Grass plot about 20 feet square, not large enough to be useful, and the Grass is everlastingly wanting cutting, a job which, when done with a pair of scissors, blisters one's fingers and makes one's back ache. I have overcome the difficulty in this way. In the spring of last year I bought two young rabbits, and with some wire netting and an old box I made a cage. It is 1 foot wide, 3 feet long; the back is 2 feet high and made of wood, sloping down to the wire front, which is 1 foot high; in the back half is a shelf 6 inches from the ground, so that the rabbit can get under to get at the Grass, and sit on the shelf out of the wet, the sloping roof making a snug, warm sleeping-place. The bottom of the cage is of wire-netting, 3-inch mesh, which allows him to get at the Grass, but prevents him tearing it up, the front half of the sides and top being 1½-inch mesh wire. The Grass now never requires cutting, as I shift the cages every evening, and in dry weather sweep the refuse on to the borders. The rabbits never want cleaning out, as it all goes through the wire-bottom, and it greatly improves the look out to see the rabbits frisking about; in fact, if we have any children come to see us we stick them at the window to see the "bunnies," and it will keep them out of mischief for ten minutes. My stock has now increased to six rabbits in six cages, four of which can be placed on any piece of ground which happens to be clear or want weeding. When I killed the old ones, after having been out all last winter, they were fleshy, sweet, and did not taste of the hutch as tame rabbits generally do. They cost little to feed, as I never give them corn, but only sharps and bran mixed with water to keep it from blowing about, and they clear up all the weeds, Cabbage stumps, &c., and at present they are engaged on the Pea and Bean haums.—W. B.

OUTDOOR PLANTS.

PLANTS IN FLOWER DURING JULY.

A "Constant Subscriber" is going into the cultivation of herbaceous plants, and if the Editor would give a list of the most valuable (lasting) and showy for each month he would greatly oblige. *** This question is an important one. Some time ago regular reports of hardy plants in bloom round London were given in the *Garden*, and most instructive they were. We would like to again raise the question, and, taking every month in the year, mention the flowers that are in bloom. Any correspondents in the habit of seeing a great many things, or of being near extensive collections, would oblige us by sending us such lists, stating the English as well as the Latin names wherever possible. We ourselves may take other means of making such lists complete. Let us begin with the month of July. According to a list published in the *Garden* the following plants are in flower in July in the neighbourhood of London:—

Acæna (New Zealand Bur)
Acantholimon (Prickly Thrift)
Acanthus (Bear's Breech)
Achillea
Aconitum (Monk's Hood)
Actæa (Baneberry)
Actinomeris
Adenophora (Gland Bell-flower)
Agapanthus (African Lily)
Alfredia
Alisma (Water Plantain)
Allium (Garlic)
Alstræmeria
Althæa (Hollyhock)
Alyssum (Mud-wort)
Amaryllis
Amberboa (Sweet Sultan)
Amellus
Anagallis (Pimpernel)
Anchusa (Bugloss)
Androsace (Rock Jasmine)
Anemone (Windflower)
Anomatheca (flowering Grass)
Antennaria (Pearly Everlasting)
Anthemis (Chamomile)
Antherium (Spider-wort)
Antirrhinum (Snapdragon)
Aquilegia (Columbine)
Aralla
Argemone (Milk Weed)
Artemisia (Wormwood)
Asclepias (Milk Weed)
Asphodelus (Asphodel)
Aster (Star-wort)
Astilbe (False Goat's Beard)
Astragalus (Milk Vetch)
Athanasia (African Daisy)
Atragene sibirica alba (Siberian Clematis)
Betonica (Betony)
Bocconia (Tree Celandine)
Bœrkhausia
Brachycome (Swan River Daisy)
Bravoa (Twin-flower)
Brizoporum
Brodiæa (Californian Hyacinth)
Buphthalmum (Ox-eye)
Butomus (Flowering Rush)
Cacalia (Scarlet Tassell Flower)
Calamagrostis (Wood Reed)
Calamintha
Calandrinia
Calceolaria (Slipper Flower, Fisherman's Basket)
Callichroa
Callimeris
Calliopsis
Callistemon
Calluna
Calycanthus
Calystegia (Bird Weed)
Campanula (Bell Flower)
Cannabis (Hemp)
Carlina (Carline Thistle)
Catalpa
Ceanothus
Centaurea (Centaury)
Cerinthe (Honey-wort)
Chamæpeuce (Fish-bone Thistle)
Chelone (Shell Flower)
Chlorogalum
Chrysanthemum
Chrysocoma (Golden Locks)
Cichorium (Chicory)
Cineraria
Cirsium (Horse Thistle)
Clarkia
Clematis
Cleome
Collomia
Colutea (Bladder Senna)
Commelina (blue Spiderwort
Convolvulus (Bird Weed)
Coreopsis (Tick seed)
Corethrogyne
Cyananthus
Cynaria
Cynoglossum (Hound's-tongue)
Cypella
Cyperus
Cytisus (Laburnum)
Datisca
Datura (Thorn Apple)
Delphinium (Larkspur)
Desmodium (Tick Trefoil)
Deutzia (Japanese Snow-flower)
Dianthus (Pink)
Diascia
Diervilla (Bush Honeysuckle)
Digitalis (Foxglove)
Dimorphotheca (Cape Marigold)
Dipsacus (Teazle)
Dracocephalum (Dragon's-head)
Drosera (Sundew)
Dryas (Dryad)
Echinops (Globe Thistle)
Echium (Viper's Bugloss)
Epilobium (Willow Herb)
Epipactis (Helleborine)
Erianthus (Woolly Beard Grass)
Erica (Heath)
Erigeron (Flea Bane)
Eryngium (Eryngo)
Erysimum (Western Wallflower)
Escallonia
Eschscholtzia (Californian Poppy)
Eutoca
Eupatorium (Hemp Agrimony)
Falkia
Ferula (Giant Fennel)
Foeniculum (Fennel)
Francoa
Frankenia (Common Sea Heath)
Fremontia
Fuchsia
Funkia (Plantain Lily)
Gaillardia (Blanket Flower)
Galega (Goat's-rue)
Galium (Bedstraw)
Gaultheria
Gaura
Genista (Broom)
Gentiana (Gentian)
Geranium (Crane's-bill)
Gilia
Gladiolus
Glaucium (Horned Poppy)
Godetia
Grindelia
Gymnadenia (fragrant Orchis)
Gypsophila
Hedysarum
Helenium
Helianthus (Sunflower)
Helichrysum (Everlasting)
Heliptcrum
Hemerocallis (Day Lily)
Hibiscus (Shrubby Mallow)
Holcus
Hydrangea
Hypericum (St. John's Wort)
Hyssopus (Hyssop)
Iberis (Candytuft)
Impatiens (Balsam)
Indigofera (Indigo plant)
Inula (Flea Bane)
Ipomopsis
Jasione (Sheep's-bit Scabious)
Jasminum (Jasmine)
Justicia
Kaulfussia
Kitaibelia
Laserpitium
Lathyrus (Everlasting Pea)
Lavatera (Tree Mallow)
Leptosiphon
Leycesteria
Liatris (Button Snake root)
Ligularia (Japanese Silver-leaf)
Lilium (Lily)
Linaria (Toad Flax)
Linum (Flax)
Liriodendron (Tulip Tree)
Loasa
Lobelia
Lonicera (Honeysuckle)
Lopezia
Lotus (Bird's-foot Trefoil)
Lupinus (Lupin)
Lysimachia (Loose-strife)
Lythrum (Loose-strife)
Madaria (Mignonette Vine)
Magnolia
Malope (Mallow-wort)
Malva (Mallow)
Matthiola (Stock)
Medicago (Medick)
Melissa (Balm)
Menziesia
Michauxia (Michaux's Bell-flower)
Micromeria
Modiola
Monarda (Horse Mint)
Monolopia
Morina (Whorl Flower)
Myosotis (Forget-me-not)
Myriocephalus
Myrtus
Nierembergia (Cup Flower)
Nigella (Fennel Flower)
Nolana
Nuphar (yellow Water Lily)
Œnothera (Evening Primrose)
Onobrychis
Ononis (Rest-harrow)
Onopordon
Origanum (Marjoram)
Ornithogalum (Star of Bethlehem)
Oxalis
Oxytropis (Oxytrope)
Palava
Panicum
Papaver (Poppy)
Parnassia (Grass of Parnassus)
Pascalia
Pavia (Buck-eye)
Pentstemon
Petrocallis (Rock Beauty)
Phacelia
Phlomis (Jerusalem Sage)
Phlox
Physostegia
Phyteuma (Horned Rampion)
Pimpinella (Pimpernel)
Piptatherum
Pisum
Platycodon (Chinese Bell-flower)
Podolepis
Polemonium (Greek Valerian)
Polygonum
Pontederia
Portulaca
Prenanthes
Primula
Prunella (Self-heal)
Psoralea
Ptarmica
Ptelea
Punica (Pomegranate)
Pyrethrum (Fever-few)
Rhexia
Rhodotypus
Rhus (Sumach)
Robinia (Clammy Acacia, False Acacia?)
Rudbeckia (Cone Flower)
Rumex (Dock)
Salvia (Sage)
Sambucus (Elder)
Sanguisorba
Santolina (Lavender Cotton)
Sanvitalia
Saponaria (Soap-wort)
Satureia
Scabiosa (Scabious)
Scolymus
Scutellaria (Skull-cap)
Scyphanthus
Sedum (Stonecrop)
Sempervivum (House Leek)
Senecio (Groundsel?)
Serratula (Saw-wort)
Seseli
Sida
Silaus (Meadow Saxifrage)
Silene (Campion)
Solidago (Golden Rod)
Spartium (Rush Broom)
Sphenogyne
Spiræa (Meadow Sweet)
Stachys
Statice (Sea Lavender)
Stenactis
Stevia
Stipa
Tanacetum (Tansy)
Teucrium (Germander)
Thymus (Thyme)
Trachelium (Throat-wort)
Tradescantia (Spider-wort)
Trifolium (Clover Trefoil)
Tritoma (Torch Lily, Red-hot Poker Plant)
Tropæolum (Nasturtium)
Tunica
Venidium
Veratrum (white Hellebore)
Verbascum (Mullein)
Veronica (Speedwell)
Vicia (Vetch)
Villarsia (Fringed Buckbean)
Wahlenbergia
Xeranthemum (Everlasting)
Yucca (Adam's Needle)
Zapania
Zephyranthes (Zephyr Flower)
Zieteoia
Zygadenus

The Verbena in towns.—This neat and brilliant little perennial bedder where well cultivated is as fresh looking as at the commencement of the flower season, and the amateur who is really fond of a bit of colour on a small scale should not overlook its merits; and it has many, among which may be mentioned its free-blooming character even in clay soil, its excellence as a town flower, both in pots and on the window-sill, and last, but not least, the variety of its deep and lovely colours. Those who admire it for the latter quality should, with the view to any particular arrangement, procure at the commencement of the bedding-out season a few plants in single pots showing buds, and plant out in the beds when the colours are visible without breaking the ball, 10 inches apart in town air, allowing double that space in airy suburban or rural situations. The town amateur who has a moderately warm greenhouse may, with little care, raise a stock of plants at the present time in the flower garden. Cuttings about 3 inches long should be selected, the side shoots from half-ripened wood being suitable, rejecting any approaching to woodiness. They should be inserted in equal parts of fine loam and sand as soon as taken off the plants. Several may be placed in a 4-inch pot, or each singly in thumb pots. We have thus rooted these without glass or shading by placing them under a north wall, but if the weather is cool they may be brought on under a bell glass or in a cold frame if kept close and moist. They only need shading in the event of really hot weather. They should have air when growing, and the top may be removed that nicely shaped plants may be produced in time for wintering in the house. Water must be withheld as the season gets colder, and the slightest appearance of mildew should be treated by dusting with flowers of sulphur, giving just sufficient tepid water to keep the plants alive, about once in ten days being generally enough. Some amateurs grow these as annuals, and raise them from seed in February or March in the greenhouse, keeping the seedlings close to the glass, giving a little air on fine days, and placing in thumb pots ready to plant out when the bedding season arrives. For these the soil should consist of three parts loam and one of leaf-mould, with a little silver sand. A fair strain will yield flowers of many colours, including scarlet, crimson, purple, pink, lilac, and rose, with generally a few of the handsomely striped flowers raised within the last few years. Although the individual blooms of the Verbena in town air are in no way inferior to those grown in rural spots, the amateur should induce a spreading, bushy habit in the plants by taking out the leading and some of the side shoots early in the season, which will ensure a larger number of flowers. Indeed, by having recourse to this practice, and by keeping every plant neat and clean, together with due attention as to soil, must greatly depend his success. Clay soil will suit these flowers, but they thrive best in deep, rich loam, with a little quite decayed stable manure. The window gardener should place one in a 4-inch pot, or three in one of 8 inches, well crocking the pots and shortening the growth occasionally. Stock raised now should have all the air possible before winter. In February, old plants, if allowed a little bottom-heat, will soon yield cuttings in time for bedding-out at the end of May.—Stamford Hill.

Early Chrysanthemums.—The early garden Chrysanthemum, with its almost countless varieties, must ever be a thing of beauty to the amateur gardener, but it is those bewitching little specimens of this flower in pots that now claim our attention. These are to be had by every amateur who would possess them at the season when flowers are at a premium, by raising a few at the present time. We are now propagating these from specimens in 6-inch pots of the late flowering varieties, and which, according to name, should bear purple, white, and crimson blooms. Strong cuttings will soon root in a cold frame if kept close and moist; these are struck in 4-inch flowering pots. In the absence of a frame a number may be rooted under a hand-light in smaller pots, and when rooted shifted into those in which they are to bloom. The cuttings should be firm but free from woodiness, and inserted 1 inch deep in pots merely surfaced with sandy soil to facilitate rooting. Occasionally sprinkling the leaves, to prevent flagging, should be resorted to, as these plants are apt to droop with insufficient attention to the matter of keeping moist. When rooted they should be encouraged to grow by placing them in a warm sheltered position in the garden, watering with discretion according to the state of the weather, and allowing a free supply if at all hot. Manure-water twice a week should be applied during free growth, discontinuing it when the buds appear. As to the number of flowers: when growing we take out the leading shoot, and allow not more than three to mature blooms, disbudding accordingly, preferring a small number of good flowers to a larger number of inferior ones. These plants when well grown should be from 16 inches to 20 inches high, and are excellent both for table and room decoration. In dark coloured china pots, temporarily inserted, they are very effective. Good loam from a nursery is about the best soil, which should be pressed slightly, working in a little silver sand to the depth of an inch and a half from the surface. By present operations a stock of most useful decorative plants may thus be raised, but the amateur who may need the hint should bear in mind that time is on the wing.—Stamford Hill.

Irises in town gardens.—The Flag Iris seems to do uncommonly well in the confined precincts of small town gardens. Even within reach of the London smoke it appears to flourish almost or quite as well as in the pure country air. Last spring I noticed that many little front gardens on the east side of London were very gay with the Flag Iris, and I also remarked that they were almost barren of other flowers. It does seem strange that with an infinite variety of things to choose from there should be so much sameness in little villa and forecourt gardens. This is noticeable both in town and country gardens, and where plant culture presents no difficulties.—J. Cornhill.

CARNATIONS OUT OF DOORS.

In the sense of being known, nothing is more popular than the Carnation, but, as regards making good use of it, few things are so little thought of. And yet we know of nothing that would better repay one's trouble. The very brightest gardens we have seen of late years, say about the end of August and beginning of September—a very important time, indeed, for all country-house people—were those with Carnations well grown and plentiful. Even small gardens with them are charming. They are flowers of our climate, and are none the worse for wind and rain. Cool western sea-shore and hill districts are, if anything, best for them. Considering how much of our country, with its long and varied coast-line, may be described in these words, we may see how valuable these qualities are. But the warmer Surrey and Sussex and Kent grow them admirably, too, though the bloom is not so prolonged. We doubt, however, if the same bright fresh colouring that is seen on the east coast at Scarborough, or, say, on the west coast in Anglesea, or in Ireland, is often seen in the warm southern gardens. Be this as it may, the result is always good enough to repay our trouble, and the flower is the queen of the summer and early autumn garden; but not if the gardener lets it come second to his bedding plants in importance, or forgets it altogether, or puts perhaps a few plants along the margin of a shrubbery. We believe that few who know the merits of the various groups would hesitate to place it next to the Rose in importance for our outdoor gardens. It, moreover, is admirable for association with the Rose, and those who will not spare it special beds may make a good attempt among the beds of Roses, on their own roots or otherwise. The plants fill up admirably the space between dwarf Roses on their own roots. A Rose here and there adds to the charm of the autumn show of the Carnation, while the foliage of the plants contrasts agreeably. A few groups of good Stocks here and there, and tufts of Violas and Pansies about the margin, together make an August or September garden which would charm the most fastidious.

As to the kinds, there are enough for all tastes. Among the Cloves alone, after the old deep crimson, we have a fine white, a brilliant scarlet, a delicate peach, and various others. Many have, in fact, been raised, and it is for each to choose the colours and kinds he likes best, and, by remembering to increase them from pipings or cuttings every year, keep up a good stock for oneself and friends. For our experience is, that there are few things people are so pleased to get as a few stout young plants of these Clove Carnations. There has been such a run on them of late years that it has been sometimes difficult to get them in the trade.

Apart from the Cloves, there are the various self-coloured and other Carnations, which are, happily, now being taken up by some of our enterprising nurserymen, and are no longer difficult to obtain in various ways. We have lately seen many fine forms, mostly in gardens of the smaller class. One may often secure plants or cuttings from such gardens. Once possessed of a good form, it should be a matter of care to keep a good stock of it. The neglect of these things should no longer be borne by the most long-suffering, and those who are not their own gardeners should say so to their men.

The plant should also be raised from seed every year, for two reasons—securing a good stock of vigorous young plants, and for the chance of getting new forms suited to one's taste or soil. The range of colour is endless, and by raising seedlings annually anyone may hope to add new treasures to the general garden stock. People who raise many other things from seed often forget how easily these are raised. Many seem not to know the fact. If there were no other good reason to raise seedlings, it is in some places desirable to do so to find varieties to suit the soil. Though the plant is far from fastidious as regards soil, yet we have known some places where the plants generally did not succeed. One showy kind would be an exception. Obviously, if one kind will succeed more than others, it may be possible by seed-raising to get more of the same taste and of different colours. Both our own seed-houses and the French and German offer selections of Carnation seed. Our advice would be to secure a packet of each distinct strain, and go to work. The plants grow freely the first year, and bloom strongly the second. By sowing a batch every year we may have each season the pleasure of watching the bloom of a new series, containing, perhaps, many single flowers, which the raiser may not care for, but also, perhaps, showing some new beauty which may find a place in English gardens for generations to come. The Carnation, while often sought by the lady, is also a poor man's flower, requiring no fires or glass for its care; so that those raising more stock than they themselves want need not doubt that they could gratify neighbours of any degree by what they did not need themselves. R.

BEDDING OUT.

The best and most instructive reply to G. F. Davis will be to ask him a few questions. He says he planted out his Geraniums, &c., on the first of May. If they were put out in bloom they would not begin to flower well before the first of June. What filled the beds in March and April? For March, April, and May a garden may be full of flowers. By the first of March the woods are full of Primroses, Anemones, and Daffodils. Half the flowers of the year are over by the first of June, and that, perhaps, the most beautiful half. G. F. Davis claims it as an advantage that his beds have been and will be in bloom for four months. That is, on the contrary, one of the great disadvantages of bedding. Who would relish the same everlasting dishes day after day, the same tune, the same dress? Then, why the same flowers in the same combination the whole season through, instead of delightful change month after month? G. F. Davis claims that hardy plants require more watering than bedders. Some of them do, but there is never any necessity for growing those in dry soils.

As a rule they require nothing of the kind. What they do require is a deep, well-cultivated, rich soil; and unless the situation is too damp the beds must be level, and if possible a little under the general level. Planted as they usually are in raised beds, and in the starved margins of shrubberies, they will not do; and to plant them in such places is not hardy plant culture, and no fair comparison can be instituted between them in such positions and bedding plants even fairly grown.

G. F. Davis says he will defy any artist to find fault wtth his arrangements. It is a singular thing that in art alone do people who confessedly know nothing of it attempt to place their untutored judgment on a level with that of publicly-known practitioners. In everything else—in commerce, in law, in science, in history—it is acknowledged that no person can know anything without learning and study. I can assure G. F. Davis it is exactly the same in art, and that the judgments of every one who has not learned the rudiments are just as likely to be correct as the judgments of a schoolboy who has yet to struggle over the asses' bridge would be about quadratic equations or the differential calculus. If "G. F. D.'s" garden has no beds of red, blue, and yellow in it, and no blazes of scarlet, crimson, pink, or magenta on raw green turf; if there are no geometric beds, and stiffly-trained and trimmed plants in it, it will at least have a negative value in an artist's eyes.

G. F. Davis rightly says that little beds cannot be effectively filled with hardy plants; these little beds are part of the bedding system, and must disappear with it. It is tolerably evident that G. F. Davis knows only the old-fashioned, muddle-mixed border, which is distinctly inferior to bedding. Growing herbaceous plants not as specimens, or in any kind of botanical arrangement, but in masses so arranged as to produce distinct colour effects, is just as far superior to bedding as bedding is superior as colour decoration to the muddle mixture. I am laying out a number of beds and borders now with an eye to colour effect, and know perfectly well that even as colour they will beat all the bedding that ever was carried out, because I shall use nothing but what I have already grown in every variety of season, and know how to make ready for any alteration the seasons may require. To plant such borders with success requires knowledge of the growth and cultivation of the plants, and that is just what is mostly defective.

The London parks have not the shadow of a shade of authority in any matter connected with hardy plant gardening. Every kind of blunder in planting, placing, and cultivation is to be seen there short of planting the things upside down. For the last five years I have made a regular tour of inspection round most of the London suburbs, and can assure G. F. Davis that not in one garden in twenty is there any bedding. The readers of the whole gardening press hail with interest and delight all instructions about hardy plants. Bedding, in ninety-nine cases out of every hundred, is only enquired about by Londoners who come into possession of a garden for the first time, and whose ideas are taken almost invariably from the London parks.

The great mistake that all defenders of bedding make is in defending the bedding plants, which no one ever finds fault with, instead of the tasteless system of arranging these plants in patterns, and filling the prominent positions in the gardens with them to the exclusion of everything else. All the bedding plants, and many more things equally showy, can be used to help the summer and autumn show in well arranged beds of hardy plants, so that those who choose to decorate their gardens with hardy plants can have all the early bloom, all the change, all the stately habit, and all the variety of these, and all the continuous bloom and brilliant colouring of the tender plants as well to fill up spaces where early-flowering plants have done blooming. J. D.

Broomrape in Clover fields.—On several field about here whence Clover has been cut I have noticed such a growth of Broomrape (Orobanche) as I have never seen before—a regular crop. The soil is coralline oolite. It would be interesting to know if this is the case elsewhere this season.—C. V. G., *Calne.*

Carnation Mary Morris.—In some respects I agree with "R.," page 286, about the merits of this Carnation. The flowers are no better in quality than many other border kinds, nor does it produce flowers more freely, but as regards growth it is sufficiently vigorous for the purpose for which it has been recommended—viz., the border.—J. C. C.

Arrangement of border plants.—The following is the way in which I have arranged the plants in a border in my garden. Being a lover of all kinds of flowers, I could not do without the old-fashioned perennials which I knew when a child; so in order to combine the new system of bedding out with my old favourites I adopted the following plan:—The border allotted to flowers at the end of my pleasure ground is 210 feet long and 8 feet wide. Being on the slope of a hill I was obliged to build a low wall in the centre to make the ground level. On the top of this little wall I put some tiles, so that there is room to walk and gather the flowers on either side. The upper division is planted with Roses, at one side some tufts of Gladioli, and next the wall is a long row of alpine Auriculas. The lower division is festooned and edged with Echeveria secunda glauca. The large divisions are planted with tall herbaceous plants—Spiræas, Phloxes, Delphiniums, &c.—inside, lower growing ones filling up outside. The small divisions are filled with bulbous roots in autumn, and when taken up zonal or Ivy-leaved Pelargoniums take their place for summer. In the early summer the soft orange-scarlet flowers of the Echeveria give a charming effect to the whole border. Outside is a row of white-leaved Pelargoniums in summer and Crocuses in spring, the whole being finished with a Grass verge next the walk.

Erysimum Peroffskianum.—I saw a mass of this in early spring and thought it formed one of the most telling bits of colour I ever saw. A plant or two after blooming had been accidentally cast down at the foot of a sunny wall, the result of which was a crowd of young plants. There was no prepared soil for them to grow in, nothing but the bare gravel walk, and they seemed quite at home there, growing in fact as well and appearing just as happy as Wallflowers do in similar situations. The effect of this mass of rich orange in the sunlight in early spring was charming. This annual, so distinct in colour from all others, requires to be sown early in September in rather poor soil; it then gathers strength by winter and makes a brave show quite early in the year, being the first of the hardy annuals to come into bloom. —J. C.

AUTUMN SOWN ANNUALS.

To judge by the rarity of the practice, it appears that the importance of autumn sowing in the case of many hardy annuals is not generally appreciated, but it is an undoubted fact that these plants sown in autumn acquire a vigour never equalled by the same seed sown in spring. Those of us who are accustomed to have a hedge of Sweet Peas in full bloom in the first week in June, with grand heads of flower, commonly four flowers on a stalk, and the stalks stout and 15 inches long with a corresponding vigour of foliage, consider with reason that others who only sow in spring and get a puny growth of some 5 feet with comparatively small short-stalked flowers some time in July, do not know what a fine plant the Sweet Pea really is, and the same with many other annual plants.

Though many of the kinds offered in seed lists are scarcely ornamental, even when well grown, numbers of others among those that really have merit are not given a chance of showing what they might be, because the common practice is to sow in spring, and a puny, half-developed growth is the result, and so the plant undeservedly gets the character of "weedy rubbish." After all, autumn sowing is only profitting hy a natural example. Seeds ripen in late summer and early autumn and fall on the ground, when the first suitable weather starts them into life. Our habit (in the southern country in warm soil) is to sow most hardy annuals between the middle and end of August, the exact time, of course, being determined by the weather and state of the ground; Sweet Peas we sow in the third week in September. We like to get them such a size as to stand through the winter 4 inches high, and they are partly protected by being sown in a shallow trench. Other annuals may be sown either where they are to bloom or in open seed beds and transplanted in any winter month in mild weather—even French and Opium Poppies may be transplanted in winter. As the season for sowing is now at hand, it may be useful to offer a list of choice hardy annuals that can be confidently recommended for autumn sowing, and especially I would commend them to the notice of those who love beautiful flowers, but who "never grow annuals because they are such rubbish":—

Omphalodes linifolia	Oxyura chrysanthemoides
Schizanthus Grahami retusus albus	Eschscholtzia californica tenuifolia
Silene pendula compacta	Godetia, Lady Satin Rose, Duchess of Albany
Nemophila insignis	Hymenoxis californica
Leptosiphon roseus	Papaver somniferum umbrosum
Linaria, purple	Poppies, French
Dianthus Heddewigi	Sweet Peas
Platystemon californicum	
Erysimum arkansanum	

G. J.

REPLIES.

13935.—**Culture of German Irises.**—The German Irises are evergreen, and flower in May and June; they are propagated by division and seeds. All new varieties are raised by the last-named method. They will grow in any good garden soil, and will stand the smoky atmosphere of towns better than most things. They are very striking in patches in the borders, and, being evergreen, do not leave a blank when flowering is over.—E. H.

14076.—**Plants for vacant spaces.**—As the Editor remarks, "E. W." should trust more to hardy plants, many of which cost but little, and are first-rate for small gardens. A beginning should be made now with plants for next year from seed. Sweet Williams, Canterbury Bells, Gloxinia-flowered Foxgloves, Delphiniums, Stock-flowered Wallflowers, Lychnis Haageana, and Œnothera Lamarckiana are all good biennials. In September plant seedling Pansies, which should be sown at once, and sow Eschscholtzias, Carnations, Poppies, Nemophila, Clarkias, Silene pendula, and Godetias where they are to bloom. Early in spring sow Leptosiphons and Sweet Peas, and a little later Saponaria calabrica, annual Chrysanthemums, Stock-flowered Larkspurs, Bartonia aurea, Coreopsis. Omphalodes linifolia, Crimson Flax, Lupines of many kinds, and dwarf Tropæolums. The best annual for filling up blanks after the early ones are over is Phlox Drummondii; it is so nearly hardy that it can be raised in a sunny window. Indian and Japanese Pinks are equally good. These three last in bloom the whole summer. Sphenogyne speciosa and S. aurea are very good annuals, and are easy to raise in a sunny window; they are pretty, soft, yellow Daisies, with dark centres, not quite so large as the common Ox-eye, and the plant grows about 9 inches high. The great thing with hardy annuals is to sow early, and give them good cultivation in the early stages of their growth. This makes the plants large and robust before they flower, and they then branch freely and give a long succession of bloom if the flowers are carefully picked off as soon as they fade. Another equally important matter is early thinning. Crowded annuals are soon over, and produce small flowers; the same plants which when crowded will be over in a fortnight will last six weeks in bloom if allowed to develop fully.—J. D.

13959.—**Hardy and alpine plants in pots.**—The following I have grown in pots, and found them most useful:—Anemone Honorine Joubert, Aquilegias in variety, Asclepias tuberosa, Campanulas in considerable variety, including Canterbury Bells, which in early spring are very effective. The dwarf Wallflowers, very early in the season, are sweet and nice, as are also all the Primrose family, including the Alpine Auriculas. Daisies I have also grown in pots and in cold houses Cypripediums (North American). The Dianthus family contains many pretty species. Digitalis or Foxgloves will force gently, and the long spikes of flowers are effective. The hardy Heaths do well in pots in a cold house or pit. I have grown many of the hardy Lilies. The old white species is a valuable acquisition; for pot culture the Hellebores or Christmas Roses are especially suitable. The Spiræas, especially japonica and venusta, are good. Forget-me-nots in cold houses, and Pæonies, both herbaceous and tree species, are successful pot plants. Many of the Phloxes are quite at home in pots; all the Pyrethrums succeed well.—E. Hobday.

14001.—**Propagating Ivy.**—Ivy cuttings will grow anywhere. The best time to plant is in autumn, early in October, and they succeed best if planted in a bed and transplanted when rooted. More attention can be given to them in a proper cutting bed.—E. Hobday.

FERNS FOR BASKETS.

In the ferneries at Kew a large number of Ferns are grown in wire baskets suspended from the roof, and the majority of them are not only seen to much better advantage in that way than in any other, but are apparently much happier thus treated than when grown in pots. By growing the drooping species of Ferns in suspended baskets, a large area of unused space may be turned to good account, and where stage room is limited this is a consideration not to be lost sight of. The baskets in use at Kew are made of stout galvanised wire, and are half globe shaped, with three wires as arms by which to suspend them. They vary in size from 6 inches to 2 feet in diameter, the depth decreasing as the basket widens, so that a 2-foot basket is only 1 foot deep, while those of 6 inches in width are the same in depth. A lining of thin slices of fibry peat is placed all around on the inside of the basket, which is then filled up with a compost according to the requirements of the plants it is meant to contain. Two kinds of Ferns, or a Fern and a Selaginella, are planted in each basket, the one to occupy the upper portion, the other to cover the peat and sides of the basket. If the house in which these baskets are suspended is not kept very moist, it will be found safest to take down each basket once a day and dip the whole into water. A stout rod with a hook on the top, like a butcher's hook-stick, is a useful tool for taking down these baskets. A little attention is necessary at first to the training of the growths which are to cover the sides; after which the growths may be allowed to take their own way. The following are some of the most striking of the Fern baskets in the Kew collection: Davallia Mooreana for the central plant, with Selaginella flexuosa for the sides. These two graceful plants combine with the most charming effect, the pale green of the Davallia and the arching character of its spreading fronds going well with the slender growths of the Selaginella, the leaves of which are dark shining green and the stems purplish coloured. Asplenium Bellangeri and Selaginella uncinata, the first a well-known Fern of great beauty, and its companion, the "blue" Selaginella, whose metallic tint and creeping, fast-growing habit render it especially useful for covering baskets, &c. Either the common Selaginella or one of the above-mentioned is used for covering the baskets containing plants of the following, viz.—Adiantum farleyense, a first-class basket plant, as witness the immense balls of it that form a feature in the large house at Chatsworth; A. gracillimum, beautiful anywhere, but very attractive when grown in a basket; A. Moorei (syn., amabile), the best of all the Adiantums for basket work; of this there are some beautiful specimens at Kew; A. Wagneri and of course A. caudatum, or, as it is sometimes called, Edgeworthi. These are a few of the Adiantums which are grown in baskets at Kew, but there is no reason why the majority of the plants of this genus should not be grown satisfactorily when treated as basket plants. Many of the Aspleniums are fitted to be employed in the same way, whilst some of them cannot well be grown in any other. A. longissimum belongs to these latter kinds. It is represented at Kew by a specimen with a spread of about 3 feet, and fronds measuring as much as 8 feet in length. Where room can be spared for this plant to develop properly it proves itself to be one of the noblest basket plants among Ferns. Polypodium appendiculatum has long feather-like fronds of a deep sea-green colour, with the veins, rachis, and sori beautifully tinged with chocolate-red. When grown in a warm house and suspended close to the glass, the colour in the fronds of this Fern is very bright and clear. P. lachnopus, with arching feather-like fronds, is pale green, and upon the pinnæ are two rows of closely set sori, which are pale brown in colour, and have an attractive appearance. The almost hardy Pteris scaberula grows most luxuriantly when planted in a basket and suspended near the glass in a cool fernery, a basket of it at Kew looking like a large ball of fronds of the healthiest green. That Ferns may be grown, and grown well in baskets, is abundantly evident from what is done at Kew in this way, where, in addition to those above noted, there are numerous other kinds growing and thriving under basket treatment.

Of course it may be said that almost any plant will do well in a basket suspended close to the glass, and given the proper amount of attention, but it is the special adaptability of Ferns for this treatment, as seen in their superior appearance, that leads us to recommend this practice for general adoption, and more particularly for adoption in gardens where suitable positions on the stages for Ferns are but limited.

13874.—**Tallow greaves as manure.**—I have never used tallow greaves as manure, but have no doubt that they possess considerable value for that purpose. If I had some now I should try them as a mulching over fruit trees, removing a little of the surface soil, placing a layer of the greaves, and then covering with soil. I believe such a mulching will be beneficial to any tree heavily laden with fruit.—E. Hobday.

Sweet Hybrid Perpetual Roses.—The following are six good sorts: François Fontaine, Charles Lefebvre, Fisher Holmes, Louis XIV., Gloire de Santenay, La Motte Sanguin. All these are dark crimson or dark red, and except Louis XIV. extremely hardy. Madame Willermoz and Souvenir d'un Frère are sweet scented hardy Teas. I find Safrano very delicate. A summer like the present is very good for Teas, but the H. P.'s have twice nearly died from the drought. Soil is loamy clay, subsoil clay, gravel chalk.—A. B. T., *East Anglia*.

14122.—**Rose of Sharon.**—Dr. Kitto, in his book on Palestine, has the following passage. Referring to the plain of Sharon, he says:—"I observed nothing bearing the appearance of what we call a Rose, and, unless the Rose of Sharon is the Cistus roseus of Linnæus, which grows abundantly, I know not what it may be." It was in flower on the 10th of April. Mr. Wilde, travelling over the same plain, somewhat earlier, says: "Much has been written and many opinions expressed regarding the Rose of Sharon. I agree with those authors who state that it is not a Rose, but a Cistus, white or red, with which this vale in particular, and other parts of India, abound."—J. D. E.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

14216.—**Growing Tea plants.**—What is lowest temperature for Thea Bohea in winter?—NOVICE.

14217.—**Garden walks.**—Could some reader tell me where I can be supplied with designs or patterns of garden walks?—CHESTER.

1418.—**Propagating Palms.**—I wish to divide a shoot of the Palm Corypha australis and strike it; how can this be done?—NOVICE.

14219.—**Ink for labels.**—Will any reader tell me the best ink to use for labels which would be exposed to the weather nearly all the winter?—T E, *Putney.*

14220.—**Raising seedling Potatoes.**—Will some raiser tell me how to raise Potatoes from seed Apple, as I should like to try the experiment?—POTATO-APPLE.

14221.—**Raspberries on gravel soil.**—I should be grateful for information respecting Raspberries, as to kind and position in garden, for gravel soil.—TEDDINGTON.

14222.—**Lavender and Rose-water.**—Can any correspondent inform me how to make Lavender-water, and also Rose-water?—P. A. S.

14223.—**Pepper tree.**—I am anxious to know the treatment of plants of the Pepper tree (Schinus Molle) grown from seeds brought from Mentone.—J. WATKINS.

14224.—**Flowers for winter.**—Will any reader tell me what plants would be the best for winter blooming in a greenhouse for cutting for button-holes and bouquets?—BEGINNER.

14225.—**Striking Crotons.**—I wish to strike some cuttings of Crotons; where shall I cut from the parent plant, and can it be done in a cool house at present time, and what compost?—NOVICE.

14226.—**The Wood Spurge and its "cup."**—Can any reader help me to the meaning of Rossetti's line, "The Wood Spurge has a cup of three." Where is the "cup" referred to, and what is the "three?"—S. F.

14227.—**Passion Flower fruit.**—Is the fruit of the Passion Flower edible?—C. C.—*** *The fruit of Passiflora quadrangularis and of P. edulis are eatible; but if you allude to the common P. cærulea, it is not so.*—ED.

14228.—**Pansies for spring.**—I wish to have a bed of Pansies next spring. Will some Pansy grower tell me what protection I could get for the above against the south winds? My garden is facing south.—A BEGINNER.

14229.—**Araucaria fruiting.**—I have a fine Araucaria bearing large cones or fruit. Will you kindly tell me if it will be better for the tree to have them removed or allow them to remain?—J. B.—*** *Remove them.*—ED.

14230.—**Cork for rockery.**—Is virgin Cork a suitable material for a rockwork in the open air on a very dry soil? If so, where can it be procured?—MRS J. L.—*** *Certainly not. Never use Cork roots, or other wood, about a rockery.*—ED.

14231.—**The Fire Bush (Embothrium coccineum).**—Can you tell me where I can obtain this shrub? I have tried in vain to get it.—F. G. E.—*** *Try one of the Exeter nurseries—Lucumbe, Pince, and Co., or R. Veitch.*—ED.

14232.—**Pruning Cobæa.**—I have a Cobæa scandens that has made splendid growth and is in flower in a hot-house. What is the autumn treatment of the plant? Should it be out down or back? If so, what is the best time to cut it?—A G. N

14233.—**The best Currants.**—I intend to plant a few White Currant bushes to a low wall (5 feet) in my garden next October. Will some reader kindly give me names of the best varieties, having regard to flavour and large size?—R KEATING.

14234.—**Pruning Black Currant bushes.**—I have a number of Black Currant bushes, about seven years old; they are very large, and hang over the walk. Would it be best to out them well back, or take them up and plant smaller ones? They bear fruit very well.—CEPH.

14235.—**Abutilons.**—I have some small plants of Abutilon and they look very unhealthy; the leaves turn yellow and shrivel or curl up. Can you tell me the cause?—NOVICE. *** *Please state conditions under which the plants are growing, and the treatment they have received.*—ED.

14236.—**Wax Flower (Hoya carnosa).**—I have a plant of this Hoya, and should be glad to know what treatment it requires. Ought it to be kept in a vinery or a cool conservatory? What is the usual time for it to flower, and what compost ought it to be potted in?—A. A. L.

14237.—**Gooseberries.**—I have a path 70 feet long, with border on each side. I want to plant Gooseberry bushes on both sides. What are the best sorts for pies and dessert, and for preserving? At what distance should the trees be planted? What age should the trees be? Where can the best be procured?—H. B.

14238.—**Judas tree.**—Will someone tell me the origin of the name of the Judas tree and some account of its flowers and growth?—OLIVE.

14239.—**Planting under trees.**—I have several plantations of high trees about my house, and want to plant a permanently green bottom. What shrubs, plants, or other things would thrive under such shade? The trees are mostly bare stems for 15 to 20 feet, and the position is elevated and exposed to strong west winds in Yorkshire.—J. C.

14240.—**Grapes and flowers.**—I was much interested with Mr. Groom's remarks on Grapes and flowers, as I have a vinery and grow flowers, but not very successfully. My vines are planted inside and I stand the plants in pots on the borders. Would Mr. Groom tell me how his vineries are built, and if vines are planted inside or outside, or does he put stages over the borders?—A PUZZLED ONE.

14241.—**Yuccas not flowering.**—About four years ago I purchased two good-sized and healthy plants of Yucca, or Adam's Needle, but neither of them have ever flowered. Both occupied large-sized pots, but this season one has been plunged in the open ground. They were not manured, being apparently so vigorous. I should be glad to know if they require assistance in any particular way.—GARHART.

14242.—**Pruning Rhododendrons.**—Will anyone tell me how to prune and treat a lot of leggy Rhododendrons? I have some trees with naked branches from 1 yard to 4 feet long, with three to six two-year-old branches at extremities. If I cut down to near the ground will they break out new wood? I want to get them dwarf, and in one case of ten in a bed, to cut so as to have them low at the edge and raised in the centre.—J. C.

14243.—**Fountain in greenhouse.**—Will any reader inform me in your paper, GARDENING ILLUSTRATED, whether it is possible to have a fountain to play in my greenhouse by means of syphons or otherwise without having a supply of water above it? I see in your issue of August 8th that "J. G., Suffolk," writes an interesting article on "My Greenhouse and Fernery," and refers to a fountain, but does not say how it works.—NOVICE.

14244.—**Cherry Plum.**—I send you a fruit of the so-called Cherry Plum, about which there was a correspondence in GARDENING during April and May. I would be glad also to have the address of "Aleph," who, in GARDENING of May 9th this year, was so kind as to promise me the name of a grower of this tree. The Plums are never much larger than the two sent. They are a very much brighter red before they are perfectly ripe.—WESTWOOD.

14245.—**Salvia buds dropping.**—I have a very healthy-looking Salvia patens, sending up about two dozen flowering shoots or stems. Hundreds of buds form but they fall off without opening. The soil is light and rich. I have given it liquid manure and water—in fact, tried everything I can think of. I had the same experience last year, but then I did nothing to try to check it. Can any reader inform me how I must treat it in order to get the buds to open?—F. HOLMAN.

14246.—**Carnations dying.**—I planted a bed of seedling Carnations last autumn from seed that I sowed in the spring. The plants did well, and sent up a number of flower stems, until lately they have begun to die off, turning yellow at the bottom, and then they wither away and die. I have taken some of them up to try and discover the cause, but I cannot. I find a number of long light brown insects, with a great number of legs, in the soil, which is ordinary garden mould, well manured. Any information will oblige—CEPH.

14247.—**Insects on Cucumbers.**—I have been troubled with an insect for years on my Cucumber plants; the colour of the insect is yellow, and it is (looking through a magnifying glass) about 1-16th inch long, but cannot be seen by the naked eye. It is always found under neath the leaf, and the leaf begins to dry up from the edge first. I have had the opinion of all around, and none can give me any information. I have thought whether it is caused by my pipes being nearly close together and heated with hot-water and in the centre of my greenhouse. Can any kind reader suggest something for me to try, so that I can destroy this troublesome insect?—J. S., *Staffordshire.*

14248.—**Carnation culture**—A few weeks ago one of your correspondents wrote an article upon the culture of Carnations, and gave the names of a few of the best varieties. I followed his instructions, and have taken a few prizes in local flower shows, and have had all my plants admired by everyone who has seen them, as well as being able to go into anyone's garden and tell them the name of a Carnation when asked. Now, I wish the same friend, or anyone else, would tell us poor amateurs the names of a few of the best Picotees and the way they are marked and coloured, the same as our inestimable friend did about the Carnations.—NOVICE.

14249.—**Propagating Bracken**—Will any of you inform me as to the best and easiest way of planting, whether by roots, or, if possible, by seed, and the best season of the year for doing so?—R. F. SALIS. *** There are two modes of propagating and establishing Bracken—by transplanting and by raising seedlings, the latter way being the best. Autumn is a good time to transplant or at any time before March. You must, with a full-sized spade, dig up entire sods, enclosing the black underground stems of the Fern, and so transplant in a light loamy or peaty soil. You will not succeed if you pull away the roots, or rather stems, without removing soil with them. Seedlings do much better than transplanted roots, and are in every way more satisfactory. If you will gather a handful of ripe fronds, those with spores (seed) on their fronds now, place them between sheets of dry paper, and keep them dry, the spores will soon fall out. They may then either be sown at once or kept till spring. Make up pots or pans of good loam, rammed firm; sow the spores not too thickly, cover with a piece of glass, place the pots in saucers of water in a cool shady position, and they will grow in three weeks or so. As soon as the young plants are large enough to handle, pot them off singly into small pots, and as soon as they have filled these give them a shift into 4-inch pots; grow them on rapidly in a house or frame, and by the middle or end of July they will be large enough to plant out permanently The progress which they make is quite astonishing if liberally treated. Plants in sods always take two years before they recover from removal, even if they do recover, which does not always happen; whereas these seedlings become quite established the first season, and the second season grow into good tufts, ramifying in all directions. A vast number of plants may be obtained from two or three pots. It is not absolutely necessary to employ pots or pans for common things of this kind. Take a sod of loam, turn it upside down in a saucer of water, and sow the spores all over it, and do not cover at all; they come just as well.—ED.

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14250.—**Malformed White Lily** (*E. F. P.*).—A distinct variety named Monstrosum.

14251.—**Blood Orange** (*Celey et Audax*)—No; merely a variety of the Maltese Orange (Citrus Aurantium).

14252.—**Book on fruit trees** (*Mrs. J. L.*).—"Fruit Culture for Profit," by E. Hobday (G. Routledge and Sons).

14253.—**Malformed Carnations** (*J. B.*).—Your malformed blooms probably arise from the plants being overfed with strong soil or manure water.

14254.—**Blue Climber** (*Reader, Southport*)—The blue climber you allude to is probably the common climbing Wistaria; it will grow in any light soil in a warm position. The variegated Acer is a common tree.

14255.—**Grapes scalded** (*U. C. I.*).—They have been scalded in some way—either by the sun or through placing sulphur on the hot-water pipes and overheating them. The only way to prevent such an occurrence in the future is to give air more freely during very hot weather and leave the ventilators open at the highest part of the house all night. It is a mistake to shut a vinery up close at four o'clock in the afternoon and leave it so until seven or eight the next morning. Under such conditions the vines are sure to be weakly and the Grapes more liable to be injured.—J. D. E.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each of various sizes, and showing any variation of form that exists.*

Names of plants—*J. C.*—Hyssop (Hyssopus officinalis) (blue); other is Marjoram (Origanum vulgare).——*Roberta.*—Bridal Wreath; Francoa ramosa.——*Rev. T. M. Young.*—Deciduous Cypress; Taxodium distichum.——*The Abbot.*—Next week.——*A. M., North Not s.*—1, Galega officinalis alba; 2, Begonia metallica; 3, Dimorphotheca pluvialis; 4, Tournefortia heliotropioides.——*C. Penn.*—1, Sedum reflexum; 2, Retinospora squarrosa; 3, Sedum album; 4, S. spurium.——*Amateur.*—Papaver nudicaule (white Iceland Poppy).——*A. Prate.*—Common Clover Dodder; Cuscuta trifolii. Of common occurrence this season.——*Lynn*—Goosefoot (Chenopodium album).——*Southampton.*—1, Helianthus decapetalus; 2, Probably a species of Coreopsis, but specimen is insufficient to name; 3 Dracopsis amplexicaulis; 4, Veronica longifolia.——*Rev T. S. Hotfield.*—Very singular; we have not observed it before.——*J. H. Lambert.*—Cannot name; some kind of fungus.——*A. Fraser.*—Spiræa ariæfolia.——*Zelda.*—Zenobia speciosa, Asplenium bulbiferum (Fern).——*A. G. N.*—1, Thalictrum flavum; 2, Holly Fern (Aspidium Lonchitis); 3, Asplenium bulbiferum; 4, Aspidium angulare.——*J. Bright.*—Lonicera Ledebouri; Ligustrum ovalifolium variegatum.——*H. T., Glenview.*—Merely a monstrosity, a rather common occurrence.——*J. W. F.*—Spiræa callosa (pink); Ligustrum chinense; others not in flower appear to be Willows.——*A. C. Harrison.*—Staphylea pinnata.——*G. M. W.*—Kolreuteria paniculata.——*Faldonet.*—Common Sweet Bay (Laurus nobilis)——*J. G. K.*—Common name of Harpalium rigidum is Prairie Sunflower; Yellow Sultan is Centaurea odorata.——*T. Sharp.*—1, Plumbago capensis; 2, Hydrangea hortensia variegata; 3, Tradescantia virginica; 4, Veronica longifolia var.——*J. W.*—We cannot name the Rose you send.——*W. J. T.*—1, Corydalis lutea; 2, Veronica longifolia.——*Enquirer.*—Solanum oripsum.

Where did he come from?—Entering my greenhouse recently I found some dark object adhering to the painted, upright woodwork, shaded by leaves. Being short-sighted, I put my finger on it, when the animal took a flying leap, which startled me. I then put on glasses, and was astonished to find a most beautiful green frog, about 1½ inches long; it had some pretty golden brown spots and streaks on its body. It certainly travelled up and down the perpendicular woodwork with the greatest ease, and, I think, on the same principle as a fly does (by creating a vacuum under each toe). Can you please give me any idea of where this frog came from, for certainly it is not a native of this place?—J. WEAVER. *** *Certainly a green frog, now tolerably common in greenhouses, but they are always put there. The mystery of the frog's appearance must be left for Mr. Weaver to solve.*—ED.

BEES.

14063.—**Flowers for bees in spring.**—"Anxious One" should not fail to plant Arabis albida at once. It blooms in March and April, and is largely resorted to by bees. A gentleman recommends in the *British Bee Journal*, which I would advise "Anxious One" to subscribe to if he intends keeping bees, to plant variegated Arabis also, as its flowers succeed the former.—Boz.

SEASONABLE NOTES.

There is plenty of room for many more bees in this country than are at present kept; much of the honey contained in the flowers of the field is left ungathered. It is computed that a 20-acre field of white Clover, in flower, will yield every fine day 100 lbs. of honey, and if this computation be correct, what thousands of pounds of honey must be left every season ungathered. Large sums of money now go to other countries for what is called honey, but which is often highly adulterated. The profitable management of bees has hitherto been but little understood, as, for instance, the old-fashioned way of taking honey from the hive by the wasteful smotheration plan, or

Brimstone pit performance, in which the following measures are adopted: At the end of the honey season ("taking-up time," as it is called), the heaviest and lightest hives are selected by the bee-keeper of the old school; a small hole is made in the ground near the apiary; a piece of stiff paper is smeared with brimstone, and inserted in a split stick, which is then stuck upright in the said hole and lighted. The hives to be "taken up" are then one by one placed over this brimstone pit, and the poor bees done to death by the fumes arising therefrom, a very unsatisfactory state of affairs being the general result—empty cells full of dead bees and grubs, honey and pollen in a state of mash; the bees thus sacrificed being oftentimes worth nearly as much as the sulphur-flavoured mixture so obtained. However, the bee-master, as well as the schoolmaster, is now abroad; better things in the future may, therefore, be hoped for. The promoters of improved bee-keeping are anxious to do away with these wasteful practices, and by teaching the ancient bee-keeper a more intelligent and humane way of managing his bees to enable him to add to his income, as well as to provide him with a constant sonrce of study and amusement, and in order to do so would make him acquainted with the nature, habits, and wants of his bees, and so wish to induce him to adopt the bar-frame hive, in the use of which the bee-keeper has much more control over his bees, is enabled to observe all that is going on within the hive, can readily obtain the honey, and that in more saleable form, and without destroying the bees in order to procure it. A great drawback to the bar-frame hive becoming universally adopted by the skepist is its first expense, but fortunately for him there is a stepping-stone to modern bee-keeping and the bar-frame hive in the improved

Flat-topped straw hive, upon which are worked sectional boxes in which pure white comb honey is obtained equal to anything obtainable from the most expensive bar-frame hive. This stepping-stone has unfortunately been almost entirely ignored by the promoters of improved bee-keeping, who have for years been trying to induce the old-school bee-keeper to jump at one bound from his skep and brimstone pit to the bar-frame hive and its attendant complications; but doubtless to make haste slowly is the greater wisdom, and when the skepist has been taught to drive his bees, instead of destroying them in the brimstone pit, in order to obtain the honey, and produce it in more saleable form, then will be the time to introduce to his notice the far greater advantages that are to be derived from the use of the bar-frame hive. The honey harvest having again arrived, myriads of bees will be destroyed over the brimstone pit during the next few weeks by those who have not yet been induced to adopt the more humane practice of driving their bees in order to obtain the honey. Driving is so simple and easily performed that anyone at all acquainted with the management of bees can easily practice it. It leaves no excuse for destroying them. Smoke the bees, turn up the hive, place over it an empty skep; either fix it up with driving irons or place the skeps rim to rim; beat on the sides of the stock hive till the bees all go up into the empty skep, and the thing is done. The driven bees can be united to other stocks, which will make them very strong and ensure early swarms or filled supers next year, or two or three lots of driven bees may be put into one hive and fed up with sugar syrup till they have built combs and stored sufficient provision for winter consumption.

Boxworth. S. S. G.

POULTRY.

14256.—**Fowls plucking each other.**—I have some Dorking hens that are gradually plucking each other, and some have large tumorous-looking lumps of flesh hanging from them. They were over-fed some time since, but food is now more sparingly given to them. They lay well. What had I better do with them?—H. H.

14257.—**Ducks.**—Will someone who knows kindly state his experience of Pekins? Are they good eating, good and early layers, and what are the average weights? Is this the best pure breed to keep in a confined run, without a pond? If not, which is? Is there any dark-plumaged duck equal to the Pekin in the above points, and as heavy?—Aleph.

OVERCROWDING IN FOWLHOUSES.

Amongst the many mistakes made by poultry keepers generally, overcowding is one of the most common. As a rule, the fault is brought about with a view to greater profits, but sometimes it is due to a longing on the part of the breeder to keep more breeds than he can really find accommodation for. In both cases disappointment is the sure result if the evil be persisted in. It does not follow that because the fowls kept under certain conditions yield a good profit for their keep, ten times that profit can be obtained from an hundred fowls. Rather is it to be expected that the profit will be considerably less in proportion, even if it does not actually disappear. The fact is, when large numbers of birds are kept together they do not receive the same amount of attention as is possible in the case of a few hens. The ground, too, quickly becomes tainted, and often the extra help required to make the run sweeter by frequent digging is not forthcoming. It is, no doubt, owing to these drawbacks that poultry farming on a large scale has never yet taken firm root in our country, in spite of the constant demand for eggs and chickens in our large towns.

If overcrowding be undesirable where poultry are kept as a source of profit only, it is still more to be avoided in those cases where prize poultry are bred. The tyro should never attempt more than one breed at a time, for if he does the probabilities are that he will fail altogether. To breed first-class specimens great patience and skill are required. The points of the parent birds must be very carefully watched, for if any glaring defects are present in both the cock and the hen they are certain to be reproduced in the offspring. There are very few really perfect birds, hence a large number of chickens must be bred. Too many breeders keep the whole of these until they are nearly full grown, only to sell them at killing price, or it may be, send them to their own tables. The proper plan is to get rid of the inferior birds as fast as possible, and thus pay greater attention to the more valuable ones left. By doing this, and confining his attention to one breed only, the merest novice may some day hope to become a successful exhibitor, whereas, by sparing the knife and keeping several varieties, his stock is never likely to be above the common.

Doulting.

Poultry for the table.—Quite a number of persons keep poultry for the purpose of having a supply for family use only, without regard to their qualities for market. Such persons care nothing for the colour of the legs or other exterior qualifications, preferring a fowl of good quality only. The best breeds for the table are the Games, then the Houdans, Dorkings, Langshans, and Plymouth Rocks. A cross of the Game with a Langshan hen produces one of the best of fowls for the table, and the same may be said of a cross of the Game and Houdan. A regular succession of crosses may be made by crossing the Houdan with Langshan hens. The next season cross with the Black-red Game; then follow with the Dorking, and next with the Malay game. The Houdan may now be tried again, followed by the Langshan, when resort may again be had with the Game. Occasionally the Plymouth Rock may be used. The constant change of new blood will give vigour, the chicks will grow fast, and the hens lay well, while the table qualities will be first-class.—*Farm and Garden.*

Lice in poultry houses.—It is sometimes an easy matter to get rid of lice on fowls, but the poultry house is not so easily managed. It is of no use to attempt to rid the fowls of lice until the premises are thoroughly cleaned, as such labour is lost. If the houses are kept clean, the hens will, with the use of the dust bath, clean themselves. To rid the house of lice, first remove all filth from the roosts, floors, walls, and nests. Scrub the roosts with coal-oil, not overlooking a single spot. Take the nests outside, clean them out, and with a white-wash brush apply a light coating of coal-oil to them, inside and outside. Now touch a ligthed match to the nest boxes and let them burn. No damage will be done, as the oil will be quickly consumed, but such work should not be done inside the houses. Make a bucket of whitewash, and add to it an ounce of liquid carbolic acid, and a pint of Tobacco water, which may be made by pouring boiling water over Tobacco refuse, and allowing the water to remain overnight with the Tobacco. Apply the whitewash profusely, and dust insect powder through the feathers of the hens, holding them by the legs for that purpose. Do not use grease on little chicks.—F. G.

The droppings.—In summer the droppings render the poultry houses very offensive, and should be removed at least twice a week, or an absorbent used in order to disinfect them. One part plaster and three parts dry earth is excellent as an absorbent as well as a disinfectant. Another very good method is to sprinkle dry earth with chloride of lime or carbolic acid, and use the earth freely under the roosts.

Hens eating eggs.—This vice is not easily cured. Make the nests in dark places, so that the hens cannot easily see the eggs, and have the strips in front high enough to prevent the eggs from rolling out of the nests. The habit is usually formed by the hens first eating the eggs that have rolled out of the nests on to the floor, and if this temptation is removed the difficulty will not be so great.—*Farm and Garden.*

Cure for gapes.—I see some readers have been inquiring for a cure for gapes in chicks. Several years ago I had a cure supplied me from a neighbour's, which, when applied, acted like magic on the suffering birds. Procure from a chemist a small bottle of carbolic acid, pour a small quantity of it into a tablespoon, then hold it over a lighted candle or spirit lamp with one hand, while with the other hand take the chick, and, directly the vapour begins to rise from the acid in the spoon, allow the chick to inhale it for a few seconds. If they are very ill the effect will be more severe than in light cases. The vapour seems to intoxicate them, but they soon recover. I have seen many cures applied for this disease, but never found one effectual except the above, which I am glad to say I never saw fail. When several birds are affected, instead of using a spoon secure a lid from a coffee or mustard tin. Make a small wire stand, on which place your lid, and under which place your spirit lamp.—A. Dewar, *Chelmsford.*

BIRDS.

14258.—**Pigeon with malformed beak.**—I have a pair of Fantails, and one of them has its beak growing crooked; they are about three months old. Can you, or any of your readers, suggest a remedy, as the bird has some difficulty in feeding itself?—R. C.

14013.—**Increasing Sun Roses.**—I have propagated Sun Roses by layering early in autumn, packing the soil firmly about the branches layered, and laying a stone over them to keep in the moisture and facilitate rooting. The layers should be left at least twelve months before removal.—E. H.

Smithfield Market, Evesham.—List of prices realised 7th August, 1885:—Beans (broad), 14d. per pot (40 lb.); Beans (kidney), 3s. 6d. to 4s. per pot (40 lb.); Beans (dwarf), 2s. 6d. to 3s. per pot (40 lb.); Carrots, 3½d. per bunch; Cucumbers, 8d. to 10½d. per dozen; Lettuce, 5d. to 6d. per pot; Onions, 3s. 6d. per cwt.; Potatoes (new), 2s. 6d. to 4s. per pot (80lb.); Vegetable Marrows 5d. to 9d. per dozen; Apples, 5s. to 9s. per pot; Cherries, 25s per side (63 lb.); Currants (red,) 1½d. per lb.; Currants (black), 2d. to 2½d. per lb.; Gooseberries, 5s. to 7s. per pot (61lb.); Pears, 5s. to 10s. per pot (72lb.); Plums (Orleans), 12s. 6d. to 15s. per pot (72 lb.); Plums (Pershore), 6s. 6d. per pot (72 lb.).

GARDENING ILLUSTRATED.

Vol. VII. AUGUST 22, 1885. No. 337.

FRUIT.

PRESERVATION OF FRUITS.

One of the things to be first considered in the preservation and storage of all fruits is when to harvest or gather them. In some fruits a good deal depends on this. Some of the foreign fruits imported to this country are gathered before they are ripe, and it is said by those who know, and no doubt it is true, that we who eat such fruits here never taste them in perfection or even of fair quality. Among the fruits which are gathered in an unripe condition and which ripen in a certain way after they are packed or in the stores in this country are Oranges, Grapes, St. Michael's Pines, Bananas, and some other fruits which come from tropical or sub-tropical countries. The Oranges of the shops in this country may be described generally as of inferior quality, because none of them are properly ripened. An Orange ripens on the tree and will hang long in the ripe state, and fruits so ripened are incomparably superior to those which are gathered in a-half or two-thirds ripe state and shipped to the English market. Those who have eaten Oranges abroad and from trees grown under glass in this country know this to be quite true, and those who eat newly imported Oranges know that they are, as a rule, uneatable, being so sour. Towards Christmas they get a little mellowed, and by spring they become fit for dessert, not because the flavour has improved, but because they are only less sour than they were. The object of gathering Oranges before they are ripe is to ensure their keeping longer. They are gathered when just beginning to change from a green to a yellow state, and are packed in boxes containing from 250 to 1,000. When the voyage was much longer than it is now, there was some excuse for gathering the fruit in the half-ripe condition, but now it is said no reason exists for the practise except custom. It is a subject for the dealers to see to. Another fruit which is gathered and packed in a green state is the

Almeria Grape, so extensively imported to this country—the cheapest of all the Grapes sold, and probably as wholesome and good as many of the hothouse Grapes which are sold at four to six times the price. As a grower of Grapes I have often been struck with the superiority of these Grapes over some of the dear, half-ripe, home-grown samples beside them. They are sound, plump, sweet, and refreshing, but do not possess much flavour. When picked and cleaned they are quite equal in appearance, if not superior, to some of our English-grown white Grapes sold. The length of time they are preserved in good condition is remarkable. English gardeners think if they keep perfectly ripened thick-skinned Grapes from September till April, in fair condition without shrivelling, they accomplish a feat, but these thin-skinned Spanish Grapes are turned out of the cork dust in the barrels nine months or more after packing perfectly sound and plump. Some berries rot, but they never shrivel, although the foot-stalks perish. The worst feature about them is that they are gathered before they are ripe, and hence are deficient in aroma and flavour. This method of packing is simply a kind of ensilage, only as the fruit cannot be pressed so as to exclude the air, the interstices between the berries are filled up with clean and inodorous cork dust, to some extent fulfilling the same purpose. Fruits grown in our own gardens can of course be gathered at the right season, and that season is when they are about to fall from the tree, but dessert

Pears and Apples are not often fit to eat when gathered. When they part easily at the foot-stalk it is a sign they are ripe, but they have to lie from one to several weeks before they are fit to eat. The Jargonelle is never good just off the tree, but it needs only two or three days to render it so, and the fruit may be brought in in successional batches from the same tree by gathering some of the fruit every day and placing it in a dry room. This is the best way with those varieties of Pears that are soon ripe and soon over.

The fruit room.—If there be any change of opinion on the subject of fruit rooms, it is one tending, if anything, to throw doubt upon the utility of those roomy and expensively constructed fruit rooms which have hitherto been considered the necessary adjunct of all large gardens. The importers of Apples have read us a lesson in this respect. From the tree, all those fine Apples which supply the market during winter and spring, go right into the barrel and remain there till they may be wanted, months after; they then turn out in as fine condition as the best preserved specimens in the most scientifically constructed fruit rooms. The barrels are firmly packed, headed up, and stored away, and the best place to store them in is a dry cellar underground, where the temperature is steady. Those who have no fruit room may, with perfect confidence, barrel or box off their best Apples and long keeping ones in this way, and put them away till wanted. Lofts are not good places in which to store the barrels, because the temperature is irregular in such places, and heats and chills destroy fruit. The retail dealers when they buy in stock cellar the boxes at once, and only bring one or two out at a time, and as needed.

Good Pears may be preserved in the same way, but they are more tender and may be wrapped in tissue paper, and should not be put too many together, the better kinds at least. Spread out thinly on a dry shelf in a cellar they keep perhaps best. The best fruit room we are acquainted with is a cellar, but it is dry, and dryness is of the utmost importance. Previous to placing the fruit in it, the cellar should be thoroughly cleaned and ventilated until it becomes sweet and nice, but as soon as the fruit is put in, shut it up, and keep it shut. The admission of air from open doors and ventilators cannot have any drying effect in winter, while it chills the fruit, produces condensation, and then decay. It is not a sign of good management or of a suitable place when Apples become alternately wet and dry according as the temperature outside rises and falls. The fruit should always be dry, and it will be dry if the temperature be cool and uniform, conditions which can only be secured in a well-drained structure, either wholly or partially underground. The fruits that can be kept for any length of time after the season of the year are Apples, Pears, Plums, Pine-apples, Peaches, Nectarines, and Grapes; of the first two we have spoken. Plums it is often desirable to preserve as long as possible after this season, as they are liked at dessert and for the kitchen. If allowed to lie in a basket or in a heap, even a few layers deep, they ferment in a very short time and become unfit for use directly.

Choice Plums keep longest suspended by threads attached to the foot-stalks in the fruit room, and will hang till they shrivel in that way; but with large quantities this cannot be done, and the next best plan is to spread them out only one layer deep, without touching each other, on some kind of sieve, lattice-work of wood, or half-inch wire netting that has been painted. The air circulates amongst the fruit in this way, keeps it dry, and such Plums as Damsons may be preserved many days that would become a mass of rottenness in less than twenty-four hours upon a deal shelf close together. Damson Plums are seldom fit to eat when gathered, but after lying a day or two till they become mellow they form a very agreeable addition to the dessert, and are always a change. We find they are eaten freely, at least, even when served along with Grapes and Peaches, and other choice fruits, when cared for in the above manner and picked for dessert.

Peaches and Nectarines we have kept without blemish for close upon three weeks on the fruit-room shelf in the middle of summer—gathered as soon as ripe and set on a sheet of paper laid above a layer of cotton—and we have kept them over six weeks in boxes set on ice. The fruit loses flavour in the end, especially on the ice, and when brought out from the ice after two or three weeks it perishes in a few hours, and therefore should never be removed till wanted, unless it has to be packed to be sent away, but it is of no use sending Peaches away that have been long preserved in that way. At any time the fruit when brought off the ice, being cold, soon becomes very wet owing to the condensed moisture upon it, which will not go off till the fruit becomes as warm as the air, which takes an hour or two. Some Peaches and Nectarines ripen, or at least fall off the tree before they are quite ripe. Such fruits will become soft in the fruit room, but in order to give them flavour they should be set on a tray in a sunny and airy position in the Peach house till fit for dessert, when they may be moved into the cooler fruit room to keep till needed. Coming to

Grapes, I daresay most gardeners profess to understand their keeping pretty well by this time—by the bottling system, no other plan being known that preserves the quality and appearance of the fruit so well, although cut Grapes are always inferior in flavour to those which are left hanging upon the vine. The Black Hamburgh is a Grape that will illustrate this better than most kinds. I remember once tasting some berries of this variety that had come back from a three days' show, and, comparing them with others freshly cut from the same vines, the difference in the flavour was so great that I would not have believed it had I not tasted the fruit. Thick-skinned Grapes, like the late kinds, do not deteriorate so quickly; but they do deteriorate, and the best plan is to leave all Grapes on the vine as long as possible. Some say that this exhausts the vine, but I do not believe it. I have now vines carrying their twentieth regular crop from which the Grapes have never been removed till the middle of February, and I think their present appearance would convince anyone that they had at least suffered no injury. The ripe fruit does not appear to draw more upon the energies of the vine than the ripe wood itself. The ripening process is complete, and the fruit is at rest, while little or no evaporation goes on from the skin of the berries in the cool temperature of a vinery in winter. Those who advocate the removal of the Grapes from the vines on the score of relieving the vines have to explain why the Grapes keep plump so long after their removal if they robbed the vines so much. The peculiar flavour or virtue that they lose by removal is another thing which undoubtedly has some subtle connection with the vine, but it does not appear to deprive the vine of strength. S.

FORMS OF FRUIT TREES.

I have carefully noticed annually for the last twenty years a fine specimen of the Crab in the grounds here, and I have been much struck with its constant production of an abundant blossom, as well as its beauty at that season. The tree occupies an open situation, and has never been meddled with by the knife in any way; consequently, it has assumed an almost perfectly even and round form in the top—a shape which all the Apples assume sooner or later if not interfered with too much. About fifteen years ago we planted a number of Apple trees in a similar position to that occupied by the Crab, and except that the leading shoot has been cut off once or twice, they have not been interfered with, and they have now assumed nearly the same shape as the Crab tree, and are equally floriferous and fertile—always presenting an even sheet of flower over the whole of their outer surface. The natural habit of the Apple is to produce one stem or trunk spreading out into a symmetrical and proportionate

head, and any interference with that habit always results in an awkward-shaped tree unless constant cutting and training are resorted to to keep it in shape. We had at one time many low-spreading Apple trees in the kitchen garden here, which were removed to an orchard and allowed to grow pretty much as they liked; the result was that the numerous side limbs extended into long top-heavy branches that have had at times to be cut back to keep them erect, and these trees have never looked so well as the standards. Cultivators of low bush-shaped trees on the natural stock, such as are convenient to grow round the margins of kitchen garden plots, always train them with an open basin-shaped centre, which is the exact reverse of the shape assumed by the tree naturally, by far the best, as can easily be shown. The round umbrella-shaped natural head produces all its fruit, spurs, and crops on an outer surface, all of which is constantly exposed to the sun and air, the leaves and branches acting as a protection and support beneath; whereas in the basin-shaped tree only one portion of the branches receives the sun at a time, and that for a short period only. This makes a considerable difference in the quality and time of ripening of the fruit, that on the shaded branches being latest and greenest, while that on the sunny side is well coloured and large. The umbrella-shaped top, on the other hand, receives the force of the sun's rays more or less over the whole of its surface all the day through. These are things which anyone may see for himself about this season; he will notice that the tree with the short trunk and open cup-shaped centre is really a tree turned wrong side out. It is a remarkable fact that almost the whole of our trained trees are constructed on a principle the reverse of that which is taught by Nature. J. S. W.

REPLIES.

14175.—**A Strawberry question.**—Never mind what you have been told, let your Strawberries stand another year before you condemn them. I should not be the least afraid to plant the runners which they make, but whether they will fruit next year depends upon how you treat them. If they are now well-rooted and planted in good rich soil by the third week in August they will, no doubt, bear fruit next season. It is quite as well for you to know that although James Veitch is a fine Strawberry it does not thrive in all soils. Amateurs should always have two strings to their bow, and I advise you to have two sorts of Strawberries in case one should fail.—J. C. C.

—— The runners from non-fruiting plants do not usually bear fruit—at any rate it is not safe to depend upon them. When I took charge of a new garden twenty-one years ago, we purchased runners of the best Strawberries then in cultivation. When fruiting time came half of the plants were barren. I took runners indiscriminately, and found the same result. Next season all the barren plants were dug up and destroyed, and runners taken from fruiting plants only, with the result that next season none of the plants were barren. We have cultivated the same varieties ever since that time, and I can confidently say that we have never had a barren plant. We never allow a Strawberry bed to bear more than two crops of fruit now, and in the light soil of our old garden they were allowed to bear one crop only, and we never failed to have immense crops annually.—J. D. E.

—— If you preserve them during the winter they are sure to crop next year.—C. R. Gersby, *Islington*.

—— The Strawberries that you planted last April will most likely bear better next year; do not do away with them. The runners will also bear a few the first year, but hardly ever do well till the second.—C. R. H., *Maldon, Essex*.

13896.—**Insects on Gooseberries.**—Gooseberry and Currant Sawfly (Nematus ribisii) is a well-known enemy to the gardener, from the damage the larvæ do to the bushes, stripping them completely of their leaves. The eggs are laid in the spring on the undersides of the leaves, and are hatched a few days after. The caterpillars are of a peculiar bluish-green colour, with black spots on the segments, and yellow markings by the head and tail. They have as many as twenty legs. When full grown they descend into the earth, and either proceed at once to turn into chrysalides, and thence into the perfect flies, or else hibernate till the following spring before making their final changes. *Tobacco powder.*—Dredged over the bushes night and early morning, this will dislodge the worms, and they can be trodden on or picked up by hand and destroyed. *Soot and lime.*—Equal parts of dry soot and air-slaked lime, mixed together, and dusted over and amongst the foliage while in a damp state, and when the caterpillars are small, will kill the worms, and, occasionally repeated, will keep the plants clean. When the leaves are fallen they should be raked together, and either burnt or removed. A good dressing of soot and lime should then be applied to the ground and repeated in spring. To be effectual, the ground should not be dug. *Spent tan.*—A good dressing of this applied during winter will often considerably check the appearance of the moths, and consequently the caterpillars; but as it varies from various tan-yards, its effect is not always certain; the fresher it is the more efficient. *Hellebore.*—Freshly ground white hellebore dusted over the trees while the foliage is damp is a certain cure, as also is the following:—Dissolve a pound of size in a gallon or two of hot water, and to this add a pound of hellebore powder. When the water becomes nearly cold mix thoroughly, and add enough cold water to make sixteen gallons. Apply with a water-pot or syringe. At the end of a week thoroughly wash off with clean water, as the powder is poisonous. We have never known this remedy to fail. The Gooseberry or Magpie Moth (Abraxas grossulariata) is a very common and well known insect. The female lays her eggs singly on the leaves of Gooseberry or Black Currant bushes, generally towards evening. The fact that the eggs are so thoroughly distributed by the moth sufficiently explains, apart from its mere fecundity, how the caterpillars are so difficult to eradicate. The caterpillars of this pretty moth will soon defoliate a very large space, especially if the trees be on walls. If taken in time they do but little damage, but if they are allowed to remain for a few seasons no crop of fruit can be obtained. Toads and birds will take the caterpillars, but damage will be prevented by seasonable precautions. Other remedies are as given for Gooseberry Sawfly caterpillars.—From "Garden Pests and their Eradication."—Celer et Audax.

14173.—**Mildewed Strawberries.**—It is very difficult to deal with them when mildew appears on out-of-doors plants, but there is no better remedy than flowers of sulphur dusted on the leaves and fruit. Some varieties are not so liable to be attacked by the parasite as others. In a garden where the soil was light and dry over gravel I could not grow Sir J. Paxton for mildew, and Laxton's Pioneer was even worse. In our new garden of clay soil Pioneer was the only one which mildewed in the present dry season. Grow Keen's Seedling, President, Frogmore Late Pine, Mr. Radclyffe, and Loxford Hall Seedling.—J. D. E.

14020.—**Aerial roots on vines.**—Reference having been made in the columns of Gardening to the above, perhaps you will allow me the privilege of expressing my opinion, as well as a few facts upon the same subject. I believe that the formation of aërial roots is not only caused by a very moist atmosphere and dryness of the true roots, but is, to a certain extent, due to the strength of the vine. Common sense would suggest, perhaps, that, the roots of the vine being dry, nature has recourse to stratagem by sending out, in a moist atmosphere, aërial roots, to make up the deficiency of moisture which is brought about by dryness at the true roots. But I think the following facts will prove that this is not entirely the reason:—I have at the present time a house in which are five vines, the strongest grower being Golden Hamburgh. This vine has always more aërial roots than others in the same house. Again, I have another house with Black Hamburghs and a Sweetwater; the former are the strongest growers, and have many stem roots, the latter the weaker grower, with few stem roots. For my own part I am always glad to see aërial roots, regarding their appearance as a favourable sign. They can also be utilised and turned to account when needed. The other day I saw at an establishment where Grapes are grown for the market a healthy house of vines, with luxuriant foliage, a fine crop of Grapes, and stem roots in abundance. The gardener had taken advantage of these roots, by suspending a flower-pot, filled with soil, beneath them. They had rooted in the soil, and in the autumn the lateral will be severed from the parent vine—a great saving of time compared with the eye or bud system of propagation. On the whole, I believe stem roots to be the result principally of a healthy and robust state of the vine.—J. J. K., *Lynn*.

14177.—**Fruit for north wall.**—I find that Lord Suffield Apple does exceedingly well on a north wall. It not only grows fairly well, but it fruits regularly every year, and the fruit is as fine and well-flavoured as that grown in positions in the full sun.—J. C. C.

—— Red Currants are frequently trained to north walls, and they can always be depended upon to bear well. Apricots may also be planted, and they come in very useful in hot and dry seasons, when those from a wall facing south have all been gathered. Jargonelle Pears also succeed well; indeed, they do better on a north wall with us than in any other position.—J. D. E.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—VIII.

Tuberous-rooted Begonias.—In the race for popularity these free-flowering, extremely showy plants must take a foremost place, and in the course of time when they become more generally known they will run the zonal Geranium very hard. No flowering plant can ever become really popular which is not really known; but as there are few of what are commonly termed soft-wooded flowering plants of more easy culture than tuberous Begonias we may safely assume that in due course they will find much favour with window gardeners. I cannot too strongly urge those who may not hitherto have grown them to give them a trial, feeling assured that if they do so they will derive much genuine pleasure. Those who have grown Fuchsias fairly well ought to easily succeed with Begonias, for they are of the two less difficult to grow, and the only care they require in winter is just the same as that demanded for Potatoes. Shake away all the soil when the foliage dies down in autumn, store them away in some dry cool place secure from frost, and you have done all for them that they need at that time of the year. How great is the difference in this respect between them and the generality of tender flowering plants, which require so much care through the winter months! The first week in April is the best time for potting the tubers, a suitable compost consisting of two-thirds loam and one-third leaf-soil, with quite one-sixth of white sand. Although these Begonias grow and root freely, the fibres are very liable to sustain injury when the soil in which they are becomes close and sour. Therefore, in the first stages of growth watering must be carefully conducted, allowing the soil to become dry before moistening it. It is when the tubers are first potted, and before they commence to form roots, that the greatest care is necessary, as an excess of moisture will surely cause the tubers to rot. The risk of loss will be much reduced by putting them in pots just large enough to allow of a margin of half an inch or so from the tuber to the rim of the pot. By the time they have made some 2 inches of growth they will have filled this small quantity of soil with roots, and can then be shifted into 4½-inch or 6-inch pots, according to the size of the tubers. There can scarcely be a better place for them than a window in a sunny aspect, in a room where a fire is made daily, as the constant warmth that there prevails is just what they enjoy, for although tuberous Begonias do not like coddling, they revel in heat. Neither do they at any period of their growth demand so much atmospheric humidity as many things, in which respect they nearly approach to the zonal, delighting in much warmth and a tolerably dry atmosphere. In a moist shady position they run to leaf, and flower but little. When the pots get full of roots don't let the soil get quite dry, and in hot weather they will need water twice a day, and should be given weak liquid manure twice a week, or a top-dressing of some kind. Treated in this way they will begin to bloom early in August, and will continue to do so until quite late in autumn. Begonias like plenty of air, therefore in the summer they may be grown on the open ledge, and will do better in full exposure than confined

in a room. When the foliage commences to turn yellow give less water, and when it dies off withhold it altogether. On the approach of winter the stems will part from the tubers, and these may then be shaken out and stored in dry sand, or they may remain in the old soil for the winter.

Those who wish to raise Begonias from seed may do so, for it germinates freely enough. It should be sown in May, only just covered with very fine soil, or, better still, with white sand. When large enough to handle prick out an inch apart in 4½ pots, in which they may remain until the following spring, as they will not come to flowering plants that same season. By sowing a pinch of seed now and then tubers which die away from old age, or some other cause, can be replaced, and if there are too many for the windows they can be planted out in the flower garden. Begonias do well in the open ground in a sunny, sheltered position. They have when in bloom an extremely gay appearance, and possess just that compact habit which fits them for little fore-court gardens. When it is understood that in light soils they are quite hardy, and that they may remain in the open ground without being disturbed from year to year, it will easily be seen that the window may be made to play an important part in the summer decoration of the outdoor garden. In the course of two or three seasons enough tubers may be obtained in this way to fill a good-sized bed. Even if the tubers are taken up in autumn they can be stored away in the manner described, and they may be planted again about the end of March in their summer quarters.

Cyclamens.—It seems scarcely right to recommend for window culture a plant which many professional gardeners with good glass accommodation fail to grow satisfactorily, and I would not do so had I not received good proof that this charming winter flower can be thus grown with a fair amount of success. I do not pretend that Cyclamens can be so well grown in the dwelling as in a greenhouse—to say so would simply be leading readers astray; but I can safely assert that, if properly cared for, they will flower well enough there to yield much satisfaction. I would advise window gardeners, however, not to attempt the raising of seedlings nor to grow on young plants, as the atmospheric conditions indispensable to the quick progress of young plants cannot be commanded in the dwelling. As not more than a couple of plants would probably be grown, the best and cheapest way is to procure good one-year-old corms, which form their flower buds almost as soon as they commence to grow. The best time to get them is in July, when at complete rest, and they may be put at once into 4½ pots in loam, leaf-soil, and lumpy peat, in equal parts, with quite one-fifth of white sand. The drainage must be good. Pot lightly and bring the corm to one-half of its depth. Up to November there is no better place for them than a cool room, where they get plenty of light and but little sun, for Cyclamens love a cool moist atmosphere when growing. Every day or two when the weather is hot they should be taken out and be sprinkled overhead with clean water, which will keep the foliage fresh and healthy. Until the pots get full of roots water very moderately, only doing so when the soil is nearly dry; but later on, when in full growth, do not let it become dry, giving it enough to keep it constantly moist without saturating it, for the roots of Cyclamens are acutely sensitive to an overdose of water; they turn at the tips, and growth completely ceases until root action is again restored. I know of no cool house plant that so quickly feels and so severely resents injudicious or careless watering. Quite as productive of evil consequences is allowing the soil to become dust dry—the two extremes must be avoided, and the success of the grower in a great measure depends on his ability to do this. The art of hitting the happy medium in this particular matter can only be learnt by practice, but once learnt the difficulty of growing Cyclamens in a great measure vanishes. Plenty of air without draughts is essential, for although they will grow in a confined atmosphere during the summer they will not form buds freely, and those that form rarely possess strength enough to develop into good blooms. A great enemy to Cyclamens is greenfly which comes on the tender leaves as they issue from the crown, and which leaves them to become deformed if allowed to remain any time. As soon as perceived they should be dusted with Tobacco powder. During the winter the plants will do very well in a living room if the window is a light one, but they will do better in an unheated apartment if guarded against hard frosts, although a little freezing will do no harm, for Cyclamens are much hardier than is commonly supposed. When the flowering time is past place them in a cool position, and continue to water when they need. In due course the foliage will die away, when the whole of the old soil must be shaken away, carefully preserving all the roots, repotting and treating generally as before. Seed pods will often form, but they should be picked off immediately, as by the formation and ripening of them, the bulbs become so much weakened as to demand a year's rest before they flower again. Corms managed in this way will last for some years in good condition.

Byfleet.

OUTDOOR PLANTS.

THE SCARLET WIND FLOWER.

The Scarlet Wind Flower (Anemone fulgens) may be considered as perfectly hardy, inasmuch as it has been known to withstand, in the open border, the severest frost of the last ten or twelve years; it is scarcely indeed, if ever, injured by mere cold, but stagnant moisture is very detrimental to it. Scarcely any hardy spring flower can compete with it as regards brilliancy and colour, and when lit up by bright sunshine it becomes perfectly dazzling. In good well-drained soil it will succeed anywhere, but it thrives best in a rich loam on a northern aspect, and in a somewhat shaded situation. Division of the roots is the surest and most rapid way of propagating it, as it is liable to sport if raised from seeds, and seedlings, as a rule, lack the bright colour and the substance of the parent plant, while some will become double. Roots of this Anemone may be transplanted almost all the year round, although the resting time extends only from June to August; but in order to ensure early and good flowers they should be planted as early as possible in autumn. A good bed of well grown plants of A. fulgens in full bloom is a gorgeous sight, and the flowers are useful for indoor decoration, and last for a week or more if cut when just coming into bloom and kept in a moderately warm room.

Scarlet Wind Flower (Double Anemone fulgens).

Saponaria calabrica.—This is a plant which possesses the rare quality of bearing with much indifference prolonged periods of wet weather and of drought. Its merits are as conspicuous when subjected to a heavy downpour of rain as when a fierce dry heat prevails. If sown in September it will make a fine show of bloom in spring, and successional sowings from the middle of March to the end of May will maintain a display until the late autumn frosts cut it down. I have seen this little Soapwort in full flower, fresh and bright, in mid-November, when with the exception of the common Marigold there was nothing in the shape of a flower to be found in the outdoor garden. Now is a good time to sow for late spring bloom; plants raised now will make specimens 18 inches across by the time they come into flower.—J. C. B.

SPRING FLOWERS.

The season has now arrived when preparations must be commenced for another year, and if we are to have beautiful gardens, sowing and rearing of plants must now be taken in hand. No branch of gardening has been so utterly neglected of late years as spring gardening; except in the case of a few miserable attempts in the way of spring bedding no flowers have been visible in our gardens until midsummer day—just when half the floral year should be over. It is a tedious process to raise most spring flowering plants from seed, as it is more than a year before they become flowering plants; some kinds, however, are so showy that they should be taken in hand. The many coloured varieties of the common Primrose should be sown now; also Primrose Polyanthuses and alpine Auriculas. These should all be sown in pots of light loam and leaf-mould, and covered with glass to prevent evaporation until the seeds have germinated. Biennials are very useful in small gardens, as they are green tufts throughout the winter, and come in flower in the early summer. Sweet Williams, Canterbury Bells, yellow Sweet Sultan, German Scabious, Iceland Poppies, and German Stock-flowered Wallflowers, are all useful. Pansies should be sown immediately, they are the best winter and spring flowers. Of annual-flowering in spring, Silene pendula compacta should be sown now, and Nemophila insignis a little later. The first may be transplanted, but the last should be sown where it is to flower. Eschscholtzias should be sown now in mild climates, they make much stronger plants and flower for a longer period. In even the smallest garden there should be plenty of Christmas Roses and Hepaticas. These can be planted anywhere where they can be sheltered from the summer sun. Snowdrops and Crocuses are useful for the back of beds and borders, where they will be hidden by later flowering things—that is their proper place in a small garden. Every garden, even the smallest, should contain plenty of Daffodils and Narcissi; many kinds both single and double are now cheap. They should also be placed at the back of borders, with the exception of the Poet's Narcissus, single and double, the Polyanthus Narcissi, and the Jonquils. Crown Imperials are very showy in light soils, but have a disagreeable odour. Globe flowers are fine spring flowers for moist soils and half-shady situations. The Anemones are a grand class of spring flowers, easy to grow if nourishing soil is provided for them. Anemone apennina and the varieties of the common coronaria and fulgens are very showy. A. Pulsatilla is useful for dry soils; spring Phloxes are very useful for rockwork, as are the silver-edged Arabis and the several varieties of Aubrietias. Alyssum saxatile compactum is a very showy yellow-flowered plant. Tulips are well-known, and I would only say a word for the showy parrots and the florists' kinds, which bedding has nearly thrust out of gardens. Pyrethrums are very hardy and conspicuous when in flower. There are many other

good strong flowers, but these are amongst the most showy and easy to manage. The only flowers that need be lifted in a garden are the spring Tulips, which can be planted in clumps, placed where summer-flowering annuals or other plants are required to help the summer show. Plants can be kept in pots to plant out after biennials, or their places can be filled with plants to flower the following season. All that is required is forethought, knowledge of the plants used, and good cultivation. J. D.

BEDDING OUT.

By what extraordinary muddle of figures and mismanagement does G. Watt arrive at the conclusion that hardy plants are more expensive than bedding, and require more attention from the gardener? It is the peculiar merit of the great majority of hardy plants that they require no attention beyond proper planting in the first instance, and annual top-dressing and weeding afterwards, until the clumps have grown so large as to be crowded, when the border has to be re-made. The bedding which is objectionable is not the mere planting out of Geraniums, Calceolarias, Lobelias, &c., in summer, but the arranging of those plants to form patterns of colour, which requires the continual pinching and thinning of the plants. Will G. Watt give figures, and go into details of cost, and show where the additional labour is required in the management of hardy plants? My hardy plants do best when left severely alone, except for a few minutes when they require moving or propagation. Perhaps G. Watt's belong to a different breed. I do not doubt "G. W.'s" statement that in a large establishment there were no new purchases of bedding plants, but the stock must have been purchased at some period, and it is ridiculous to put the fact that hardy plants were being purchased at a certain period, while bedding plants were not, as a proof that the one kind of plants cost less than the other. What about the cost of annual propagation of the tender plants and their preservation through the winter? Is that to be wholly left out of all calculation of comparative cost?

Take the most expensive kinds of hardy plants —viz., florists' flowers. Phloxes cost 9d. to 1s. each, cheaper by the dozen; plant these in a bed of good soil, well dig 2 spits deep, and liberally manured in the bottom spit, and next spring each stool will give an average of thirty young plants all ready rooted. Each Gladiolus will produce three. Chrysanthemums are prolific in rooted cuttings; in fact, a quarter of the labour frittered away on bedding would keep double the space in flower with hardy plants for double the length of time. The labour of propagation of hardy plants is a mere trifle compared with that of tender plants, as, in most cases, it amounts to mere lifting and division. The care they require is, as before stated, strictly limited to proper preparation of the soil in the first instance, and picking off faded flowers, top-dressing, and hand-weeding afterwards. How any person can say that requires more labour than bedding I am at a loss to understand. The only plants which require careful propagation are Pansies, but as these can be managed throughout in the open air the expense of fire heat is saved. I am perfectly aware that gardeners still stick to bedding. Gardeners know little or nothing about hardy plants, and if we take the London parks as a fair specimen of what little knowledge they possess, it would almost seem as if to get good gardens we must first get rid of the gardeners, for in these public gardens nearly every possible blunder is to be seen. But I did not include in the term "the public," gardeners, or anyone who was influenced by them. By "the public" I meant those who were responsible for their own gardens, and in gardens belonging to that class in London, bedding is only to be seen in about one garden in twenty. The sale of bedding plants for small gardens has almost ceased, and even in small nurseries the places formerly taken up by the stock of bedders is now occupied by hardy plants. I am perfectly aware of all "A. B. T." says about hot seasons; but the great evil of spring bedding is that it is almost always bound to fail as I described, because if the spring flowers, with the exception of bulbs, are only put out into the beds when the summer bedding plants are taken up, they are five or six weeks too late in being planted. They do not get sufficiently strong before winter, and when spring comes they have to grow before they can flower, and in consequence flower poorly and late. The gardens I used as an illustration are many of them next door to others where no bedding is attempted, and in these the same plants used as bedders in the others were large flowery clumps covered with bloom, and had time to bloom themselves out before it was time to put out any tender plants. Now once get rid of the bedding idea, and these same spring flowers need not be moved at all with the exception of annuals, but can have tender plants, annual or otherwise, planted amongst them to shade them from the summer sun. Pansies treated in that way keep on all summer in the shade, and flower again in the autumn.—J. D.

—— I will endeavour to answer "J. D.'s" questions to the best of my ability. In the first place my Geraniums, &c., when put out were fine grown plants struck last July, and bloomed well from the time they were put out, having been in bloom for more than a month in the greenhouse before. Secondly, the beds were filled in the previous November with Crocuses, Tulips, Forget-me-nots, and Primroses, &c.; these had done blooming at the end of April, they were taken up and carefully planted in a shady part of the garden, and this year they will be put in again in due season. It seems to me that the question of having "the same everlasting dishes day after day, the same tune, the same dress," cannot be discussed in the same breath with having the same flowers in bloom for four months. People usually like all flowers to last in bloom as long as they can. I still maintain that hardy plants require more water than bedders. Now take, for instance, Phloxes; they are one of the grossest feeding plants you can grow. In my herbaceous border (which allow me to inform "J. D." is not one of those muddle mixed borders he describes, but is arranged in masses, with no earth to be seen between the plants) I have Foxgloves, Antirrhinums, Pentstemons, Hollyhocks, Sunflowers, Roses, Wallflowers, Christmas Roses, Campanulas in varieties, and many others, too numerous to mention. Now I certainly find that these, although planted in well-manured soil, soon flag unless well watered; but they do exceedingly well as I keep them all watered; but in the front garden, if I had them in there, they would not look half as flourishing. The point I endeavoured to set forth in my last article was that my Grass was patchy, bad, and withered, and I made these beds, hoping to make the garden look bright during the summer. That point "J. D." has entirely lost sight of, or perhaps he would give me his idea of what should have been done with the Grass? Should I let it be brown, and everyone who passed say, "How dried up everything looks!" or should I let it be as it is now, full of colour and beautiful? I would tell "J. D." that the bedders are not arranged in stripes or rows, or any other pattern; each bed is filled with one variety—one with white Geraniums, one with scarlet, and so on. "J. D." objects to colour on raw green turf, but whoever arranged a glass of flowers without plenty of green leaves? Who ever painted a picture—a landscape—without green fields and trees? or, take Nature, and see how she sets the green trees against the blue sky, or surrounds the tiny Pimpernel with its own green leaves. "J. D." says people attempt to place their "untutored judgment on a level with that of publicly-known practitioners." One cannot recognise a "publicly-known practitioner" in an anonymous writer. The greatest portrait painter living, and also a great landscape painter, who is now, unfortunately, blind, have both admired and approved of my garden. I am not a "Londoner come into possession of a garden for the first time," as I have all my life been accustomed to acres of garden, both flower and vegetable. "J. D." complains of people not bowing down and worshipping his idea of gardening, because he is an artist, and yet if one follows a professional gardener's advice he does not approve of that. He first says "Don't pit your ignorance against a professional artist," and in the next breath "Don't follow the advice of a professional gardener, he is foolish and ignorant." Now, he may not admire the London parks, but they certainly employ the best gardeners; and it does not behove one to blow hot and cold at the same time.—Caroline F. Davis, *Leatherhead.*

—— I am afraid I must include myself among the crochetmongers "J. D." is so hard upon when I say I admire and follow a course contrary to that which he recommends. I love Geraniums, Fuchsias, and bedding plants. Is not "J. D." rather hard upon C. F. Davis in condemning her for adopting a system of gardening that she finds best adapted to her circumstances and taste? Comparisons are said to be odious, and so I think "J. D.'s" are, when he says, "Who would relish the same everlasting dishes day after day, the same tune, the same dress," as being in any way applicable to flowers. "J. D." might have gone a little further and added, "the same house, the same furniture, and the same faces." Is "J. D.'s" desire for change in everything such? Can he not bear to look upon the same flowers in bloom for four months together? For my part I strive to keep such as I cultivate in bloom for as long a period as possible, and yet do not tire of admiring the Geranium for eight months out of the twelve. It is only for the want of heat and light that I do not have them continuously. Like C. F. Davis, but probably in a smaller way, I follow both the bedding out and the mixed border, but, unlike "J. D.," I find the bedding plants make by far the best show. My means, time, and space (a London back garden), being limited, I should, by confining myself to the mixed border, have to be content with at least half the quantity of colour and flowers, for the simple reason that, do what one will, it is impossible to succeed in London in the manner "J. D." says we can—the difference may be between "theory and practice." With cool greenhouse treatment (only sufficient heat to maintain an average of 35 degs. to 40 degs.) I am able to keep my few hundred bedding plants from year to year, thus saving cost of fresh purchases. With but a few exceptions the smoke, fog, and damp of a London winter are too much for the constitution of the border plants; hence, if we are to throw over the "bedders," it means a fresh stock every spring, at which season of planting, I believe, "J. D." says it is unfair to expect success. As to what filled the beds during March, April, and May, in my case Snowdrops, Crocuses, Hyacinths, Tulips, Primroses, and Auriculas, and such of the early border plants that had weathered the winter, by which time the bedding season had arrived. The bedders are beginning to give place to Asters, Zinnias, and a few other annuals, to be followed by Chrysanthemums; these latter I manage to keep in bloom till Christmas and sometimes early into January. I think this proves that we who follow the happy medium have no need to regret being unlike "J. D.," who goes on to say, "For the last five years I have made a regular tour of inspection round most of the London suburbs," and "not in one garden in twenty is there any bedding. Bedding in ninety-nine cases out of one hundred is only enquired about by Londoners who come into possession of a garden for the first time, and whose ideas are taken almost invariably from the London parks." Now the logic of all this is perfectly clear. Retired Londoners, forming only a small number of gardeners, "J. D." cries "Wolf" unnecessarily. By his own showing he writes upon a subject long since settled or abandoned. For my part, I heartily congratulate the gardeners of the London parks for having taught the public a love for flowers, thus elevating the tone of all whose associations are brought in contact with one of nature's most beautiful gifts. "J. D." must bear in mind that the tastes of others, even though they may differ from his, should be respected, and, though there are plenty who are content to smile at his poor opinion of the professional gardener, there are others upon whom his many articles might have some effect if he would cease to style himself as the highest authority, writing under a *nom de plume.*—Canonbury.

What is the right way?—I have been so amused, not to say amazed, at the contradictory orders issued by "J. D." to his humble disciples lately that I am tempted to make a list of them, and ask if they are logical, as he asserts:—"People are fools to use bedding plants, because they are fleeting;" "people are

fools to use bedding plants because they thereby condemn themselves to gaze for months at the same arrrangement of flowers;" "monotony is to be avoided," but "you cannot have too many Pansies in a garden" (not even if you do not care much for them). "You must not plant herbaceous plants in beds; you must not plant them near shrubs; you must not plant anything within a yard of a Rose tree," and "you must not allow an inch of bare earth to be seen." "You had better do away with turf, and make beds on gravel." (Query: How to fill them?) "You are not to place trees in your garden, and you are never to sweep up the leaves!" "You are to buy hardy plants, because bedders cost so much" (mine never cost me one penny), and "you must not dare to feel disappointed if the said hardy plants are seven years in coming into bloom, as is not unfrequently the case with bought perennials." "You are not to dig, hoe, or fork your ground, but let the weeds have their own way," and carry out the doctrine of evolution to the end of finding that Dandelions, Sow Thistles, &c., will prove themselves stronger than any exotics, unless the ground is well tilled and duly kept after the fashion of practical gardeners.—A. B. T., *East Anglia.*

Ornamental Grasses.—In the adornment of flower gardens and shrubberies we cannot too highly estimate the value of ornamental Grasses, and the varieties are so numerous that whether for lawns, plantations, or lakes, we need never be at a standstill for a variety. For planting by the sides of lakes, rivulets, and on islands, there is the beautiful Japanese Grass, Eulalia japonica zebrina, with spotted foliage, and a tuft of flowers like a lot of ostrich feathers growing out of the leaves, or there is the Panicum virgatum, a pretty light Grass with dark brown flowers, and Stipa pennata, or Feather Grass, and the Papyrus from which is made the Egyptian Papyrus. Then for growing in shrubberies a selection may be made from the following:—Avena sterilis, or Animated Oats; Coix Lachryma, or Job's Tears; Eragrotis elegans, or Love Grasses; and the well-known Briza gracilis, or Quaking Grasses. Then there is the noble Pampas Grass for planting on lawn. There are many more varieties too numerous to mention here, but those I have named will well repay any little trouble expended on their culture, imparting, as they do, a charm of no ordinary character to a garden, and also a light and graceful appearance when used in bouquets. All the varieties may be dried for winter decoration. Seeds of each of the above varieties may be purchased for a few pence and sown in a cold frame in February or March, and pricked off into 6-inch pots when large enough to handle. They should be protected from winds and heavy rains.—C. F. Davis, *Leatherhead.*

Carnation, Mary Morris.—It may interest readers to know the result of growing this in London. Three years since I bought six plants, they were placed in a centre bed, and fed with blood manure; the first year they did fairly well, the second season they produced over 150 blooms, and this summer they have made further improvement. I consider it superior to any other variety for town culture.—M. V.

The Double Siberian Larkspur.—Those who are fortunate enough to possess moderately strong roots of this prince of Larkspurs (Delphinium grandiflorum, fl.-pl.), may, by taking it in hand at once, soon increase their stock. Cut off the tops, wash the roots, and divide them downwards according to the number of crowns, or the knife may safely be sent down the middle of the beheaded stalks. When this has been done some of the divisions will allow of the knife crossing them, from the number of "eyes" in the lower parts. These may be cut to such short lengths as an inch, and in all cases fibre should be preserved. Some parts, however, may have none, but they will make plants, needing only a little more time. All these root cuttings, some being cut on three sides and both ends, should be treated so as to get them furnished with roots as quickly as possible. Prepare a bed 9 inches deep of fine and perfectly clean sand, and if it has been well aired or thinly spread out in the sunshine all the better. Set the cuttings in a row an inch below the surface. Water once thoroughly, and leave them to get every possible ray of sunshine. With the warm August weather, in a week or twelve days there will be a set of new roots on each cutting; but it might be better to leave them another week, when some evening or dull day they should be potted in sand with a little brown loam made very fine. Do not press, but trust more to a heavy watering the next morning to settle the sand. Stand these pots in full sun, but do not allow them to get dry. 3-inch pots will soon be filled with roots, and I prefer to keep them in that size, and have them plunged in dry sand in a cold frame during winter, but air should always be left on. This method has been followed with success for two seasons. The chief points are to start early and have a clean warm bed to make roots in.—J. Wood.

Feather Grass.—Stipa pennata, though not a flowering plant in the strict sense of the word, plays, where freely grown, no small part in the decoration of our borders; its long awns, "like the feathers of a bird of paradise," are just now fully developed and almost ripe, and the softest breeze causes them to float and sway when hardly another sign of life is to be seen. At all times they have a pleasing and animated appearance, but it is among Carnations where this Grass gives us its best effects; the bright flowers of the Carnations, seen at a short distance off, fanned by a gauzy set of awns about their own height, appear to increased advantage. If cut now, these plumes of Grass may be utilised for indoor decoration until another year's crop is produced; but as soon as cut each spray ought to be separated until it is quite dry, otherwise a number become twisted together, and in two or three days are like ropes, and, of course, quite spoiled.—J. Wood.

Erysimum Peroffskianum.—I saw a mass of this in early spring, and thought it formed one of the most telling bits of colour I had ever seen. A plant or two after blooming had been accidentally cast down at the foot of a sunny wall, the result of which was a crowd of young plants. There was no prepared soil for them to grow in, nothing but the bare gravel walk, and they seemed quite at home there, growing, in fact, as well, and appearing just as happy as Wallflowers do in similar situations. The effect of this mass of rich orange in the sunlight in early spring was charming. This annual, so distinct in colour from all others, requires to be sown early in September in rather poor soil. It then gathers strength by winter, and makes a brave show quite early in the year, being the first of the hardy annuals to come into bloom.—B.

Herbaceous plants.—It is a good plan to renew plantations of herbaceous plants, but frequent propagation entails labour and expense, and it is not necessary to propagate such subjects so often as is sometimes recommended. The great majority of hardy border plants will live for many years. We have known the same plants of the common Monkshood, Phloxes, Potentillas, Columbines, and other similar and robust species to occupy the same spot for twenty years, and look as well at the end of that period as they did at the beginning, although none of them received any manure or top-dressings during the whole of that time. Delphiniums run out in time, and are better propagated from seed or cuttings, but we have many fine plants from 5 feet to 8 feet and 9 feet high five and six years old, and which will apparently go on as long again. Evergreen subjects like the Carnation will endure for three or four years, but they are at their best the second year, making good, healthy masses, and blooming well. In my opinion it is a radical mistake to depend on annually propagated Carnations for a display. They do well enough, but produce few flower-stalks, and have to be planted thickly. They, however, produce fine Grass, and plenty of it, and every shoot will bloom the year following if the plants are left undisturbed. This is the best way to have effective masses of Carnations, and there is no need to do away with them till they show signs of decay. The common practice of rooting up fine masses of Carnations one year old to make room for much smaller and younger plants not one whit better nor so good in any way is a suicidal one, and the same may be said of Pinks, but they are not meddled with so frequently. Good culture and top-dressings obviate the necessity of propagation, but most of the spreading shrubby subjects like the Candytufts are benefited by cutting in occasionally, provided the pruning is performed as soon as the plants have done flowering, or early in summer; late cutting in is the death of many plants. A good top of foliage is the best protection in winter.

The Siberian Larkspur.—In reply to "C. B." (page 304), I wish to inform her that Mr. Ware, Hale Farm Nurseries, Tottenham, got a plant of Siberian Larkspur from me some time ago, and I noticed that he advertised a few plants this spring. I am very sorry that I cannot offer "C. B." a plant; but, as I said before, it propagates slowly. I have heard that it is possible to strike the old stems, and if she sends me her address, and likes to try this plan (about which I am not sanguine), I will send her a couple by post. The next three plants I have to spare are promised.—Denis Knox, *Virginia Rectory, Ireland.*

Campanula turbinata.—The various forms of this have at once a vigorous, but very dwarf, habit, and bear numerous cup-like bells. Unless looked after, plants from seed, which is freely produced, spring up about the old root, and, as I believe, run back to the original form of carpatica, and so the dwarfer varieties are soon overgrown and killed. I have noticed this happen over and over again in the case of strong clumps. We can get plenty of turbinata seed, but, according to my experience, it does not reproduce the true form. It, however, yields some pretty varieties. All that have been raised both from self-sown seed and that received from other sources show clearly in the leaf state carpatica features. The lesson we should learn, then, if the same thing happens in other gardens, is to keep the desired form free of seedlings. Of both runners and seed it would be well to keep many other Campanulas clear if we could manage it.—W.

Phloxes in August.—Just now Phloxes are at their best, and most beautiful they are. The season has been most favourable for the perfect development of their leaves and flowers, and the latter are unusually brilliant. Some plants which are raised so profusely about Edinburgh, such as the Pansy and Viola, are said to succeed better in the cool north than in the warm south, but there are no grounds for saying anything of the kind about Phloxes. With us this has been one of the warmest summers on record, and our Phloxes have never been finer. I am quite charmed with them. We have some in the centre of flower-beds in the flower garden, others in masses in the pleasure grounds, and more here and there in rows in the kitchen garden, and in all of these positions they have grown well, bloomed well, and produced a striking effect. No flowers, moreover, are easier cultivated. The soil and manure which will produce a good Cabbage will grow the finest of Phloxes.—M.

Sweet Sultan.—Last summer I saw many very pretty bunches of this in London, and I resolved to grow some of it this season, which I have done, but I like better to see it in handfuls cut than growing. Its habit is only suitable for a rough mixed border. This applies more particularly to the purple-flowering variety, the most graceful being the yellow one. Their fragrance, too, which is heavy, would not find favour with many. I do not think I shall grow them again.—J. M.

Stocks.—Market growers will have done well with these this year, for the winter being so mild and dry they came through it in fine condition. Probably for many years so many Stocks have not been seen in Covent Garden as this past spring. They came in by waggon-loads, and sold at the rate of 2½d. per bunch of a dozen sprays. At this rate an acre of ground would yield a large sum, for Stocks are compact of habit and take comparatively but little space. It is important to secure a good strain which gives but a slight proportion of single flowers. White kinds are favourities, and no wonder, for they are when pure extremely chaste in appearance.—J. C. B.

Digging herbaceous borders.—In reply to "E. A. H." (page 286), it will be sufficient to ask her what sort of cultivation she supposes ninety-nine out of every hundred of the plants grown in gardens get in their native situations, whence they are brought to fill our gardens. Are the spade, the rake, and the hoe ever used about the roots of our native Orchids, Primroses, Cowslips, Campanulas, and Columbines?—J. D.

THE COMING WEEK'S WORK.

Extract from a Gardening Diary, August 24th to August 29th.

Thinning out Chrysanthemums to give them more light and air. Putting in cuttings of Coleus for stock. Rearranging plant houses. Potting Stag's-horn and Lady Plymouth Pelargoniums for winter blooming. Tying and training Clerodendron Balfouri to roof stove. Tying and stopping Melons. Pulling up old Melons and scrubbing house thoroughly with Gishurst compound ready for winter Cucumbers. Fertilising Melons and cutting all ripe fruit. Cutting Mint, Tarragon, Balm, Fennel, Basil, Marjoram, Sage, and Horehound, and tying them in bunches for drying. Top-dressing small Cucumbers for planting. Planting pit with early Ashtop Potatoes. Turning manure, and mixing with leaves and Grass to put in bed for winter Cucumbers. Sowing Mustard and Cress. Digging up the remainder of Regent Potatoes and Patterson's Victorias, also Magnum Bonum. Sowing a frame with Early London, Erfurt, and Walcheren Cauliflower to stand the winter and for planting in early spring. Tying and stopping Tomatoes.

Work in the Town Garden.

City and suburban gardens are now, or should be, looking their very best, and the persevering amateur may rest upon his laurels for a time, and enjoy the fruit of months of thought, toil, and care. There is at present not much actual work to be done; the watering, especially during such weather as we have been enjoying lately, is the only serious item. Pot plants need water at least once, and often twice, every day; and the flower-beds, borders, and lawn as well, should have a good shower over all, enough to moisten the roots as well as the foliage, every two or three days; but beyond this, and a little periodical sweeping and trimming-up and shading where choice plants are grown under glass, there is little to do. With regard to watering, however, we would call attention to the fact that it is quite possible to give too much moisture under certain circumstances even in the height of summer. If the garden is fully exposed to sun and air, with a naturally dry and well-drained soil, not over rich, the hose or watering-can may be used freely with advantage, but many town gardens exist under very different conditions, are surrounded more or less by high walls or buildings, so that there is a considerable amount of shade, and in such cases, especially if the soil has been made at all rich, and is also naturally somewhat moist, a too liberal supply of water to such plants as Geraniums, Verbenas, and the like, would have a bad effect, and inevitably encourage growth at the expense of bloom. I have known even the ordinary Vesuvius Geranium, planted under some such conditions, grow to the size of Cabbages, with no bloom whatever, simply through too free a use of the hose. Large-leaved, quick-growing plants, especially those subtropical subjects grown for their foliage, must, however, be kept constantly moist at the root, or the lower leaves will turn yellow and fall, and the plants become anything but ornamental. These tropical, or tender fine-foliage plants, if well-grown and attended to, and planted in deep, rich soil, either singly or in groups or combinations, give a very fine effect, and their rich foliage affords a sense of luxuriance not easily obtained in the town garden by any other means. A well-grown Castor-oil (Ricinus) planted singly on a piece of nice turf is one of the most beautiful objects we can call to mind, and not by any means difficult to produce.

Beds of scarlet and other shades of Geraniums, of Verbenas, Petunias, and Calceolarias are now a blaze of colour, even in the heart of great towns; true, in very smoky places the Geranium blooms do go very white round the edges of the petals, and where this is the case more dependence should be placed upon Verbenas (seedlings of course), Phlox Drummondi, &c., for this colour; but there are comparatively few gardens where the invaluable Geranium cannot be utilized with advantage. Stocks are in full beauty, and may be had as fine in town as country; Zinnias are beginning to make a show, and Asters will soon be opening the first blooms if they have not done so already. Roses, unfortunately, we cannot have, but our tall spikes of Hollyhocks to a great extent make up for the deficiency, to say nothing of the full rich globes of the first Dahlia blooms. Foxgloves are over, and so are the Delphiniums, or Larkspurs, but Sunflowers show their golden discs everywhere, and Lupins planted late are in full beauty, while Michaelmas Daisies, Chrysanthemums, and the graceful C. uliginosum are giving beautiful promise of a fine bloom by-and-bye. In the mixed borders all have clumps of many coloured Cornflowers, Marigolds, both French and common, Indian and China Pinks, Marguerites, and annual Chrysanthemums of various sorts, Helichrysums, scarlet Linum, and many others. Violas and Pansies do not as a rule succeed very well, but Lobelia, blue or white, answers the same purpose, and Mimulus will flourish abundantly. Indoors, the little greenhouse should now be gay with Fuchsias, Balsams, Zonal Geraniums in almost endless diversity of colour, a few late Pelargoniums, Abutilons, Coleus, tuberous Begonias, the pretty pale blue Plumbago capensis, and others; white Nicotiana affinis, Mignonette, and stocks will afford us delicious perfumes to any extent.

One more hint: if your lawn becomes brown and bare in summer, as is probably the case, and you would like to see it otherwise, give it a good watering or two with a solution of nitrate of soda, 1 ounce to the gallon, which will very shortly restore its natural colour.

B. C. R.

Glasshouses.

Flowering stove plants.—Striking cuttings.—Spring may be looked upon as the fittest time for striking cuttings of most things, but there are a good many plants that require a stove or intermediate temperature to grow in, that may with advantage be propagated in the latter part of summer, as, with such, the warmth they require keeps them moving through the winter, in which way they have a considerable start in advance of spring-struck stock of the same kinds, consequently admitting of their attaining more strength the ensuing summer. Of such things as the different kinds of Ixoras, Allamandas, Dipladenias, Tabernæmontanas, Rondeletias, Gardenias, and shrubby Clerodendrons, where it is desirable to increase the stock cuttings of the young, half-ripened shoots, should at once be put in at this advanced season; it will be better to put each cutting singly in a small pot, as then there need be no disturbance of the roots when they are big enough to require moving on. If a little bottom heat can be given them it will help them to root quicker; if this is not available the cuttings should be stood at the warmest end of the stove and covered with propagating glasses, keeping them close and moist until enough root progress has been made to prevent their flagging, after which give a little air, gradually inuring them to full exposure in the house.

Fine leaved stove plants. — Crotons, Aralias, Dracænas, both the green and the variegated kinds, with other things of similar character, may also, in like manner, be now struck, where suitable cuttings can be had. Crotons root so freely, either from cuttings of the young half-ripened shoots, or from larger pieces to which some mature wood is attached, that if they are confined in a brisk heat they will strike in a few weeks. All the Aralias will root readily from cuttings composed of two or three joints of the current season's growth, or of the young shoots that have been produced by plants that have had a portion of the top taken off; these, when about 3 or 4 inches long, if taken off with a heel, will root easily where enough warmth can be given them. When any of the variegated-leaved varieties of Dracæna have got at all bare of leaves at the bottom, it is best to take off the heads and strike them, as if they are given enough room, so that their leaves do not get at all injured, they will make good specimens in a very little time, whilst the stems, cut into bits an inch or two long, and put a couple of inches apart in pots or pans, will make a useful stock. In the same way the different kinds of green-leaved Dracæna may now be increased; these are even more useful than the coloured-leaved sorts, as being able to thrive in a greenhouse temperature, or that of a living room, they can be used in places where the heat-requiring varieties would soon get shabby.

Pandanus.—Several of the small-growing, green-leaved kinds of Pandanus are amongst the best decorative plants in cultivation; and to these may be added the variegated P. Veitchii and P. javanica variegata, whilst they are in a small state. Young plants of these that were taken off in the form of suckers earlier in the season, if not already in the pots which they are intended to remain in through the winter, should now be placed in them. Stock of this description, which come in so well for standing singly in small vases, should not have larger pots than necessary to keep them in health. The two last-named should be kept near the glass so as to give the leaves their requisite colour.

Yucca filamentosa variegata.—This is one of the best of all plants for decorative use where variegated foliage is required, as it will do in either a warm or a cool house, or in the rooms of a dwelling whilst in a small state. Young stock of this Yucca that were struck earlier in the season in the usual way from root cuttings, if the plants have got three or four small leaves each, should at once be moved into 3 inch pots and kept close to the glass in the stove, where they will continue making root-growth through the autumn. So treated, although they will not make much progress in the formation of leaves, the increased root power thus secured will be an advantage in supporting top growth in spring. Stock of all such plants as the fine-leaved kinds named should be daily syringed, getting the water well to the undersides of the leaves. This should be continued as far into the autumn as there is any likelihood of red spider or thrips being at all active; for unless the leaves of such plants are kept quite free from the attacks of these pests the plants are all but useless, as bright, healthy-looking foliage is impossible when affected with them.

Winter-flowering Begonias.—The fibrous-rooted kinds of Begonia, so useful for winter blooming, are in some danger of being neglected through the attention now given to the tuberous-rooted section. This is a mistake, for, when well managed, there are few things that produce such a continuous succession of flowers as the plants in question. Of these such kinds as B. insignis, B. nitida, B. Ricinifolia, B. semperflorens Saundersii, B. Ingramii, and B. manicata may be always depended on to give a long succession of flowers. Plants of these should now have every attention to get them strong, for on this much depends their ability to bloom well; they are free-rooters, and, although now getting somewhat late in the season, if they are too much confined at the roots they should have larger pots; they like moderately rich soil. Stock of these Begonias that have filled the soil with roots, but which are in pots big enough to support them, should have manure water given regularly. Assistance in this way to quick-growing plants is a matter of the first importance, yet, in the press of other work, it often gets neglected, until its application has only a partial effect. No garden, large or small, should ever be without a supply constantly prepared and ready for use, so that it can be given to anything that requires help in a way that is immediate in its effects.

Ferns for cutting.—Much of the value of Ferns for cutting depends on the way the plants have been treated during the season of growth. If kept too warm, or with insufficient light and air, the fronds flag directly they are cut, and in this way they spoil the appearance of the flowers with which they are associated. Adiantum cuneatum, A. gracillimum, A. formosum, Pteris cretica, P. tremula, P. serrulata, and some of its crested forms are amongst the best of all Ferns for general use with cut flowers. These and such other Ferns as are wanted for cutting should be grown with no more shade than will suffice to prevent the sun scorching them. The fronds are none the worse for having the yellow shade of colour that exposure to the sun gives them; on the contrary, when in this condition they are preferred by many. Where Ferns of this description have been grown under conditions opposite to this, no after treatment will make good the defect. Yet something may still be done to make them harder, even after the growth is completed. These plants should now be stood in a light airy house or pit, with a drier atmosphere than they have so far had, and no more shade than will keep them from scorching. In this way further growth will be discouraged, and the fronds will get harder. Plants of these Ferns that have been hard cut earlier in the season should now be encouraged to make some growth before the season is too far advanced. Little or no shade ought to be given, but a little warmth will assist them, admitting air in the middle of the day; and, if the soil in the

pots is full of roots, give manure water at each alternate watering for a few weeks.

Large Ferns.—Tree or other kinds that are under potted, and are at all suffering for want of enough to suport them, will be much benefited by an occasional application of manure water, or by a surface-dressing with some concentrated manure that will get washed down to the roots by the water given. If sufficiently assisted in this way, large Ferns can be kept in a thriving, healthy condition with much less root room than they often receive. T. B.

Flower Garden.

Rose cuttings.—The present is a good time to put in cuttings of Roses. Select strong partly ripened shoots and insert them firmly in the soil in a shaded border of fine soil. Give them a good soaking of water, and put Evergreen branches over them for the first few weeks. Under ordinary circumstances a large percentage of them will make good plants fit for potting or transplanting into beds in twelve months from the date of insertion.

Carnations and Picotees.—Let the layering of these be completed as speedily as possible, as when cold, wet weather sets in the layers do not form roots freely. Pipings or cuttings may still be put in, using very sandy soil, and placing the pots containing them in a very shady place. The hardier varieties for flower borders should also be layered, even if they have not yet finished blooming. Beds of self-coloured Carnations are striking objects even in geometrically-arranged flower gardens. They will grow and thrive, too, in smoky towns where many other flowers barely exist. Yellow, purple, scarlet, and crimson Carnations are the best for beds. In layering, about 1 inch of soil should be removed from the surface under the plants, to be replaced with very sandy loam, into which the layers should be notched and pegged down.

Bulbs.—All kinds of spring-flowering bulbs will soon be forming roots, and, if intended for removal, the work should be done at once, as they are not good subjects to move when in full growth, the roots being brittle and easily broken. It is, therefore, better to either keep them out of the soil until they can be finally planted in positions in which they are to flower, or to put them in pots or shallow boxes, from which they can be transferred at any time without much damage if started in light soil or Cocoa fibre. Now is a good time to select bulbs for spring flower-beds in which they will flower well during the early months of the year; in all cases purchase early, as the first comers get the pick of the bulbs, and the finest bulbs yield the strongest flower-spikes.

Propagation.—Propagation should now be proceeded with as opportunity offers. Pelargoniums have made rapid growth of late, and there are plenty of cuttings, but they should be taken off carefully in order that the beds may retain their effectiveness after the cuttings have been selected. Our best bedding kinds are: scarlet—Bonfire, John Gibbons, and Vesuvius; pink—Master Christine, Lady Byron, and Amaranth; rosy crimson—Waltham Seedling; light purplish crimson—Lord Palmerston; white—Madame Vaucher, still the best. Our best fine-foliaged kinds are Sophia Dumaresque, Maréchal McMahon, May Queen, Mrs. Laing, and W. T. Radcliffe; others equally good might be named, but these are the best for general bedding effect, and it is much better to grow a few reliable varieties than numerous doubtful novelties.

General work.—Flower beds need repeated going over to remove bad and seedling flowers. Violas and Calceolarias, generally the first to succumb to heat and drought, never fail, even on our light dry soil, and the only reason, next to having good supplies of water, why they do not is that old flowers are regularly picked off them. The same rule is applicable to all free-flowering plants. To keep Lobelias in full blossom we occasionally clip off a portion of the tops with sheep shears; the plants at once throw out fresh shoots, and thus the flowering season is extended. Of course such work requires to be done cautiously and with discernment, taking care that sufficient flowers are left to last till new ones make their appearance. Fine foliaged plants in beds of geometrical design now need going over once a week to keep the outline true to pattern, but though this is advised, it must not be supposed that evenness of plants or table-like flatness is meant, but rather that the plants should be allowed to grow naturally; the effect is then much more pleasing, and the labour needed to keep them in order less. In such beds we always use what—for want of a better term—we call "dot" plants, and these are kept in shape by tiss, stopping, or curtailment of growth, according as the character of each demands. Our best plants for such a purpose are Grevillea robusta, Chamæpeuce diacantha and C. cassabonæ, Abutilons, Fuchsias, small Dracænas, Aloes, and Agavss.

Fruit.

Orchard houses, in which the fruit is now ripening, may have all the ventilators left open, as highly flavoured Peaches and Nectarines cannot be obtained without a free circulation of air. Pay particular attention to the watering of trees in pots in all stages of growth, and syringe freely twice a day wherever clean water can be applied without wetting the ripe fruit. Always make a point of gathering the fruit when dry and cool, before it is ripe enough to fall from the trees, otherwise it will lose its sprightly flavour, and the slightest touch will hasten its decay. When all the fruit has been gathered from the most forward trees, remove the trees to one end of the house, or a separate compartment, to be potted or top-dressed and cleansed, and re-arrange later kinds, so as to give them the benefit of more light and air. Where trees are fairly cropped, but little pinching or stopping will now be needed; but any sub-laterals which start may be kept in check, and old leaves, where they overhang the fruit, may be turned or tied aside to let in the sun.

Vines.—Let the vines in mid-season houses be well cleansed with the engine or hose as they are cleared of fruit. Examine internal borders, and give them repeated waterings where they have been allowed to become at all dry, as no greater mistake can be committed than that of allowing the internal roots to feel the want of liquid food after the crop is gathered. If trained on the close-spur system, shorten back the young wood to five or six buds, and take out the lower laterals to plump up the pruning eyes. Carefully preserve all the old foliage from injury, as future shows depend upon the way in which the leaves complete their functions, and from this time onward leave the house fully ventilated by night and by day. Cover up the external borders of early and late vineries with some light material for checking evaporation. The principal crop of Muscats, now colouring fast, will require more light and as much air as can be admitted consistent with the maintenance of a temperature ranging from 70 degs. at night to 85 degs. by day, and when properly coloured, as will be the case by the middle of September, the Grapes will keep for several months if the external roots can be protected from the direct influence of cold autumnal rains. Where incessant firing has fostered spider, and the old foliage has suffered and become thin, it is a good plan to tie down a few of the laterals, and stop them at various lengths, so as to insure an even spread of foliage, which answers the double purpose of assisting the vines and shading the delicate fruit from the direct rays of the sun. Muscats that are quite ripe will require some very light material drawn over the roof, to prevent the sun from scorching the berries. Proceed with the lifting and relaying of the roots of vines in early houses before the leaves fall and lateral growth ceases. Keep the house close, moist, and shaded from bright sun; use good turfy loam, lime rubble, and crushed bones in a dry state, give a little water to settle the soil about the roots, and mulch when all is finished.

Hardy fruit.—All Pears should be gathered the moment they part readily from the branches. Afterwards their highest qualities are developed by slow ripening in a cool, airy room. Late varieties that are bearing a full crop should be thinned out, removing, of course, the smallest, deformed, and badly placed fruits. Mulch with good manure, and should dry weather continue watering will be necessary, at all events, on light soils. The watery shoots and other useless spray on Plum trees should now be cut away, and in some instances, such as that of the finer dessert Plums, the fruit should be thinned. Gather all Morello Cherries, lay the new growths in thinly, and well wash the foliage once a week as a preventive of the attacks of red spider and aphis. Keep the soil about Apricot trees mulched to prevent cracking, and any trees that are very vigorous may be partially root-pruned at once. The check will assist earlier maturation of both roots and buds, and the roots will get re-established before winter. Perhaps, if we except the Fig, no other kind of fruit tree requires such restricted root space, or also frequent cutting back of the principal roots, as the Apricot. Where, however, the former plan—restricted borders—can be carried out by walling in a given space, it is in every way preferable to root-pruning, ensuring, as it does, at one and the same time both quality and quantity of fruit. Another requisite as regards successful culture is firm borders; the harder the soil is compressed the more resistance have the roots to encounter, and consequently lateral roots are produced in great profusion. Finish tying or nailing in the shoots of Peaches, and only in sufficient quantity for next year's fruiting. Dust with sulphur to destroy mildew and spider on outdoor Vines, and, if need be, water well. As a rule, such Vines are planted in dry sunny spots where drought prevails at the root before it is expected, and mildew frequently appears.

Vegetables.

Mushroom beds.—We generally have our Mushroom beds in some out-of-the-way place, as they are anything but ornamental, and the site is allowed to grow wild during the summer, except that we mow down the weeds to prevent them from seeding. The object is simply to get a semi-turf to consolidate the manure, as at this season the manure gets dry. We first chop up the turf and put it to the manure, then add turf, watering at the same time with strong liquid manure, making all solid as the work proceeds, turning it about twice or thrice, when all is ready for building the beds. We are now very busy with the first beds for autumn bearing.

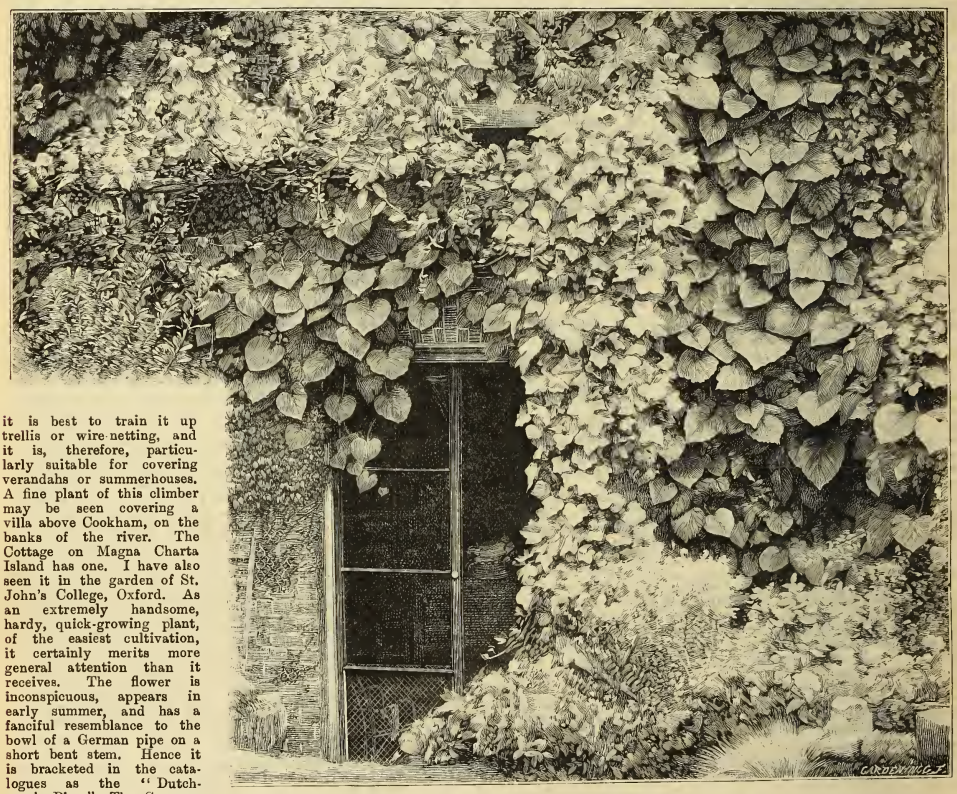
Spinach should now be sown, also Cauliflowers. Cabbage and Lettuce should have timely attention. Celery should not be allowed to flag; give it good soakings of water, putting the spout of the can close to the surface to prevent wetting the leaves, as this often leads to scalding. All late Peas should also be mulched and well watered; if a little manure water is at hand mix a pailful of it with thirty-six gallons of clear water; this will add to the welfare of the crop. Leeks and all strong feeders must have due attention, otherwise the crops will be lost. Young seeds now just up should be hoed as soon as the plants indicate the row; this hoeing has a tendency to keep off slugs and other vermin. If you make the leaves distasteful, and by hoeing cause a certain amount of grit to stick to them, you will find that the vermin will not be troublesome.

Cucumbers.—Do not allow the heat from lining to decline, as nights will soon counterbalance days, and lack of bottom-heat will tell upon the quantity and quality of the fruit. As few plants so quickly resent neglect, see that the thinning out, stopping, and removal of surplus fruits receive the proper attention at least three times a week. Peg down the joints, and pack with pieces of fresh turf wherever fresh roots can be induced to work on the surface, and while keeping the frame well filled with fresh, healthy foliage, guard against overcrowding with old leaves, which often become the starting-point for red spider and mildew. From this time forward the sowing of seeds of Telegraph and other favourite winter kinds must be regulated by the periods at which the different compartments, now occupied with Melons, will be at liberty, and the same rule will apply to cuttings, as in each case it is better to throw away pot-bound plants and start with fresh young stock than to run the risk of fostering insect pests from the outset. Where the yearly supply of fruit is obtained from one or two efficiently heated houses, now is a good time to clear out one. Cleanse, paint, scald, and lime-wash preparatory to a new start, as this opportunity may not again occur before next spring, and everyone knows how fresh and vigorous young maiden plants go away when everything is clean and sweet about them. Where home-grown seed is in demand, a given space should be devoted to its growth, and clean, healthy fruit should be selected and carefully fertilised with the male blossoms.

OUR READERS' ILLUSTRATIONS.

THE DUTCHMAN'S PIPE (Aristolochia Sipho). This is one of the handsomest climbers we possess, and it is a pity it should be so little known or appreciated in this country. Its beauty consists in the large, heart-shaped, bright green leaves, which measure, under favourable circumstances, as much as 7 inches in diameter. The plant is common in North Germany, and is perfectly hardy; it will grow under any aspect and in any fair soil. The specimen shown in the competition prize photograph I have trained up the side of a house, over and among the underlying Ivy. As the Aristolochia does not attach itself to walls, it is best to train it up trellis or wire-netting, and it is, therefore, particularly suitable for covering verandahs or summerhouses. A fine plant of this climber may be seen covering a villa above Cookham, on the banks of the river. The Cottage on Magna Charta Island has one. I have also seen it in the garden of St. John's College, Oxford. As an extremely handsome, hardy, quick-growing plant, of the easiest cultivation, it certainly merits more general attention than it receives. The flower is inconspicuous, appears in early summer, and has a fanciful resemblance to the bowl of a German pipe on a short bent stem. Hence it is bracketed in the catalogues as the "Dutchman's Pipe." The Germans call it the "Pfeifenstrauch." It is deciduous.

Forest Hill. W. E. M.



OUR READERS' ILLUSTRATIONS: The Dutchman's Pipe (Aristolochia Sipho) and other climbers. From a photograph sent by Mr. W. E. Matthiessen, 40, Devonshire Road, Forest Hill, S.E.

Artificial manures.—When in a large seed shop the other day, an amateur present enquired about manures for plants, and objected to certain well-known artificial manures, on account of their smell, and the seedsman informed me that there were many objectors of the same kind, but that gardeners themselves if anything preferred the odoriferous compounds. There are some special manures, like salt, soda, soot, &c., which are inodorous, but they can only be used for a few purposes, and are not generally useful. Compounds, whether artificially prepared or home made, if composed of half decomposed vegetable or animal matters, and fit for general application, as a rule have a disagreeable smell, and it is quite unreasonable to expect them without it, unless they are deodorised by the addition of materials that add to their bulk, but reduce their strength at the same time. We prefer to buy a manure of full strength and to deodorise it ourselves, and that can, as a rule, easily be done by the addition of a little fresh loam. Manures from the cow-house, or piggery, or farmyard generally, all smell, often offensively, whether liquid or solid, but we know that some of the most powerful plant stimulants come from such sources, and as for guano, everybody knows the scent of it well enough. It is the same with concentrated artificial manures made from bones and other animal substances. The only two artificial manures I use, both of which are extensively employed and of proved excellence, are Beeson's and Standen's, and it is not an agreeable task to apply a dressing of either of them, the smell is so strong at first, but soon disappears. Both are largely composed of animal matters. Beeson's manure is exclusively composed of fresh bones softened, not by chemicals, but by steam, in large cylinders, after which raw blood is added, and superphosphate, to fix the ammonia, and prevent fermentation. The bones and blood are the products of the knacker's yards, and the quantities of fresh bones sent to the mills weekly are enormous. My advice on the whole, therefore, to cultivators is not to be too sensitive on the subject of smell of manures, for the worst smelling are, as a rule, the best, and when applied to pot plants in glasshouses a little loam sprinkled on above the manure will do away with the smell. I always apply manures to Potatoes, Peas, and such like at first, because manures that suit these will suit most other things, and those mentioned are both quick and lasting in their effects. Considering that they can be conveniently applied, and that a small bag will go a long way, I reckon such artificial manures cheaper than most others.—J. W.

Competing with amateurs.—Will practical men express an opinion on this point? Is it right that a man who yearly publishes a catalogue with different kinds of seeds and plants for sale, should be allowed to compete with amateurs? I am of the impression that he should be classed with the gardeners or nurserymen; but my opinion is always opposed on the ground that as long as a man does not live by selling seeds and plants, but follows some other occupation, he is justly entitled to compete with amateurs. I, however, cannot see that we have got anything to do with what other employment such men may devote their time to, as I think there are but few persons who do not follow more than one particular branch of work. I think all that we have got to look to is the man's catalogue, which says "that any other seeds not mentioned here can be obtained by applying at the said address." Our show is open to all, but strictly forbids gardeners, florists, and nurserymen from showing with amateurs.—W. H. SEGTON.

14170.—Heating greenhouse.—In the case of a span-roofed house the pipes must be carried all round; if on one side only there would be much danger of frost entering on the pipeless side in severe weather, while on the other the air would become too dry. For a house 10 feet wide three 4-inch pipes would be necessary, taking the flow up one side about 4 inches from the wall and bringing back two return pipes of the same size on the other. It is well to have plenty of piping, as then it need not be so strongly heated, and the atmosphere does not get so parched. The fire can also be banked up at an earlier hour of the night.—J. C. B.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

14259.—**Best winter Cucumber.**—Will any grower tell me what is the best winter Cucumber, and when it should be sown to have fruit at Christmas?—B. W.

14260.—**Taking cuttings of Oleanders.**—Will anyone please tell me when to take cuttings of Oleanders, and the best way of ensuring their growth?—I.

14261.—**Root-pruning of Roses.**—Will any Rose grower tell me whether it is necessary that the roots of Roses should be pruned? If so, how often should it be done?—Sphinx.

14262.—**Cut Roses.**—Does any reader of Gardening know of anything in the way of a liquid which will assist in keeping cut Rose blooms when mixed with the water in which they are kept?—Z. Y. X.

14263.—**Pure White Pansies.**—Does any reader know a Pansy as perfectly white as Viola cornuta alba? If so, will he be so kind as to give names and degree of hardiness, and oblige?—An Englishwoman.

14264.—**Cement for aquariums.**—Could any readers tell me of a good cement for an aquarium? I believe there is one composed of boiled oil, plaster of Paris, and litharge, but I do not know the proportions.—M. J. S.

14265.—**Apple gatherer.**—I am desirous of getting an Apple gatherer, so as to pull the Apples from trees without climbing. Can any reader of Gardening tell me where I can obtain such an instrument?—J. L.

14266.—**Clematis on north-east wall.**—Will anyone kindly tell me if a hardy violet Clematis will grow and bloom well on a north-east wall, also what soil it will require?—C. R. H., *Maldon.* *** *Yes; it will grow if planted in a light soil.*—Ed.

14267.—**White hardy perennial for autumn flowering.**—Will any lover of hardy plants kindly recommend me a white, free-flowering, hardy perennial not exceeding 10 inches or 12 inches high, for blooming in late summer and autumn?—E. H. D.

14268.—**Planting under trees.**—I should be much obliged if anyone would kindly give me advice as to what to plant in a border under some Pine trees where there is a considerable open and untidy bare space where sun does not penetrate. Clay soil.—M. V.

14269.—**Strawberry cultivation.**—Will any Strawberry grower please inform me whether the fruit-bearing power of the plant is interfered with by allowing the runners to remain during the fruiting season? Should they be pinched off until the fruiting is over?—Wallace

14270.—**Cleaning lawn tennis balls.**—Could any reader tell me the best way of cleaning covered lawn tennis balls, which are stained and dirty with use?—H. R. C.

14271.—**Degenerated Rose bushes.**—I have some white Rose bushes that have degenerated very much. Will any Rose grower tell me if I should prune them down low, where I should cut, and what month to do it in, so as to have them good for next year?—Suburb, *Glasgow.*

14272.—**Making an Asparagus bed.**—Will any grower of the plant kindly tell me how to set about making an Asparagus bed, and when the plants are to be put in?—Towers. *** *Mr. Hobday's article on the "Culture of the Asparagus," December 27th, 1884, will assist you.*—Ed.

14273.—**Chrysanthemums in shed.**—At the end of my garden I have a wooden shed, 7 feet high, open wire-work front, facing east. Will any Chrysanthemum grower tell me whether this would be a suitable place to bloom my Chrysanthemums in? I have no glasshouse.—Sydenham.

14274.—**Damp walls in greenhouse.**—I have a small greenhouse which suffers much from damp walls. Will any correspondent inform me whether painting the walls would keep out the damp, and, if so, what kind of paint ought to be used? The walls are built of stone.—Medicine Doctor.

14275.—**Sowing seeds.**—Will any reader of Gardening kindly tell me the proper time for putting in the following flower seeds and bulbs; the soil is strong, cold clay, near town:—Foxglove, Cactus Dahlia, Lilium candidum, Iris, Tritonia, Phloxes, Poppies (various), Myosotis, for early flowering?—Mrs. D.

14276.—**Evergreen climbing plants.**—Will some correspondent give me a list of evergreen climbing plants suitable for trellis arches, planted out or otherwise, to have a temperature of 50 degs. in winter?—J. J. H. *** *Try Stauntonia latifolia, Lapageria alba and rosea, Clematis indivisa, and see reply to your other question.*—Ed.

14277.—**Plants for indoor rockery.**—I am making an indoor rockery in a glasshouse fully exposed to the sun, but can shade if required; the rockery is to be made against the back wall, to project about 8 feet, and about 8 feet high, supported by two pillars in front forming an arch, with fish-pond and fountain in the recess, with waterfall from top. Would someone kindly give me the names of some plants—hanging, creeping, or erect-growing—that would suit such a place?—Rechale.

14278.—**Growing Maiden-hair Ferns.**—Will any lover of Ferns tell me how to grow the Maiden-hair Fern? I send specimen.—W. C. C., *Worcestershire.* *** *The one you send is the common stove Maiden-hair, Adiantum cuneatum; it thrives admirably in any warm house.*—Ed.

14279.—**Strawberries falling off.**—I have some Yates' Seedling Strawberries, which have been planted two years. The crop this year would have been very good, but I find on examination that very few of them have ripened, and great numbers of them have dropped off. The ends of the stalks have a black appearance. I shall be glad if any of your readers can explain the cause of this, and tell me how to remedy it in the future.—J. H. O., *Todmorden.*

14280.—**Rhyncospermum jasminoides.**—Will some kind correspondent tell me the best mode of treating plants of Rhyncospermum jasminoides? I have two plants in my greenhouse which have flowered well this summer, and should be glad to know what watering they require during autumn and winter, when to prune or repot, &c. My plants are trained over a trellis-archway, and could have a temperature of 50 degs. during cold weather.—P. P. H.

14281.—**Growing Ferns outside bowls.**—I have some bowls made of common pottery, such as is used for garden pots, to be suspended in a room and kept filled with water, the object being to grow Ferns on the outside. Will any reader who has tried the experiment tell me what kind of earth to use, and whether I can grow in that way any other plant?—Distress.

14282.—**Neglected Jessamine tree.**—I have taken a house and in the front there is a Jessamine tree which has been neglected. For about a yard from the root the tree is rather bare, but at the top is very bushy, and is now in full bloom. Will any of your readers kindly tell me when the tree should be pruned, and give me any directions they can to secure a successful growth?—Stafford.

14283.—**Climbers for back wall of greenhouse.**—Will you kindly give me a list of climbing plants suitable for a greenhouse back wall, where they would have a temperature (constant) of from 45 to 55 degs according to their requirements? I have already Roses, Passiflora and Lapageria.—J. J. H. *** *Try Habrothamnus, Cestrum, Fuchsias, Lonicera sempervirens, Tecoma capensis, Begonia fuchsioides, and Mandevilla.*—Ed.

14284.—**Heating conservatory by gas.**—Will any Gardening friend tell me the best method of heating a small lean-to conservatory (opening out of my study), 13½ feet by 6 feet? The former owner evidently heated it by gas, as the pipe and tap still remain. Does a gas stove answer, and if so what is the best kind to obtain? I do not wish to go to the expense of a coal stove and flues, as I intend to remain here but a short time.—Towers.

14285.—**Wanted, a name.**—Would one of your flower-loving West-end-of-London correspondents take the trouble to obtain and publish in your columns the name of a pink Geraninm bedded out in Hyde Park, which excels any I have ever seen? As a highly floriferous bedder of a most pleasing colour it was approached by no other along the Park Lane walk. Its position is about midway along that walk, and at or near the northern end of where the carpet bedding begins. It would be doing a service to your readers.—C. J. B.

14286.—**Forming garden with fruit trees.**—I am about to form a garden, and would be glad of information about planting. The soil is what builders call "skerry," that is, a sort of clay shale. The last crop was, I think, Clover, but that was several years ago, and since then it has become overgrown with Grass, &c. It slopes rather steeply to the north-west by west, and is nearly at the top of a hill; is shaded from the east and partly from the north by another hill. Locality, Nottinghamshire. Should like to know the kinds of Apples, Plums, Pears, &c., best suited. Will any practical reader kindly advise me?—Beginner.

14287.—**India-rubber tree.**—About three years ago I bought an India-rubber tree. It was then 14 inches high, and has done well, as it is now 4 feet 8 inches. About 8 inches from the top, and just where a fine leaf joins the stem, another stem has started, and thrown off a leaf exactly similar to the parent tree. If this were cut off would it thrive in another pot? If not taken off I am afraid it will make the plant top-heavy. The pot I have it in is 9 inches across the top, and the plant is very healthy. Is the pot large enough?—Stout. *** *We advise you to cut away the rival leader, and if you feed it well the pot you have it in will be sufficient.*—Ed.

The following queries are briefly answered by the Editor and others, but readers are invited to give further answers should they be able or offer additional advice on the various subjects.

14288.—**Strophanthus** (*Suburb*).—Strophanthus is a tropical shrub.

14289.—**Mildew on vines** (*W. H.*).—Dust the vines and bunches where affected with flowers of sulphur.

14290.—**Elementary work on gardening.**—Hobday's "Cottage Gardening" is the best we know.

14291.—**Getting rid of Horse-radish** (*G.*).—There is no other way of getting rid of it than digging it out root by root.

14292.—**Repotting Ferns** (*Towers*).—If the roots are healthy do not destroy any; simply shift the whole into a larger pot.

14293.—**Book on cottage gardening** (*Miss Staples*).—Hobday's "Cottage Gardening," price 1s. 6d., Crosby Lockwood and Co.

14294.—**Disposing of Orange tree** (*Orange Tree*).—We do not know where you can dispose of it. You had better apply to some local nurseryman.

14295.—**Layering Carnations** (*Stout*).—Carnations when layered should remain for six weeks or two months before they are separated from the parent stem.

14296.—**Book on Cultivation of the Pelargonium** (*Wallace*).—Bailey's book on the Pelargonium—a new edition of which will soon be published—will give you the information you require. Baines' "Greenhouse and Stove Plants" also treats of its cultivation.

14297.—**Procuring Diplacus glutinosus** (*E. A. K.*).—Apply to one of the chief London nurseries, there should be no difficulty in procuring this plant.

14298.—**Moving Clematis** (*W. B.*).—Try the experiment during winter. Be careful to injure as few roots as possible. Take up a good ball of earth around the roots.

14299.—**Mildewed vine** (*Distressed Amateur*).—Dust all the affected parts of the vine with powdered sulphur. Probably the mildew was transmitted from the Rose to the vine.

14300.—**Delphiniums** (*J. B. W. B.*).—We should be disposed to plant them out in October, and can see no good in keeping such plants through the winter in frames, as they are absolutely hardy.

14301.—**Reviving India-rubber plant** (*R. S.*).—We fear the only treatment that you can adopt in order to revive your plant would be to put it into a warm moist stove. It would then soon recover or die.

14302.—**Obtaining Jasminum gracillimum** (*Bullfinch*).—Any good nurseryman who makes indoor plants a specialty ought to be able to supply you. It is now a tolerably common plant in the great London nurseries.

14303.—**Yucca quadricolor** (*C. R.*).—We do not think you would see any signs of variegation in your seedlings, at least for some time to come, and it is probable that you may not have any variegated plants among your batch of seedlings.

14304.—**Spotted Palm leaves** (*Distress*).—We cannot help you in improving the condition of your Palm unless you tell us what treatment it has been subjected to. Repeat your question, and give us some information upon which to form an opinion.

14305.—**Flowers for exhibition** (*R. Waller*).—The Pansies that you send are not better than the common sorts, and are not suitable for exhibition. The Sweet Williams are a fancy strain—not the Auricula flowered kind—and are not considered so fine as the others.

14306.—**Phlox divaricata and P. subulata** (*C. E. H., Cambridge*).—These Phloxes can certainly be grown from seed, but you are not likely to find them quoted in seedsmen's catalogues. You will probably have to grow your own seeds of them if a friend cannot supply you.

14307.—**Hardiness of Sciadopitys verticillata** (*C. E., co. Wicklow*).—This is not one of the hardiest trees, but it will flourish in most parts of these islands. It would be advisable to give it some protection during the first winter or two after it is planted out. In your locality the plant would be hardy.

14308.—**Laying out a garden** (*Hull*).—We cannot give special directions for laying out every garden. Similar questions have been asked recently in Gardening, and hints for general application given. You had better read these, and apply to us if you want information on any particular point that troubles you.

14309.—**How to lay out garden** (*J. H. B.*).—Without going to the expense of drawing and engraving a plan specially suited for your garden we cannot help you. By far the best plan you can adopt is to call in some practical man in your neighbourhood, who, after examining the ground, would be able to give you assistance at once.

14310.—**Are Marguerites annuals, biennials, or perennials?** (*B. W.*).—If you mean what is called the Paris Daisy (Chrysanthemum frutescens) it is a perennial, but there are Chrysanthemums with similarly-shaped flowers that are annual. C. frutescens is raised from cuttings struck in autumn in a frame or under a hand-light.

14311.—**Lichen on fruit trees** (*W. R.*).—Your trees are covered with Lichen, which is an indication of an undrained spot or otherwise unsuitable soil. To get rid of it you must have the stems scraped and washed with a solution of lime during the winter, and the general health of the trees must be improved by spreading a surfacing of good soil over the orchard.

14312.—**Insects on Peach leaves** (*I. R. N.*).—The injury has been caused by red spider and nothing else.—J. D. E.

14313.—**Herbaceous plants** (*F. W. S.*).—A good display may be made next year by planting seedling Holly-hocks now. It is better to plant now than in spring. All the tall-growing herbaceous plants propagated by division in the autumn will flower well the following season.—J. D. E.

14314.—**Fumigating Grapes that are colouring** (*Monmouth*).—Gauze over the ventilators ought to keep the wasps out. Fumigating is of no use. If any wasps get in through the gauze they may be got rid of by placing a few bottles containing beer in the house. The bottles should be half full.—J. D. E.

14315.—**Sulphate of ammonia for Chrysanthemums** (*Urbs*).—This may be used with confidence after it has been kept in good condition for a year. The same kind of manure ought not to be constantly used on the plants. A small portion of guano or fish manure spread on the surface and watered in is better than sulphate of ammonia.—J. D. E.

14316.—**Propagating Clematis** (*W. Payne*).—The variety C. Jackmanni may be propagated by laying the shoots in October; indeed, all the hardy kinds may be propagated in this way much better than by cuttings. They may also be layered in July. The firm shoots may be taken off with a heel in summer, and will strike under handglasses, kept close and shaded.—J. D. E.

14317.—**Arrangement of plants and cut flowers on dinner table** (*Amateur*).—For a table 7½ by 4 feet the best would be a well-arranged large vase in the centre for cut flowers and foliage; on each side two small Palms, or two plants of Aralia Veitchii gracillima—indeed, any neat and elegant plants may be used; two plants of Cocos Weddelliana would do as well as any others. If stove plants are excluded neither of those named could be used; but two small plants of Grevillea robusta would answer instead, or two small Lomatias, and, failing these, two small Maiden-hair Ferns. Avoid overloading the table. Two small plants and one vase are amply sufficient; a small glass with a button-hole flower to each diner might be added.—J. D. E.

14318.—**Shallots for exhibiting** (*Cymru*).—The common Shallot is the best for all purposes. The largest is the Grosse Eschalotte d'Alençon; it is allied to the Jersey or Russian, and is probably a different species from the true Shallot. Any of the principal seedsmen could supply them—at least, the common kind; the other sorts are seldom grown. Vilmorin, of Paris, would have them. —J. D. E.

14319.—**Abutilons for London garden** (*Urbe*).—The Abutilons raised by Mr. George succeed well in a small garden on Highbury Hill, and they would succeed equally well at Stoke Newington. The varieties grown are: Brilliant (reddish crimson), Purpurea (deep reddish purple), Scarlet Gem, Cloth of Gold (clear yellow), King of the Roses, Emperor (purplish). They are all dwarf, free-flowering, and distinct in colour.—J. D. E.

14320.—**Strawberries unfruitful** (*A. B. C.*).—The best way is to destroy all unfruitful plants, and to take runners only from those that bear. It is not sufficiently known that if runners are layered in small pots as soon as they can be obtained, and are planted out, as soon as they are well rooted, on rich, deep soil, they will bear a large crop of better fruit the following season than they will do in any subsequent one. If the unfruitful plants are allowed to remain they will not be likely to bear next year.—J. D. E.

14321.—**Fuchsia leaves dropping off** (*H. Worly*).—No information is given as to the treatment they have received, whether they are growing in a dwelling-house or greenhouse. No doubt they received a check during the hot dry weather. Fuchsias are very sensitive to sudden changes of temperature; this will often cause both leaves and buds to drop off. Excessive heat may be mitigated by shading and watering the leaves of the plants as well as watering freely at the roots. A hot dry atmosphere is very injurious.—J. D. E.

14322.—**Weevils eating Cucumbers** (*G. W. W.*).—What weevil is it? It may be the red-legged weevil (Otiorhynchus tenebricosus), a small black beetle which is common in gardens, hiding underground by day and coming out at night to feed on the leaves of fruit trees and vegetables. Hand-picking at night is the best way to destroy them. The larvæ are also injurious to the roots of trees and vegetables on which they feed. These can be destroyed by removing the soil from around the plants and sprinkling salt upon it.—J. D. E.

14323.—**Treatment of Pelargoniums** (*A. Croyts*).—A month after they are cut down turn them out of the pots, shake out a considerable portion of the loose potting soil, reducing the balls sufficiently to allow of repotting the plants in pots a size smaller. After this is done place them on a stage pretty close to the glass in a pit or greenhouse; but do not give any water for a few days after; if the leaves have developed in a light airy place, or perhaps out-of-doors, they will not flag at all. When water is applied give sufficient to thoroughly water the whole of the compost.—J. D. E.

14324.—**Rust on Grapes** (*Perthshire*).—This is caused by applying sulphur to the hot-water pipes in an early stage of the Grapes' growth. If sulphur has to be used to destroy red spider it ought not to be done until the berries have arrived at the stoning period. Cold draughts will also cause rust, usually when east winds are blowing in March and the sun comes out hot at times. Handling the berries with perspiration on the fingers at the time of thinning is also very injurious. Some young gardeners are careless enough to push their heads in contact with the berries during the operation of thinning, and the contact with the hair is blamed for it. Those who have charge of vineries ought to be careful not to expose the house to draughts of cold air until the stoning period, at least, nor to apply sulphur to the pipes until that time. Never touch the Grapes during the operation of thinning the berries.—J. D. E.

14325.—**Grapes mouldy** (*Lichen*). — From the description given I think they are attacked by either mildew or mealy bug (Coccus adonidum); if the former it can be destroyed by painting the pipes with flowers of sulphur stirred in soft soapy water, shutting up the house, and then heating the pipes so that it feels uncomfortable to place the hands on them. The mealy bug is not so easily destroyed; if it has got into the bunches it is a hopeless case, and the only thing that can be done now is to wait until the leaves drop and the fruit is gathered. Prune the vines, then strip off all the loose bark, and well wash the vines over with warm soft soapy water. When this has been done paint all the wood of the vine with sulphur, such as was used to paint the pipes for mildew, but add to it a portion of Tobacco liquor. All the woodwork of the house ought to be well washed with soapy water.—J. D. E.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each of various sizes, and showing any variation of form that exists.*

Names of plants.—*C. A. H., Norfolk.*—Rudbeckia (Lepachys) columnaris.——*Axminster.*—1, Athyrium filix-fœmina; 2, Athyrium filix-fœmina plumosum; 3 and 4 appear to be similar, and pieces of young seedlings only, not possessing any distinct characters yet; all that can be said is that they are forms of Athyrium filix-fœmina; 5, Athyrium filix-fœmina Fieldiæ; 6, Polystichum angulare acutilobum; 7 and 8 reached us without any specimens attached to them, and there were two loose specimens without labels; the largest of the two is the common Athyrium filix-fœmina, and the smaller is only a fragment which cannot be identified.——*C. R.*—1, Sedum populifolium; 2, Cyrtomium falcatum; 3, Adiantum hispidulum; 4, Lastrea filix-mas.——*W. S. Lucas.*—Both Fuchsias, but we cannot attempt to name the varieties.——*M. J. Love-jones.*—Salvia Horminum.——*Cattony.*—7, Tabernæmontana Camassa; 8, Species of Cynoglossum; 9, Jasminum grandiflorum; 10, Raphiolepis ovata.——*S. E. C.*—1, Celsia cretica; 2, Celsia Arcturus.——*H. C.*—1, Cannot name; 2, Dianthus Armeria; 3, Species of Hieracium, probably Pilosella; 4, Campanula rotundifolia var.——*A. H.*—Next week.——*J. K., Rugby.*—Cannot name the Gooseberry.——*Rockhampton.*—1, 2, 3, and 4, All forms of Veronica longifolia; Trailer is Disandra prostrata; Apparently Coreopsis lanceolata.——*W. M. F.*—1, Lysimachia ciliata; 2, Spiræa Filipendula fl.-plena; 3, Limnanthes Douglasi; 4, Disandra prostrata.——*Rugbeian.*—a, Nierembergia rivularis; b, Anomotheca cruenta; c. Alonsoa incisa.——*P. H.*—Cherry Plum is Prunus Myrobalana.——*Ruth.*—1, Sedum spectabilis; 2, Please send again; 3, Veronica longifolia var.; 4, Genista tinctoria.——*W. Denison.*—Wayfaring tree (Viburnum Lantana).——*P. L.*—1, Campanula Barrelieri; 2, C. pusilla alba; 3, C. garganica; 4, Antennaria margaritacea.——*Mrs. Payne.*—Bridal Wreath is Francoa ramosa; Orange flower is Diplacus glutinosus; other is Veronica imperialis.——*Clarendon.*—We do not attempt to name such flowers as Carnations.——*Bermondsey.*—Kalosanthes coccinea.——*E. A. R.*—1, Statice latifolia (Sea Lavender); 2, Echinops ruthenicus.——*E. Marshall.*—Euphorbia Lathyris.

ROSES.

AMONGST THE ROSES.

Whether we shall get the full crop of autumn Roses is doubtful. The heat has been excessive, and the rainfall insufficient to moisten the roots. Our Roses, indeed, look parched, and unless we get a heavy rainfall shortly with a diminution in temperature, we shall have but few autumn Roses. To irrigate the roots as they should be is, in our case, quite out of the question. But there are hopes for those who can, for if the roots are plentifully supplied with moisture, Roses revel in a high temperature. Therefore, I say to all who can, irrigate liberally, and if done without any delay, a fair harvest of autumn Roses may be looked for. If some stimulating liquid, too, from the farmyard tank or sewage water can be had, it should be used in preference to clear water. Anything more forcing should, however, be used cautiously, for any of the concentrated manures, if used in excess, may do mischief by promoting a quick and succulent growth that would not have time to get hardened before winter. Roses may also be further helped by having the dead and decaying flowers removed, and any weak and exhausted branches cut out, at the same time avoiding anything like systematic pruning. On some plants there will be long, vigorous shoots that are monopolising all the strength from the roots. These should be shortened back to about half their length, and any weak and useless shoots that will have to be cut away at spring pruning time may with advantage be removed now. Thinning out the flower-buds must likewise be attended to shortly if large, well-formed flowers are required. Already I notice that on the strongest shoots of such varieties as Souvenir de la Malmaison, La France, Victor Verdier, and others noted for late flowering, there are more buds at the ends of the shoots than they can be expected to mature and expand. Where there are five buds thus placed they should be reduced to two, and larger numbers in proportion.

J. C.

THE KITCHEN GARDEN.

Autumn and winter Radish.—The best of all late autumn and winter Radishes is the China Rose. If sown now, and again about the middle of September, it will be found most serviceable throughout October and on until March next year. The first sown lot will bulb during September and October, and those which have taken the lead in developing will be ready for use in the latter month, but they need not be all used then, as they will remain good for some months. Those sown in September will not bulb fast, as November weather is not favourable to them as a rule, but they will continue to swell throughout the winter, and no frost or cold weather will prevent them altogether from doing this. Its very hardy character is one of the most valuable habits of the China Rose, and those who deal with it may easily have Radishes throughout the whole of the winter. The more hardy they are grown in the early part of the season the better. Nothing like any kind of protection should be given them until frost or snow comes, and then a layer of straw or something of the kind is all the temporary protection which they require. I have found them to grow much hardier in moderately rich soil than in ground extra rich, and an exposed situation is much better for them than a too sheltered spot. In all cases the seed should be sown in drills 1 foot apart and 2 inches deep, and the soil all round should be made very firm. Thin sowing is best, as when the young plants come up in crowds they prevent each other from swelling, unless many of them are drawn up prematurely and thrown away.—M.

An amateur's Mushroom bed.—Having taken Gardening Illustrated from the commencement of the second volume, and picked up much useful information therefrom, I feel a pleasure in contributing any scrap which may be encouraging to other amateurs like myself who take an interest in horticulture. I herewith send you a photo of a Mushroom bed (15 feet by 6 feet) that I have in one standing of my stable. I procured a load of good hot manure from the railway station, threw it in a heap, and turned it several times at intervals of three days. On May 20th I spread it over the floor some 10 inches thick, well trampling it, and on the 23rd I broke up the spawn into pieces about the size of a hen's egg, and buried it a little under the surface at 9 inches or 10 inches apart all over the bed, again trampling it. I then put on the soil from 1 inch to 2 inches thick, and made it solid. The heat was very nice, which I could tell by several short iron rods, which I plunged in over the bed. Not having any hay I covered up with some mats laid on sticks, supported about 4 inches from the bed, which in five to six weeks was covered with white specks. The photo I send was taken on July 18th (I cut several plates of Mushrooms before this date), and in the eight days following I cut 14¾ lbs., when the bed showed signs of dryness, so gave several gallons (two to three) of tepid water from a can with a very fine rose. This I was very careful about, as I once spoiled a bed with over-watering, and now it is certainly a much prettier sight than the photo represents, for it is completely covered with Mushrooms which are of a larger size than the first. There appear to be two kinds, one very white on the top and a nice pink underneath, the other somewhat browner, and not quite so good a colour on the underside; when cooked they are very tender, and of excellent flavour. I may add that this year is my third trial, and the success far exceeds my expectations, for I have previously looked on Mushroom growing as a very fickle affair; in future, however, I shall have no fear. I believe the principal point is to get manure from places where the horses are particularly well fed, so that it will retain a nice genial heat. I should have stated that the stable is darkened, and before cutting the first Mushrooms I removed the mats altogether from the beds. On August 7th I cut 5½ lbs. from the bed, and on August 8th over 10 lbs.—H. S., *Nuneaton.*

REPLIES.

14174.—**Failure of Vegetable Marrows.**—The cause of your Marrows being unfruitful is that they are growing in too rich a soil. If you can get at the roots search them out and cut half of them asunder, and do not give them any water. Try them in a poorer soil another year.—J. C. C.

13882.—**Caterpillars on Cabbages.**—The destruction of the grub is a very troublesome matter, hand-picking being the only sure method As, however, prevention is better than cure, all chrysalides that can be found should be destroyed, and the same remark applies to butterflies and moths. Anything that emits an odour distasteful to these will also keep them at bay, and we have been so successful with the following that we have tried no other:—*Paraffin, or coal oil.*—Mix one ounce of oil with a gallon of soapsuds, and water the plants with the mixture before the caterpillars appear. If any have appeared, an application at the rate of two ounces to the gallon will generally clear them off. Of course, this must not be done within a month of the Cabbages, &c., being out, on account of the smell. Soapsuds alone will also clear caterpillars from most smooth-leaved subjects if applied fairly often. From May till October the Cabbage caterpillars (Pieris brassicæ, P. rapa, and Mamistra brassicæ) flutter about in kitchen gardens for the purpose of laying their really beautiful yellow eggs. They are neatly arranged under the surface of leaves and securely fastened by a natural glue, and from them, in due time, issue the little destructive caterpillars known as "green caterpillars."

The chrysalis, or pupa, is commonly found on window ledges, palings, walls, and such-like places, but is sometimes attached to the plant. It is rather a curious object, of the colour of stone, and prettily carved as with a fairy chisel. The chrysalis is merely attached by a band of silk to the place selected by the caterpillar, and varies greatly in colour, although generally it is of a whity-brown colour. The eggs are laid on Cabbages, or similar plants, and are hatched in a few days. The caterpillars are voracious feeders, feeding day and night, and, what is worse, they spoil, with their excrement, in the case of Cabbages, more than they eat. On being disturbed, the caterpillar rolls itself into a tight ring, and so remains until it supposes that all danger is over. It descends into the earth for its change into the chrysalis state, and remains there until the following spring. If the chrysalides were collected and destroyed during the autumn and winter digging, much injury would be saved during the succeeding spring and summer.—From "Garden Pests and their Eradication."—Celer et Audax.

INDOOR PLANTS.

GLEICHENIAS (NET FERNS).

The Gleichenias constitute one of the most beautiful groups belonging to the whole family of Ferns; the different species of which the genus consists are divided into two tolerably distinct sections — namely, the Gleichenias properly so called, and the Mertensia group. As regards culture these two sections differ but little, if we except temperature; the true Gleichenias, being natives of Australia, New Caledonia, New Zealand, and Tasmania, will luxuriate in a cool plant stove; while the Mertensia group, which consists of natives of Ceylon, Penang, Malacca, Hong Kong, Assam, Jamaica, and Trinidad, require a warm stove. None of the Gleichenias should be sown in deep pots, as the fronds rise from slender rhizomes that creep near the surface. The compost in which they succeed best is one capable of retaining its porosity for a long time, as, when once established, they do not like being disturbed. Fibrous peat, broken up into pieces the size of an egg, forms a good basis, and to this may be added about one-fifth of coarse sand-stone grit or well-washed road or river sand. The ordinary white sand, so generally recommended and used for Ferns and other plants, is too fine for the purpose, and allows the soil to clog in a comparatively short time after the plants are re-potted. To the above a little good fibrous peat may be added in the case of robust growing kinds, and especial care must be taken to drain the pots or pans employed in such a way that water cannot stagnate in the compost. Like all Ferns, Gleichenias require a copious supply of moisture, both at the root and in the atmosphere, especially when growing, but the soil must never be permitted to become water-logged. Insect pests must, as a matter of course, be carefully guarded against. Green fly is apt to appear on the young fronds in the spring, and brown and white scale often do great damage unless kept from spreading, as it is almost an impossibility to eradicate them from large specimens when once they obtain a footing.

Of Gleichenias, properly so called, the best are the following:—Gleichenia alpina, a compact Tasmanian species, the fronds of which rarely exceed 12 inches in height; the divisions of the frond are about an inch in length, the minor divisions being round and not pouched below, and of a fresh bright green colour above. When well grown it forms an attractive little specimen, which succeeds perfectly in a cool fernery or pit. G. circinata is generally grown in gardens under the name of G. microphylla. G. dicarpa, of which our illustration gives an excellent idea, is one of the most elegant of all Gleichenias, and a kind that may be grown successfully in a warm greenhouse. Good specimens of it measure from 2 feet to 4 feet in height, and about a yard in diameter. It is a Tasmanian species, and being a good grower and one of the best of the section to which it belongs, it well deserves culture. G. hecistophylla, a New Zealand species, resembles the last in general habit of growth, but the divisions of the fronds are larger. When grown in a shallow pan of fresh open compost, in a temperate and humid atmosphere, this makes a handsome specimen, either for ordinary decorative purposes or for exhibition. G. rupestris is like the others, evergreen, and the stems are of a dull reddish-purple colour, the minor divisions of the fronds being bright green above and glaucous beneath, but not concave or pouched. It is a native of New South Wales, and not yet well known. G. semivestita requires a stove temperature, and its fronds, in a cut state, are very useful for many purposes. G. Speluncæ is now common in gardens and for all decorative purposes; it is one of the best and most distinct in the whole section in which it is placed. Among the False Gleichenias or Mertensias the following are valuable:—G. Cunninghamii, which is beautiful, but rather rare in cultivation. G. dichotoma when well grown in a cool stove temperature makes a handsome specimen, either for ordinary decorative purposes or for exhibition. It is a Fern which should be in every good collection. G. flabellata succeeds well in a shallow, well-drained pot or tub of fibrous loam, peat, and coarse sand, and requires a copious supply of moisture. It is one of the hardiest species in the whole genus, fine specimens of it being known to withstand 2 degs or 3 degs. of frost without sustaining any injury. It is, however, unadvisable to allow the temperature to fall so low if it can be avoided. The fronds have elegant fan-like divisions, of a deep green colour, and are invaluable for cutting, as they remain fresh in water for several days. G. furcata is a plant which requires a warm stove temperature, and a fresh, well-drained compost. Many other species of Gleichenia are known through books and herbaria, but those named include the most beautiful of those which are grown in gardens, and they are amply sufficient for the most complete general collection of decorative Ferns.

B.

Gleichenia dicarpa.

PROPAGATION AND CULTURE OF POINSETTIA PULCHERRIMA.

Poinsettias are not difficult to grow if a few all-important points are kept in view. The roots must not be broken more than possible in repotting, and the plants when once rooted should not be allowed to become starved or pot-bound. Sudden changes of temperature are injurious, such as shifting the plants from a somewhat cool house or frame in autumn into a much warmer position, and the same may be said regarding their removal from heat into cooler quarters in the younger stages of growth. In either case the leaves are liable to be affected. Another point is that the roots will die in autumn if the plants are allowed to remain too long in frames where they are exposed to a continued low temperature or too much moisture at that season. The general plan now adopted is to propagate annually, growing on the plants to produce one head of bracts each, and afterwards retaining them for a supply of cuttings the following year, when they are thrown away. For growth in small pots this is the best method, but if large branched specimens are required, the old plants must be kept and grown on, as cuttings when stopped produce only small heads. The old plants must be kept in a warm place after flowering until June, when they should be watered and started to produce cuttings. It is best to keep them quite dry during the resting period. Plants kept on the shelf of a warm potting shed produced when started much stronger cuttings than those in a warm house and watered occasionally. When the cuttings are about 3 inches long they should be taken off below a joint, with or without a heel, and inserted in small pots singly without crocks, and placed in a warm, close frame in the propagating house. This plan is much better than putting several cuttings in a larger pot, as injury to the roots when repotting is thereby avoided.

When the cuttings are rooted, air should be gradually admitted until they are strong enough for the open house, when the roots will soon be found to have reached the sides of the pots. The compost best suited for Poinsettias is a rich, rather light one, consisting of about half-turfy loam, not broken too fine, with the addition of dried cow manure and leafsoil in about equal proportions. A little soot and some broken charcoal are also good additions: the former imparts a dark colour to the leaves, and the latter keeps the compost open. Pots of sizes to give a gradual shift should be selected; thus cuttings put into 3-inch pots may be transferred to 5-inch ones, and those put into 2½-inch pots may be potted on into 3-inch pots, and again into 5 inch ones, in either of which sizes they may be flowered Plenty of light must be accorded Poin[illegible] all times, or they will soon d[illegible] weak. When well started a [illegible] ting a better place can scarcel[illegible] them than a frame or pit in w[illegible] spent hotbed, as the plants can [illegible] touching the glass at all times i[illegible]

material from underneath as they grow in order to lower them. Plenty of air and water with a syringing each night and morning will best suit their requirements and induce short-jointed strong growth. Exposure to full sunshine should also be allowed, unless it be unusually hot, when a thin shading should be applied on bright days. The stock of plants must be removed to a somewhat warmer position early in October, and they may be gradually introduced to more heat in batches as required. The bracts are generally formed and nearly developed before the flowers open.

Plenty of heat and moisture should be given during this stage, and artificial or other manure, in order to secure them as large as possible; a temperature of about 60 degs. will retain them in beauty for a long time afterwards. The height and strength of the plants will depend a good deal on the time when they were propagated and the strength of the cuttings inserted. The latter is a matter of importance, weak cuttings being undesirable. Cuttings put in as recommended any time in August will produce plants a foot or more high to come in before Christmas, and it is questionable if these are not more useful than others that are propagated early in July and are consequently much taller and stronger. It is, however, desirable to put in successional batches of cuttings that may be obtained from the same plants, and so secure plants of both descriptions. The old plants of Poinsettias, if required to be grown on, should be shaken out and potted in somewhat smaller pots than those in which they have been growing at starting time. They should have been cut back rather hard, as if long old shoots are left the best young ones always proceed from their points, and the plants are thereby made leggy. Such shoots may, however, be utilised for early cuttings, and secondary growths encouraged for the old plants. The after cultivation may be very similar to that recommended for plants from cuttings, with the addition of larger pots, and consequently more space. J. K.

Plants for greenhouse.—I have a lean-to greenhouse about 20 feet long, 6 feet wide and 10½ feet high at the highest, and should be glad to get a little advice on the management and selection of plants suitable. I do not want expensive plants, and, as I am an amateur in the strictest sense, it would be useless to furnish it with things requiring very careful treatment. There are at present a Passion Flower, a Magnolia, a Maréchal Niel Rose on the long wall of the house, and Gloire de Dijon at the end. The Roses have been planted a few months only, and have made no growth yet. The situation is low, the house at the bottom of a hill, and the floor of greenhouse 3 feet below the garden; situation, south-west suburb of London, but not so much enclosed as is usual in such districts; soil, clay and damp. Have been obliged to put ground glass nearly to the top of long side as a substitute for original board division between self and neighbour, there are no side-openings, and only one in the roof, doors at both ends opening into room of dwelling-house and garden. We get a great deal of sun, I may say all day when it is shining, but in the evening it is shaded by dwelling-house. It is not wide enough for a stage, so I have two long shelves on one side, and one on the other. I think of making a little rockery along the wall under the glass side for Ferns, and shall be glad to know the best and cheapest material to make it.—Amanthera, *Surrey.*

Salvias are indispensable for autumn, winter, and spring, seasons at which one or other of the many varieties may be had in flower. The best for autumn is S. splendens Bruanti, which is a great improvement in every way on the original form; it has better foliage and much larger and brighter spikes of flowers, which make a brilliant display. S. rutilans, the Pine-apple-scented Salvia, is the next to succeed it, and the blossoms, though small, are produced freely, and are of a bright tolling colour. S. Pitcheri is quite a gem in its way; its blooms are of a lovely blue, and good strong plants of it flower the whole of the winter. S. Heeri comes in early in spring, and is one of the freest and most useful; besides being very floriferous, it lasts long in perfection. S. gesneræflora is the latest of all, and a most desirable kind it is, as, besides having fine foliage, it is good in habit, and the spikes of bloom are large and striking. Unlike the others, the two last named sorts dislike the least artificial heat, and are often spoiled thereby, but the three others just mentioned require a little warmth to bring them out in perfection. During the summer they all do best out-of-doors, either planted out or in pots, the former being the way in which large plants may be had most readily, as with a free root run they grow much faster, and keep more healthy and better furnished below. If grown in pots the best plan is to make long narrow beds of three rows or so, and plunge them in half rotten straw or litter, the same as Chrysanthemums, as then they are handy to get at and look to as regards watering. The soil most suitable for Salvias is fresh fibry loam, with just a little well-rotted manure mixed with it, together with a sprinkling of sand to keep the whole open.

LACHENALIA TRICOLOR.

Lachenalias form a distinct and useful class of bulbous plants for greenhouse decoration in spring and early summer. The best-known species is L. tricolor, and there are also some other grand kinds of more recent introduction, such as Nelsoni and lutea; but the culture pursued in the case of L. tricolor will also suit them, their requirements being in all respects similar. Of L. tricolor a few bulbs should be within the reach of everybody, and Nelsoni should also be grown by all who can obtain it. The present is the time to start these Lachenalias. If the bulbs have been kept quite dry since the time when they went to rest, they will part freely from the soil. The whole stock should be collected together before commencing to re-pot. If this is done the largest and the smallest sized bulbs can be selected and grown separately in order to have those together that will produce spikes of flower of somewhat similar strength. The soil should consist of two parts rich loam and one part leaf-soil or well-decayed manure, adding sufficient sharp grit or sand to keep the whole porous. Although Lachenalias require plenty of water during most of the growing season, they will not bear a waterlogged soil; consequently the drainage must be efficient. The bulbs should be placed at first in the pots or pans in which they are intended to flower. Pans about 1 foot in diameter and 6 inches deep are best, as the flowers look most effective when seen in a mass. If such pans cannot be obtained, 5-inch pots may be used, placing five or six bulbs in a pot. The largest bulbs should be selected for the pans; they should be placed an inch or rather more apart, and covered with half an inch of soil. After potting ours are placed in a shallow pit or a bed of ashes, where they remain during the winter. Lachenalias should not be put in a dry place, nor wintered in a situation exposed to fire-heat—*i.e.*, if strong sturdy plants are desired. We give them much the same treatment regarding temperature as Intermediate Stocks, Schizanthus, Pelargoniums, &c., and they succeed admirably. Air is admitted in winter on all favourable occasions, but cold draughts should always be avoided, or the leaves will become brown and disfigured. As the plants grow more room must be allowed them, and in winter as much light admitted as possible by keeping the glass clean. L. tricolor keeps in flower a long time, especially if some of the plants are retarded. Some recommend forcing, to which the plants are, to a certain extent, amenable, but they seldom are so strong or last so long as when kept altogether in a cool place. Where there are plenty of plants a few may, however, be placed in a somewhat warm position for flowering early, and if kept near the glass they will not be much injured. A little artificial or liquid manure applied when the flower-spikes appear generally prove beneficial, but care should be taken not to put any on the leaves. The plants commence flowering in April in cool positions, and if some be retarded by being kept in a house or frame with a north aspect, their flowering season may be considerably prolonged. They must not be exposed to cold draughts during February or March, when easterly winds are generally prevalent. As to arrangement when in flower, if placed about indiscriminately in the form of single pots or pans, the general effect which they are capable of producing when better arranged is lost. Projecting corners of the stages are the best positions, and if a pan be placed in the middle and surrounded with a few pots, thus forming a group that may be repeated in other parts of the house, a distinct and pleasing feature is thereby obtained. Each strong bulb will produce three or four spikes of flowers, and if the plants be replaced as they get past their best by later ones, such groups may be kept attractive for two months or more at a time. After flowering is over, the plants should be removed to a sunny position in order to thoroughly ripen the bulbs; withhold water gradually until the leaves are dead, when its use should be wholly discontinued. J. G. K.

Arum Lilies (Callas) are grand winter blooming plants, but if they are to be really fine they must have liberal treatment, which can be best afforded when they are planted out. Before doing this, trenches should be prepared after the manner of those for Celery (except that they need not be so deep) and the plants divided and turned out in them, after which they should be kept well supplied with water during summer, when they will make strong crowns that will send up blooms freely and make a grand show. When potted up in autumn, the most suitable place for them is the foot of a shady wall, where, if sprinkled overhead, they soon get fresh root hold, and become ready for slight forcing or placing in the greenhouse.

Pelargonium leaves withering.—I have had in my greenhouse three or four dozen Pelargonium plants, such as Duchess of Bedford, Dr. Masters, &c., which have flowered profusely since April last, but during all that time—indeed, though in a less degree for some months previous—leaves (one or two on each plant every day) have been turning yellow and withering, and though I have varied the treatment I have failed to remove the trouble. I have searched through Vol. VI. of Gardening and Vol. VII. up to the present number, but have found no reference to any disease that would show itself in the form of yellow leaves, excepting perhaps in one number I find a disease called the "spot," which is caused by over-watering, though I do not think mine have been over-watered. I would like to know what "spot" is. I shall also be glad if any grower of these plants would kindly give me such directions as would enable me to avoid over-dryness or over-watering in growing Pelargoniums.—J. J. H., *Long Eaton.*

REPLIES.

14161.—Manure water for greenhouse plants.—It is not desirable to water greenhouse plants indiscriminately with manure water. Heaths, Epacrises, and many other hard-wooded plants do not require it. It is only useful for Pelargoniums, Cinerarias, Calceolarias, Fuchsias, Begonias, and vigorous growing plants of this character when they are in good health, and the pots in which they are growing are quite full of roots. Diluted ammonia may be used twice a week, but the best is guano water, an ounce to the gallon.—J. D. E.

✍—— Use sheep and cow dung mixed. Keep it with water in a tub, and use half-a-pint in a pail of water three times a-week. Diluted ammonia is very good for occasional use.—C. R. Gresty, *Islington.*

14163.—Maiden-hair Fern.—The best are raised from seeds; but it is easily propagated by dividing the plants. They should be grown either in a cool or warm hothouse. If the plants are now in 4½-inch or 5-inch pots, and these are well filled with roots, but not matted or root bound, prepare some 7-inch pots by placing an inch of clean drainage over the bottom, over this some fibrous turf from which the clay particles have been shaken out. The potting soil should be equal parts of fibrous turf and peat. In potting press the compost in firmly, but do not ram it too closely. The next repotting should be into a 9-inch pot, and then into one 11 inches or 12 inches in diameter. A plant may be grown 3 feet across in a 11-inch pot.—J. D. E.

Crocking pots.—A very expeditious way of crocking a pot is to place a cockle shell over the hole, and a few pieces of brick or potsherd around broken to the size of Peas or larger according to size of pot. Pots, crocks, and cockle shell should be clean and dry.—E. A. H., *Durham.*

ODONTOGLOSSUM PHALÆNOPSIS.

When well-grown, few Orchids rival the delicate beauty of flower and leaf of this Odontoglossum, and it should certainly be added to all collections where it is not yet found. It is not now so very expensive, but I remember ten guineas being offered for a plant of it bearing five flowers. A genial climate should be secured for it—a cool house during the hot months of summer and a warm house in the winter. It grows well in solid peat and crocks surfaced with Sphagnum; anything like a shifting compost is fatal to the plant, nor should too great a quantity of Sphagnum be used in surfacing, as it is apt to hold too much moisture, thus causing rot in the delicate pseudo-bulbs. Light, and a free circulation of warm air, may be secured by suspending specimens where possible, or by staging them on inverted pots near the glass, but not so near as to suffer from any change in external conditions. B.

USEFUL HINTS FOR DRY WEATHER.

Carnations suffer from drought sooner than many other subjects, the roots being numerous and near the surface. The stems droop and turn yellow, and the flowers refuse to open. The Carnation likes a cool soil. Leaf-soil scattered in among the plants is very useful, if one good watering is given at the same time; and whenever possible Carnations should be mulched in warm, dry soils. Where the plants are allowed to grow in masses and cover the ground with their own foliage, the latter acts as a protection itself; but plants put out of pots, being usually isolated on bare soil, soon suffer unless mulched and watered. Herbaceous borders and beds, being usually filled with a great variety of subjects, suffer from drought severely, particularly the shallow rooting species and such as root freely, like the Phlox, which is a gross feeder, soon impoverishing the soil near and sucking the moisture out of it like a crop of Peas. The best plan is to mulch such borders with rotten leaf-mould or Cocoa-nut fibre refuse early in the season, either of which will keep the soil moist without watering, if put on annually 2 inches or 3 inches deep. Cool moisture-loving subjects, like the herbaceous Spiræas, Violas, Pansies, and most alpine subjects, should be mulched by themselves if the whole of the ground cannot be covered. A good covering of several inches of leaf-mould or short Grass will often save the lives of any of the Viola family, and also Calceolarias. In some places Pansies and Violas are most uncertain if not mulched, and watering without that seems only to work greater injury, causing the soil to cake and crack in a few hours afterwards, unless the watering-pot is followed immediately by the hoe, which is not always convenient; mulching prevents all this. All flower-beds suffer in dry seasons, and especially bedding plants, whose roots are always necessarily near the surface. The evil is greatly increased by careless planting, as if the roots are not let in deeply, as can be done in the case of many things from seed beds, the tops are sure to suffer from even a few days' drought. Still, frequent waterings should be avoided; a good soaking once a fortnight is sufficient if the surface of the soil is stirred the day following or mulched, but mulching is objected to on flower-beds if not covered in some way, as the birds are sure to scatter the litter all over the ground.

Both Strawberries and Raspberries will need copious waterings if the roots have not been mulched early in the season, particularly Raspberries, which love a cool, moist soil. As to vegetable crops, they, as a rule, do little good in very dry seasons. Cauliflowers button at an early stage, and are useless. Turnips run to seed; so do Celery, Lettuce, and other things, and the quality of all is impaired. The only vegetable that does better the drier and hotter it is is New Zealand Spinach, a most invaluable vegetable in dry seasons, affording a plentiful supply of large, succulent leaves when common Spinach cannot be had, unless sown about every two weeks in very rich soil and well watered, as it runs to seed immediately, producing few or no leaves.

Mulchings, even if thin, should be scattered roughly over the soil among all crops during drought, and there is hardly anything so handy as short Grass, which, being light and easily applied, may soon be made to cover much ground, and it will reduce the necessity of watering at least 50 per cent., so that there is no comparison between the two as regards labour. Water should always be applied after the mulching is put on. J. S. W.

Odontoglossum Phalænopsis.

14168.—**How to exhibit cut Chrysanthemums.**—Cut blooms are exhibited on boards made of ¾ inch deal. The boards should be painted a light green colour, and for twelve blooms should be 2 feet long by 18 inches wide, 3 inches high in front and 6 inches at the back. The holes for water tubes are an inch across. The tubes should be made to go in and out easily. From centre to centre of the holes the distance is 6 inches, and from the centre of the holes nearest the edge of the board to the edge is 3 inches. A stand for twenty-four blooms is made up of two 12's, and for thirty-six of three. A stand for six is half the size of a twelve, the board cut across from back to front. The cups are of various sizes, and should be made of deal; the small sizes are 1½ inches wide, and the largest 1¾ inches, inside measure, and they are about an inch deep; the stem of the tubes is 1½ inches long, with a hole bored through it wide enough to admit the thickest flower-stem easily. The flower is kept firmly in its place by a part of the flower-stem used as a plug.—J. D. E.

CATS v. GARDENS.

I feel you have done your readers a slight injustice by toning the remarks of your correspondent "Vigornia." A good, high-flavoured scolding is a comfortable and convincing process, and gives to discussion the requisite Attic salt. I do not remember what originated this controversy, Cats *v.* Gardens, but it would appear that some poor cat-haunted wretch was driven to desperation, and, hoping to alleviate his woe, sought common-sense advice in your paper. I am prepared to guarantee that he never imagined that such a flood of gardening and ethics mixed would flow responsive to his wail. Nearly the whole of the correspondence which does not suggest annihilation as a remedy tries to prove that the fault is not with the cat but with the man; that were it not for the warped mental condition of the man he would never think of weighing his own enjoyment against that of his neighbour's cat. One person amusingly says that he finds a cat or two in his garden most useful, and the injury done by them most trifling, if any—implying, I suppose, by this line of argument, that others must find it the same. Now I think this kind of thing is rather hard upon those who find gardening nearly impossible owing to the ravages of cats. Can it not be seen that a person may keep a garden, say at Clifton, to whom the word cat would possess no terror, while to another living at Camberwell the case would be widely different? Let it at least be admitted that everyone is the best judge how much cat is necessary for his own happiness. I should like to ask why our cat defenders stop short at that animal—why not acknowledge an equal right to your neighbour's children to run over your flower beds? or, on the other hand, why kill snails, and worms, and other garden pests? One person says it is un-English to destroy your neighbour's cat; but is it eminently British to destroy your neighbour's flowers? There is one who draws a touching picture of the death of a beloved tom by violent hands. It is scarcely worth mentioning a darling invalid face, whose chief brightening was her flower bed, pale with tears at the destruction of her treasures by the faithful, odourless brutes. One can hardly fathom the order of being who can take pleasure in keeping any animal, and who is either unable or unwilling to prevent it destroying another's property. Such a one is, of course, far outside the pale of argument. I say if the law is against anyone defending himself from injury, it is patent to the lowest of us that that law should be expunged. I know many people think that love of animals, like charity, covers a multitude of sins; but what passes for love of animals can and does exist in the most depraved natures. That beautiful historical character, Marat, was so fond of a little dog he kept, that he could find time to detach himself from the pastime of wholesale murder, to fly into the most violent passion with anyone who by accident trod on his dog's tail. Kindness to animals should be instilled into the youngest mind, and cruelty sternly punished; but we should guard against the sickly sentimentality that mewls over the humane despatch of useless and destructive creatures, but which, while bursting with love for the brute creation, seems to delight in wounding by bitter words a sentient human soul. Philos.

—— As a reader of Gardening from its commencement I have been much interested in the cat controversy now going on in your columns, and I think some good may come of the question being thoroughly threshed out. When I get home on Thursday nights from work I invariably have a look over Gardening, and to-night I chanced to alight upon "Vigornia's" letter. After tea I went down to the garden to have my smoke, and ponder over "Vigornia's" vigorous defence of the "harmless, necessary cat." Sauntering round I had a look at my Pansy bed, where I have a few choice beauties I recently brought from Scotland, one of them, a very fine one, not as yet in commerce. Here the cats had been

during my absence, and sad havoc they had made, tearing up the young growths on which my hope for next year is set. Now I was, and had reason to feel, aggrieved, and, though I came up to the house and again read "Vigornia's" letter, I am not satisfied. The champions of the cat seem generally to ignore one point—tbat my neighbour's cat has no right in my garden. Probably they would tell me it is my business to protect my garden from the cats. Let us see. My garden is on the other side of tbe road in front of my house. It is about 40 yards by 26 yards, and surrounded by railings, a brook, and my neighbours' gardens. Now it is simply impossible for me to keep cats out of here, and with a garden of this size it is equally impossible to carry out the wooden-peg absurdity recommended by "S. L. S." Suppose I could identify the offending cat—which I could not do once in a hundred times—I have to take out a summons against the owner, which would cost 6s. 6d., and the loss of half-a-day's work. I then have to risk the chance of proving to tbe satisfaction of the bench (1) that it was defendant's cat; and (2) that I had sustained actual loss. The chances are that I should fail in the first, for every owner of a cat is prepared to swear that his or her—and especially *her* — particular cat is the best-mannered cat that ever had fierce claws hidden beneath a glossy fur. What working man, I ask, would go to all this trouble and expense? The conclusion I come to is this:—I pay for my garden for my own pleasure and profit. It neither injures the property nor offends the feelings of anyone; neither were my flower-beds ever known to run about the roofs at night making the strong man indulge in expletives, and the sick wisb for an end to his sufferings. My garden is a quiet, steady, respectable affair, always to be found in its own proper place; and if people can't keep their four-legged hobbies in tbe proper places—that is to say, in their own houses or premises—my only resource is to secure their destruction, for where cats get into gardens they become, and ought to be treated like, vermin. In closing this rather long letter, I would just remark that the ideal cat suggested by "J. D." is not bred in this neighbourhood.—J. R. S.

—— I cannot pass "Vigornia's" letter without wishing to add my experience of the cat. I take it that he is referring to the "country cat" in his remarks—in fact, he must be, for I cannot think that it would be possible for any gardener in our metropolis to bestow the same praise on the "London cat." I speak feelingly, for the havoc he has wrought in my garden is terrible; my seed-beds have been scratched, and no end of choice plants broken down during his nocturnal combats. He says—"One person has as much right to keep a cat as another a garden," but we London gardeners do not complain of anybody keeping a cat (one of my neighbours, by-the-bye, keeps five), but we do complain of their being allowed to run riot in our gardens. If people will keep cats they should take means to keep them on their own premises. I for one will take every means in my power to keep them off my domain, and should I catch one there I shall kill it as I should any other "wild beast." Anyone would imagine from "Vigornia's" letter that cats are a necessity in a garden. I, like "Bromley Amateur," have found them an intolerable nuisance.—A Suburban Amateur.

—— Allow me to suggest American four-barbed wire, cut into short lengths and laid on the ground, as a preventive of the mischief done by cats. In America I have seen it in universal use, and having tried it myself have found two lines of wire sufficient protection against cattle. —C. G. O'Brien.

14326.—**Birdlime.**—Will anyone tell "A Bullfinch" how to make birdlime?

14327.—**Turtles.**—I should be very grateful for any information as to the general management of small turtles. Can they be kept in a bowl with minnows? I have been advised to keep them there, but fear they would kill the fish.—Dorothy.

Cockroaches.—I see references in Gardening to these. Have any of your correspondents ever tried powdered borax? It is a certain cure—thrown where they are, in a day or two it will be hard to find one. It is cheap and worth trying.—Stouth.

14178.—**Heating greenhouse.**—I should advise you to get a horseshoe boiler and flow and return pipes.—C. R. Gresty, *Islington.*

Catalogues received.—*Choice Dutch and Cape Bulbs.* Ant Roozen and Son, Holland—agents, Mertens and Co., 3, Cross Lane, St. Mary-at-Hill, London.——*Hyacinths, Tulips, and other Bulbous Roots.* Wm. Cutbush and Son, Highgate, London.

COTTAGE GARDEN FLOWER SHOWS.

The Shaftesbury Park Flower Show, which recently took place in one of the Board Schools in Battersea, may be taken as the type of many others held in the populous neighbourhoods in London about this time of tbe year. The competition at the show in question is restricted to the inhabitants of the Shaftesbury Park Estate, and none have gardens beyond a few square yards in area, but all the houses have forecourts, and one of the objects of the Garden Improvement Society is to encourage attractive forecourts and windows. There are prizes given for the best forecourts and windows facing different aspects, so that those whose houses face north are not placed in competition with those whose houses face south. This is a capital plan, and one that is found to work admirably. Prizes are also awarded for the showiest windows adorned with plants under the several aspects; and, moreover, there is a class for the best back garden, although this class is of secondary importance, as the main object of the society is to encourage attractive forecourt and window gardening, and it is found that those who keep their front gardens in order do not neglect the back. Prizes are also given for the best climbers, such as Jackman's Clematis, Canary Creepers, and Everlasting Peas, while some houses are adorned with vines, bearing good crops of Grapes. The first prize front garden was extremely attractive, and indicated great care and attention on the part of its owner, and it showed what can be done in the way of window and court gardening under difficulties. There was an excellent competition at the flower sbow and some really creditable window plants were shown; some would not even disgrace a professional gardener. There were classes set apart for sets of three window plants in flower and out of flower, also for fine foliaged kinds. There were classes also for Fuchsias, Geraniums, Begonias, Palms, Musk, Ferns, Coleuses, besides cut flowers arranged in baskets, bouquets, vases, &c. The best classes represented were those for Fuchsias, some of which were large specimens trained on a flat trellis. The Fuchsia is without question one of the best of all plants for window culture, particularly the old free-flowering sorts. The newer kinds, though they have bigger flowers, are not nearly so floriferous. Musk was shown admirably, firm large specimens in vigorous health. With plenty of water and abundance of light, as fine Musk can be grown on a window-sill as anywhere. There were numerous Begonias, but not many of the right sort. Some of the exhibitors were too ambitious in attempting to grow the tuberous-rooted kinds, which, as a rule, require special treatment. The best of all flowering Begonias for towns is the Weltoniensis, a small pink-flowered sort, but an abundant bloomer, and it may be grown to perfection in a window. The large coloured-leaved kinds are capital for shady windows, and some good plants of these were shown. Scarlet Geraniums were poor, it being fully late for them. Besides, they are not among the best plants for window culture. Ivy-leaved sorts are better, and now that there is so much variety among them and they are so cheap, cottagers should obtain some of the best, like Mdme. Thibaut, Gloire d'Orleans, and others. Coleuses, being so simply grown and so suitable for a light sunny window, were excellent, some being uncommonly finely coloured. Ferns, too, were good, particularly the hardy kinds; some of the Hart's Tongue sorts being as much as 2 feet through. In this class again the exhibitors erred in trying to grow delicate subjects like Maiden-hair Ferns, which want good attention even under favourable circumstances.

Window shrubs consisted for the most part of variegated Euonymuses, than which no better shrubs could be found for towns. For variety's sake we recommend the Holly-leaved Osmanthus, shrubby Veronica Traversi, also a capital plant for outside window-sills. India-rubber plants, strange to say, were poorly shown, not withstanding that it is one of the most popular as well as the most valuable of all room plants. The Aspidistra, or Parlour Palm, is another good plant for rooms, but it does not appear to be much known yet. There were one or two good plants sbown, and were its qualities better known we are sure that it would be grown extensively. There were classes for Fern cases and vases, besides several for cut flowers arranged in bouquets, and the like, but none of these were remarkable; indeed, cottagers, as a rule, require a little tuition in flower arrangement. They do not seem to know how many or how few flowers to put up; they crowd, or their arrangements are too thin. One of the prettiest features of the show were the drooping plants, and none were so remarkable as the Campanula fragilis, of which there were plants having drooping shoots two or more feet in length, and fairly smothered with soft, purple-blue flowers. It is one of the best of all plants for windows, and cottagers may pride themselves in being able to grow at least one plant better than professional gardeners can in proper greenhouses. Besides the competitive exhibits there was a considerable display of plants and flowers from various nurserymen, among them being Messrs. Veitch, Laing, Cannell, and Neal. As a matter of course the exhibits from these firms were perfection, and it was fortunate for the visitors to the show to have such beautiful examples to compare with their own productions. During the time the show was open there was excellent entertainment provided, besides music; and we think that all small flower shows would be more appreciated if something of the kind were provided for. The management of this show, which is in the hands of experienced persons, leaves little to be desired, and each year it seems to increase in importance.

RED SPIDER AND ITS REMEDY.

Those who have been engaged in the cultivation of plants, even on a limited scale, will not need to be told how injurious this little insect is to plants of all descriptions that it happens to attack. Small and insignificant in appearance as it is, its presence is marked by worse consequences than those of other pests that look much more formidable. The leaves of a deciduous plant that is subject to its ravages quickly cease to perform their functions, and prematurely die off; whilst the stouter, more enduring foliage of Evergreens is injured to an extent that does even more mischief to the plants. Vines that are but slightly affected invariably fail to colour their fruit fully, and if its ravages are not soon stopped, the weakening influence extends to the following year's crop. On Peaches its weakening effects, whenever allowed to get ahead, are equally apparent. The dry condition attending the ripening of Melons particularly suits it, the flavour of the fruit always suffering in proportion to the extent of its presence. Azaleas that have their leaves injured by it are not alone perceptibly reduced in strength, but the flowers produced afterwards for one or two years are wanting in their natural depth of colour. Roses cultivated under glass, either when planted out or grown in pots, are always more liable to its attacks than most plants. Fuchsias are favourite food for it, especially in the summer months. In fact, although there are some plants which suit the taste of this diminutive pest better than others, and on which it rarely happens that a season elapses without its putting in an appearance, it is by no means particular as to its food, for it will live upon many things the juices of which might be supposed to be of so acrid a nature as to place them beyond its molestation. Plants in a free vigorous state of growth are never so liable to its attacks as when in the opposite condition. Wherever anything approaching a stagnant state of the roots exists, either through disease, insufficient nutriment, over confinement of the roots, or want of water in the soil, with a dry condition of the atmosphere, there red spider meets with conditions just to suit it; moisture is its greatest enemy. In the cultivation of plants, especially such as are of a fruit-bearing character, that during the ripening process need the atmosphere being dry, if previously present to ever so limited an extent, it then spreads as if by magic. The same thing happens with the numerous plants grown for decorative use that require the atmosphere around them being kept drier towards the end of summer at the season when it becomes necessary to thus assist the ripening of the wood.

The various remedies in use for its destruction, such as the fumes from sulphur applied to

the heated pipes or flues, the application of powdered sulphur to the affected plants when such is admissible, washing with clean water, or with some or other of the various mixtures which will destroy it—these are so well known as not to require further mention here; but what I want to urge upon amateurs and others whose experience may happen to be limited is, that prevention is better than cure, and it is much better to take means in the early part of the season—that is, in spring and the beginning of summer—to so treat their plants as not to admit of this insect getting a lodgment during the commencement of the season. For as certain as it once obtains a footing, even if not present to an extent to be noticed, as soon as the hot, dry weather comes on or the time in autumn for keeping a drier atmosphere arrives, then will the ravages of this insect become such as to give much trouble. One of the principal causes through which Red Spider gets a footing early in the season is an insufficient use of the syringe. Plants grown under glass should, with very few exceptions, be regularly syringed overhead, care being taken to get the water to the under side of the leaves as well as to the top; no mere sprinklings are effectual. With such plants as this insect will live on a regular good drenching ought to be given once or twice every week through the growing season. It should ever be remembered that plants in the open air are very differently placed, so far as being under the influence of the vapoury moisture which is ever rising from the ground and coming directly in contact with the underside of the leaves, where principally the insects secrete themselves, from what they are when grown under glass standing on dry wooden stages, either when made close without interstices, or composed of bars with openings between, that in either case are made still drier, if, as often happens, they are placed over the hot-water pipes. Under such conditions, instead of the moisture that in the open air rises amongst the plants to an extent that in the night-time covers the underside of the leaves with dew, they are subjected to the much drier conditions which are so favourable to the development of red spider. In place of these dry stages, which are costly and perishable, I should recommend a surface composed of fine coal ashes or something of a like nature which will hold moisture that will at once place the plants under conditions more natural to them and equally opposed to such as the spider delights in. It would be a decided gain even on the score of economy, as the wooden stages so much used in greenhouses and conservatories cost a deal and are always requiring repairs.

Out-of-doors an insufficiency of moisture arising amongst the leaves is often the cause of red spider gaining a footing on plants to an extent that all but defies its extermination. At one time I had a good collection of laced Polyanthuses. I grew them continuously in pots plunged during summer in ashes in a shady place, and in dry weather I kept the ashes so moist that the soil in the pots absorbed enough water for the plants, it rarely being necessary to apply any directly to them. Until I adopted this practice I was always troubled with this insect. Anyone who has ever grown these Polyanthuses need not be told how very differently they thrive and increase when free from this pest from what they do when it puts in its appearance, even to a limited extent. The practice advised by an old Manchester florist, of giving a copious watering overhead late in the evening effected the same purpose, but if I had applied as much directly to the roots as I gave to the plunging material between the pots, there would have been some danger of the roots rotting, fond of moisture as these Polyanthuses are. Four-fifths of the cases wherein this most destructive insect attacks cultivated plants arise from the plants being placed under conditions of insufficient moisture overhead, and which in a state of nature are present, to compensate for the absence of which, if success is to be attained, the cultivator must take means to make them good. T. B.

Anemones.—I bear a good many complaints about Anemones not blooming. I believe the tubers should not be planted deep, but rather on the surface of the soil, and only the thread-like roots in the soil. Those I have planted that way are doing well, and I have often noticed wild Anemones growing in the same way.—E. A. H., *Durham.*

VEGETABLE & FRUIT COOKERY.—XVIII.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Raspberry Vinegar.—This cooling and refreshing beverage is a general favourite, and can very easily be made by those who are able to procure fresh, ripe, and good fruit. Take four pints of Raspberries (measured after the husks are removed), three pints of white wine vinegar, 6 lbs. of the best lump sugar, one pint of pale brandy; put the Raspberries into a large basin and crush them, pour over the vinegar, cover and let stand for five days. Reverse a chair upon a table, and tie over the four legs a coarse clean cloth; place a basin under it, and pour through the cloth one gill of pure white vinegar; then turn the fruit and vinegar which has been standing, into the cloth, cover to exclude dust, and let remain until the next day to drop as much liquid as possible through, but on no account press or squeeze the Raspberries. Crush the sugar, and add it to the juice, pour this into a preserving pan, and boil gently for three-quarters of an hour. Remove every particle of scum as it rises, and then strain it again through a cloth, and set aside to get quite cold. Then add the brandy, and pour into clean bottles, cork and seal tightly. This will be found a cooling and agreeable beverage in cases of fever or sore throat, but it must be diluted with water according to taste.

White Raspberry vinegar.—Take four pints of ripe white Raspberries, remove the husks, and put them into a stone jar with half-a-pint of white wine vinegar, cover the jar and place it in a saucepan of cold water and allow the water to boil around the jar until all the juice is extracted from the fruit, which will take about two hours; lift the jar from the saucepan and strain the juice through a coarse cloth as before directed. To every pint of juice thus obtained allow one pint and a-half of white wine vinegar, and two pounds of crushed lump sugar; put these all into a clean jar, which place again in a saucepan of boiling water; let the water boil around the jar for one hour, stirring the contents of it occasionally, and if any froth should arise to the surface remove it, so that the vinegar is quite clear and bright; lift the jar from the saucepan, and when the vinegar is quite cold, pour it into clear clean bottles and cork tightly. For use, serve two tablespoonsful in a tumbler of fresh cold water.

Tarragon vinegar.—This vinegar is most useful, when used judiciously, to impart a pleasant flavour to salads, and when made at home gives but little trouble, and is inexpensive. The leaves only of the well-known aromatic plant are required, and these should be gathered as soon as the plant begins to blossom. Pick each leaf separately, and spread them upon a sieve to dry in the sun. When the leaves are quite dry weigh them, and to every pound allow three cloves of garlic, six shallots; peel and chop the shallots and garlic very small; put them into a jar with the Tarragon leaves, and pour over them three quarts of the best white wine vinegar. Seal the jar securely, and cover it with bladder; set aside in a cool dry place for six weeks; and then strain the vinegar through a filtering bag until it it quite clear; pour it then into small clean bottles, and it will be ready for use. Do not use large bottles, as so little of the vinegar is required to be used at a time, and the flavour is preserved so much better when the bottle is kept tightly corked.

Ripe Gooseberry vinegar.—Take the ripest and largest Gooseberries you can for this purpose. To every quart of fruit allow two quarts of water that has been previously boiled and allowed to cool; put these into an open vessel, mix thoroughly, and let stand for thirty-six hours; then strain through a coarse cloth, and to every gallon of juice add one pound of brown sugar and one pound of golden syrup. When the sugar is dissolved, and all the ingredients well mixed, pour into a strong clean barrel, and cover the bung-hole with strong paper, with a few holes in it, pierced with a skewer; let stand until the vinegar ceases to work or ferment, then put in the bung, and let stand for twelve months, when the vinegar is ready to be drawn off and bottled. This is an excellent pickling vinegar, or it may be used for any ordinary culinary purposes.

Chili vinegar.—Take half a pound of ripe Chili Capsicums, and after removing the stalks put them into a stone jar, pour over them a quart of the best white vinegar, and let them stand, well covered, for one month. Filter the vinegar, and pour it into small bottles for future use.

Garlic vinegar.—Bruise two ounces of fresh Garlic and put it into a stone jar, pour over one quart of vinegar, cover and let stand for three weeks; then strain and bottle it. A very few drops of this vinegar will impart a delicious flavour to many sauces, soups, and gravies. Two drops rubbed over the dish on which a grilled steak or chop is to be served will give a pleasant relish; but the greatest care must be exercised in using this vinegar, as too much will be as disagreeable as a small quantity is agreeable.

Nasturtium seeds.—When these are pickled they form a cheap substitute for "Capers," and may be used in their place for the sauce which is so generally served and approved with boiled mutton. They are also useful as a garnish for salads, cold meat, and fish. Gather the seeds while young and green. If they be very large cut them in halves. Wash in salt and water, and dry thoroughly with a soft cloth. Put the seeds into a wide mouthed bottle, and sprinkle now and again a very little salt, and a few pepper corns as you fill the bottle. Pour on enough cold vinegar to entirely cover the seeds, cork tightly, tie a piece of bladder over the cork, and store in a cool dry place. These will be ready for use in nine months, but are better when they have been kept a year.

Radish pods.—As these are not all ready to be gathered at one time we shall only give here a simple method of pickling the pods, which when so prepared add a pleasant relish to cold mutton, &c. Gather the pods when they are full grown and the seeds formed within them, leave the stalks on and wash them in cold salt and water, and dry thoroughly in a soft cloth. Put the pods thus prepared into a stone jar with a very little salt, and a few pepper-corns, a blade of Mace, and enough vinegar to cover them; cork tightly. When adding more pods repeat the same quantity of spices and pour on more vinegar, as the pods will soak up a good deal, and should never be left uncovered.

14328.—**Making Tomato sauce.**—Will some reader of Gardening Illustrated kindly furnish me with a good recipe for making Tomato sauce, and tell me how long it will keep good?—Clapton.

14329.—**Rosemary hair-wash.**—Will someone kindly give me a recipe for making Rosemary hair-wash? I should also like to learn the effect of Rosemary on the hair?—Sphinx.

14165.—**Flies.**—Oil of Lavender will, it is said, kee away flies.—C. F. Davis, *Leatherhead.*

—— "Invalid" should use Myocum or fly gum, to be bad of all chemists. Used as directed it will clear the room in a few minutes.—S. McC.

Sparrows.—I should like to say a few words about Mr. Sparrow. I live in the centre of a town (Guildford), and am more lucky than some. I have a nice garden, walled in all round, and could grow almost anything if Mr. Sparrow would leave me alone, but he is a dreadful curse to me and my neighbours. We have tried almost everything. He picked off all my Gooseberry buds and ate my Peas off. I used black cotton and white cotton, put the sticks over, and they crept under all the lot. I put soot and lime on them—in fact, tried everything that I saw recommended in Gardening, but it was no use. As soon as they had done with the Peas they began upon the Lettuce, cleared them off close to the ground, and then ate off several lots of Radishes. I put up a scarecrow, but they soon got used to that, and I caught some sitting on the top of it in about three days' time. Then I made a windmill, which made a dreadful noise, and awoke the neighbours up, so that I had to take that down. Then I painted a cat on a piece of board, which answered very well for a day, but the sparrows soon got used to it. We also keep "Vigornia's" friend, and she does nearly as much mischief as the sparrows. I set a spring trap, and caught one and tied him up; then we tried feeding them, and had more than ever then. I shot several; so, you see, I tried pretty well to drive them out, but they are just as numerous now as they were in the spring. Some of our friends will say, buy netting; but

we have to put our hands into our pockets too often already, and we want to do everything at the least expense. We have plenty of ways of getting rid of caterpillars and maggots—a little hand-picking or a little soapy water will do as much in one hour as a hundred sparrows would do in a week; so, you see, I have cause to complain. I should advise everyone to kill all the sparrows he can get hold of, no matter in what way.—V. B.

—— I have read with interest, week by week, the complaints [made about that] mischievous bird, the sparrow. He pecks the buds off Carnations, he pulls up and eats all kinds of seed, and is a most voracious bird where Peas are concerned. We soak the seeds in paraffin or some other oil, and this seems to stop his depredations, for they invariably come well when so treated. On a winter's night, also, we go out "batfowling" round ricks, Ivies, and hedges; we have caught 80 birds in one night, two-thirds of them sparrows. I think the sparrow when thus treated gets nothing but what he deserves.—W. C. C., *Worcestershire.*

BEES.

14330.—**Bees not swarming** (*A. B. C.*).—It is by no means a rare occurrence for a colony of bees to fail to throw off a swarm. A heavy yield of honey frequently appears to absorb the whole attention of the bees and entirely destroy the swarming impulse, while, on the other hand, a moderate flow of honey is very productive of swarming. Bees on the point of swarming are often prevented from doing so by a change in the weather and a fall in the temperature, when the queen-cells are destroyed and the swarming delayed until queen-cells are again in a forward state, thus causing a loss of some weeks, and frequently putting a stop to swarming for the season. Cells in which embryo queens have been destroyed are easily recognised from their being torn open at the side, and not cut back from the end in the ordinary way. In this variable climate the uncertainties of natural swarming are so great that many bee-keepers adopt the safer method of artificial swarming, an important item in its favour being the saving of much time to the bee-keeper as well as to the bees. Possibly you gave more room in the hive than was needed, which would tend to check the swarming fever. Had you extracted the honey from some of the outside combs, after they became full, the bees would have filled them again with honey instead of clustering outside the hive in idleness.—S. S. G., *Boxworth.*

14331.—**Bee flowers** (*Unnoticed*).—The cultivation of honey-producing flowers deserves more attention by bee-keepers than it has hitherto received. Although in the summer, when bees can range the fields and woodlands, cultivated flowers are not much sought after by them, the case is different in early spring, as long flights [during fitful gleams of sunshine cannot at this time be taken with safety, but if a good pasturage of honey-producing flowers is provided near at hand the bees in their early spring flight have an opportunity of obtaining provision as soon as they seek it. Among the earliest spring flowers from which much pollen and some honey is obtained may be named the Snowdrop, the varieties of Primroses, and the Russian Violet, after which Arabis albida comes in most usefully, flowering generally in March. If a large bed of the latter be laid down in autumn it will prove most valuable in time of scanty bloom the following spring; it admits of any amount of subdivision and is very hardy. The early variety of yellow Wallflowers is also a very valuable bee flower, contributing greatly to the support of bees during the early spring months. Plantations of this may now be made for spring flowering, or seed sown. Limnanthes Douglasi is a most useful bee flower, and when once sown or planted takes care of itself; it is most welcome to bees, being covered by them at every available opportunity. A large supply of provision is obtained in the spring and early summer from the flowers of the white Turnip. Borage is a plant of first importance to the bee-keeper. It flowers from early in June till October, yielding a constant succession of flowers, and is invaluable in damp weather, the bees eagerly taking advantage of its drooping blossoms when other flowers are charged with moisture. The seed should be sown in March or April.—S. S. G., *Boxworth.*

POULTRY.

QUESTIONS.

14332.—**Feeding fowls.**—I shall be glad if "A Lover of Fowls" will let me know what he considers the best system of feeding fowls, and whether he thinks it is better to give them their meal boiled, or only scalded with boiling water.—Ignoramus.

14333.—**The Scotch grey fowl.**—"J. H." requests information as to where the Scotch grey fowls referred to in Gardening of August 1st, page 300, are to be purchased. Can any reader tell her?

REPLIES.

14257.—**Ducks.**—Pekins are very good as regards laying and the quality of their flesh; they also reach good weights—from eight to nine pounds each at a year old. Ducks of any breed may be kept on premises where there is no pond or river for them to swim in, but to be profitable they must have an extensive range, so that they can get most of their own food. If it has to be bought for them, as it must be when they are confined, there is certain to be considerable loss. Under the circumstances I should keep no ducks at all, and certainly not white ones; but if "Aleph" be anxious to do so, he should get some Rouens. They will not lay quite so early as the Pekins or Aylesburies, but they are good table birds, and quite as large as the others I have mentioned. They are dark in colour. The Cayugas are black, and are highly spoken of by Mr. J. K. Fowler.—Doulting.

14256.—**Fowls plucking each other.**—Various causes are assigned for feather-eating amongst domestic poultry. It happens for the most part in small runs, where cleanliness is not observed as it should be, and instances are on record where the habit has been brought about by a deficient water supply. Very often it arises through the fowls having nothing to do. To remedy the latter evil, a Cabbage or Lettuce should be tied to the roof of the run, and allowed to hang just within reach of the fowls. Its swaying to and fro interests them, and at the same time it supplies them with green food. In the case put forward by "H. H.," I advise that the whole of the birds which have contracted the habit should be separately confined. Then extract all the broken feathers, and remove any flesh that may be hanging. Keep the birds apart until the skin has completely healed, and before returning them to their run well lather the affected parts with carbolic disinfecting soap, the disagreeable taste of which may prevent the birds taking more than one mouthful. Lettuce should be abundantly supplied to the hens whilst confined, and plenty of green food be provided for them after they are turned together again; their other requirements must also be attended to. If the habit be then persisted in, the ringleader had better be destroyed.—Doulting.

14122.—**Rose of Sharon.**—It is uncertain what flower is meant by "the Rose of Sharon.' Old Greek and Latin translations render the word indefinitely "flower of the field," "ἄνθος τοῦ πεδίου," "Floscampi." Bishop Wordsworth, in his commentary *in loco*, quoting Gesenius, says it is the "autumnal Crocus of white and violet colour, growing in Sharon, the most beautiful meadow land of Palestine." Referring to Gesenius's Lexicon I find the first meaning given is "a Lily or a Narcissus," then, "the corresponding Syriac word signifies the same as the Greek ἐφήμερον, Meadow Saffron, Colchicum autumnale, Linn." The Hebrew word is "chabasseth," and the following remarks of the Rev. H. B. Tristram ("Natural History of the Bible") who spent nearly a year in the Holy Land, accompanied by experienced botanical and zoological collectors, ought to be accepted on good authority: "From the derivation of the word it is supposed to point to some bulbous plant, and very probably to the sweet-scented Narcissus (Narcissus Tazetta), a native of Palestine. Others have suggested the Crocus, of which there are many species very common; but they are deficient in perfume, and there is no bulb more fragrant than the Narcissus; it is, besides, one of which the Orientals are passionately fond. While it is in flower it is to be seen in all the bazaars, and the men as well as the women at that season always carry two or three blossoms, at which they are continually smelling." After noticing other suggestions he concludes, "On the whole, the Narcissus appears the best interpretation." Amongst the native flowers of Palestine, enumerated by Tristram, there is no mention of Hypericum calycinum. My botanical authorities refer to Ireland and Scotland as its native habitat; and I cannot believe that there is any foundation for its identity with the Rose of Sharon.—A Subscriber to Gardening Illustrated.

—— Both Dr. Kitto and Mr. Wilde, quoted by "J. D. E." (page 330), are no doubt right in thinking Cistus the most Rose-like flower in Sharon, but it appears to me that that is not the question. Your correspondent wanted to know what flower was so known in English gardens, and, rightly or wrongly, Hypericum calycinum (St. John's Wort) is usually recognised by that name.—T. J. W., *Crouch Hill.*

The Burning Bush.—In your issue of February 14th, 1885, I ventured to ask for further details respecting the description given by Mr. J. Clark of the ignition of the Dictamnus Fraxinella. I did this not with the least intention of casting a doubt upon his veracity, as he seems to have supposed, but simply because I wished to have the subject discussed in Gardening, and to hear what other observers had noticed with regard to a very curious, and, so far as I am aware, unique botanical fact. It often happens that statements of this kind are repeated from mouth to mouth without being actually put to the test. When Mr. Clark wrote again to you asserting that his statement was the result of his own personal observation, I was quite satisfied, and required no further evidence. Being, however, greatly interested in this subject, I eagerly awaited the blooming of my Fraxinella. It bore about twelve spikes of bloom this year, and on the first calm evening after the flowers were fully expanded I gathered my friends around the tree, and applied a lighted candle to the base of a flowering spike. Instantly a little puff of flame ran up among the flowers to the top of the spike! The Fraxinella question was solved beyond all doubt. I hereby submit my testimony to Gardening, and make my humble apology to Mr. John Clark and to Dictamnus Fraxinella. I must, however, repeat my conviction, strengthened by close observation, that the glands from which the volatile oil exudes are not situated exclusively upon the flowers. The petals I think are devoid of them, but the main stem and the pedicels (short flower stems) are clothed with oil glands, so also is the ovary, and they exist even on the filaments of the stamens. With a good lens the structure of these glands may be clearly seen, and it is only necessary to press the stem gently to draw out the essential oil, which leaves a powerful odour on the fingers. After ignition these glands assume a whitish appearance—in fact, they are slightly scorched. By all means let every one who loves quaint herbaceous plants grow the Fraxinella. It is a slow-growing plant, and dislikes any interference; but when established it repays one's patience. It is beautiful in foliage, still more beautiful in bloom, and not least beautiful in fruit.—Lincolnshire Rector.

Schizostylis coccinea not blooming.—Will any reader who has succeeded with the above enlighten me as to the cause of my failure? I planted the bulbs last year in good soil, in 6-inch pots, and gave them cold frame treatment throughout the summer. The plants throve well to all appearance, put up good foliage, and even good flower buds. They were returned in October to a greenhouse, where I expected great things of them; but the blossoms were miserable half-opened things, quite unlike the lovely flowers I have seen on plants grown for the market. I notice that the bulbs increase with great rapidity, and that the pots are full of small offshoots. Early in this summer I turned the plants out of the pots, split them up, and set them in good soil in the open border. I purpose repotting in October, and hope before that time to see the subject dealt with in a helpful and exhaustive style by some of your practical correspondents, from whom I have already learnt so much.—Lincolnshire Rector.

BIRDS.

14334.—**Doves.**—Will any reader tell me what is the best food for doves? Mine are ashy-grey, with dark rings round the neck. I should be glad of any information as to the best way of managing them generally, and of breeding them.—Dorothy.

14258.—**Pigeon with malformed beak.**—Better kill the bird at once, or it will be starved to death. The defect is often the result of continuous in-breeding.—Doulting.

GARDENING ILLUSTRATED.

VOL. VII. AUGUST 29, 1885. No. 338.

OUR ILLUSTRATION COMPETITION.

ALTHOUGH we have received many very pretty photographs, the special object of our competition—the illustration of the more beautiful aspects of climbing and rambling plants—has been but very imperfectly realised. We have had only one or two fairly interesting examples of climbers, and these were not good photographs. Our country is full of beautiful examples of climbing Roses and other climbing plants on cottages and walls, and we feel sure that the attention of the artistic photographer has not as yet been sufficiently directed to those things. We hope it may be in the immediate future, because nothing is more beautiful than the way in which climbing plants tumble over wall or tree when allowed a fair chance.

There is one thing in connection with these photographs, and with photography in gardens generally, of which we are certain—they will do a great deal of good to gardening; they show so well the good and the bad of it. Talk to most people about rightness or fitness in garden design, and the chances are ten to one that, no matter how ugly the object spoken of, they will say, "It is a matter of taste." Now that is, we believe, the most stupid way of arriving at any conclusion in these matters, knowing as we do that it is a question of law in the beautiful art of gardening. We have seen the most hideous things that ever adorned a garden—from a cockney collection of rubbish and burs plastered over with every kind of excrescence, and called a rock garden, to the most ungraceful, lifeless, and barren displays of ugly bedding-out—settled in this way, but not for us. We have noticed, with great satisfaction, that in photographs the ugly things are clearly fixed for the observer's education—harsh railings, even placed where they need not be placed; needless walks, ugly pattern beds—every vice of our gardens may be seen in photographs, and, oddly enough, the evil is emphasised in them, so that it may be possible to show even the "matter-of-taste" people how wrong the points are. Many things sent to us have been spoilt in this way, but a great many of them, we are glad to say, show an observance of a natural taste in gardening, and we look to this to improve year by year. We feel sure that the lovers of gardens will adopt the right way as soon as they see how much we lose by stiff and formal things that were very well in a past age when nature predominated around us, and when a little geometry seemed interesting by its very contrast, and it was thought a clever and a right thing to shear the beautiful trees into walls, as may yet be seen in many gardens on the Continent and occasionally in England.

Another point on which we feel convinced is, that the art of photography, when mastered by the amateur, will afford quite a new delight to the lover of gardens, by giving him an excellent means of preserving their charms. The delight of gardens beyond that of any other thing is their changefulness. One collects pictures or birds, and, barring slight changes and accidents, they are the same all the year round, and some things are preserved for ages; but the peculiar charm of a garden is that it changes like our own lives, and like the clouds above us. There are no two days in the year in which the plants are alike. The varying aspects of the garden are wonderful as delightful, and no true lover or student of the subject will regret their changefulness. A garden stereotyped is too dreadful to think of, but it would be very delightful to get a faithful record of those aspects of the garden that pleased us most—of the result of successful seasons, growth of very fine specimens or of unusually graceful or interesting developments of any kind; of old or favourite trees, or of any of the innumerable aspects which our gardens present as the years fly by. The art of photography, which any intelligent person can now master, enables us to keep a faithful record without the labour of drawing, and, be it observed, only the very best and most painstaking drawing can give one a faithful record of the inimitable grace of a garden. Thus photography is worth mastering, if for no other purpose than that of keeping a record of our garden. A book of convenient size might be devoted to the subject, and photographs placed in it as they were taken, so that one pursuing this system could turn back for years and see the result of previous years' work. Trees, and some other aspects of gardening, may remain with us pretty constantly, but such noble beds of Tulips as Dr. Bruce sends us are not to be seen every day, and the photograph almost gives one as much pleasure as would a sight of the border. A friend of ours has already begun a book of such pictures, and very charming it is. Our recent examination of the photographs kindly sent us by our readers confirms us in the idea that to photograph and preserve the beauties of one's own garden adds a new charm to gardening itself. The one thing necessary is to get proper apparatus, and do the work well. It is not so very easy as it seems, and questions as to light and shade, and various others that people do not generally think of, should be considered.

We thank our readers heartily, and hope that no one will hesitate to send us photographs of anything that seems to be of interest. Very often we have found that a photograph which, as a whole, is not remarkable, shows some detail that may be suggestive to many people, and an illustration of the fact is given in the little engraving published this week from a photograph sent us by Mr. Leese. This, as a whole, did not seem to us to be such a remarkable view of a rock-work as to deserve reproduction; but a portion of it illustrates well a favourite notion of ours that all such steps should be made alive with plants.

PRIZES ARE AWARDED TO THE FOLLOWING:—

Dr. Bruce, The Castle, Dingwall, N.B. Fine photographs of beds of Tulips. We never expected to see Tulips so gracefully shown in any drawing or photograph.

Mr. W. T. Butler, Harrow Lodge, Dorking, Surrey. Very charming group of subtropical plants, well held together, and gracefully grouped—not dotted about in the stupid way they very often are in the parks, like children lost on Salisbury Plain.

Mr. Alex. Borthwick, 13, Wendover Crescent, Mount Florida, Glasgow. A very well-chosen series of photographs of bedding plants, but the effects not at all good in colour. Also some pretty wild scenery in Scotland. All the photographs are badly lighted—probably from the use of imperfect lens.

Miss Mary Cross, Clarkson Road, Wisbech. A very nice photograph of a trellis-covered way. We think other photos from the same garden would be interesting.

Mr. Evans, Winterton Lodge, Littlehampton. A good photograph of a fine plant of the Maiden's Wreath (Francoa ramosa), unhappily staked, but, nevertheless, looking very pretty. We are sorry we have not more plants from the same photographer, because his work is very good. Apart, altogether, from home landscape and garden effects, it is very interesting to show good effects of individual plants, well grown or trained in an interesting or novel way as this plant was.

Dr. Good, 1, Ashchurch Terrace, Shepherd's Bush. Very good photographs of Ferns and ferneries indoor, the walls well covered with the plants.

Mrs. E. A. Holmes, Hartside, Durham. Views in gardens. Very good photographs, which, being rolled up, gave us a deal of trouble. The condition in which some of the photos that were rolled up reached us, makes us repent of having given competitors the option of sending them mounted or unmounted, and we hope readers will in future always send them mounted.

Mr. A. P. Jackson, 7, Cannon Street, London, E.C. Some charming photographs of the Oxford Botanic Gardens. These form to us a pleasant souvenir of a garden that more than once has given us great pleasure. Two of them are devoted to the aquatic house, and the grouping of the foliage is almost a picture. We hope Mr. Jackson may be able to give us a few of the many pretty views in the same garden, about the walls particularly.

Mr. Stephen Marshall, Weetwood Hall, near Leeds. A beautiful example of the common Traveller's Joy, round a door. Photograph good; the platinotype is not quite so good for reproduction as the silver process.

Mr. Robert Murray, 7, Hope Terrace, Edinburgh. Very interesting photographs, but some of them not taken in a proper light. A capital house, covered with climbers, spoilt by rustic garden furniture in front. A very good photograph of Drummond Castle Gardens, but not good light. One beautiful aspect of Portswood, Southampton, injured by the moving of the camera, as many things are shown double. This subject deserves to be well done, particularly the verandah part. The best of the whole series is Netley Abbey, showing the Ivy growing over the old windows in a very graceful way; but, as in the case of the others, the right light has not been studied.

Mr. G. Postles, gardener, The Friary, Newark, Notts. Good photographs of a graceful garden. One extremely pretty photograph showing a fine old church in the distance, injured by the presence of a garden seat. Why cannot garden seats be made pretty and simple? Why are they often among the ugliest things that can be devised?

Charlotte M. Price, Nantclwyd House, Ruthin. A very beautiful old avenue of trees, and an excellent photograph. Photographs of the same value of good garden subjects would be charming.

Mr. A. J. Tubb, Shrubbery, Ashchurch Terrace, Shepherd's Bush, W. Fernery and conservatory; beautiful photographs.

Miss Wyles, Park College, Coventry. Good photograph of beautiful trees, one of them a Cedar, with a pretty old wall in front well stained with Moss and Lichen.

COMMENDED.

Mr. John Allen, Buxted, Uckfield, Sussex. Photograph of a pretty little garden and a house well covered with climbers, which are not, however, well shown. We hope more of our readers will some day send us photographs of pretty cottage gardens—the prettiest of all gardens.

Mr. Thomas Butler, Marlpool, near Derby. A wonderfully well-grown plant of Hydrangea; photo spoilt by the introduction of figures, and in other respects not at all so good as the plant.

Miss Coxe, Hurworth-on-Tees, Darlington. A very pretty subject and a fair photograph, showing a landscape and river beyond a carefully-planted garden. Other views from the same place would, we think, be pretty.

Mr. C. H. Evans, 2, Alcester Street, Redditch. A very beautiful photograph of Water-Lilies, but taken so that the position is confusing, the Lilies looking as if they grew out of a vertical surface.

Mr. J. Grice, Moorlands, Sunderland. A fine plant of Brugmansia, grown in a pit and greenhouse. The photo seems to have been

taken some time, and is quite pale and poor in colour, which we regret, as it shows a very interesting aspect of greenhouse vegetation.

Mr. R. H. MacLoghlin, M.B., Cloughjordan. Bad photographs of very graceful subjects; probably a bad lens or a bad plate was used.

Mr. W. J. Mayle, 133, Parliament Street, Derby. Photograph of fine group of fruits, Roses, &c.; but group scattered too much in composition—too thinly dotted about.

"E. R. T." A house prettily covered with Roses in pots; but photograph too general, probably from the attempt to show the house and figure. The mistake is in not taking close views of the windows and their graceful surroundings, which are dimmed in the endeavour to show too much, and the photograph cannot therefore be well engraved.

Mr. A. Taylor, Starston Place, Harleston, Norfolk. A very interesting subject. A splendid plant of Wistaria, covering various projections and surfaces of a large house, but the photograph very bare in colour and tone, from bad printing or some other mistake, so much so that we could not reproduce it with any success.

Mr. Alfred Watkins, Wilcroft, Hereford. A pretty photograph of a quaint cottage border.

Rev. J. M. Young, Ballyclog Rectory, Stewarts Town. Very poor, pale photograph of a very fine tree of the Willow Oak (Quercus Phellos).

Among the other competitors were—

Mr. S. Griffin, Lucerne Villa, Wilton Road, Salisbury. Small and not good photographs of very interesting subjects. Climbers round windows pretty, but not clear, owing to photograph embracing too much.

Mr. A. Hatcher, gardener, Heronden Hall, Tenterden. Pretty climbers and Roses, but photographs too small and not good in colour.

Mr. Aug. W. Orr, 29, Waltham Terrace, Blackrock, Dublin. "Bowers," &c.; the photographs, unfortunately, bad and obscure, though the subjects seem novel and interesting, as far as we can judge.

ROSES.

Standard Roses.—If anyone wants to see the effect of planting standard Roses in open places, they have only to look at some beds at each end of the Palm house at Kew; there they will see the evil of the practice, and have the opportunity of contrasting them with Bush Roses in beds near. "A. B. T." says standards will do in holes cut out in turf. They may drag out a miserable existence there for a great number of years, but a standard which does not annually send out four or five shoots as thick as a man's little finger, and four or five feet long, cannot be said to grow, it only exists. As, however, the president of the National Rose Society said in the *Garden* of July 18th, standards have long been condemned by every one who understands the cultivation of the Rose, it is needless to say anything further against them.—J. D.

Rose, Empress of India.—On p. 326 "J. C. C." twice over recommends Empress of India as a good garden Rose. In one place he says, "It is certainly a beautiful garden Rose." I have had it in my garden for four seasons, and though there are always plenty of beautiful buds, I have never had one to open. I have two dwarf plants on the Manetti, and one on standard Brier, but in all cases they behave the same. The petals come loose instead of the bud opening. In the same beds I have had beautiful specimens of Louis Van Houtte, Marie Beaumann, La France, Le Havre, &c. If anyone can tell me how to get the Empress of India to open I shall be glad. Speaking of Roses, can anyone tell me the difference between Jean Diaband and Abel Carrière? I have them growing side by side, and I cannot see the slightest difference. I, perhaps, ought to say that my garden is in East Yorkshire on the Wolds.—R. V.

14270.—**Cleaning lawn tennis balls.**—Rub them on Cocoa-nut matting. The reverse side of a door-mat answers well, being stiffer and harder than the upper side. —E. F. V.

13942.—**Lawn mower.**—I have had a 16-inch Excelsior lawn mower in use for the last four years, and one man can easily work it. I have constantly used it myself, and speak from my own personal experience.—Cymro.

OUR READERS' ILLUSTRATIONS.

STEPS IN ROCK GARDEN.

Our little woodcut shows how every step in a garden should be made the most of. People who set the necessary steps in rock gardens in hard cement can get nothing out of them but cement, of course; but steps set in soil or gravel will often contain a whole collection of charming plants in the angles. The little Violets, and Snapdragons, and Rock-foils (Saxifrages), and a number of other beautiful things, live quite happily in these corners. The engraving is of part of a photograph of a rock garden at Send Holme, Woking, sent by Mr. W. H. Leese, who says that the steps, thickly covered with alpine plants, have a very picturesque aspect.

OUTDOOR PLANTS.

REPLANTING NARCISSUS BULBS.

Having just finished the digging and replanting of some thousands of Narcissus bulbs of kinds many and various, I wish to say a few words on the subject. In July, as a general rule, Narcissus bulbs are just so many cricket balls—that is to say, both tops and roots have withered away, and you may remove and replant them at once without the slightest fear of injury. In Holland, I believe, the rule is to dig bulbs of nearly all kinds every year, and Narcissus growers at home may follow that plan with advantage whenever increase of stock is a desideratum, as well as the annual flower harvest. If, on the other hand, flowers only are desired, clumps may be left for three or four years at least unmoved without injury. What I am most anxious to make clear to amateurs, however, is the great central fact that if Narcissus bulbs are dug in July and at once replanted, they will flower quite as strongly, even if not actually more so, as if left in the ground unmoved, and that in addition bulb increase and bulb growth are alike improved by this judicious removal. On the other hand, if, as now happens very frequently, the bulbs are dug up in July or August, and are then dried and tossed about in the shops until, say, October, November, or even December, the bulbs are weakened so much that good strong bloom the first season after planting is quite out of the question. I am convinced that Narcissus bulbs cannot be dug too early after the last week in June, nor can they be planted too early after they are dug. Drying off the bulbs and keeping them out of the hands of the grower until late in autumn, as is now the rule, is a most pernicious system. Drying off bulbs is almost a necessity for trade purposes, so far as Dutch growers are concerned, but for all hardy bulbs grown at home it is not so; and when once amateur growers and large bulb buyers recognise the fact that a Narcissus bulb cannot be too soon replanted after it is dug up in July, then and then only may we hope for a trade to spring up in fresh—*i.e.*, newly dug bulbs. In too many cases the bulb salesman is only a middleman, and all he cares about is to buy as cheaply and to sell as dearly as he can; but if amateurs are wise, they will first make sure that the bulbs are grown by the man with whom they deal; and secondly, they will insist on having their orders executed as they themselves desire, when, as in the case of Narcissi, it is fairly proved that the early (July) planting of freshly dug bulbs is the best practice. I here confine my remarks to Narcissus bulbs, but the principle alluded to is applicable to many—indeed, to most—other *bonâ fide* hardy bulbs, by which I mean those which exist from year to year in our northern and midland climate without protection. I shall be glad to have the opinion and experience of other observers in this matter, but personally wish to say that I am totally opposed to the usual custom as now practised of drying off hardy bulbs and keeping them out of the ground months after the proper time of planting. I was speaking to a large bulb grower on this point the other day, and dug up some Narcissus bicolor Horsfieldi roots to convince him that at one particular season a Narcissus bulb lies in the ground without a living leaf above or a root alive below. That time is, as I have said, between the limits of June and August, some species being earlier and some later than others, but, as a rule, the proper time is in July. In Holland the bulb growers only dry off the bulbs intended for the English market, and the stock bulbs are at once replanted. In a word, all my observations and experience go to prove that the drying off of Narcissus bulbs is wrong, and that late planting is also wrong in practice, and the question now is—how long these two errors are to remain unremedied. I am sure that in the end both amateurs and the trade will be alike benefited—the one by ordering and the other by supplying freshly-dug Narcissus bulbs in July. B.

Our Readers' Illustrations: Small engraving of Steps in a Rock Garden, showing plants in the interstices of the steps. From a Photograph sent by Mr. W. H. Leese, Sunnyside, Winchester.

HARDY FLOWER BORDER NOTES.

Those who a few years back asked "Where were the flowers in August and September on hardy flower borders?" should see our borders at present. Not so many years ago we had no herbaceous plants whatever, but plenty of bedding out; now our collection fills about half-a-dozen borders 500 yards in length and proportionately broad, and this takes no account of beds and other places containing some thousands of similar subjects elsewhere. My employer has spent more on hardy plants than others have spent on Orchids, and I think with a good deal more satisfaction to all concerned, although the Orchids have not been neglected either.

Carnations are just still in bloom in the north, notwithstanding the hot weather. We have seedlings and named kinds of all sorts and sizes, and from one to six years old, the latter broad masses a yard and more across, producing quantities of flowers that are literally countless. I tried to-day to get an approximate idea of the number of expanded blooms on one old plant, but gave the task up, and still more buds were to open. I never saw Carnations look better in flower and foliage, but to know what a Carnation is really like when at its best you must have at least a three-year-old mass, then you may cut whole sheaves of flower. Some of our named kinds are about 4 feet high—too tall by half, as they require too much staking. The seedlings are for the most part dwarf.

Phloxes are the next most conspicuous subject at present. We got tired of the names of these, as we found many were nearly alike, and some not very first-rate, so we named them according to the colours—crimson, pink, white, purple, rose, lilac, magenta, and so on, and then we knew what we were planting, and how they would look. What a rich and varied display these would make alone! It is needless propagating Phloxes by cuttings; divide the roots and plant in good soil if you wish for good heads of bloom. The manuring of our herbaceous borders is a consideration now, and hence they get very little, and when they get that it is only a mulching in November of some waste soil or manure. Yet everything is strong and looks well.

Delphiniums began to flower in June this year, and still produce later side sprays, but the main spikes are over. They have done well this season, and were never seen so strong and tall, although on the same spot for some years.

Gaillardia hybrida splendens and Coreopsis are fine autumn flowerers, and continue in perfection long and well. The first is not very hardy here, as the roots rot in winter and have to be lifted and replanted in spring. It behaves something like Tarragon if left too long in one place. Harpalium rigidum has the same fault. This is a fine herbaceous Sunflower, but with us it is quite eclipsed this year by the new types of annual Sunflowers, which are magnificent.

Senecio pulcher has turned out to be one of the biggest cheats we have tried, growing stiffly and slowly, and pushing a miserable shoot and a few buds up that never expand—marked for the rubbish heap.

The Tobacco Plant (annual) will, I think, prove one of the very best sweet-scented plants for the hardy garden. In the evening it scents the garden all round near where it grows, and it grows like a weed outdoors in seasons like the present, even in our cool region. I have no doubt it will grow and flower, more or less successfully, outdoors in ordinary seasons in most parts of all the three kingdoms.

Marigold Meteor.—This new and very pretty variety of the common pot Marigold I consider a gem in its way. Easily raised from seed sown out-of-doors it is in bloom in July, and continues to flower in perfection till frost destroys it, and it takes a smart frost to do that. Every plant comes true and double, and is of a pleasing cream colour.

Spiræa filipendula (double).—This is in autumn what the Spiræa japonica is in early summer, only it keeps flowering much longer. I am not sure, however, that the common Meadow Sweet is not quite as good, if not better. Its plumes are taller and larger, and it is a true wild garden subject. I landed in a grand patch of this lately when fishing in the north on a river-side. The panicles were magnificent in size and purity of colour. It was growing in a deep, damp black soil which must be often under water.

Cape Hyacinth.—This is another overpraised subject. Five hundred or a thousand of it planted in the mass look well enough, but singly it is not striking to look at. It is, however, hardy enough, even in unfavourable districts.

Gladiolus Colvillei.—I cannot speak from experience yet of The Bride Gladiolus, which, I suppose, belongs to this section, but if it be as good as the purple Colvillei, as sent to me, and as early a bloomer, it will be good. This Gladiolus has been out here for several years, blooms about the end of June or July, is of a rich crimson-purple, and one of the most noticeable plants of the season. It is well worth planting extensively.

Pansies and Violas.—These are in fine flower at present. Picking the flowers off early in the season when they are not wanted, and the seed-pods as fast as they form later on, helps greatly to prolong the season of bloom and keeps the plants in vigour. Do as one may, however, the named florists' Pansies deteriorate in size and general quality towards autumn; and if allowed to grow and flower at will two years in succession, the varieties are not recognisable. I noticed one very prettily marked variety last year, which had originally fine large flowers, that had become very little better than the common tricolor of the fields when grown in good soil. Violas have more stamina in them, and are more enduring.

The general growth of many flowering plants and Roses is this year very fine. I have never seen the foliage of Roses so fine, clean, and large. I have seen leaves lately of the Duke of Edinburgh that were simply enormous. Three point leaves nearly covered the whole of a man's hand, and the blooms were proportionately good. There is every prospect, too, of growth being well matured, so that prospects for another year are so far good. S.

14219.—**Ink for labels.**—I have always found an ink termed "Garden Label Ink, A.E.L.," prepared by Bainbridge and Co., 60, Leather Lane, Holborn, very useful for labels, either wood or zinc, which are exposed to weather, as it is almost indestructable.—C. M. P.

HARDY PLANTS FOR AUTUMN FLOWERING.

To all who have helped in any way to the revival of hardy plant culture, a walk through any suburban district, sufficiently removed from the London smoke to allow plants to grown in a free and healthy manner, must give the satisfactory assurance that they have not worked in vain. In nearly all gardens there are many hardy plants, and in nearly the whole of these gardens bedding is conspicuous by its absence, and where it is still carried out in many instances it is excusable, because the whole plan of the garden would have to be altered to allow of effective decoration in any other way. It is very questionable if this great change could have been carried out had it not been for the fact that very few people like stiff and formal arrangements of flowers, but much prefer them growing in a free and graceful way; and once relieved of the fear of being unlike their neighbours, or out of the fashion, they have begun to exercise their own taste in the arrangement of their gardens, the result being freedom and variety, and the allowing of plants to develop their own natural habits. I was much impressed lately by the evidences of this greater freedom in garden arrangement, and especially in the case of one garden which had evidently been laid out in the most formal style for bedding only, but in which all the beds were filled with hardy plants and annuals, the few Geraniums used being large old plants—very showy these looked, each with as much bloom on it as a flat bed 4 feet across. Several gardens I have seen in which all the arrangements were as good as the plants grown would allow them to be. One garden, that of a medical man, in the quiet little country town of Chipping Ongar, in Essex, is in all its arrangements about as near perfection as possible, everything well grown and prettily arranged. Unfortunately the plan of the garden and the placing of the house are unusual; the entrance being at one end, and the largest part of the garden beyond the house, so that the house faces neither the road nor the principal part of the garden, and has only a comparatively narrow strip of garden in front of it. This garden, so nearly perfect, illustrates one little point which deserves the attention of all interested in hardy plants, and shall form the text of a few remarks.

This is a grand year for bedding plants; the weather has just suited them. Geraniums, Lobelias, and Calceolarias are covered with bloom, and Petunias are splendid. On the contrary, this is just the kind of season to disclose the weak points in the culture of hardy plants. Given a moist, cool spring, and a late summer, and badly-grown plants will still look respectable; but a dry spring, followed by a hot and parching summer, discloses every error in cultivation, the index being a poor, early, and short-lived bloom. Early in September most hardy plants should be in their blooming places. Late-planted, and especially spring-planted, things are rushed into bloom in a season like this before they have rooted sufficiently to make good flowers. The same fate overtakes plants which are overcrowded, or neglected, or which have not a sufficiently deep and rich soil to root in. Even with the best cultivation, however, there comes a time when the bloom of the early and midsummer plants is past, and then, unless sufficient provision has been made for autumn flowers, the beauty of the hardy beds and borders is over for the year. Very few hardy plants belonging to temperate regions bloom in autumn; the use of flowers in the economy of nature is to secure the production of seeds, and these seeds have to ripen, sow themselves, and become plants, as a rule, before winter. It follows that while from March to the end of July there is an abundance of floral material for garden decoration, in the last months of the year we have to use to a great extent the plants of more genial climates. A considerable proportion of the late bloom in a border or bed of hardy plants should consist of

Half-hardy annuals.—To raise a stock of these in an ordinary greenhouse or hot bed is a very simple matter. In the milder climate of these islands, where a number of hardy annuals can be trusted to stand the winter in most seasons, the best system to adopt is to sow plenty of these in autumn, and plant plenty of spring Tulips, placing these with the definite intention of following them with half-hardy annuals for late flowering. Nemophilas and Silenes can be followed by Phlox Drummondi; Indian and Japanese Pinks, Portulacas, and seedling Verbenas and Tulips can be succeeded by Begonias, Petunias, Zinnias, Asters, and Stocks. With such bulbs as Scillas, Crocus, Snowdrops, and Narcissi, and such plants as Pansies and Primroses, a good way is to plant in circles with a space of about 18 inches in the centre of each circle; this allows of these bulbs being followed by plants out of pots. This successional planting does not necessitate blanks, as that of bedding does, as it need not be all done at the same time.

There are many hardy plants, however, which flower in autumn, and a goodly number of these should be planted amongst the earlier blooming things. Kniphofias, Tritomas, or Torch Lilies, are conspicuous plants for late flowering, either isolated in beds on turf, or in groups among the dwarfer plants in the front of a border where they can stand up clear of anything else. Sparaxis pulcherrima is a fine distinct plant for the south, which should be planted in groups; it has Rush-like leaves 5 or 6 feet high, and spikes of drooping, bell-like flowers of all shades of pink and rose between white and crimson. The Tiger Iris is very showy in the front of borders. Tigridia Pavonia is the best kind, with bright scarlet flowers 5 inches across. It requires a well manured soil and plenty of moisture, and likes a good loam. Anemone japonica should be in every garden in quantity; it is one of our finest hardy plants. The white kind, Honorine Joubert, and the hybrid A. japonica rosea, are both good. A light, rich soil, containing plenty of rotted turf and leaf-mould, suits these plants best, and they also prefer a half-shady place, such as a border facing east. The habit of the plant greatly resembles our native Wood Anemone; the underground running stems are similar but larger; the principal differences are that the flower stem bears a number of flowers instead of one only; and the underground stems send up their flower stems mostly at their inner ends, so that the plant, instead of having the diffuse and spreading habit of the Wood Anemone, looks as if it formed a crown, sending up a number of flower stems. If it is taken up, however, its true habit is seen, as every flower stem springs from a distinct piece of root-stock, as in the Wood Anemone. Once a good clump is found it begins to run about. This should be planted behind dwarf plants, so that no part of the plant is hidden, as the foliage is good, and the habit of the plant picturesque. A grand plant, beginning to be well known, is Harpalium rigidum, a Sunflower of moderate size, which sends up a number of flowering shoots; it is a rambler, and, therefore, should be placed where that habit will not be objectionable. Zauschneria californica is a good plant, with orange-red flowers, height about 2 feet. Pentstemons are good August and September flowers. The florists' kinds are very showy, but are hardy only in the south. Cuttings, however, require but slight protection. There are also many fine species, such as P. barbatus, Torreyi and P. Eatoni, with scarlet flowers; and P. Jaffrayanus, P. ovatus, P. secundiflorus, and P. speciosus, with blue flowers. The florists' varieties give all shades of pink, crimson, rose, and purple. The general effect of these plants is a good deal like that of the Antirrhinum, and they require placing among plants with bold foliage. Early-flowering Chrysanthemums are far too little known. They require as good cultivation as the show kinds, and with that they form solid masses of flower from the beginning of August until fruit comes.

Of autumn-flowering bulbs there are the Tiger Lilies, Watsonias, Schizostylis coccinea, Zephyranthes candida, and the Colchicums, which rival in autumn the Crocus of the spring. Fine August flowering bulbs with blue flowers are the Agapanthus and the Quamash (Camassia esculenta). Those who do not mind a little extra annual expense may beautify their borders late in the year with clumps of Guernsey and Belladonna Lilies. Delphiniums and Pyrethrums, if promptly cut down after flowering in spring, and well top-dressed and watered in summer,

will flower again in autumn. Seedling Pansies flower fairly well in autumn. Gladiolus Brenchleyensis, when well grown in suitable soil, triples itself every year, like the Crocus, and if some of the spare bulbs are planted out in May they will flower late.

The best annuals for late flowering are the half-hardy ones. Phlox Drummondi is a host in itself; Indian and Japanese Pinks are equally showy; Zinnias, Asters, and Ten-week Stocks, Schizanthuses, and Salpiglossis are all showy and useful. Portulacas and Calandrinias are good for hot, dry places. Grammanthes gentianoides and Sedum cœruleum are very dwarf for rockwork or front lines. Whitlavia gloxinioides is a good late blooming annual, and the Indian and Italian Pimpernels are easily raised from seed, and flower well in autumn. Annual Chrysanthemums, Coreopsis, Gaillardias, Sphenogynes, and Arctotis breviscapa are all good late bloomers. Antirrhinums, raised from seed in spring, bloom well in autumn; Tropæolums are well known as autumn bloomers; of tender plants most useful are old plants of Pelargoniums, Fuchsias, tuberous Begonias, Cannas, Petunias, and Salvia patens—Dahlias can, of course, be used *ad libitum*. The front parts of borders should be mainly filled with dwarf evergreen plants; most of these flower in spring, but a considerable amount of beauty can be got by contrasting their leaves. Sedum spurium is a plant with leaves tipped with russet and red. It unfortunately will not remain a small tuft, as it runs about and sends out shoots which cross and re-cross and form a mat which becomes covered with rosettes of leaves; it is best allowed to cover a few square yards in a mass. Arabis albida variegata is better for borders than the ordinary kind; it is not so robust a grower, is more dwarf, and does not spread so quickly, the creamy-edged leaves have a bright effect all the year. The Aubrietias and Thrifts are bright when in flower and neat when out of it. Erinus alpinus is a diminutive plant easily raised from seed; it is barely an inch high, and covers itself with small purple flowers on stems a little over an inch high. There is a white variety; this does very well in dry soils, the rosettes of leaves are only about 3 inches across, so that it will form a close turf. Dwarf Achilleas, Saxifrages, Sedums, and Sempervivums may be used to form varied tufts of leafage. Buttresses and clumps of stones half-sunk in the soil can be used to break the monotony of breadths of these dwarf plants; on these stones can be placed the creeping Phloxes and the Sun Roses. Gentiana acaulis is a beautiful dwarf plant for a damp soil, and can be grown in drier soils if carefully watered. Among these dwarf plants can be placed clumps of Scillas, Snowdrops, Jonquils, Parrot Tulips, Colchicums, and the dwarfer Lilies and Gladioli. These bulbs will find their way up through the carpet of evergreen dwarf plants.

The only fault I have been able to find with this system of carpeting the front of borders with dwarf evergreen plants is a slight want of yellow flowers. Alyssum saxatile compactum is a sheet of bloom while it lasts, but something is wanted before then. The common Primrose and the common Cowslip can be raised from seed by hundreds, and give just the effect required. Few native plants improve so much under cultivation as the common Cowslip; diminutive seedlings quickly become large plants, carrying many trusses of bloom. The Oxlip is also very handsome, but still better is the Giant Polyanthus. I think the system thus sketched out will be found to be the best way of getting the longest period of bloom and the showiest effect out of hardy flowers. The front part of the borders will be the finest show in spring; the middle region in early summer; while the back of the borders may contain most autumn flowering plants, helped by the annuals, and tender plants in the middle and near the front. More attention should be paid to autumnal flowering Roses—Teas, Chinas, and Bourbons—with such perpetuals as flower well a second time.

Very small front plots cannot be kept showy with hardy plants alone in the later months of the year. The beds in them should be made as large as possible, and every kind of spring flowering plant should be used in plenty; but for late summer and autumn flowering it is better to trust to bedding plants and annuals which produce continuous blooms. The smallness of the space necessitates this arrangement. Pyrethrum uliginosum may occupy a sheltered, partially-shaded corner, and a clump or two of Anemone japonica may be planted; but with the exception of some good clumps of Lilies, Pinks, and Carnations, Gladioli, Phloxes, and pleuty of Chrysanthemums, early and late, it will be found best to trust to Geraniums, Fuchsias, Petunias, Salvia patens, Phlox Drummondi, and similar things for summer. This will allow of perfect masses of the spring flowers being planted, which need not be moved until they want dividing, as the summer plants can follow Tulips and autumn-sown annuals as already suggested. By this means a front plot can have all the neatness of bedding, and all the brilliancy of the summer bedders, without any stiffness or formality, and can have such a show of Christmas Roses, Hepaticas, Scillas, Daisies, Anemones, Primroses, Polyanthuses, spring Phloxes, Arabis, Aubrietias, Alyssum, Pansies, Daffodils, and Narcissi in the early spring months as can never be seen with bedding, and these can be followed by Pinks, Pyrethrums, Delphiniums, Poppies, and Irises, before the summer bedders come into bloom. J. D.

The Woolly Androsace (A. lanuginosa).—This lovely species, perhaps the most useful of the genus, has a straggling habit; this, however, need not detract from its other fine qualities, but may be turned to good account in two respects—viz., its flowering may be invigorated and increase readily made. Each time a flower scape is sent up, twin shoots grow at the base of it, and the common node is rather swollen; these twin shoots in a short time each produce a scape and twin shoots again, and so the plant straggles on. By taking off the leaves as the base of each scape, lancing the underside of the thick joint and putting in a peg, the plant becomes stayed, looks neater, and roots from the pegged node. Though this plant does well on rockwork, I prefer to grow it in a deep pan for several reasons. When in a pan of good size, the pegging can be done better than in the harder and stonier stuff in the rockery; then during unfavourable weather it can readily be placed under cover; lastly, under any circumstances, this hairy plant can be kept in better health under glass than elsewhere, from the occurrence of the October fogs until the following February, or March, though it is no uncommon thing to bring it through the winter quite exposed.

Anemone alpina. — This is a desirable thing in its seed state, as is also its variety sulphurea. The latter especially has monster shaggy seed heads; some of those I measured were 4½ inches in diameter. Seven of these on one plant have formed an ornament for the past two months, standing quite a foot above the ample and yet verdant foliage. These heads of awned seed are now doing duty in vases, and their effect is unique; but they will not last long, as the seed drops daily, when it is gathered and sown at once. To say nothing of the handsome habit and flowers of these Anemones, they are worth growing for their seed heads alone; the feathery substance resembles in colour the more dusky ostrich feather, and the globular tuft is mounted on a stout yellowish stalk.—W.

Cutting off seed pods.—This is a most important operation in such a dry season as the present, as the blossoms quickly fade, and the seed pods exhaust the plants, if left on for only a few days, so that the plants cease to produce buds, and the floral display is brought to a sudden termination, for no plant can go on perfecting a crop of seed and a crop of bloom as well, even if well supplied with liquid at the root. In dry weather everything favours seed bearing, and the duration of the blossoms is very brief, owing to the dryness of the atmosphere; therefore extra precautions must be taken to remove the old blooms directly they are on the wane. Plants that seed freely are the first to show the effects of a crop of old bloom; but even those that do not produce seed freely are so much improved in appearance by the removal of the old blooms that anyone who values his garden will not grudge the labour. I find single Chrysanthemums, Marigolds, Antirrhinums, and similar plants flower for months if regularly divested of their seed pods, but if this is neglected no amount of attention in other ways will make the garden gay. Seed saving should be made quite a distinct branch of horticulture to flower gardening, as the two cannot be carried on together satisfactorily.—James Groom, *Gosport, Hants.*

Stipa pennata.—This, though not a flowering plant in the strict sense of the word, plays, where freely grown, no small part in the decoration of our borders; its long awns, "like the feathers of a bird of paradise," are just now fully developed and almost ripe, and the softest breeze causes them to float and sway when hardly another sign of life is to be seen. At all times they have a pleasing and animated appearance, but it is among Carnations where this Grass gives us its best effects; the bright flowers of the Carnations, seen at a short distance off, fanned by a gauzy set of awns about their own height, appear to increased advantage. If cut now, these plumes of Grass may be utilised for indoor decoration until another year's crop is produced; but as soon as cut each spray ought to be separated until it is quite dry, otherwise several become twisted together, and in two or three days are like ropes, and, of course, quite spoiled.—W.

ACANTHUSES IN FLOWER.

Mr. Hayward sends us from Godalming a fine spike of Acanthus, which is by no means a rare thing in gardens, but which seems to have been more appreciated of late years. Its beauty of

Stately Bear's-Breech (Acanthus latifolius).

form and its stately grace are charming, especially when it is associated with stonework—a low terrace wall, or garden, or a building. We are glad to see that plants that do not shout at one with pure yellow or deep red are beginning to be a little more thought of than they used to be. We have lately seen the Acanthus in great beauty in many gardens, and perhaps this is as good a time as any to insert engravings that show its form of flower, so that many of our readers who have not it already may be tempted to get the plant.

Yellow Foxglove.—At page 309, No. 14167, in correspondence, "E. F. de S." asks where plants of Yellow Foxglove may be procured. The editorial reply is, "You will probably have to raise this plant from seed." I have an idea that in a short time I may have two or three young plants of the herbaceous variety from Southern Germany. If "E. F. de S." will send me his address, I may be the means of some small help in this matter. I do not own the yellow variety of our common Digitalis—I wish I did.—Wm. Barnard Hankey, *Oaklands, Cranleigh, Surrey.*

BEDDING OUT.

May I say a word on the bedding *v.* mixed border controversy? It seems to me, however, that it is an error to consider the two systems as competing one with the other, seeing that each is good or not precisely as it is appropriate or unappropriate to a given situation. All will doubtless agree that the mixed border is in itself more beautiful, just as a landscape is more so than a decorated door-panel, but paint the landscape on the panel, and it becomes an offence to the eye. I am inclined to think that as an accessory to the quasi-classic villa, with which the speculating builder has so abundantly blessed us, the more severe style of gardening is all that is permitted—viz., that of geometrical beds, with shrubs of formal shape, regularly placed. Much more pleasing, doubtless, is the irregular-gabled cottage, festooned with creepers, embowered in trees, and with borders of herbaceous flowers.—H. B.

—— I am a subscriber to your periodical, which affords me a pleasant half-hour's reading every Friday evening. I have been much amused and interested in watching the vicissitudes of what I may call "The battle of the borders." The valiant champions who respectively advocate the bedding-out and herbaceous systems appear to be still unweary of the strife, and in the bitterness of heart engendered by the long contest they seem inclined to reverse the process by which poets have symbolised the happiest days of men on earth, by turning their ploughshares into swords. Lord Bacon begins his essay on gardens with these words—"God Almighty first planted a garden; and, indeed, it is the purest of human pleasures," a sentiment which often recurs to me as I am contemplating my flowers; but I have never yet found myself speculating as to whether the Garden of Eden was treated on the bedding-out or herbaceous system; and surely human pleasures lose some of their purity if we allow angry party feeling to enter in. I have noticed frequent reference to art and artistic principles in the course of the controversy; will you permit me, therefore, as a professional artist, though only an amateur gardener, to say a few words? I quite agree with "J. D." that bedding-out, as commonly practised, is not artistic, seeing that all artistic effect, both in poetry and painting, depends upon variety, and monotony is necessarily destructive to it. One of the greatest pleasures I receive from my garden is to take a turn round before I begin my day's work to see what is "out"—if it was laid out entirely on the bedding-out system I should know exactly what to expect, there would be no element of surprise, and in a very short time the faces of all my flower friends would become so familiar to me that I should cease to care for them. Bedding-out, moreover, has this artistic defect, it in no way reminds one of Nature, which it is the object of art to imitate. I remember finding myself one month of May on a wide plain in the Regency of Tunis; as far as I could see was a blaze of colour, there seemed to be no Grass, only separate plants of many species in bloom; it was the most magnificent sight I ever remember to have seen, and one I shall never forgot. Now if the art of gardening is an imitative art, and it is acknowledged to be so by many writers—Lord Bacon, Sir William Temple, and Mr. Spence for instance, who laid great stress on what we have since called landscape gardening—it follows that such an effect as I saw near Tunis is what we should endeavour to reproduce, and that certainly cannot be done by the bedding-out system as usually practised, which imitates nothing but a lobster salad; and, furthermore, every man who loves his garden acquires a personal interest in his plants as individuals: he learns their peculiarities, and has observed their vicissitudes of fortune. When they were on the bed of sickness he has administered the soothing manure; when, in the exuberance of youth and health, they have been inclined to overstep the limits of decorum, he has corrected them by judicious and paternal pruning. But this can only apply to his herbaceous borders—his bedders-out he can take little interest in; they correspond with that uninteresting class of people who have been superfinely educated and made prigs of; who never do anything wrong, who are always the same, always good, and for whom we care nothing! So far, I may seem to you to be entirely an advocate of the herbaceous border, and so I am, but I do not go the length with "J. D." If I understand him rightly, he would exclude bedding-out plants entirely, which would be too great a sacrifice to make in favour of a principle. As far as my limited knowledge goes, I know of nothing that can replace the Geraniums, the Lobelias, the yellow Pyrethrums, and the Coleus. I don't see how a succession can be kept up, or a constant display of colour, without them. What I understand by artistic gardening is such an arrangement of plants as shall group them in agreeable forms, which shall also illustrate their habits of growth, and produce fine combinations of colour—this last is the great difficulty. This year, owing to inexperience, all my harmonies have been destroyed by a preponderance of yellow; I have never had enough of blue, white, or rose colour. Blue is a necessity, and it is comparatively a rare colour amongst

Spiny Bear's-Breech (Acanthus spinosus).
(See page 352.)

flowers; it is tolerably plentiful in spring, but when Squills, Hyacinths, and Forget-me-nots are over, there comes a gap before the Larkspurs are in full bloom; then, as it appears to me Lobelias are invaluable, and, in the same way, the different shades of scarlet presented by Geraniums are not commonly found. They bloom all through the summer and supply the key-note which unites and enhances the harmony of colour. In fact, sir, it appears to me that to attain the perfection of artistic gardening, we must unite the two systems; herbaceous plants should be the mainstay—experience will enable us to foresee what will be the effect of our borders in different seasons, while bedding-out plants will enable us to supply deficiencies and enhance that effect. R. A.

—— Would "J. D." be willing to let a lady write to him for some advice, as she is one wishing to arrange a new garden so as to have hardy plants arranged in such a manner that she may have some flowers the year through? —S. M. W.

White Violets.—I beg to ask readers of Gardening what I can do to make white scented Violets bloom. I brought them from Sussex, where they were growing wild, and planted them both in good garden soil, and also in something more like natural conditions—under a Privet hedge. In all situations the plants have grown and spread monstrously, densely abundant leaves, and larger than wild. They have also produced seeds abundantly, but never one flower. What is the reason? And can anything be done? This is a hilly district of north-east Cheshire. As to conditions, I may add that they flower abundantly transplanted into gardens in Sussex, and as to climate, that they bloom wild about Chesterfield (North Derbyshire).—George Parsons.

Hardy flowers in the parks.—We notice with pleasure a great many of the old Chelsea Clove and other Carnations in Hyde Park, and also Lilies and really good kinds of hardy plants; but the growth is not what could be desired owing to the plants being kept in the shade often, and having shrubs within reach of their roots. They are dried up and poor. These plants, from their number, must cost a great deal of money, and occupy the time of a number of men. We think that very excellent results would be got if the same number of plants were placed together near the eye; for example, at the end of the Serpentine there is a green place where there are no trees, but simply single tufts of fine-foliaged plants here and there. In such a position as that bold beds of Carnations and similar plants may be put with good effect and excellent results as regards cultivation. Let them be put out in the sun and given the same fair chance as the bedding plants, and the results will be no less satisfactory.

REPLIES.

14249.—**Propagating Bracken.**—Your correspondent, "R. F. S.," cannot do better than follow the first part of the Editor's advice, and secure sods from an old and thick plantation. I had to do this on one occasion, and we went with a waggon and brought home a load of large sods cut out from 6 inches to 8 inches deep, and about 1 foot square, and these sods threw up fronds in sufficient numbers to make quite a thick plantation the first year (as they were put in a yard apart from centre to centre). They were quite strong, and grown into a thicket the third year.—J. C. C.

14239.—**Planting under trees.**—If you only want a carpet of green under the trees the common green Ivy will suit you better than anything else. If you want to fill the space with evergreen shrubs, the following will suit you: Mahonia aquifolia, green Box, green Yew, green-leaved Euonymus, Butcher's Broom, Laurustinus, and Aucuba japonica, and the common and Portugal Laurel, if more are wanted. We dealt with just such a case a few years ago, when we planted the above-named subjects, and we are perfectly satisfied with the result. But when the things were planted we took a good bit of trouble to prepare the ground, as far as the many roots of the trees which it contained would permit, with a light mattock, and spade holes were made about 9 inches deep and the surface roots removed, and as the trees were large no injury was done to them. The roots were then put in and the hole filled up with some fresh soil brought to the spot on purpose. Our plants were well-rooted dwarf specimens, with a fair number of branches, and they were trodden well in, and not a plant died. The planting should be done early in October.—J. C. C.

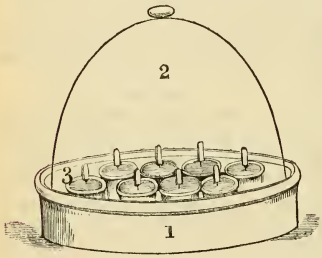
14222.—**Lavender and Rose water.**—Lavender water: Oil of Lavender, 2 drachms; essence of bergamot, ditto; essence of ambergris, 60 drops; mixed in a pint of the best rectified spirits of wine.—Ockley, *Surrey.*

Removing old hard putty.—As the time will soon be coming round when it will be necessary to see that all frames, &c., are sound, and to repair those that are not, and as all your present readers may not possess, as I do, your journal from the very first, allow me to quote from Vol. iii., page 614: "If a hot iron be applied to the putty it can be scraped off, and the glass can be removed without breaking. —G. P." Having tried this myself, I can strongly recommend the method to any who may have occasion to replace broken glass. I use my soldering bit.—Ferndale the First.

HOUSE & WINDOW GARDENING.

HOW TO RAISE FERNS FROM SPORES.

This plan, of which I give a sketch, has been in use by myself for many years, and most successfully. I have at various times given it to growers, but still I hear of difficulties. Procure a good sized bell-glass and an earthenware pan without any holes for drainage. Prepare a number of small pots, all filled for sowing, place them inside the pan, and fit the glass over them so that it takes all in easily. Take these filled small pots out of the pan, place them on the ground, and well water them with boiling water to destroy all animal and vegetable life, and allow them to get perfectly cold; use a fine rose. Then, taking each small pot separately, sow the spores on the surface and label them; do this with the whole number, and then place them in the pan under the bell-glass. This had better be done in a room, so that nothing foreign can grow inside. Having arranged the pots and placed the glass over them—it should fit down upon the pan with ease—take a clean sponge, and tearing it up pack the pieces round the outside of the glass, and touching the inner side of the pan all round. Water this with cold boiled water, so that the sponge is saturated. Do this whenever required, and always use water that has been boiled. At the end of six weeks or so the prothallus will perhaps appear; it may be, not



1, pan; 2, bell-glass; 3, small pots and labels.

until a week or two later; perhaps from unforeseen circumstances not for three months. Slowly these will begin to show themselves as young Ferns, and most interesting it is to watch the results. As the Ferns are gradually increasing in size pass a small piece of slate under the edge of the bell-glass to admit air, and do this by very careful degrees, allowing more and more air to reach them. Never water overhead until the seedlings are acclimatised and have perfect form as Ferns, and even then water at the edges of the pots. In due time carefully prick out, and the task so interesting to watch is performed. H.

ROTTEN FRUIT.

It is sad to see how much of this is sold in London. When fruit is forbidden, as it frequently is in cholera times, it is no doubt rotten fruit that is meant, and that is harmful. In the central row, Covent Garden, we have seen a number of boxes of Tomatoes exposed in a decomposed state, though the skin was whole. The Tomato is peculiar in not showing decay so easily as other fruits and vegetables, and great quantities of it are sold and eaten in a bad state. Coming to dessert and other fruits, anyone who notices them in our great markets may see unpleasant sights. Now and then the dealer himself promptly estimates the value of some of his stock, and throws his Cherries down in the street, where they add to the now popular attractions of Covent Garden. It is to be wished that others would do so too; but, alas! in the very central row of our great fruit market it is common to see outside the good shops fruit offered in a state of decay. In Fenchurch Street we some time ago saw Peaches, marked 1s. 6d. each, which, on examination, proved to be nearly "half gone" with the mouldy decay common to the Peach. That a dealer in such a street should charge at the rate of 18s. per dozen for rotten Peaches is an exceptional case; but why should fruit dealers be allowed to sell at any price garbage that may be dangerous to health? And if this be done, as we know it is, outside of good shops (at a low and tempting price, it is true), what may we not expect in some of the poorer districts? The inspection of fruit is far from being as thorough as it should be, if inspection there be at all. Certainly decayed fruit does not call eloquent attention to itself, as fish and meat in a bad condition do; but, nevertheless, it is dangerous food, the sale of which should be forbidden and effectively controlled in times when plagues are in the air, if not at all times. In any case, those who enjoy Tomatoes with their chops in London restaurants would do well to glance at the Tomatoes, whatever they may do with the chop. This is a fruit (or vegetable, as some may prefer to call it) which can never bear long carriage, but which is brought in quantities from Spain, Portugal, and other districts in South Europe to our markets. It is abundantly sold in a bad state, the glossy skin concealing the fact from most observers, especially the many who pay no attention to what they eat. If the numerous glasshouses, pits, and frames that in our country are empty, or nearly so, during the summer months, were used, as they might be, for the growth of Tomatoes, there would be less need to bring from distant countries a wholesome esculent now steadily growing in favour.

FRUIT.

GOOSEBERRIES ON WALLS.

Fine crops of Gooseberries might be grown on walls, and all vacant places on them between the permanent trees should be filled up with them. An east wall suits them admirably, and on walls they can be better protected from birds than when growing in the usual way. By growing Gooseberries on walls two advantages are secured—first, fruit of a size suitable for tarts can be had earlier by a fortnight than on bush trees—a great gain—and the fruit when ripe will keep much longer than that produced in the ordinary way. Rain is thrown off it by the wall coping, thus keeping the ripe fruit dry, and preventing splitting and decay. It is unnecessary to cover the trees with wire netting to protect the buds from birds in spring, thereby warding off in some degree rain, which soon renders the trees liable to the attacks of red spider. When the garden here was made some five years ago we planted a quantity of Gooseberry trees of different kinds against the walls in the spaces between the permanent fruit trees. They are now 6 feet high, and every year are completely covered with fruit down to the ground. They never fail, no matter what the season may be. The young wood, which is made freely, is pruned away in summer before the fruit ripens —*i. e.*, with the exception of the leading shoots —and this assists maturation by admitting the sun's rays freely among the fruit. Gooseberries from walls, we think, too, are of better flavour than those from bushes. Keeping small birds off the buds in spring is a great advantage. Some time before Christmas the trees are pruned, and in doing this we leave as much young wood as possible without overcrowding; other shoots we cut in quite close with the exception of leaders, from which we just remove the extreme points. The branches left are laid in quite thickly, say 4 inches apart. We then mix lime, soot, and clay to the consistency of paint; some grease or anything of the kind from the kitchen is then melted over a fire, and to this we add the other ingredients when hot. With this mixture we paint all the branches, covering them completely, buds and all. To some this may seem a troublesome matter, entailing a large amount of time where there are large numbers of trees to operate on, but the results well repay us. Some recommend lime only applied with a syringe, but that does not adhere sufficiently. The frosts and rains of winter wash it off, and by adding the grease and clay this is remedied. It does not wash off before the trees are safe from the attacks of birds, and with caterpillars we are seldom troubled; if a few make their appearance a dose of hellebore powder soon settles them. We sprinkle a little powder over the parts affected in the evening, and the following morning we thoroughly wash the trees with clear water applied with the garden engine. This cleanses them for the season. The stems of our trees, too, are never affected by Moss, such as one often sees on trees not treated in the way described. This we attribute to the annual painting. Our bush trees are also all painted, but we do not summer-prune them, as they do not make as much wood as those growing against the walls. They bear heavy crops annually—so heavy as to require supports to keep the fruit off the ground. We dig in a small quantity of manure about the roots once in two years, as we find them to crop and grow well enough without annual manuring. Our Red Currants in the quarters of the kitchen garden we paint in the same way as the Gooseberries. They are trees with a clean stem of about 15 inches long; each tree consists of from six to ten branches, which are kept closely spurred in. The branches are allowed to grow about 6 feet high; by having so few branches to each tree, and pruning the young shoots in summer when the fruit commences to colour, they get plenty of sun and air, which assists the ripening of the wood—a great point in the production of next year's crop. Under this treatment the branches become clothed very thickly from top to bottom with fruit. An advantage gained by cutting away the young growth preparatory to ripening is that the rains clear the fruit of honeydew which sometimes affects them.

Bishop's Waltham. E. M.

WHAT IS THE CAUSE OF UNFRUITFULNESS IN FRUIT TREES?

In a local paper I saw an extract from a contemporary, which stated that, there being a reciprocal action between the roots and the branches, the growth of superfluous wood, through neglect of summer pruning, caused a corresponding extension of the roots which went downwards in uncongenial soil, and unfruitfulness was the result. This theory on the surface looks very plausible, but I fear it will not bear critical examination. For if the roots have sufficient space to extend horizontally, why should the growth of shoots from this neglect cause the roots to go downwards any more than the natural growth of a standard from a small to a large tree? Nature has provided the roots of plants with the disposition, as it were, to seek good and shun evil. We see this tendency manifested where they avoid a noxious substance placed in the soil. It seems, therefore, unlikely that a plant would choose to send its roots downwards to bring on a constitutional state that defeated the end of its existence. Nature's great care and object is the preservation of the species. In all her devices for the furtherance of her object she never errs. So as long as the pomologist and orchardist have the same ends in view as she they might follow her as an unerring guide. Her principal means for the prosecution of her purpose are vigour of growth combined with fruitfulness in the individual. This she attains by the simple process of the "selection of the fittest." She gives her subjects vigour of growth that they might, so to speak, successfully combat with and overtop their antagonists who are struggling with them for room to exist. But as soon as there comes a sudden check to a plant's growth she makes haste, by causing it to go to seed, to make provision for the perpetuation of its kind. In pot culture we see the same principle exemplified. As soon as the plant gets pot-bound it begins to flower. When the orchardist, who is in a hurry to realise results, resorts to root-pruning, he too often permanently dwarfs his trees, and thus, for a small present gain, sacrifices a large future advantage. Root-pruning, then, produces fruitfulness by giving a check to the growth of the tree, through cutting off and reducing the supply of nutriment, and, therefore, the flow of sap to the tissues. Ringing, double grafting, the application of ligatures, and the depression of the branches act in the same way. When the roots are lifted and brought near the surface the effect is greater and more lasting than when they are merely severed, as it takes longer for the root fibres to reach the depth that was occupied before. After the operation the tree appears to have more fibrous roots than before, but this is more apparent than real—they, now occupying a much smaller space than before, become more manifest. It should be remembered that it is

not the roots themselves but the spongules at the end of the root fibres that extract the nutriment from the soil, the office of the roots being to secure the tree in its position, and to act as conduits for the conveyance of the sap. With respect to the received opinion that the coldness of the subsoil is a cause of unfruitfulness, we should remember that its mean daily temperature in the spring, when the fruit is setting, is higher than that of the surface, more especially so where the ground is shaded by trees. Where the forest trees on the same subsoil are vigorous and seed-bearing, and, indeed, fruit trees of the same kind, but of good bearing varieties, are fruitful and doing well all around, what is there to warrant us in coming to the conclusion that the barren tree is rendered so through its roots having gone down into an uncongenial soil? We might dig down and see that the top actually goes deep into the subsoil, but without having examined the roots of the fruitful ones how can we come to a logical conclusion as to the part this circumstance acts in producing barrenness? When we consider that (without root pruning) if the tree be headed down and regrafted with one of the fruitful varieties, it is more than likely it also would become fruitful, the inconsistency of coming to such a conclusion becomes apparent. Again, as the shy-bearing and the sure-bearing varieties are all grafted on the same kind of stock, are we to suppose that the former has long roots that enter deep into the subsoil, and that the latter has short fibrous roots that remain near the surface? If so, we must imagine that the scion has the power to control the production and the direction of the roots of the stock on which it is grafted. Nor can we see any geological reason why the land should deteriorate as it goes downward. It is being continually worn down by denudation; what is now surface soil was once subsoil, and what is now subsoil will some day be surface soil. How often in dry weather, when the vegetable crops near have been flagging for want of sufficient moisture, have we seen large fruit trees heavily laden with fruit, dug all around and close up to their boles without their showing the least signs of distress. Compensation appears to be made to the tree, for its having its half-starved roots near the surface destroyed, by the soil, that has had its continuity with that where the deeper roots are situated broken, acting as a mulch to the latter, preventing the upward rise and evaporation of moisture. If the principle I have ventured to question is perfectly sound, then no harm can be done, for to dispute a truth (especially one that is generally admitted) is productive of good instead of evil. It causes a search to be made for, and an examination to be made of, the original grounds of belief.

L. C. K.

14237.—**Gooseberries.**—The following is a list of good sorts which I have just coming into bearing in Cardiganshire, having been planted three years:—*Red:* Red Champagne, Rifleman, Keen's Seedling, Red Warrington. *Yellow:* Yellow Champagne, Leader, Gipsy Queen, Catherina, Moreton Hero, Gunner, Broom Girl, Leveller. *Green:* Green River, Jolly Angler, Pitmaston Greengage, Langley Green, Thumper, Telegraph, Green Overall, Green Walnut, Green Gascoigne. *White:* Abraham Newland, Princess Royal, Whitesmith. They are planted 6 feet apart. They were probably from two to three years old when I had them.—Cymro.

14234.—**Pruning Black Currants.**—Cut back half the number of your trees to within 1 foot of the stem this year; next year treat the others in the same way. Do the cutting back in November, and then take off the surface soil 3 inches deep, and lay over the roots a layer of good strong farmyard manure, and put the soil back again. Black Currants like a cool, strong soil; therefore cow manure should be preferred for them.—J. C. C.

— As they bear well it would be a pity to do away with them, as it would be from two or three years before a fair crop would be gathered. Cut them well back in the winter.—Cymro.

13938.—**How to build a greenhouse.**—Articles on this subject, with working drawings and plans, will be found in "Carpentry and Joinery for Amateurs," published at 170, Strand, W.C.; also in "Every Man his own Mechanic," Ward and Lock; and in part 5 of "Amateur Work," same publishers. The article in the first-named book refers to a lean-to house, and if that is what is required, a better guide to building it could not be found.—North Kent.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

14335.—**Tulips.**—Will any grower of the flower tell me how long a Tulip takes to come to perfection from the seed?—Weekly Subscriber.

14336.—**Cutting down Laurustinus.**—What is the best time for cutting back these shrubs without spoiling the next season's bloom?—E. G. Culverwell, *Howth.*

14337.—**Best Roses for Durham.**—Will some reader kindly say what are the best Rose trees to be grown in a garden which gets the north winds?—Amateur, *Durham.*

14338.—**Pumpkins turning yellow.**—Several of my Pumpkins turn yellow and drop off before the flowers have expanded. Will any grower kindly tell me the reason for it?—Young Gardener, *Neath.*

14339.—**Propagating Double Nasturtiums.**—Will any reader tell me how to propagate the Double Nasturtiums? Mine are very fine; from small plants bought of a nurseryman.—Aquaria, *Berks.*

14340.—**Window plant.**—Will "J. C. B.," or any other correspondent, kindly tell me how Hyacinths, Tulips, Polyanthus Narcissus, and Crocus can be grown successfully as window plants?—Jno. M. M., *Pontypool.*

14341.—**Best Strawberries.**—Will any reader inform me what are the best kinds of Strawberries to grow on a light sandy soil over chalk? An early and a late kind producing good fair-sized fruit are required.—H. C., *Beddington.*

14342.—**Grafting Cherry tree.**—We have in Surrey a young, sturdy, semi-wild Cherry tree in a good position, which I should like to graft or bud, as the case may be. Will any fruit grower tell me what I ought to do, and, as far as possible, how to do it?—F. F., *Surrey.*

14343.—**Carnations at Christmas.**—"A. Y. E., North Britain," would like to know the names of some Carnations suitable for button-holes to bloom about Christmas and Easter in a frame. *** *Seeds offer you no chance; you must buy plants grown ready for your purpose.*—Ed.

14344.—**Ferns.**—Will any reader tell me what kind of Ferns will grow in standing water? I have a fernery with a small artificial pond and want to plant some Ferns therein. Also what are the best Ferns to place in cork, with a fountain playing upon it, say an hour a day, in greenhouse?—Lancashire.

14345.—**Lamp for heating small greenhouse.**—Will anyone who has tried the experiment kindly tell me whether it is possible to heat a small greenhouse, 6 feet by 8 feet, through the winter, sufficiently well to keep my plants alive, by means of a lamp? If so, what lamp is best?—Wm. White.

14346.—**Growing Lavender and Peppermint.**—Would any reader kindly let me know through Gardening what is the best sort of Lavender to grow for making oil of Lavender, and what is the best soil to suit it? Kindly tell me also what is the best soil to grow Peppermint on for a similar purpose?—J. P.

14347.—**Onions for exhibition.**—Would any reader kindly give me instructions to grow white Spanish Spring Onions for exhibition, and how to judge whether they are good enough to take a prize? They are to be exhibited August, 1886, and the garden faces north-west, at Melinorydduu, Neath.—Young Gardener.

14348.—**Large winter Onions.**—Will any market gardener tell me how to grow the very large winter Onions which we see at the various shows? I have been told that it is done by planting small Onions, of the year before, like Shallots. I tried a few this spring, but they have all come up double and run to seed.—R. V., *Hull.*

14349.—**Peach tree.**—What Peach tree do you recommend for my orchard house? I have Barrington, Royal George, and Alexandra Noblesse, and shall be glad to know of another good tree.—Dhu-pond. *** *There is no better Peach known for flavour—which is about the main thing of importance in a Peach—than the old Noblesse.*—Ed.

14350.—**Grevillea robusta.**—Will someone kindly tell me how to treat Grevillea robusta? I have tried keeping them damp and dry; east and south-west aspect; greenhouse and sitting-room. I have no place north for them. The leaves turn to a dry, spotted state, and drop off; in fact, they exist, and that is all.—Verna, *Ramsgate.*

14351.—**Propagating Currants and Gooseberries.**—Will any fruit growers please inform me whether it is possible to propagate Currants (red, white, and black) and Gooseberries easily by means of cuttings? If so, will they please instruct me as to the manner and time of taking the slips, and the best situation to plant them in?—A. D. F., *Surrey.*

14352.—**The Gingseng tree.**—I want to get a quantity of the seed of Manchurian Ginseng tree plant. In China, where it is grown, it is called by the natives the "Man plant," on account of the shape of the root, which is bifurcated, somewhat resembling the legs of a man. If any reader will tell me where to get this seed I shall be greatly obliged.—Liverpool.

14353.—**Fruit trees not bearing.**—On a wall with western aspect I have several Plum, Peach, cherry, and Pear trees; all were planted three years since, have grown well, and been pruned by a gardener, but have not borne any fruit. During this summer they have all made a quantity of new wood. The soil is clay. Can any of your readers tell me what to do?—W. D.

14354.—**Tropæolum tricolorum not flowering**—I cannot get this Tropæolum to flower; one plant I have in a window box facing south, partly shaded, *i.e.*, up to twelve o'clock and after three o'clock; another plant is in the open with full sun all day, rather dry position. Can any reader tell me the reason? They are watered well, and the drainage is good.—J. W., *Brockley, S.E.*

14355.—**Adam's Needle not flowering.**—I have a Yucca plant (Adam's Needle), growing in a fairly sheltered garden, in a light, sandy soil, that I bought three or four years ago. Although making vigorous growth, it does not show the slightest inclination to flower. Can you account for this?—G. S. Page. *** *You do not state its age. Some Yuccas take a long time to flower.*—Ed.

14356.—**Yellow Carnation.**—Will any reader tell me why these plants do not increase, so as to enable one to take cuttings, like other kinds of Carnations?—R. G. W., *Chard.* *** *We fear that the yellow kinds are of more delicate constitution than the others, and there seems to be very little progress in the new forms towards the possession of free and fine border kinds with yellow flowers.*—Ed.

14357.—**Unfruitful Plum trees.**—We have three or four young Plum trees, which grow vigorously, but have never had more than three or four Plums each season. I have been told that it is because they are self-sown, and should have been brought into cultivation by grafting. Is this so, and had I better cut them back, so as to get young wood for grafting? Will any reader give me a few hints as to grafting?—F. F., *Surrey.*

14358.—**Chrysanthemums turning yellow.**—Will any grower of Chrysanthemums tell me the reason of mine turning yellow in pots? I have several doing well, but two are quite yellow. I have turned them out, but can see nothing amiss. Have tried soot water, but they get worse. One I found had not grown since last moved. I have grown good Chrysanthemums several years, and never saw one like these.—Lincolnshire

14359.—**Vegetables for exhibition.**—I should like to know the best kinds of the following vegetables for exhibition:—Cos and Cabbage Lettuce, Broad and Kidney Beans, red and white Celery, Pumpkins, Turnips, Parsnips, Peas, Cabbage, Rhubarb, Radish, Kidney and Round Potatoes, with instructions as to what points to attend to. They are to be exhibited August, 1886. Will any vegetable grower help me?—Young Gardener, *Neath.*

14360.—**Soil for Roses.**—Will any Rose grower tell me what is the best composition of soil for growing Roses, and to what depth a border ought to be trenched? The border has a westerly aspect, with an exposure to the south, open district, Ayrshire, Scotland.—Amateur Rosarian. *** *Make another question of your collection of Roses, and give some guidance as to your taste—whether you like Teas, or HybridPerpetuals, whites, yellows, or reds.*—Ed.

14361.—**Plum cuttings.**—Will any fruit growers kindly tell me at what season Plum cuttings should be put in? They are common Plums, not grafted, and grow from suckers generally, but I wish to try cuttings, as the suckers grow rather untidily.—H. F. C. *** *We fear our readers have very little experience of Plum trees from cuttings, and we should advise you to be content with suckers. Do you find that the Plum trees from suckers do better than grafted trees?*—Ed.

14362.—**Outdoor Cucumbers going off.**—A fortnight ago I found my plant flag, and in a few days it was quite gone. To-day I find two going in the same way, and a friend tells me he has lost four in the same way. The vines look very healthy before being attacked. The roots are good, and nothing has eaten them. Can any readers tell me the cause?—S. H. *** *We presume they are on ridges in a sunny place in the open air, but "S. H." does not say so.*—Ed.

14363.—**Cut flowers.**—I should very much like to know why in some rooms cut flowers last longer than in others. I have often put up cut flowers, and found them quite withered the next day. All our rooms face south, yet it is only in the drawing and dining-rooms that they fade so quickly, for in the rooms above the flowers all last over a week. If any reader of Gardening could answer this I should be grateful, as it is very strange that they should wither so rapidly.—F. E. S., *Norwood.*

14364.—**Planting garden.**—I have a plot of land, 70 feet by 250 feet, and am anxious to plant some fruit and ornamental trees; also some flowering shrubs, which will not require much, if any, attention, as the ground is situated in Surrey, and away from where I reside. If any reader can give me a list of what to plant, also any suggestions as to planting, I shall be obliged. Does the ground want any previous preparation, it being now meadow land, and unoultivated? The subsoil is chalky.—The Bird.

14365.—**Sweet Hybrid Perpetual Roses.**—I see that a writer in Gardening recently mentioned the old Rose, Louis XIV. I should like to know where I can get a plant or cuttings of it, as I lost mine years ago, and it seems to be out of cultivation, as I never see it mentioned in nurserymen's lists of Roses. Mine was planted on the north wall of the house, where it grew well for some years. It is one of the best dark Roses for button-holes. Perhaps "A. B. T." would kindly give me the information?—Cymro.

14366.—**Flowering Currants dying.**—What can be done for a number of these shrubs (Ribes), which seem to be dying bit by bit one after another? They are planted along with other shrubs, which are quite healthy, on sloping banks raised against the low boundary walls of the garden. The soil is light and dry, and the shrubs are somewhat crowded; yet it was a bush standing nearly clear that died first, and those which now are among the most sickly are on the bank which seems the dampest. They flowered very abundantly this spring. Will any grower tell me whether they should be cut back, and at what time?—E. G. Culverwell. *** *By way of precaution, as this is very easily grown and is so cheap, you should plant a few in some other position, that is, if you really admire the shrub very much, as we do.*—Ed.

14367.—**Paris Daisies failing.**—All my Paris Daisies which are planted out in the borders have become shrivelled, like the specimens enclosed. Could any readers tell me what is the cause of it, and suggest a remedy? The plants themselves are strong and healthy.—C. B. S., *Limerick.* *** *The shrivelled buds you send do not seem to be those of the Paris Daisy at all, but if you had sent some leaves with them we might have been able to decide. There are so many Daisies in cultivation nowadays that perhaps there may be a mistake as to the plant.*—Ed.

14368.—**Autumn Onions for exhibition.**—Would any reader kindly answer the following questions on making an Onion bed? The Onions are now sown; I want to transplant them for exhibition. Would a piece of land where Potatoes, or Cabbages, or where Onions have been three years following, be best, and should I dig it flat, ridge it, or leave it as it is, and would soot or salt manure be best put in now or in spring? Could I use anything to help the growth during the summer? When is the best time to plant?—Young Gardener.

14369.—**Regulating temperature of greenhouse and fernery.**—I have built a glasshouse in a recess facing south; it gets about four hours' sun in the day. It is raised from the ground to a level with my sitting-room window, and has a wood floor. It measures 10 feet across the front, and 8 feet deep, and 9 feet high at the highest point. I find it gets very dry and hot whilst the sun is upon it, and very soon gets cool. Will some reader of Gardening kindly advise me as to regulating the temperature, and the best means of warming it in the winter?—Lancashire.

14370.—**Marvel of Peru.**—In the spring I bought some Marvel of Peru tubers, just shooting out. I kept the plants in a cold frame until June, and then planted them out in the open ground. They are now full of buds, but the blooms do not expand; they wither away. I should be glad if some one would tell me how to treat the same during summer and winter. The soil is very heavy and clay.—H. R., *Bucks.* *** *We have never found any difficulty with Marvel of Peru in the London district, putting out the tubers in spring, and the plants flowered abundantly in autumn.*—Ed.

14371.—**Peaches and Nectarines cracking.**—Will any Peach grower kindly tell me the reason of some of my Peaches and Nectarines cracking? I have a large orchard house, with the trees in pots round both sides, and in the earth up the middle, all standards, no artificial heat. They are syringed twice a day, about 6 30 in the morning and 4.30 at night, and given liquid manure twice a week. They are large trees, only some of the Peach trees split their fruit, and it is the same with the Nectarines; they have a very rusty look about them. The house is given plenty of air in the day and shut up after syringing at night.—Brook.

14372.—**Bedding Geraniums.**—Would some reader of Gardening kindly point out wherein I erred in my treatment of my bedding Geraniums last year? In the latter part of September I dug them up, and, after shortening the longest roots and taking off the tops for cuttings, I planted them in boxes, watering them well, and putting on a shelf in the greenhouse. Nineteen out of every twenty died, while the cuttings in the same house struck and did well. No heat was put on until frost came. I should be much obliged for any advice, as the few old ones I did save have bloomed so much better than the cuttings.—G. H. E., *Netherton, Yorks.*

14373.—**Plant stands for conservatory.**—What kind of plant stands do you recommend in a prettily tiled conservatory, 33 feet by 24 feet, and very high, with a narrow strip of soil for climbers all round? Drawing-room window centre of one end, opposite door on to lawn at the other. This seems to make it desirable to keep the centre open. Plants do well on both sides, as it is wide and light, but one side is against house wall.—S. F. P. *** *So far as we can judge from the letter the best plan would be to dispose the plants without a stand at all. Put tall plants on the tiled floor itself, in groups. Ugliness and plant stands are closely allied.*—Ed.

14374.—**Laying out garden.**—I have come into possession of a garden in a country town in north Yorkshire. It is 90 feet in length (east to west), 16 feet north to south; is walled round, north wall 8 feet high, south wall 5 feet. Am building a greenhouse (lean-to) at east end, 15 feet long, 11 feet broad. I wish to grow vines and flowers. A border of Ferns exists under the south wall; then a walk, leaving 11 feet by 74 feet to grow flowers. The soil is fairly good, brown, and rather heavy. Will any brother amateur give me an idea how to arrange it to best advantage? Am very fond of Roses and Carnations, of both of which I have some very good specimens, and should like some nice beds.—G. N. S., *Yorkshire.*

14375.—**A window conservatory.**—Having read that interesting article on window conservatories in your paper (No. 332) of the July 10, I seem to have caught the infection from your enthusiastic correspondent, and now wish above all things such an arrangement as he describes so plainly. As it is, I suppose, too far on in the season for me to have any great display of blooming flowers, would "J. F. R.," or any other correspondent, inform me what plants would be suitable for me to begin with now? I have two spare windows, both looking due south; one of the windows pertains to a small room, little more than the breadth of the window, and I have been thinking I might grow a few good plants in it. Plants recommended should not be of the most costly kind, but such as would suit the pocket of an average working man, to which class I belong.—Ted, *Bathgate, N.B.*

14376.—**Hardy evergreens.**—I have a small town garden situated in a very draughty position, which in winter and early spring is therefore very cold. I planted some common Fir trees and some Laurels (rotundifolia), along a border in full exposure to the draught. The Fir trees soon died, and the Laurels became quite brown before the new foliage appeared. I substituted for the dead Fir trees some Abies; these are looking mere skeletons and must be removed, whilst the Laurels are poor, scraggy, thinly-foliaged shrubs. Will any reader tell me what would be the best thing I could plant in their stead? Is there anything more hardy in Laurels than rotundifolia? Would the variegated Laurel flourish better? Would Yucca bear the cold in such a position?—S. S. *** *"S. S." probably means by the "variegated Laurel" the Aucuba, which is by far the best of all shrubs that we know for gardens in towns. The evergreen Euonymus does very well, as also do Yuccas.*—Ed.

14377.—**Cordon Apple trees.**—I grafted about 200 Apples this spring, which I wish to train as diagonal Cordons. How should they be pruned and treated in order that at four years' old they may produce fruit buds throughout their whole length, which is to be 6 feet? They will be trained to a strained wire fence, they are grafted close to the ground on sticks about twice the size of a cedar pencil, and now range in height from 2½ to 4 feet. Any information will greatly oblige.—H. H. S. *** *The enquirer does not state the stock that he grafted upon, which is most important. They ought to be on the true French Paradise, and when they start into rapid growth they ought to be pinched regularly and carefully, but not too closely, or the young growth may be forced too much. The current year's shoots should not be pinched, as a rule, closer than six joints or leaves from the base. The pinching and training should generally be done so as to balance the tree, to make it one string of fruitful spurs, to avoid bare spaces, and always to let the point grow upward a little, in the case of horizontal Cordons, so that the sap may be continued freely through all parts of the little tree. "H. H. S." should consult the "Parks and Gardens of Paris" if he wants a full account of this system, by which the best fruits seen at our shows for many years have been grown.*—Ed.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14378.—**Herbs** (*Lane*).—All the plants you mention are herbs usually grown in large gardens for the kitchen. You must tell us what you mean by "sweet herbs."

14379.—**Lilium auratum** (*Glenarm*).—The bulbs will grow again next year. Do not give them too much water, as that was the cause of the leaves falling off this year.

14380.—**Cuttings of Pelargoniums** (*Amateur*).—If put out in good time cuttings of Pelargoniums strike with the greatest freedom in the open border fully exposed.

14381.—**Flower gardening** (*Household Writer*).—There is no book on the special branch of gardening you mention. You will find the best hints in the "English Flower Garden."

14382.—**Transplanting Strawberries** (*South Down*).—Yes; you may safely transplant your Strawberries during next and the following months. Disturb the roots as little as possible.

14383.—**Delphinium leaves dying** (*Gleanrm*).—The plants will grow again. The sooner you plant them out the better, if your soil is fairly warm, and such as encourages hardy plants.

14384.—**Ranunculuses** (*W. W., St. Austell*).—If you have well-ripened tubers you may reasonably expect good flowers next year. The fact that they have thrived so well proves that your soil suits the Ranunculus, which is by no means one of the easiest plants to grow.

14385.—**Syringing greenhouse** (*Vernia*).—It certainly does injure flowers to syringe them, and if your plants are clean there is no true reason for doing it. Obviously the only way to syringe your greenhouse is to keep the growing plants as far as you can from the flowering ones.

14386.—**Sowing seed of Lilium Szovitsianum** (*Glenarm*).—Sow the seeds at once in loamy soil, keep in cold frame for the first season, and then plant out in a sheltered sunny position where, if the conditions are favourable, they ought to flower in about two years after planting out.

14387.—**Tea leaves around the roots of plants** (*M. B., Dalton*).—They would act as what gardeners call a mulch, and preserve moisture round plants grown on warm windows and window-sills. We have seen Auriculas and other plants do very bravely, indeed, with a little covering of Tea leaves.

14388.—**Lavender** (*J. H. W.*)—Lavender grows with greatest freedom on poor and dry soils, but we have never noticed it fail on any soil, so far as we remember. In its native country it grows in poor, rocky, and sandy places everywhere—the poorer the soil probably the more concentrated its fine aroma would be. It is no advantage to grow such a plant luxuriantly.

14389.—**Curiosities of horticulture** (*F. Coventry*).—The most simple explanation of the "transformation" of scarlet Flax into white Candytuft is that the seed packets were mixed. We have heard of similar cases, and lately a correspondent wrote to ask us how it was his Melon seeds had produced Cucumbers. Changes in the colour of Carnations and other flowers frequently occur.

14390.—**Wintering plants in chalk cellar** (*Vernia*).—There is not the least difficulty, we should say, in preserving many things over the winter months in such a place. Keep out frost, of course, though hardy bulbs will not mind that. Most hardy bulbs, however, should be in the ground in winter. Pelargoniums must not be touched by frost, nor should the roots of such tender stove bulbs as Achimenes and Gloxinias.

14391.—**Forcing Carnations** (*A. Y. E., Nairn, N. B.*).—Carnations are perfectly hardy, and, unless your soil is peculiar, you can grow them out-of-doors with ease. Certainly they do very well in some southern Scottish gardens, as we can testify. A frame might be useful for the winter storage of what are called florists', as distinguished from the fine hardy border, varieties, but it would not do for forcing—at least, so far north. Winter-flowering or Tree Carnations want a warm house.

14392.—**Raising perennial and biennial plants** (*Kozak*).—Assuming the seed was good, we think you did well in sowing in a cold frame. You may sow another batch now, and the very hardiest kinds may be sown in beds in the open air. Do not forget some of the first-rate hardy annuals, like the blue Cornflower, which is twice as good when sown in autumn. Stable manure is entirely needless in raising such things as you mention, which are nearly all natives of cold countries, except the Heliotrope and the Calceolaria, which are easily raised from cuttings or seeds in gentle heat. The number of plants to be raised from seed is so enormous that generalisations about them are not so useful. If you let us know what kinds you particularly wish to raise we shall be happy to assist you. Books that will help you are the "English Flower Garden," "Town Gardening," and "Cottage Gardening."

14393.—**Treatment of Asparagus** (*F. P.*).—Your question is not quite clear. We do not know what you mean when you ask if all the stems should be cut off in June. At that season we should cut off none but those that were wanted for eating. The proper time to plant Asparagus is certainly in spring, just about the time that the plants are starting, and they should be planted much wider than they are generally, and never less than 3 feet apart in line if really good Asparagus is wanted.

14394.—**Insects in Orchid-house** (*T. D.*).—The best way to get rid of brown scale is to carefully wash it off with a soft sponge, using rain water in which three ounces of soft soap has been dissolved to each gallon. Fumigate with Tobacco smoke to destroy green fly on Caladiums, or they may be dipped in the soft soapy liquid; it instantly destroys green fly. Tobacco smoke injures the young fronds of Adiantums, and Odontoglossums are also injured by an overdose.—J. D. E.

14395.—**Wintering Geraniums in frame** (*R. McIntosh*).—It would depend very much upon how the plants were prepared. If they were taken up from the ground late in the autumn, potted, and placed in a cold frame, most of them would die. The plants must be established in the pots before the winter, and the frame should be placed in a well-sheltered corner; some dry ashes must be banked up against the woodwork outside. Make the bottom level, and place over it a layer of dry ashes, on which place the pots. The soil in the pots should be kept quite dry. Place double mats over the glass at night whenever there is danger of frost, and in very severe weather a layer of dry straw under the mats. Remove the lights from the frame entirely whenever the weather will admit of it. All mouldy and decayed leaves must also be removed at once. Most of the plants will live through ordinary winters.—J. D. E.

14396.—**Propagating Hollyhocks.**—(*A. B. C.*).—During the summer months a goodly number of plants can be obtained by taking cuttings from the growths thrown out from the base of the plants. All the lateral shoots produced on the main stem may be taken off, and the eyes planted in small pots as vine eyes are treated. These and the cuttings taken from the base of the plants will soon produce roots in a close frame. A hotbed, from which the heat is nearly gone, will be the best place for them. When the stock plants are cut down in the autumn, dig them up and pot them. They may be wintered in a cold frame, or cool greenhouse in the north of Scotland. A number of growths will be attached to each crown. These must be taken off carefully with a heel attached. If rooted simply in small pots, and placed in a propagating house, they will form roots freely in February and March.—J. D. E.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each of various sizes, and showing any variation of form that exists.*

Names of plants.—*G. Palmer.*—1, Hedychium Gardnerianum; 2, Variety of Cannaindica; 3, Pteris cretica albo-lineata; 4, Asplenium bulbiferum.——*A. B. T.*—Leycesteria formosa.——*G. W. O., Teignmouth.*—Apparently Gasteria verrucosa.——*Ruth.*—1, Hemiaria glabra; 2, Liatris spicata; 3, Francoa appendiculata; 4, Helenium autumnale.——*G. F. G., Bridport.*—1, Lycium europæum; 2, Eupatorium cannabinum; 3, Populus candicans; 4, Achillea Millefolium.——*Miss L. Falkner.*—Catalpa bignonioides.——*G. Coulthard.*—Appears to be Madame Falcot.——*A. S. Dix*—Francoa appendiculata.——*S. Maples.*—Alnus glutinosa.——*E. A.*—Next week.——*T. R. Collins.*—Lilium candidum.——*F. Brewer.*—If you will send a descent specimen we will try to help you.——*L. L.*—Calycanthus occidentalis.——*Xantippe.*—1, Agrostemma coronaria; 2, Maiden-hair tree (Salisburia adiantifolia).——*J. A. Owen.*—1, Send in flower; 2, Veronica decussata; 3, A kind of hypolepis (Fern).——*G. S. W.*—It is Campanula persicifolia.——*Mrs. Morier.*—Clarkia pulchella.——*A. H.*—1, Angelica sylvestris; 2, Œnanthe fistulosa 3, Pimpinella magna; 4, Lysimachia vulgaris.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* Gardening, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Cat-trap (*Norman*).—See "Answers to correspondents," page 376, July 25th.——Poultry feeding (*J. Gilbert*).—We cannot forward your letter; you will see that we have printed your question.——Cherry Plum.—Will "Mrs. M.," who some time ago made inquiries respecting the Cherry Plum, send us her address?

Smithfield Market, Evesham.—List of prices realised 21st August, 1885:—Beans (kidney), 6s. to 7s. per pot (40 lb.); Beans (dwarf), 3s. 9d. to 4s. 6d. per pot (40 lb.); Carrots 3d. to 4d. per bunch; Cucumbers, 7d. to 10d. per dozen; Mushrooms, 5d. to 9d. per lb.; Potatoes (new), 2s. 9d. to 4s. per pot (80lb.); Vegetable Marrows, 1s. 3d. to 1s. 10d. per dozen; Apples, 2s. 6d. to 5s. per pot (64lb); Pears, 3s. 6d to 11s. per pot (72lb.); Plums (Orleans), 12s. 6d. per pot (72 lb.); Plums (Pershore), 4s. 9d. to 5s. 6d. per pot (72 lb.).

OUR READERS' ILLUSTRATIONS.

SUB-TROPICAL GARDEN AT HECKFIELD PLACE.

Here is a view of part of a flower garden at Heckfield, where our good friend, Mr. Wildsmith, is the very able gardener. It is that part of the grounds called the sub-tropical garden. Our illustration, which is one of those sent for the first competition in Gardening, by Mr. T. Mason Good, of Winchfield, Hunts, shows without any further words of ours how well the gardening is done; and it also gives a little peep at the pretty landscape beyond the garden. In this warm corner of England such effects are not difficult to obtain, and may be bad from simple materials which almost anybody can get. We are, however, averse to sub-tropical gardening by means of costly and tender indoor plants. Excellent effects can be got from hardy plants, and also from those of rapid culture, like the Castor Oil Plant, Hemps, and the greenhouse Acacia, put out in spring with bedding plants. The illustration is that of one of the most successful and best-managed gardens in the south of England.

THE COMING WEEK'S WORK.

Extract from a Gardening Diary,
August 31st to September 5th.

Potting Cinerarias out of 3-inch pots into 5-inch pots, in which they are to flower. Putting in cuttings of Violas in border for spring bedding. Putting in cuttings of Violas under north wall for spring bedding. Shifting Cyclamen bulbs into flowering pots. Cutting Lavender for distilling. Putting in cuttings of Pelargoniums and Fuchsias for winter flowering. Tying shoots of Maréchal Niel Rose in cold house and loosening buds on Briers. Putting in cuttings of Heliotrope and Ageratum for stock. Cutting out superfluous wood from Figs in order to give the fruit more light. Gathering all ripe Apples. Cuttting a few berries out of late Grapes where too thick. Removing all runners from Strawberries for forcing, and giving them a little more room, where crowded, to admit air and light. Hoeing ground between growing crops of Cabbages, Cauliflowers, and Lettuces. Tying, training, and stopping Tomatoes. Planting out Bath Cos Lettuces and more Endive for winter use. Getting in hotbed in Cucumber house for winter Cucumbers. Sowing Mustard and Cress. Mixing loam and leaf-mould in which to plant Cucumbers. Pulling up Carrots that are running to seed. Harvesting Onions and storing them on stages in cold houses to dry. Storing Regent Potatoes and covering them with straw. Earthing up Celery. Planting Cucumbers for winter. Clearing Peas off ground, and manuring it for winter digging. Cutting out useless growths from Tomatoes, and also a few leaves to ensure the fruit ripening.

Our Readers' Illustrations: Sub-tropical garden at Heckfield Place. From photograph sent by Mr. T. Mason Good, Winchfield, Hunts.

The present is the time of the year to see gardens of this description, as after the warmth of the summer they display all the beauties of the fine leaved plants.

Eurybia Gunni and E. stellulata. — I think there must be some confusion here (see page 310.) E. stellulata, or, properly, Olearia stellulata is a totally distinct plant from E. Gunni, and could not, by any possibility, be mistaken for it. It is a soft-wooded species, with linear glabrous leaves; it may, however, be readily confused with E. ramulosa, which it very closely resembles. The most obvious difference is that the latter blooms in the autumn, and E. stellulata in spring; and a further difference, which is not so obvious, is that, on careful search, some of the foliage of the latter will be found to be trilobed. These two plants are equally and decidedly tender, and not by a very long way so hardy as, undoubtedly, E. Gunni is.—T. Smith.

Carnations of the border varieties, and even many of the more robust-growing of the show kinds, are among the very best of plants for the Town Garden. In a fairly sunny situation and moderately rich soil, which should, if possible, be of a loamy nature, they may be depended upon to succeed almost anywhere. August is the best time for propagating these sweet and favourite flowers, and as it is of great importance to get the young plants thoroughly well-rooted before winter, no time should be lost in getting all the healthy plants layered. All that is needed is a few dozens of small hooked pegs, about 4 inches long, which can readily be cut from a few Pea-sticks, and a small quantity of good sandy loam, mixed with a little coarse silver sand, or road grit, and a small portion of leaf-mould, if this can be obtained. With a small trowel scrape away a couple of inches of soil from underneath each of the flowerless shoots, or "grass" on a plant, arranging them at equal distances round the parent, and replace the mould with a little of the sandy compost. Strip off a few of the leaves at the bend of the shoot, where it lies closest to the soil, and with a sharp knife cut half way through the stem in a slanting direction from the under side, and cutting towards the main plant. Now fasten the shoot firmly into the prepared bed of soil by means of one of the hooked pegs, placed just over the cut, and cover with about an inch of the compost. Settle the soil by means of a good watering, and keep fairly moist till rooted. If the layers are found to have formed a good mass of roots by the end of October, or early in November, they should be severed from the parent plant, and carefully planted either in nursery beds or directly where they are wished to bloom. Some defer doing this until spring, but if sufficiently forward there is no doubt that the plants are much better established by blooming time if moved in the autumn. In smoky localities, however, it is better to layer early, and take up and pot the young plants singly into large 60's (4 inch pots) in October, wintering them in a cold frame, and planting out early in spring. Some of the stronger plants may be potted on into 7-inch or 8-inch pots in good sound loam with a little decayed manure, and these will come in very useful, especially if there is a cool greenhouse in which to flower them. For an unheated glasshouse there is nothing more suitable than a collection of good Carnations; they are really better without any artificial heat, and if well cared for almost all of the finest show or stage varieties may be grown successfully in any town, while for delicate perfume and variety of colour and markings a houseful of Carnations is not easily beaten.

With regard to sorts, there are now so many good-named Carnations, of every imaginable shade of colour, that it is scarcely necessary to give a list of names. Any nurseryman who grows them can make a good selection, while for those who have time and money to spare nothing can be more enjoyable than inspecting a good collection when in bloom, and choosing those you may fancy most. For outside borders there is nothing to beat the old cloves, crimson, pink, purple, and white—especially the first and last: for constitution, vigour, freedom of flower, colour, and general usefulness, they are the best. Those who grow them in pots should certainly add a few of the tree varieties; they are nearly or quite as easily grown, and if kept dryish in winter a mat or two laid on the glass will afford all the protection from cold they need. The only material difference, is that these are propagated by cuttings instead of by layers. Half-a-dozen of the best of the Tree Carnations are—Alegatière, rich crimson scarlet; Miss Joliffe, large pink; Souveuir de Malmaison, delicate blush, immense size; La Belle, pure white, and very free; Garibaldi, soft scarlet; and Andalusia, bright yellow.

Picotees do not succeed nearly so well in smoky air as Carnations, though they will grow fairly well in the outer suburbs even of large cities.

Hollyhocks being now in full beauty, it will be advisable, if there are any really good doubles, to mark them, and carefully save the seed, cutting fully half the top of the spike off when the beauty is past, as the plant cannot be expected to perfect all the seed formed. Sow the seed as soon as ripe, protect a little during winter—in small pots in a cold frame if necessary—and plant out where they are to flower early next spring. Hollyhocks propagated by division do not last long in town air, and are under any circumstances liable to disease, while seedlings flourish wonderfully, so that a fresh stock should be raised every year. Seed of any good Foxgloves, Delphiniums, or other perennials and biennials should also be saved and sown as soon as ripe in nursery beds for flowering next summer.

Dutch bulbs.—The time has now arrived when Dutch bulbs of all kinds should be purchased. When received, a good plan is to divide all the Hyacinths (for pots), Tulips, &c., into two or three lots, to pot one part as soon as possible, say early next month, and the others at intervals of about a month afterwards. By this means a natural succession of blooming will be obtained, and all, having had abundant time to get established and produce a mass of roots, will be certain to yield fine spikes of bloom with a minimum of trouble. B. C. R.

Glasshouses.

Coleus.—These useful decorative plants are remarkable for the ease with which they can be propagated and grown on. Their rapidity of growth is such that it is not necessary to keep large plants through the winter. If cuttings are put in now they will strike in a fortnight, and can afterwards be kept through the autumn and winter in an intermediate temperature, where they will keep on moving slowly. Small stock of these plants so managed will be found preferable to older examples that would require cutting back to keep them within reasonable size. The cuttings should be put in at once singly in small pots, keeping them moderately close and moist. As soon as they are well rooted pinch out the points of the shoots to induce their breaking back and making bushy growth. After this they should be moved into 4-inch or 5-inch pots, which will be large enough to winter them in. A shelf close to the glass will be the best place for them during the dull season.

Kalosanthes.—Small examples of these free-flowering plants are often more useful than large specimens. If cuttings were put in to strike in spring, and have been grown on in small pots with free exposure to the light and sun, which they so much like, they will now have made short, stocky growth; but to insure their blooming next summer they should continue to have all the sun that it is possible to give them. During the next month a frame or pit where the lights can be drawn off them in the daytime and replaced at night, should the weather be such as to require it, will be the best place for hardening and ripening up their growth, and upon this condition being fully secured depends their flowering next season. Among the large growing kinds — Phœnix, an exceedingly bright red flowered sort that produces large massive heads of bloom is much preferable to the old coccinea, which many growers yet retain, but, which is not nearly so free a flowerer as the other. K. miniata is a very free bloomer, and, if the plants are in the open air (as all the flowered kinds of Kalosanthes should be) the flowers are much finer coloured.

Aloysia citriodora (Lemon-scented Verbena).—This sweet-smelling plant deserves to be grown in every greenhouse. Most people like it for its agreeable perfume, especially when mixed with cut flowers. It strikes freely from cuttings made of the soft, or of the half-ripened, shoots at any time during the spring or summer. Cuttings put in now, singly in small pots, if kept warm and moist under a propagating glass, will soon root, and if kept through the winter in a greenhouse will be much in advance of stock that is not struck before spring, making a much larger plant the ensuing summer.

Ivy-leaved Pelargoniums. — Few things have been so much improved of late years as this section of Pelargonium, both the single and the double-flowered varieties. The latter especially are far in advance of the older sorts. Not only do they make fine decorative subjects for conservatories, but they are very useful for cutting, being devoid of the objectionable appearance which many of the double forms of the other sections of Pelargonium have. Where there is any scarcity of stock of these ivy-leaved kinds, cuttings may still be put in; they should now be placed singly in small pots in a mixture of loam and sand, and in these pots be allowed to remain until spring. If a little heat can be given them they will root quicker, but they must not be kept so close or moist as some things require, or the cuttings will be liable to damp.

Petunias, double and single varieties.—Some of the double varieties of Petunia are, independent of their decorative value, very serviceable for cutting. The flowers last well in water, and some of the white sorts are little inferior to a Camellia in appearance. Plants of these that have been kept on flowering during the summer will now be in a somewhat straggling condition, and should have their shoots shortened back at once, so as to give them a chance of making a little young growth before the dormant season comes on. So treated, if they can be kept during the winter in a warm greenhouse, they will be in right condition for moving on in the spring to larger pots. The single forms of Petunia now come so good from seed that growers depend altogether on seed sown early in spring for their stock of plants to flower the following summer; but any particularly fine coloured varieties that have in addition a good habit of growth are worth keeping; and if now partially cut in, as advised for the double flowered sorts, they will flower earlier and more profusely next spring than such as are raised from seed. In cutting Petunias back the shoots should not be so much shortened as in the case of some plants, or they often do not break freely afterwards.

Abutilons.—Young plants struck from cuttings, or older examples that have been grown on with a view to their flowering during the winter in an intermediate temperature, should be encouraged as much as possible to get strong. The plants are best now kept in a pit, or cool house, where they can have plenty of air, with manure occasionally if the pots are full of roots.

Lapagerias.—The flowers of these beautiful greenhouse climbers will now be coming on apace, and if there happens to be any trace of aphides on the young shoots the plants should be fumigated, or the insects will settle on the flowers and give them a dirty appearance. This is especially the case with the white variety, the flowers of which are easily soiled, in which condition they are of little use for cutting. Lapagerias are water-loving plants, particularly while they are making growth, and even at this season, when little shoot extension is going on, the soil in which their roots are placed must not be allowed to get very dry. Where the plants have their roots in a bed it is necessary to see that this is sufficiently moist throughout, for, in common with other plants so situated, it sometimes happens that the soil, for a few inches of the top, is wet enough while the under portion is too dry.

Lagerstrœmias.—These beautiful but much neglected plants rank among the most charming ornaments of the greenhouse. Where well managed they will have been covered with a profusion of their singular flowers. To have them in the best condition the plants should be grown in a warm greenhouse. After flowering they should have abundance of air to ripen up their wood. With this object the soil ought to be kept drier all on through the autumn and winter. The white and also the rose-coloured kinds are well worth a place.

Neriums. — The beautiful Carnation-like flowers of these plants are always acceptable; but to bloom freely they must be well hardened up after the summer growth has been made. Nothing affects these so well as exposure in the open air in the sunniest place that can be given them, letting the plants remain out as late in the season as the weather will permit. Although while growing Neriums will take almost as much water as Willows, still through the autumn they should not have more than sufficient to prevent the leaves from suffering. Large plants that have been cut close in earlier in the season will have made vigorous growth, and to get this fully matured the drying process must be continued during the autumn and early part of winter.

Chrysanthemums.—As the plants will now have filled the pots with their roots so that every particle of soil is occupied by their hungry fibres, they will require to be liberally supplied with manure water, which from this time onwards they will have mainly to depend on, as the roots will have exhausted the nutriment which the soil, with the solid manure intermixed with it, has contained. Care must be taken that they never get so dry as to cause the leaves to flag, or the lower ones will be sure to suffer from it. See that they do not root through the bottoms of the pots so as to get hold of the earth where they are stood. To prevent this the stock should be turned round from time to time. T. B.

Flower Garden.

General work.—Clip Privet and Yew hedges, and give a final trimming for this season to Box edgings. Propagate bedding plants at every opportunity, and also prepare spring-flowering plants by pricking off seedlings, splitting up Polyanthuses, Primroses, Forget-me-nots, and similar material. Water shrubs and Roses, and all climbers on walls that rain cannot reach.

Herbaceous borders.—The present time, while the plants are in flower, is the best for weeding out all worthless or curious species, and replacing them by increasing the stock of such kinds as make the best show in the open borders, and are most useful in a cut state. The Achilleas, Japanese Anemones, Phloxes, Galegas, Actæas, Potentillas, Pentstemons, and Poppies are in grand blossom; they have had about the same amount of attention as to watering, picking over, and tying up as has been given to ordinary bedded-out plants. Both sections are valuable in their respective places, but neither one nor the other will make a creditable display if left to take care of itself, and yet many people appear to think so, more especially in respect to herbaceous plants. Many of the kinds may now be propagated freely by means of offsets, and Phloxes and Pentstemons by cuttings, but those that need to be increased by division must be left until later in the year. Keep the borders free from weeds, trailers well to their support, seed-pods picked off Sweet Peas, and if there are any vacant spots, sow hardy annuals, for early spring flowering, and fine foliage plants.

Sub-tropical Garden.—Growth of late has been profuse and the beds will never be better; hence the present is the time to take note of what to repeat or what to avoid in future arrangements. I have marked the following for repetition, viz., a bed of tall Sunflowers and Castors-oils in combination; one of single Dahlias, Marguerites, and Acacia lophantha; another of Solanum robustum and marginatum (a row of each), with Eucalyptus and tall Cannas in the centre. The variegated Abutilon and crimson-stemmed Chilian Beet in combination are also very pretty. Among the fine-dwarfer-foliaged plants, succulents at present bear the palm. Sempervivum arboreum, arboreum purpureum, and arboreum variegatum, large-leaved Echeverias, and American Agaves are the principal large kinds used, the carpeting plants for the same being Mesembryanthemum cordifolium variegatum, conspicuum, and cœrulescens; all the attention that these beds now need is keeping free from weeds. Pick the seed-pods off the Mesembryanthemums and give an occasional press down with the hand to keep the growth right under the taller plants. When thus trimming up the beds advantage should be taken of the opportunity to take the necessary cuttings for next year's needs. All succulents strike best in pots; no bottom-heat is needed, but full exposure to the sun and protection from heavy rains.

Fruit.

Raspberries and Strawberries.—Let the old canes and all the weakly growth be cut away from Raspberries, particularly those on northern or shaded borders where this year's growth has been very gross. On warm, dry soils a good layer of rotten manure may be spread over the surface as soon as it is cleared of the weeds, and next year's crop will be much benefited by the operation; but in cold gardens

the application of manure may be deferred until after the winter dressing, as no greater mistake can be made than that of forcing a vigorous growth late in the season to be crippled or killed by the first severe frost the following winter. The same rule applies to Strawberries after they have done bearing. In many gardens they are much longer neglected than they ought to be, and the ground is robbed and shaded by useless runners, when by their timely removal to let in sun and air a degree of ripeness of roots and crown buds might be secured and the plants enabled to pass through the sharpest winter and produce an abundance of perfect flowers the following spring. If possible, all autumn planting should be finished by the middle of September, as the roots will then have time to lay hold of the soil, and the plants will produce a few fine fruit the following season, but if delayed after this time the young plants will be quite as well in the nursery bed until the spring, and the ground intended for their reception can have the benefit of a winter fallow.

In the management of fruit trees generally, let the aim be the proper maturation of the current year's wood by laying it thinly against the wall, and by spurring all the weaker shoots back to within two or three eyes of the winter pruning buds, taking care to retain a plentiful and even spread of foliage over every part of the trees. Look over Peaches and Nectarines every morning, and gather all that are forward enough for removal to a dry, airy room where they will ripen up and keep for some days after they are ready for use. The different kinds of early Pears, including Beurré d'Amanlis, William's Bon Chrétien, and Jargonelle, will also be the better for removal, a few at a time before they are quite ripe, when, by easing the trees, those left will become much larger, and they will extend the season until smaller but better flavoured fruit from pyramids and bushes is forthcoming.

Strawberries in pots.—By this time the latest plants will have become well established in the fruiting pots, and the most important point will be the formation of plump ripe crowns with plenty of healthy roots under them for forcing up the flower-stems in the spring. In low, damp situations more favourable to the growth than to the ripening of the crowns, medium-sized pots, which quickly become filled with roots, answer best, and when this stage has been reached it is a good plan to elevate them on planks, dwarf walls, or platforms 1 foot or more above the ground, where by full exposure to light and air, and careful attention to watering with water which has been for some time exposed to the influence of the atmosphere, the backward plants may be made fit for storing away in cold pits by the end of October. Keep the general stock of plants free from weeds and runners, and move them occasionally to prevent the crock roots from striking into the ground; also keep a sharp look-out for worms, red spider, and mildew. The best remedy for the removal of the first, is clear lime water, and the others may be destroyed by dipping the leaves of the plants in a mixture of sulphur and water. If very early forcing is contemplated, the first batch of Vicomtesse Héricart de Thury and La Grosse Sucrée, which is equally early and produces finer fruit, may now be taken to an open, airy situation, where they can be partially plunged for the better protection of the roots, which should now be almost forcing the balls out of the small pots. If not already done, get the surplus runners planted out on good ground conveniently situated for water. Mulch and encourage a vigorous growth, as these plants will give the earliest runners for next year's forcing.

Vines.—Muscats now colouring will require more light and air; and when quite ripe, they will keep a long time if the border is protected from the direct influence of heavy autumnal rains. Coverings of dry Fern, shutters, or, best of all, glass lights placed in a sloping position, answer well for throwing off water, while they attract sun heat to the surface of the border. If spider has injured the old foliage to any extent, and the latter is not sufficient for the protection of the tender skins of the berries, it will be necessary to lay in a few of the laterals and to stop them at the third or fourth joint to secure an even spread of healthy foliage, or [modern houses glazed with large squares of 21-ounce glass may have some light shading thrown over the exterior.

Vegetables.

As soon as the ground is clear of Onions we begin to plant Cabbage without any digging; when the young plants get fairly started, we give the soil a good stir up with a cultivator, which does a great deal of good. Lettuces, which we require in large quantities, we plant between the young Strawberry plantations, for both Strawberries and Lettuce enjoy a good, rich larder, and we make a point of pleasing them. Endive is now getting ready for putting in its proper place. Keep sowing winter Lettuces and Spinach, cut all the old flowering stems from Globe Artichokes, and if the autumn is a fine one you will be rewarded with a second crop of smaller but quite as good flavoured heads. There is no time when a good salad is relished more than just now. Our Paris Cos Lettuces, growing between Celery ridges, manured with old Mushroom manure, are very good. They want no tying, are crisp and cool, and most refreshing.

Timely thinning of Winter Spinach, Turnips, Radishes, and Lettuces is of the utmost importance, in order that the plants may grow up sturdily and be the better able to to withstand the winter. Keep all Beans closely picked off as they become fit for use; the plants will then bear for a considerable time longer without exhaustion. If runners are cut back 2 feet or 3 feet, all the old pods being removed, and are given a good watering and mulching, they soon break into fresh lateral growth, and fruit as freely as at first. Give abundance of water to Celery prior to earthing up, and occasionally dust over the rows with soot and wood-ashes as a preventive of fly. Harvested herbs dry and retain their colour best when hung up in a draughty, sunless shed. Parsley to stand the winter should be given plenty of space and the driest position in the garden. Keep Tomatoes to single stems and the foliage thin.

THE KITCHEN GARDEN.

The Onion Maggot.—It is to be regretted that "C. M. D.," of Arbroath (p. 323) does not inform the public of his cure for the Onion maggot. Effects will follow causes. The cause of the Onion maggot is thus: The female Onion fly (simular to the house fly, and to the meal fly) deposits her eggs, or fly-blows, on the Onion top, just where the biforcation from the stem takes place. These eggs are hatched in twenty-four hours, the young maggots eat their way down inside the stem into the bulb; here they remain until they arrive at full growth, or maturity; they then creep into the soil, become chrysalides, and in time come out perfect flies and prepared for another season of provocation, and consequent destruction, to the Onion crop; but whether the flies leave the chrysalis this autumn or next spring I cannot say. I have been a grower of spring Onions for over fifty years, but it is only within the last twelve to fifteen years that the beds here have suffered severely. I last year commenced the system of stamping out, and last year and this I have had every affected bulb drawn from the beds and burned. From appearance I am of opinion that good will follow, and if all Onion growers would do likewise the fly would be reduced in numbers. Throwing the diseased bulbs to the rubbish heap would be as bad as leaving them on the beds, for wherever the maggots can find a place to form the chrysalis then Nature will complete her work. I have often and often seen these fly-blows on the Onion tops. It would be a labour of love to go over large beds and wipe them off. Pepper is one of the best preventives or protection to butchers' meat and game.—O. F.

—— Perhaps if I tell my experience of Onion growing it might be useful to some one. I do not say that mine is a perfect cure, but to me, since I adopted it, it has made all the difference between a crop and none, or at least half a one. A good many years ago, when I first had charge of a place, I lost the entire crop for two years in succession, when I saw it recommended that instead of, or along with, digging the manure in, it ought to be spread on the surface and left until sowing time, I tried this plan, digging the ground as soon as cleared in the fall. I spread the manure on the surface, and at sowing time I raked it in, and sowed the seed, rolling the ground very firm. I have always succeeded since. In Canada, where I had charge of a garden some time, in the fall we used to empty a cesspool on the place intended for the Onion crop, and it seemed to answer the same purpose, for we were never troubled with the grub, though our neighbours were, and had to plant top Onions, as they are called, instead of sowing seed. I wonder why these are not introduced in this country. I have never seen them in any catalogue; they would be very useful. My reason for its success is that the roots are in contact with the manure from the first, and they come up strong and healthy, and are better able to resist the attacks, or, rather, being strong the eggs are not laid on them.—W. R., *Isle of Man.*

—— I should be very glad if "C. M. D." would make known his remedy for the prevention of maggot in Onion, as I have tried many so-called remedies but without success, and have now given up trying to grow Onions. If "C. M. D." will be good enough to make known his discovery, which he has tried with such good results, I should be very pleased to try it, as it can be of no use for him to tell us how well it acts unless he also tells us what the remedy is.—J. P. C.

Winter Broccoli.—The way in which the northern markets are supplied with Broccoli during winter indicates to what extent this fine vegetable is used, and how important it is to plant hardy kinds in the north and in Scotland. Broccoli has been so crossed and intercrossed as to be as white as Cauliflower, but hardier. In this quality its value lies, because if the summer Cauliflowers would endure our winters they would be preferred, being of superior flavour; but none of them will endure more than a few degrees of frost, while Broccoli will stand about 20 degs. or more, although no two sorts are equally hardy. As a rule, the summer Cauliflowers have larger, flatter, and greener leaves than Broccoli, the leaves of which are narrow and more frilled. I have never seen a Cauliflower-leaved Broccoli that was at all hardy, and Grange's Early is an example. It is a Broccoli, and if sown at the same date as the other varieties in spring, will invariably produce good heads in October and November, or earlier, but it perishes with the first frosts. Much of it need not, therefore, be planted. The hardiest varieties that we have ever tried are Hammond's Imperial, raised in Yorkshire, Snow's Winter White, Backhouse's White, Knight's Protecting, Dilcock's Bride, Carter's Champion, and Cattell's Eclipse. The whole of these, except the two last, however, perish in very severe winters, but it is rare for a whole plantation of Champion and Eclipse to succumb; indeed, as a rule, most of the plants escape. They are the two hardiest and latest Broccoli in cultivation, and we always plant more of them than any others, as they generally provide the latest heads in May and June till Cauliflowers come in. Eclipse is the better of the two, having fine large white heads; but one just succeeds the other, so both are necessary.—J. W.

Tomatoes in the open.—Against walls these are now forming many clusters of fruit, and if properly treated will become a profitable crop before the season is over. Thin training of the shoots and leaves, full exposure to sun and air, and substantial feeding at the root when required are the main points requiring attention in order that successful results may be realised. Dry atmosphere suits Tomatoes capitally, but too much damp generates disease. —J. M.

14220.—Raising seedling Potatoes.—Get the plums as ripe as possible, put into a box or flower-pot, cover with dry sand, and keep in a dry place till wanted. I generally sow in the latter end of March, and then soak the hard, dry plums for twelve hours in water, break them up, wash out the soft pulpy stuff, lay the seeds for a few hours on blotting-paper, or an absorbing substance, then sow very thinly in rows, covering lightly with fine soil. While preferring ripe plums, I would not discard green ones of a variety wanted, as if well kept they will sometimes grow, though pulled green. —P. P. G.

Autumn sown Onions should all be drawn at once, and laid out on airy sunny place to dry. Many of their stems have died down now, and they may be stored after lying on the surface of the soil for a day or two. Onions of this class are most useful, and they should be extensively and generally grown.—J. M.

INDOOR PLANTS.

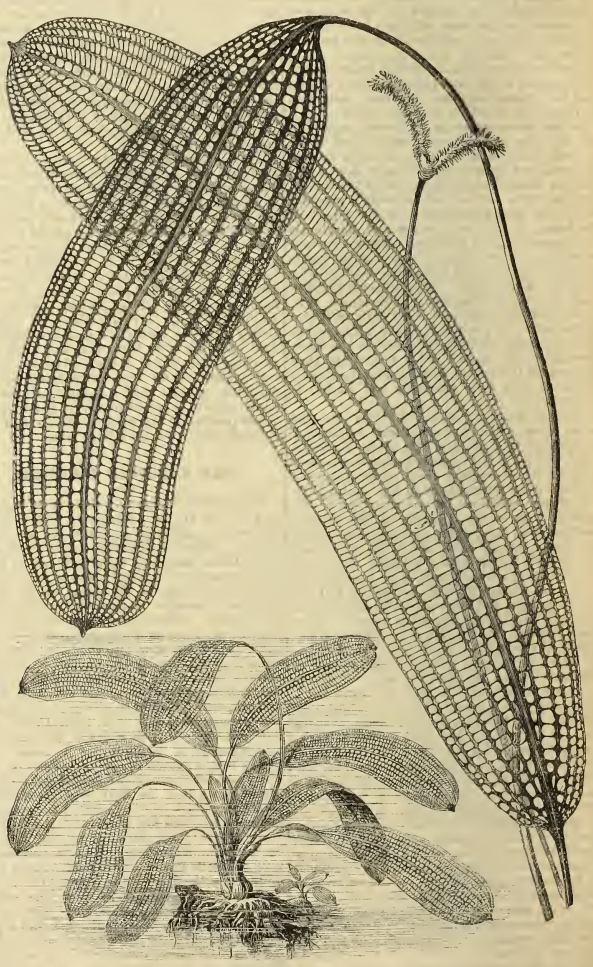
EARLY CYCLAMENS.

Those who wish to have Cyclamens to flower satisfactorily in the early winter months of 1885, should sow seed at the end of August. The seed may be sown in a pot or pan, according to the number of plants required. Any fairly light sandy soil will do for the seedlings, and as the seed is larger than that of many other plants, it may be buried a little deeper, but only so deep as just to be well covered. I may remark here that only those in a position to give the plants a higher temperature than that of an ordinary greenhouse during winter are recommended to sow the seed at this time of year, for, in order to obtain fair-sized plants in the time specified, the plants must be raised in heat, and kept through the winter in a temperature ranging from 55 degs. at night to 70 degs. during the day. Therefore as soon as the seed is sown the pan should be placed in the stove, or in some structure similarly heated, and shaded from bright sunshine, so that the surface soil may not dry up so quickly as to require watering every day. Good seed does not, as a rule, fail to produce a fair percentage of plants, if carefully attended to in the way of moisture, but an excess of moisture in the soil and a low temperature will cause it to rot, before it has had time to start into growth. Unless the young plants stand very closely together in the pan, no great hurry need be made to move them out of it. They ought to stand in the seed pan until they have produced four leaves, and then they may be expected to have made sufficient roots to bear removal without suffering any serious check. From the pan they should be put into 3-inch pots. The soil for Cyclamens should be fairly light and rich, and should consist of equal parts turfy loam, peat, and well rotted hot-bed manure. If the peat does not contain a fair proportion of sand, some should be added and well mixed with the other ingredients. Except for the first potting the soil should not be sifted, but well beaten up on the bench with a spade, the rough lumps being picked out. Plants raised from seed as here directed will be ready for single pots early in January. As soon as potted let them have a **warm position and a fair amount of light**, setting them where they can be syringed twice a day, and be kept free from thrips and green fly. About the end of March they should be ready for a shift into 4½-inch pots, and should be set in the same quarters again. They will not require any more pot room, as the Cyclamen is one of those plants that suffer from being over-potted, or, as we gardeners say, they flower most profusely and keep in best health when the roots feel the pots. Early in June they may be placed in their summer quarters, which should be a pit or frame, where they can be shaded in very hot weather, and where ventilation can be carefully attended to. They should be shut up early on sunny afternoons in order to keep up a genial growing atmosphere about them at night. The moisture at the roots must be kept up by giving sufficient water as often as they require it, and no more. In September they should be showing flower, and then they should have a warm shelf in the greenhouse. Early in November they ought to have the benefit of a slight increase in temperature, when they may be expected to flower freely, and will continue to do so for some time. J. C.

Culture of Pancratium fragrans.—We have just now got a specimen of this lovely bulbous plant with four spikes of flowers on it, about from twelve to thirteen flowers being on each spike, a result which certainly well repays any little care that has been bestowed on it. The flowers are of such a pure white and so fragrant, that it has few rivals in these respects, and for decoration it can hardly be equalled. Its only fault is the short time during which it lasts in flower, from eight to ten days being as long as it will keep in perfection even in a cool house. Pancratiums are sometimes subjected to a roasting temperature, which is not at all good for them. We generally grow them through the winter in a temperature of from 57 degs. to 60 degs., fully exposing them to the sun all the year round, and we have them in flower twice in the year—viz., in March and again in August, according to our requirements. The less shifting about they get the better, except when really necessary. When the bulbs get very low in the pots turn them out, examine the roots carefully, and repot if necessary in a pot a size larger in a compost consisting of half turfy loam, quarter peat, quarter rotten manure, and if a few half-inch bones are added all the better. Let the whole be well mixed with silver sand. After they have completed their growth rest them a little by withholding water, but at the same time do not allow the leaves to flag or get injured in any way, for when that happens their ability to flower is impaired. Remove all small bulbs when potting and place them in pans, potting them off singly when strong enough, and keep them in 6-inch or 7-inch pots as long as possible, for in this size they are better adapted for indoor work than in pots of a larger size. Pancratiums may be readily increased from seed, which should be sown in spring upon light sandy soil. Place the pans in heat close to the glass, and give very little water till the seedlings appear, which will be in a very short time. Pot them off when fit to handle and they will soon become useful plants.—H. K.

THE LATTICE-LEAF PLANT.

We dare say that at this time of the year, when our parks in London are almost like a desert, and many of our common trees have lost their leaves, it would be a good thing for most of the parched foliage if it could dispense with its flesh, and "sit in its bones," as the Lattice-leaf plant (Ouvirandra fenestralis), shown in this beautiful illustration, does. It is a plant literally made of veins alone, and manages to live submerged in the waters of Madagascar, flowering very prettily. It is seldom cultivated in this country, being a little difficult to grow, but it is always pleasant to see it in a botanic garden, or any collection where it is successfully grown. It gets covered with confervæ, and wants some peculiar conditions which do not occur everywhere, but here and there in gardens it is grown well, as it used to be for many years in the College Gardens at Dublin by Mr. John Bain.



The Lattice-leaf plant (Ouvirandra fenestralis.)

We dare say some of our correspondents will give other instances where its cultivation has been undertaken with success, and tell us the conditions; no doubt the quality of the water has some determining influence.

Pelargoniums for pot culture.—Among double or semi-double zonal varieties for pot culture, I consider that Madame Thibaut should be first on the list. It is a bright rosy pink, which I find invaluable at all times of the year, as it produces large trusses with a freedom equal to the single Vesuvius, and is excellent in habit. We are never without blooms of this kind, for as soon as plants of it get exhausted we take the tops off for cuttings, give the old plants a little rich top-dressing, and place them on light shelves near the glass, where they soon become covered again with lovely trusses of flowers. I should unhesitatingly say that this is not only the best double, but the best zonal of any kind in cultivation, new or old. I have some of the latest and best sorts flowering side by side with it, but they do not come near it in colour, habit, or amount of bloom. Then there is Wonderful, a well-known orange-scarlet kind, good in habit, and a very free bloomer, opening well at any time of year, and producing large heads of brilliant flowers—the best of the scarlet varieties. Sergeant Hoff is somewhat similar to Wonderful, and a very desirable variety. F. P. Raspail is one of the best of purple doubles, good in habit, and a very free flowerer. Of newer sorts M. Leon Frene, carmine, appears likely to be good. Venus is a very pretty pale pink, Flambeau a splendid scarlet, Comtesse de Tannenberg a good rose, and Soleillett a good violet-shaded variety.—J. G.

Forcing the notted Iris.—Those who wish to have a few potfuls of Iris reticulata in bloom at Christmas should remember that this is the proper season to pot the bulbs. Hardy as this beautiful Iris is it forces well, and fine tufts of it, glowing with rich colours and delightful fragrance, may be secured for the Christmas table with the greatest ease. The best plan is to either buy good-sized bulbs—in fact, the best that can be procured—or dig up some of the best clumps in the garden. In the latter case the bulbs require to be sorted, the largest and best being set aside for potting, the rest replanted in the borders. Five good plump bulbs should be placed in a 5-inch pot, using a sandy loamy soil. The pots should then be plunged up to their rims in ashes beneath a cool frame, but they must not be watered until the leaves appear well above the surface, which will be about October, when the roots should be placed in a light frame or house, where the temperature would range from about 45 degs to 50 degs. This gentle forcing will induce the bulbs to throw up their flowers about the end of December, when the only treatment required is to keep the pots moderately dry and in a cool atmosphere, so as to prolong the beauty of the flowers as much as possible. The forced bulbs should not be treated carelessly after flowering, as they usually are, but should be allowed light and moisture, so as to thoroughly develop their foliage, and when spring comes the pots may be set in the open air until the foliage is quite decayed, when the soil should be kept dry and the bulbs re-planted during next August. The chief point to attend to in forcing this Iris is not to allow the soil to become so moist as to induce the rotting of the bulbs before the leaves appear. Neither must the plants be placed in too great heat, which would result in all leaves and no flowers.—G.

Spear-leaved Japanese Lilies (Lilium lancifolium, album, and rubrum).—These lovely varieties of the extensive Lily family are now in great beauty, and they are most acceptable for conservatory and other cool house decorations at a time when there is not such a crowd of good things to distract one's attention from their great merits, and, although when the first craze about Lilium auratum was at its height, one could hardly hear a word about the lancifolium section, they have now quite regained their old popularity, for there can be no question but that for general usefulness they are far more valuable than their rival of the auratum type. I find it best to grow them in various-sized pots, ranging from 6 to 12 inches in diameter; as small pots with a single bulb in each are most useful for vases, while larger ones, with from three to five bulbs, make a fine display in the conservatory. We usually repot our Lilies in November, using a good compost of fresh loam, peat, silver-sand, and a little hot-bed manure. The pots are only half-filled with soil, the bulbs set on it, a handful of silver sand placed on each, and enough soil to just cover the bulbs. They are set in any cold house or pit until they start to grow, when they are set out in frames, keeping them near the glass. As soon as the surface roots appear, top dress with rich soil. Careful watering and sponging the leaves to keep down fly, are the principal items of culture to ensure a fine display of these beautiful flowers.—J. G., *Hants.*

A new winter Begonia (B. Roezli).—As a winter bloomer, this Begonia possesses great merit. It is seen to best advantage when grown in the form of good-sized specimens; it is tall in growth and branches sparingly, so that in small pots it has a leggy appearance, while when strong the numbers of shoots sent up from the base give it a better developed appearance. In common with most of its class a moderately rich and open soil suits this Begonia perfectly. We use a compost consisting of two parts turfy loam, and one part each of leaf-mould and decayed manure, with a fair admixture of sand. Its propagation from cuttings is not so simple a matter as that of most other kinds. Leaves will not grow, and even when cuttings of the shoots are put in, many of them damp off. The most successful way to strike this Begonia is to take the young shoots that are produced after a plant has been cut back. Put them singly into small well-drained pots of sandy soil, and keep them close in a stove temperature till rooted. In selecting the cuttings great care must be exercised, as, if too succulent, they will damp off at once, and when allowed to get hard they will stand for months without rooting. This Begonia may also be increased in great numbers from seed, provided the blooms are fertilised artificially; but seedlings vary somewhat in the hue of the blossom, and, if raised from the deepest coloured type, many of them will be much paler than the original, so that in order to perpetuate the best variety, cuttings are to be preferred. Its lanky habit forbids its use as a decorative plant in a small state, for in a 5-inch pot it runs up slender, with a few leaves and flowers on the top, the whole then being by no means of a prepossessing appearance.—H. P.

The blue African Lily (Agapanthus umbellatus), is one of the old-fashioned greenhouse plants well worth taking more care off. In the south of England it may be safely left out-of-doors all the winter, but is usually placed under cover during the most inclement months. It appears to enjoy a great popularity in the Isle of Wight with amateur and villa gardeners, and at this time of year, visitors are struck with the beautiful effect produced by large specimens of this plant, with its tall spikes of pale blue flowers rising to a height of 3 or 4 feet, and the effect of a good mass of this somewhat scarce colour amongst other more brilliant hues is very pleasing. To get good-sized specimens in a short time, the best plan is to take three or four young plants and place them in a pot 10 or 12 inches in diameter, using rather a stiff soil such as is generally called an adhesive loam, with a little manure and sand. In this the plant will make fine healthy foliage that is very ornamental, and the year after potting they will send up fine spikes of bloom, and with copious supplies of water they may be kept in the same pots several years; large saucers or pans filled with liquid manure are a great help to such gross-feeding plants as this, as they render unnecessary such constant watering as is otherwise required in dry seasons.—J. Groom, *Gosport.*

Solanums from cuttings.—Those who have hitherto been content with growing Solanums from seed will not regret giving this plan a trial. When the plants are done with for decorative purposes, a stock of the best berried ones should be selected and set in a cold frame till wanted for propagating. They strike very freely during the spring months in frames in which a growing heat can be maintained. As soon as they are well rooted we take care to keep them on the cool side, our object being to make them as hardy as possible. We have now a batch of well-berried plants in 6-inch pots raised from cuttings in March and kept in cold frames since May. Where not planted out, coddling must be guarded against; in fact, we have the lights taken off every night when the weather is favourable.—B., *Bristol.*

REPLIES.

14236. — **Treatment of Wax-flower (Hoya carnosa).**—The Hoya carnosa is properly an intermediate house plant, but, nevertheless, it will do well in a conservatory or vinery — best in a conservatory, simply because it can get the most light. I should certainly advise "A. A. L." to plant it in a conservatory which is moderately heated. Another important thing is to be careful with water; never water more than once a day, and sometimes each alternate day. The usual time for it to flower is May and June and onwards. The compost for potting should consist of two parts of free loam, one part of leaf-soil, and one part of peat and silver sand—a small portion of manure will do no harm—all thoroughly mixed together.—J. Dobbs, *Grimsby.*

—— Keep your plant during the winter in the warmest house of the two, and only give it sufficient water to keep the soil just moist, as this plant will endure a dry soil when in a low temperature better than a wet one; the time of flowering varies according to treatment. In your case it would probably flower in July or August. It is not very particular as to soil; peat and loam in equal parts, with one-eighth part sand, will suit it as well as anything. Keep the drainage right, and commence giving more water in April, and let the plant have a light, sunny position. Hoyas do not require much root room.—J. C. C.

14224.—**Flowers in winter.**—For buttonhole work Cyclamens are the best flowers that can be grown, and, if well grown, the same plants will furnish bloom all through the winter and spring. To get them to bloom they should be started into growth in March, in warmth, to be grown along in summer in cold frames. Old bulbs do not flower quite so soon as young plants, but they will come in in December, if they are attended to as soon as they finish blooming. Shaken out of the old soil in June, and repotted in suitable compost, they make strong growth, and throw up their flower buds early; whereas, if allowed to remain until August before being attended to, they do not flower before March or later. Paris Daisies bloom freely in winter if the plants are well prepared for the purpose. They should be grown in the open air all the summer, pricking off all buds as they form until September. The yellow kind, Etoile d'Or, is the best of all, for it never seems to get tired of blossoming, and it looks well in any kind of floral arrangement. Zonal Geraniums, if grown along during the summer, and not allowed to flower then, will do so in winter if a little fire is made now and then to keep out damp, and so will Heliotropes. Mignonette, too, sown, say in September, flowers well in winter, and in the way of pure white flowers nothing can be better than Christmas Roses, which come so much finer in a cool greenhouse.—J. C. B.

14260.—**Taking cuttings of Oleanders.**—It is now rather late in the season for taking these, but if carefully watched, there is no reason why "I.'s" cuttings should not succeed. Shoots that are not showing flower should be taken and inserted, say half-a-dozen together, in a bottle of water; as soon as the roots are about an inch long (which will be in a month or six weeks time) the cuttings should be potted, care being taken not to break the roots. 60-size pots will be large enough at first, shifting afterwards into 48's or 32's. The soil should be a moderately strong loam, mixed with a little well-rotted manure. Plenty of water must be given while growing, and when bloom buds appear it will be found advisable to stand the pots in a small jar or saucer of water; during the warm days of July stand the plants out of of doors to well ripen the wood, giving plenty of water. So treated, "I.'s" plants should bloom well next season.—Cora Brea, *Portsmouth.*

14225.—**Striking Crotons.**—Cut the shoots from the base of the root, if there be any, if not, cut the side shoots off—they strike from only the young wood; but in order to strike them you want a gentle bottom-heat, either in a frame or stove. They strike the best in peat and Cocoanut fibre.—John Dobbs.

14235.—**Abutilons unhealthy.**—The treatment is right as described, but they must have been neglected in some way. The fact of leaves turning yellow and shrivelling shows that they lacked water at the roots. We have plants treated exactly as described and they are growing and flowering well. Too much manure water would have the same result, if it killed the roots. If you cannot succeed with them in pots plant them out-of doors next season in June.—J. D. E.

CATS AND OTHER TRESPASSERS.

As I see that you have not closed your columns to the wail of the cat-ridden, as "Vigornia" recommended, will you allow me to state my experience of being county-courted for ordering the destruction of a cat. The brute had been annoying me for weeks, and killing chickens as well as other things, so I sent a message to the owner that it must be destroyed or damages paid; the wife of the owner consented to have it shot by my gardener, which was done. The owner, on his return from work, sent a letter threatening to county court us if the value of the cat, which he estimated at £2 10s., was not paid. I took no notice of this, and a fortnight later received a county court summons for that amount. The case was heard, and the judge pronounced that the cat, being a trespasser and a poacher, had been very properly killed, and added what I regarded as the most valuable part of his sentence—"Had the plaintiff gained his cause it would have been for me to assess the value of the cat, which I should have given at sixpence." As the man was poor I did not ask for damages, but he had to pay his own costs and those of the witnesses, amounting probably to some 30s. The moral we deducted was that for the next cat we killed we would offer 6d. in payment; but it is a remarkable fact that we have not been troubled with strange cats since. In imitation of Mrs. Davis's excellent example, I append my full name and address, though you, Mr. Editor, will probably agree with me that it is too long for constant use; and permit me to revert to the familiar "A.B.T., East Anglia," in future letters.—(The Hon.) A. Blanche Thellusson, *Woodbridge, Suffolk.*

—— I have found by experience the efficacy of the remedy for the cat nuisance referred to by "S. L. S." (p. 307). I find also these pieces of wood, with a pin at one end, a capital remedy for the fowl nuisance. A fowl, however, is longer in learning wisdom than a cat. A few inserted with the pins just level with the ground where a dog is in the habit of scratching will put a stop to that annoyance. Two or three placed in the right direction in the weak part of a fence by which the animals enter will keep them back.—W. B.

—— "A. P.'s" plan in Gardening of August 8th is good. I have tried it, and, like him, have caught dozens. It is a most humane method; but the result was this—that for every cat destroyed my neighbours simply renewed the supply, and I gave up trapping and took to the plan advocated by "G. G." in your issue of August 1st, which I find answers better. In the country, with wild cats, "A. P.'s" plan is excellent, especially if baited with Valerian root.—X.

—— I have been greatly amused with the opinions expressed by "J. D.," in your issue of August 8, in his defence of cats in suburban gardens. On reading that "J. D." never had any seed-beds scratched up nor damage done by cats, I cannot but conclude that "J. D.'s" garden is confined to a window-box which happens to be inaccessible to pussy, and that he does not possess a yard of cultivated ground. As to his ideas for the education of cats, I fear that however much he may rely on the "intelligence and docility" of these domestic pets, he will never prevent their mischievous tendencies of scratching up seed-beds and bulbs, keeping people awake at night, and breaking the eighth commandment as often as they get the opportunity, and not confining themselves to prigging a bit of fish. I am quite disposed to agree with "J. D." "that cats have a perfect knowledge of their master's premises," and may possibly know where they begin and where they end. I am also certain, from painful experience, that they have an instinctive knowledge of my premises, especially the larder. They will watch the places of ingress and egress with the intelligence and audacity of an accomplished burglar, will watch for a convenient moment, and snatch any toothsome morsel in their way that may probably have been intended and reserved for my own enjoyment. I believe I was one of the first to open up this question in your columns—what to do with these mischievous nuisances. I have tried all sorts of remedies, including snuff and pepper, without success; but when I can get as much leisure as your correspondent "S. L. S.," and the evenings get very long, I may possibly try her remedy, and endeavour to accomplish the task of covering an acre of ground with bits of firewood, with pins stuck in them. I have decided not to resort to poisoning or trapping, but I have just secured a puppy, on whose intelligence I shall rely; his father and mother have the reputation of being capable of killing the strongest and healthiest tom cat in three minutes. I shall rely on young "Teazer" to watch my future interests in the garden by night, and to give neigbours' cats a warm reception whenever they approach my larder. —J. W.

—— At last relief has come, and the controversy of "Cats *v.* Gardeners" may, unlike most controversies, be settled to the satisfaction of all parties. The cat lovers can keep their pets and the gardeners still enjoy their beautiful flowers. How? Simply by placing themselves in communication with a countess residing at Penge, respecting a peculiar breed of the animal of which she appears to be the sole possessor. These cats, to which a magistrate applied the distinctive title of "well-regulated cats," are —I trust readers will not be incredulous, because the statement is the lady's own—*never out after six o'clock in the evening!* Now, all that distressed gardeners need do is to procure the adoption of the particular breed of cat to the extinction of all others, and then what bliss will be ours! These cats *never go into other people's gardens*, and each day we shall see each member of each separate family, after passing the day in dignified solitude, quietly proceed indoors at the stroke of six, not to appear till a reasonable hour the next morning. Sir, if the Countess de Viesca will only permit the multiplication of this admirable variety of the feline race, hitherto unknown to naturalists, she will be conferring a boon on all humanity. Let an influential deputation wait upon her, and an association be at once formed. If gardeners let slip the opportunity they will deserve to be cat-ridden all their days.—T.

A "modified cat" concert.—A Leeds correspondent sends us the following from the *Yorkshire Post*:—"It has often happened that valuable inventions have had their birth in accident. This is the case in regard to the recent invention made by J. H. Symms for the modification of cats, and although the name of the invention may be open to criticism, of the value of the invention itself there can be no doubt. Mr. Symms's back-yard has been for years infested with cats. Affliction sore from this particular cause long time he bore, and bootjacks were in vain. The voices of the cats were to the last degree exasperating to his nerves, and a month ago Mr. Symms was, apparently, on the way to fall a victim to persistent insomnia. One night a peculiar, melodious sound floated up to Mr. Symm's back windows. It was a gentle, soothing sound, of delicious timbre, and, while totally different from the yell of an ordinary cat, it did suggest what the voice of a celestial and glorified cat in another and better world might be. Mr. Symm's listened with admiration and delight, and in a short time he was lulled to slumber by the melodious voice. In the morning an investigation in the back-yard resulted in the discovery of what was apparently a new species of animal, half cat and half tin can—a sort of connecting link between live cat and canned sausage. It appears that a can containing a little preserved salmon had been carelessly thrown into the yard. A predatory cat had squeezed her head into the can in order to get at the salmon, and had found, when it was too late, that the fragments of the tin around the mouth of the can prevented her from withdrawing her head. In these circumstances she wandered about the yard, blind, and unable to escape. The voice was so modified by the can that it lost its hard and distinctive feline character, and became the delicious music which had charmed Mr. Symms's midnight ear. Mr. Symms at once saw that the means of rendering all the cats of the neighbourhood harmless was at his command. The next night he placed twenty four salmon cans in his back-yard, and in the morning he found that twenty-four cats had bonneted themselves. For nearly a week these animals wandered about the back-yard, unable to steal, fight, or destroy Mr. Symms's Geraniums, while the neighbours called on that gentleman to thank him for the public spirit which had induced him to place in his back-window the most delightful Æolian harp they had ever heard. Mr. Symms is one of the grandest benefactors of the race. He has pointed out the way by which we can obtain relief from cats. Old tin cans can be obtained at a nominal price, and enough salmon to bait a hundred of them can be bought for a few pence. There is not a cat living who has sufficient self-control to abstain from canned salmon, even at the peril of her life. Within a month's time there need not be a cat in this city whose head is free from a tin can. The midnight concerts will make the whole city melodious, and after their swan is sung the cats will die, and the whole feline race, so far as this city is concerned, will be exterminated."

AN AMATEUR'S EXPERIENCE.

It is now a good many years since I began to take an interest in the cultivation of plants and flowers, and my experience leads me to the conviction that an amateur has a great many trials to go through, and much disappointment to suffer, before he attains anything like success. Not only is there no royal road to a knowledge of horticulture, but there is practically no road at all to a beginner; and if he is a man possessed of courage and perseverance, and follows on in the steep and rugged path of experience, he will often find himself miscrably deceived by the puffing and trickery found in catalogues and "guides" issued by florists. I have oftentimes perused these with rapturous delight, and pictured to myself my little greenhouse and garden filled with the plants and flowers so ably and graphically described; but how very different their appearance when they come to hand! I have done business with a good many firms, but I have found none yet that sell the article they advertise. Take seventy-five per cent. off the standard of excellence in the catalogue, and still they are above their real worth. For several years in succession I have spent over half a sovereign in flower seeds of various sorts—Asters, Stocks, Marigolds, Antirrhinums, Canterbury Bells, Pentstemons, Phlox, &c., &c. I have once had good Stocks, and once good Snapdragons, all the rest of the seed was not worth a brass farthing. I am quite ready to set down a fair proportion of failure to my ignorance and inexperience, yet I fail to see how a knowledge of gardening can change the colour of a flower or alter its substance. For instance I purchase Asters (Victoria, intense rose); when the blooms appear they are a sort of faded puce, about the size of a shilling, and there is one row of petals round the head of the flower and all the middle portion is bald. Now I don't see how any knowledge of horticulture could have made these come true. I think the blame must be laid to the credit of the seed merchant. It is no pleasure to write in this strain, and I will not detail to you my disappointment with regard to other seed. What I wish to suggest is that the Editor of Gardening should undertake to supply his readers with some means whereby they may gain access to a firm or firms where their orders will be executed on the understanding and conditions attaching to other trades—viz., that the articles shall be such as are described in their advertisements, and failing this they will make good any deficiency.

Disappointed Amateur.

North Lancashire.

*** We insert the letter of a "Disappointed Amateur," but we see little justice in his complaint, because there are many trustworthy seed houses in all parts of the country from whom perfectly good seeds may be obtained. Good cultivation cannot always be depended upon, we fear, and in the raising of annuals almost everything depends on cultivation. Of course, there must be good seed at first, and all respectable houses take care that the seed they sell is good by testing it themselves. There may be failures and there may be exceptions; there may be, and there often is, bad selection and spotty poor varieties, but the serious thing is the way the seedlings are treated. Great numbers of people seem to have no idea that they should be thinned out early, should never be allowed to be drawn, or to be too thick, and should be kept sturdy and in a growing, well-lighted state from the beginning. Take the

case of a person who lets his seedlings be drawn up in a pot until they are quite worthless, as one may see every day in gardens. Whether an Aster develops into a fine plant or becomes a starved object depends almost entirely upon cultivation. "Disappointed Amateur's" suggestion is entirely impracticable. The proper way is to deal with those houses that serve one well, and if purchasers think that one seedsman does not treat them fairly they should try another, but should first be sure that accident, or bad culture, or wrong season of sowing, or any other thing that may mar seedlings, is not to blame rather than the seedsman.—Ed.

THE VILLA GARDEN.

(*Continued from page* 320.)

Marjoram (Sweet or Knotted).—This is in constant demand. It is generally treated as an annual, but the plants will live through a mild winter. I have some plants now growing in a warm corner that stood out all last winter. It is usually sown under glass in April, hardened off, and planted out 6 inches apart in May in a warm, sunny spot. A few plants should be pricked off in pots, and be kept under glass for early use. Lift some plants in autumn, selecting those which have been cut in and are just breaking again, pot them into 5-inch or 6-inch pots. These, if placed in a genial atmosphere near the glass, will supply green Marjoram all winter, when it cannot be obtained in the open air. Where plants are kept in pots all the winter, a stock may be worked up from cuttings for planting out in summer; but, as the plant seeds freely, raising them from seeds gives perhaps the least trouble. Cut for drying when in flower in August. *Pot Marjoram.*—This is a hardy perennial, will grow anywhere, and is easily increased by division in spring.

Penny royal —This is a dwarf mint used for flavouring. It is a native, but unless transplanted annually it is apt to die off in patches. Owing to its close, compact growth it holds the damp, and this condition is fatal to it. Every little bit will grow in spring and new beds are soon formed.

Rosemary.—There are several varieties of this, one or two having variegated foliage, but the old green-leaved kind is the best and hardiest. Cuttings in autumn under a hand-light will root freely in a shady position; or slips with a heel may be planted any time during winter or spring, sheltered by glass. Rosemary is used by the chemist in the manufacture of scents and preparations for the hair. The plant has an ornamental appearance on the lawn or in the shrubbery border.

Rue.—"Herb of grace" this is called by some country people, by whom also it is thought a good deal of as a medicine in spring. The gamekeepers in Norfolk chop the green leaves up fine and mix it with young pheasant's food. They have great faith in its value to the bird's health, which I think, probably, is well founded. It is a dwarf evergreen shrub which will grow anywhere in moderately light soil. Cuttings of the young shoots will strike in autumn or spring under hand-lights, kept close and moist. Plant the cuttings out, when rooted in rows, 15 inches apart, if many plants are wanted, though for the most part one or two plants will be sufficient and may be planted in any out-of-the-way sheltered corner.

Sage.—This is easily propagated and grown, but should not be left too long on one spot, as old plants sometimes die off during or immediately after a severe winter. It is a good plan to raise a new bed from cuttings every two years, destroying the old bed when the new one has become well established. Cuttings or slips with a heel of old wood will readily and quickly root about May Day, if dibbled firmly into the ground, 8 inches apart each way, and watered if the weather is dry. Sage is not particular about soil or aspect, but the site should be well drained. Where only three or four plants are required, if a few of the outside branches have a little soil placed over them in autumn they will strike root, and a stock of young plants will always be coming on without any further trouble. Sage may be raised from seeds in spring if cuttings cannot be obtained. There are several varieties, but only two are generally grown—the green and the purple.

Summer Savory.—This is classed with Basil and Sweet Marjoram, the seeds being sown in a gentle warmth in April, and the plants hardened off and planted out in May, or it can be sown in May on the bed where it is intended to remain in the open air. When in flower cut and dry the stems with the flowers and foliage in an airy room, and when dry rub and keep in wide-mouthed bottles.

Winter Savory.—A hardy perennial, used in the same way and for the same purposes as the annual kind, though the latter is generally most appreciated. It is easily increased by division or cuttings in spring.

Tansy.—Used sometimes in flavouring, though not much called for. The curled-leaved variety is best. I have sometimes found the leaves useful in table decoration. They are of a dark tint of green and have a fern-like appearance, and have rather a nice effect for decorations on the cloth. Tansy is easily cultivated, and, being a native plant, it is very hardy. It may be raised from seeds, but it is better to divide an old root and plant out the offsets 12 inches apart. By cutting down a few plants at different periods during summer, a young condition of growth in a part of the stock can always be had.

Tarragon is used in flavouring salads and in cookery, and is quite indispensable. On some soils it is rather delicate, and, although a native of Siberia, in cold heavy soils in this country it often fails altogether. But I have never known it to fail on a dry, warm site, and where there has been any difficulty with it, if planted on a raised well-drained spot it flourishes and becomes strong, proving it is not the cold that injures it but damp. Tarragon is easily propagated by offsets, which may be taken off in spring with a piece of root attached; or an old plant may be lifted and the root-stock cut into small pieces and planted in a bed. I have struck it in pots and boxes in spring like any ordinary soft-wooded plant, and a box or two of cuttings planted in spring in a warm frame, hardened off and stood out all summer, will come in useful when placed in a genial temperature for producing green shoots in winter; or, if no provision has been made in this way, some roots may be lifted and placed in a forcing pit. To obtain a succession of nice young growths all the summer some of the shoots should be cut down at different periods to induce a succession of young shoots to spring up. In winter a liberal top-dressing of old manure should be spread over the surface, covering up all the crowns.

Thyme.—There are two varieties, commonly grown for culinary purposes—viz., the common Green and the Lemon; the former can be obtained from seeds sown in spring, and transplanted when large enough, or cuttings may be inserted in March or April and kept moist. Division of the roots will, in most cases, answer all requirements, the Lemon Thyme especially yielding to this mode of propagation. Thyme may either be planted in beds, or it may be used as a bordering to any other plant. It is very hardy, but sometimes in severe and in cold, wet winters old plants die off; therefore, it is always best not to trust too much to old beds. Select a warm site, with light, rich soil, mulch with old leaf-mould or manure, and there will always be plenty of Thyme. It will seed as it grows, and plenty of plants can be raised in that way, without any other trouble, and these may be lifted and planted in a new bed to form a succession in spring.

Wormwood.—This is exceedingly bitter, and is often used by country people as a tonic. It is cut and dried for winter and spring use. It is strongest when just opening its flowers, and most people cut it for drying then. In the country, if anyone wants a tonic, a handful of Wormwood is placed in a jug, or pitcher, boiling water is poured over it, and a glassful is drunk every other morning. It has no merit, except for the purpose named, but in a collection of medicinal plants it must be grown. It is a native plant, and grows wild in the fens of Cambridgeshire. May be propagated by seeds in spring, or division, or slips, or cuttings, in March or April. Will grow vigorously in any light, warm soil.

Drying Herbs.—The active principle of all plants is strongest just when the flowering process is going on, but before seeds are actually formed, and this is, therefore, the best time for cutting and drying herbs. They should not be dried in the sun, as the sun in August takes too much out of them. An open shed or building is the best place. They may be spread out on shelves, or tied up in small bunches, and hung up to the rafters beneath the roof, where the air can circulate freely among them. When thoroughly dry, they will retain their strength best if rubbed up fine, and placed in bottles, corked up tightly. E. Hobday.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XIX.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Artichokes.

This vegetable is not so much eaten in the British Isles as upon the Continent; but when once the taste is acquired the vegetable is much sought after and appreciated. Only a small portion of the Artichoke is edible, and the process of removing the uneatable part is very easy when once acquired. The word "trim" as used in directing the preparation for cooking of other vegetables is here hardly explanatory enough. To prepare an Artichoke for a hungry consumer the uneatable portions must be removed, so that the Artichoke may be eaten with a fork, in the same manner as Carrots, Turnips, &c. But a real lover of this vegetable will prefer the leaves left on, and will endeavour to command sufficient patience to pick off leaf after leaf, and to get at the delicate flavour of the Artichoke.

Plain boiled Artichokes.—Twist the stalks from the Artichokes, and wash them well in cold water. Have a large saucepan over the fire, with plenty of water, liberally salted, and when it has been boiling rapidly for five or ten minutes, plunge in the washed Artichokes, head downwards, and boil them without a lid on the saucepan as fast as possible until they are tender, which may be ascertained by extracting one of the leaves—if it comes out quite easily the Artichokes are ready to be dished, if not they must be cooked longer. It is quite impossible to specify any length of time for boiling this vegetable, as old and long-kept Artichokes require about three times as much cooking as young and freshly picked ones; therefore, the cook must be careful to watch the vegetable while it is boiling. When sufficiently tender to be served, drain upon a sieve, and serve either upon a strainer in a vegetable dish, or upon a folded napkin, so that any water that may remain within the folds of the leaves may be absorbed or drained off. Always boil Artichokes in a large quantity of water, as this tends to disperse the bitter taste which is so often found in those fully grown. Serve melted butter, or oiled butter, in a separate vessel, with a squeeze of lemon juice added just before serving. Each leaf of the Artichoke should be pulled off with the thumb and finger, the end dipped into the sauce, and as much of it as is tender then eaten.

Artichokes served as a salad.—This vegetable, unlike other green meat, should not be prepared before it is sent to table, but each person must prepare and cut for himself. Take fresh and young Artichokes, wash them well in several waters, and then shake and drain them upon a sieve. Mix a sauce of a judicious quality of salad oil, vinegar, pepper, salt, and a very little mustard. Hold the Artichokes by the top leaves in your left hand, and with a very sharp knife cut thin slices from the bottom, and to each slice will be attached a leaf, which hold with your right-hand thumb and finger, and dip the slice of Artichoke into the sauce; convey it at once to your mouth and masticate well. Although this has a delicate flavour we cannot recommend it as suitable food for anyone troubled with weak indigestion.

How to prepare Artichoke bottoms.—Cut off the stalk, turn the Artichoke head downwards, and cut it into four quarters as you would an Apple, and with a sharp knife remove all the hard or woody stamens which are near to the core; then cut off the leaves in a slanting direction to within an eighth of an inch of the core, not too close, for as the leaves approach the core the eatable portion appears. When these are pared and trimmed neatly, throw them into a basin of cold water containing the juice of a Lemon, and remember that this trimming operation of the Artichoke must be expeditiously performed, or

both the appearance and flavour of the vegetable will be spoiled. When all are ready plunge them from cold into boiling salt and water containing the juice of a Lemon, or one tablespoonful of white vinegar, and let the water boil very fast for about fifteen or twenty minutes, when lift the Artichoke with a perforated spoon again into the cold water and Lemon juice, where let them remain until you are ready to cook them in any of the following methods :—

Artichokes fried in batter.—Cut the Artichoke bottoms into conveniently-sized pieces after they are prepared as above, and dust them with flour, so as to render them quite dry. Dip them into batter, and fry them in hot fat until they are of a pale brown colour. Drain on porous paper, and serve on a folded napkin with a very little salt sprinkled over them, and decorate with fried Parsley.

Batter for Artichokes.—Take four tablespoonsful of flour, one of salad oil, and three of warm water, a pinch of salt, and the whites of two eggs. First mix the flour, water, and oil free from lumps, and when you have beaten it for five minutes, add the salt to the whites of eggs and whip them to a very stiff froth; then stir them lightly into the batter, and it is ready to coat the Artichokes with before frying them.

Stewed Artichokes.—Melt two ounces of butter in a saucepan, add to it one tablespoonful of flower, and, when they are well mixed without any lumps, pour on by degrees two large breakfast cupfuls of water, stirring all the time until the sauce boils; then add pepper and salt to taste, with the bottoms of four Artichokes; put the lid on the saucepan, and let all stew gently for half an hour; then lift the Artichokes on to a piece of buttered toast on a hot dish, and thicken the sauce with the yolks of two eggs, stir briskly, but do not allow the sauce to boil after the eggs are added; squeeze in the juice of a Lemon the moment before pouring the sauce over the Artichokes.

A savoury dish of baked Artichokes.—Butter a shallow dish and lay in a bed of prepared Artichoke bottoms; strew over them a plentiful supply of chopped Parsley, Mushrooms, and a very little Shallot, pepper, and salt. Beat two eggs to a froth, and add half a pint of milk; pour this over the Artichokes, sprinkle bread crumbs on the top, with a few pieces of butter; bake in a moderately hot oven for twenty minutes or half an hour. The remains of cold boiled Artichokes may be utilised in this manner, and so form an appetising dish.

14210.—Non-effervescing lemonade.—I assume that made with Lemons is meant. If so, take one Lemon; pare the yellow part of the rind as thinly as possible, and put into a jug; squeeze the juice of the Lemon into another jug, with a little sugar, according to taste; add to each jug from a pint to a pint and a-half of *boiling* water; let them stand till cold; then strain through muslin and mix. By making lemonade this way you avoid the bitter flavour that it sometimes has, and which is produced through the inside white pulp not being kept back.—Ferndale the First.

A good bee plant.—Melilot (Melilotus officinalis) is a capital bee plant. Planted on any waste piece of ground it furnishes late in summer a harvest for myriads of these busy insects. It being a biennial, seeds sown in autumn will produce flowering plants the following season, and if the locality is sheltered the stem will attain a great height. The main stem of a self-sown plant which came up in my garden is over 11 feet in height, and has, besides, several large flowering-stems springing from the same root. My bees are constantly buzzing merrily round it, and I believe it to be one of the very best honey-producing plants grown. When dry it is extremely fragrant, and, like the Tonquin Bean and Woodruff, will impart a sweet odour of new-mown hay to linen.—E. C., *Surrey.*

POULTRY.

14397.—Poultry with swollen feet.—I have charge of about one hundred fowls. Three cocks and two hens have one of each of their feet swollen, and after it swelled for about a fortnight I cut the feet with a knife, and matter oozed out. They have a good house to roost in, and go about in the fields during the day, and they get the best of feeding. Will "Doulting," or some other reader, tell me the cause and what to do?—Gardener.

THE HOUSE SPARROW.*

(By a Friend of the Farmers, Colonel C. Russell.)

The sparrow question has interested me from childhood; the first definite observation I can remember was that of opening half-grown nestling sparrows some fifty years back, and finding in their gizzards ripe Wheat about June 20th, when none could be got in the fields; the nearest place where it was likely to be found being a farmyard about half a mile distant. It struck me at once; so much for calculations of the number of insects destroyed by sparrows, based on counting the visits of sparrows to their nests, and assuming that they carried in nothing but insects. From that time or earlier I have observed the habits of sparrows; up to 1870 only loosely, and my impression then was that they lived mainly on corn, and though they took a few insects sometimes, that they no more lived on them than boys live on nuts and blackberries. One most objectionable habit I have noticed from the first—that of turning the house-martins out of their nests as fast as they build them. A decrease in the numbers of the martins by this persecution has been going on steadily for the last fifty years, till they are, according to my estimate, not one-fiftieth as numerous as they have been within my memory. . . . . Becoming much interested in the subject, I investigated the food and habits of sparrows with special care during some seven years, and worked pretty hard collecting from a wide extent of country and examining the food in thousands, old and young; old ones from all sorts of places at all times of year, young ones from wherever I could get any all through the breeding season. The result, confirmed by occasional examinations up to the present time, was that I found that sparrows destroy even fewer insects than I had supposed. The food in the old ones was almost all Corn during the whole year; green Peas (of course bitten up small), were also found in them in summer; and in May and June, when corn is scarce, a few wild seeds, chiefly of Grass. No insect has been found by me in a sparrow between September and March. I have not often found one at any season (particularly between June and March) in a sparrow old enough to feed itself, and have very seldom found any number of insects in one—even when corn could scarcely be got. The food of young sparrows was found to vary greatly; of those taken at the same time from one farmyard, some broods contained insects, some corn, green, or ripe, or green Peas, and a few green seeds, chiefly of Grass, and in many would be a mixture of some of all these. The kind of food by no means always depends on the age of the birds; the first food after being hatched given to a young sparrow is commonly a small green caterpillar, but large callow ones a few days old are often full of ripe Wheat, and some ready to fly contain insect chiefly. My observations showed plainly that to get results of any value an investigation of sparrows' food must be made on a large scale; otherwise very erroneous deductions may be made. For instance, once in June I found in forty-seven nestling sparrows of all ages from one farmyard scarcely anything except old Wheat and green Peas; there were only about six insects in the whole number. From such an instance it might be inferred that nestling sparrows are fed with little else than Corn and Peas, while another instance taken alone might be thought to prove that insects were almost their only food.

The following is, according to my observation, an outline of the life-history of a country sparrow. After being reared in the nest on some or all the sorts of food just mentioned, according to the notions of his parents (and these notions differ greatly with the same opportunities), if there is nothing ready for him in the fields, he lives on Corn and green Peas, if these things are to be found, about buildings, yards, gardens, and roads (unless a field of early Peas tempt him out sooner), till Corn is forming in the ear, when he and his kind begin their ravages on it as soon as it will afford them a little milky stuff in the ears. If he does not leave the nest till this time or later, he quickly betakes himself to the cornfields. As time goes on he and his fellows go further into and stay more in the fields, till, by September or earlier, most of them live in them altogether, sitting on the hedges by day and roosting in them by night, and feeding entirely on Corn, until, generally at some time in October, all the Corn on the stubbles is sprouting (sparrows, unlike larks, do not seem to like sprouted corn) or rotting; he then eats a few wild seeds; but when these and damaged Corn are all he can get in the fields, he soon leaves them and goes home to houses and farmyards, getting his food with fowls and pigs, on the roads and at stacks, especially after these are threshed out. He lives thus till spring, except that at autumn seed-time he has a turn at the wheatfields, picking up what grain he can get at before it has time to sprout. In March I have sometimes found a small soft beetle or two, occasionally a small caterpillar, or often a piece of tender green leaf, among his cropful of Corn. At spring seed time he has another turn at the cornfields. In May and June he often finds it difficult to get as much Corn as he would like, and goes eagerly to any place where he has a chance of getting it, but often has to make shift with wild seeds; he seems, too, to like a little green Grass seed with his old Corn, and contrives to find some very early in the year; most likely in warm sheltered places near buildings. I once found some sparrows full of Chickweed-seed in May. At this season he gets wild seeds near houses, in gardens, or meadows adjoining, but, so far as I have observed, does not go far into the fields for them. Now we come round to the time when he can get plenty of his favourite food; perhaps green Peas in June, and any amount of green Corn in July. A few town sparrows which I have examined had little in them besides Corn, much of which they get where fowls and pigeons are fed; they get also unbitten Oats and some Grass seeds from horse-droppings in the streets, as well as a good deal of bread-crumbs and other waste in towns. Sparrows leave towns and villages for awhile, and go to the fields when plenty of Corn is to be got there. At spring seed-time I have seen a great crowd of sparrows along the hedge of a newly sowed field near a small town. I believe that most of the London sparrows go out of town at harvest-time.

That Sparrows live chiefly on Corn is pretty evident, independently of any examination of the food in them. Where plenty of Corn can be had for the greater part of the year, they will make shift for a short time with wild seeds or insects; but where there is never any corn there are no sparrows, and where there is little of it but few. Not many are to be seen in moorland countries where corn is not grown. I heard some years ago that at Mauritius, where they had been introduced, no Corn being grown in the island, the sparrows kept to the towns and did not go into the country. The destruction of Corn by sparrows is very great, but varies so much in different places that I cannot pretend to guess the proportion of the whole Corn crop of the country to which it amounts. The mischief is greatest near towns and villages. As an instance, a friend who, a few years back, had four acres of Barley close to the village of Writtle, near Chelmsford, told me that the sparrows devoured the whole crop, not leaving a grain.

Without going further into the detail of sparrows' food, the question whether they are or are not, on the whole, useful to the farmer by destroying insects, can, I think, easily be decided. They seldom go far from houses and roads into the fields except when they can get Corn there, and then for the sole purpose of eating it, as the contents of their crops prove. Going through the fields in May and June, when most insects are given to their young, I seldom see a sparrow much more than a hundred yards from a house or road. Speaking broadly, it may be said that, unless very near houses and roads, sparrows take no insects in the fields. If they did any good to the farmer in this way, the land near their haunts would be worth more per acre to cultivate than the enormously greater extent of ground where sparrows never take an insect. But this is not the case. The greater ravages they commit on the Corn are the only noticeable effects produced by sparrows on land near places always frequented by them.

* From "The House Sparrow." (London: [illegible] Wesley and Son, 28, Essex Street, Strand.)

GARDENING ILLUSTRATED.

Vol. VII. SEPTEMBER 5, 1885. No. 339.

OUTDOOR PLANTS.

FACE OF ROCKWORK WITH ALPINE PLANTS.

Here is a little sketch showing a beautiful specimen of the long-leaved Rockfoil (Saxifraga longifolia), which is happily placed in a chink on the vertical face of the rockwork, thinly laced over with the small-leaved Ivy. The illustration tells its own story. On properly formed rockeries plants grow on vertical surfaces in the greatest beauty. In our wet climate alpine plants find in such places a dry medium which keeps them in a firm and hardy state during the winter, and in which, in fact, they live longer than they would elsewhere in gardens.

Schizostylis coccinea not flowering.—It does not require an exhaustive article (as a "Lincolnshire Rector," on p. 348, suggests) to describe the requirements of this plant, for it is about as easy a plant to grow and flower as any I know; and when your correspondent turned his plants out of their pots into the open ground he was taking the first wise step towards success. All that he has to do to them now is to place a temporary frame or handlight over them when cold, stormy weather sets in but not before, and then they will flower. With us they come into flower at the beginning of October, and frequently go on flowering to the end of the year. If his plants should not flower this year it will be because they are too thick. We replant a portion of our stock every spring, and they never fail to flower. It is one of the most accommodating plants that amateurs can grow for autumn flowering, as it is not at all particular as to soil; but a sheltered position in the full sun is desirable. With us in the West of England it does not require any protection to bring it into flower, though in Lincolnshire no doubt it would be benefited in the way I have suggested; but whatever form of protection is used the plants will require both light and air in fine, mild weather, and the best way of giving it is to take off the lights altogether during the day.—J. C. C.

Vacant spaces.—The answers that have been given to my question are acceptable, but I fear I shall be no gainer without further aid. The problem to be solved is as follows:—Given five beds, what to put into them which shall give a fairly continuous bloom during late spring and summer? How should the arrangement of plants be made, and when should the various seeds be sown? No bedding plants allowed, nor annuals, &c., which require to be raised in a hotbed or under glass. My experience of annuals, &c., is so unsatisfactory that I have now restricted myself to Mignonette, Nasturtium, Sweet Peas, and a few Stocks and Wallflowers—which last always look untidy, as do Sweet Williams, to which I am not partial. Anent the Cherry Plum—I had one, but it was blown down last winter; it never bore very well, though the fruit that arrived at maturity was pleasant.—E. W.

Daffodils.—It is very easy to admire Narcissi when they are in bloom next March and April, but now is the time to plant bulbs for next year's blooming, if the work has not already been attended to. Most of the complaints anent the poor bloom of Daffodils, &c., the first year after planting, are due to this operation being deferred until late in autumn. The great difficulty with myself is to get bulbs early enough, and no doubt others are in the same fix. Those also who intend to surprise their friends with some of the best Daffodils in pots next February should lose no time in potting up their bulbs. Even the wild field Daffodil, so common in many localities, is beautiful when grown in pots for the greenhouse, but N. Horsefieldi, N. obvallaris, N. maximus, N. nanus, N. princeps, N. major, and N. Bulbocodium should be potted at once.

WATERING IN DRY WEATHER.

"J. C. C.," in his note under the above heading (p. 320), says that watering with clear water in poor soil does more harm than good. For some time previous my attention had been directed to the same thing, and I had come to the same conclusion. I had resolved in my mind the following explanation of what might appear to many a paradoxical fact:—The roots of plants spread away from the stem a much greater distance than is commonly supposed, the roots of trees spreading a considerable distance, in most cases beyond the outermost drip from the branches. In soils that are not rich, where the full functional activity of every absorbent organ is requisite to supply the wants of the plant, it is evident that if only a part be brought into play the plant must suffer accordingly. As the plant grows, and the roots exhaust the soil, they advance farther away from the stem. The root fibres, with their spongioles at their tips, are, in their turn, converted into larger roots, which take no part in extracting nutriment from the soil. Here we have an answer to the question that naturally arises in our minds—Why should clear water from the watering-pot be an injury where clear water from the clouds is a benefit? It is because Nature waters all the ground, while the gardener in far too many instances only waters the part which would be least benefited by the operation, the outside of the circle, where the proportion of absorbent organs to the inert roots is much the greatest, being left untouched. It has been said that the cause of the greater effectiveness of rain watering than watering with the watering-pot is due to the nitrogen in the shape of ammonia and nitric acid that water absorbs in passing through the atmosphere. But water also imbibes plant food in passing through the land. We see its fertilising effect where "clear water" is allowed to pass over naturally poor Grass land. The reason that watering is beneficial when put on rich land, or when applied as liquid manure, is that where plant food is abundant a part of the roots of a plant is by increased functional activity enabled in a measure to do duty for the whole.

The circumstance that first directed my attention to the subject was the watering during dry weather of Peas that were sown in trenches without manure. I never could see any benefit from the operation; whilst the same thing done to the Celery in trenches, where abundance of manure was put, was productive of marked good results. This year I watered some Dahlias with clear water, close to the stem, to minimise the chances of their being eaten by slugs. After a while they began to look worse instead of better. I then watered a circular space around each plant, with a radius equal to the height of the plant. A decided improvement immediately commenced. I am now, and have been for some weeks, making a similar experiment with liquid manure. I have selected for the purpose two lots of Asters. In one case I have watered all the ground; in the other I have wetted only a small space around each plant separately. Those treated in the way first mentioned are now fine, vigorous plants, while the others are rather stunted in appearance, and about one-third of the size. Taking into consideration the principle which the experiment appears to make evident, it seems highly probable that where Celery is grown for exhibition much finer results might be obtained, if, instead of putting the plants in trenches they were planted on the level surface, heavily manuring a space 3 or 4 feet on each side of a line where the row is to be, thickly mulching the same space after planting, to prevent the watering from running off as well as to check evaporation, and at earthing-up instead of disturbing any of the roots employing earth from elsewhere, or, perhaps better still, putting boards on each side of the row, and filling the included space with ashes.—L. C. K.

Face of rockwork, with alpine plants among sparse Ivy.

Why hardy plants sometimes fail.—People who have only been used to planting bedding plants out of pots do not know how to plant hardy flowers. If hardy plants are planted in the same way they are almost certain to fail. The roots have to be spread out nearly level, and all broken and wounded parts cut away with a sharp knife. The reason that hardy plants fail in towns has little or nothing to do with any necessary or unavoidable conditions. Exhausted soil, careless planting, want of suitable manure, and neglect of cleanliness are the principal causes of failure. Bedding plants succeed in many gardens, simply because they are planted with a potful of good soil which lasts the plants the season through. Anyone who has watched the gardening in the London parks knows why the bedding plants succeed there; they are planted in soil which is perfection for things requiring light soil and good cultivation. If the hardy plants had the same culture and attention and then failed, that would be practice and not theory; but, without that, to say they fail in towns is theory and not practice. In a suburban garden in a season in which the wind, blowing towards my garden nearly all winter, made the atmosphere very unfavourable, purchased plants succumbed, but my own seedlings scarcely showed any signs of weakness. Many plants fail without apparent cause; but it is not the fog or the town air, but slugs and snails, or daddy-longlegs' grubs lurking beneath the leaves, which robins and thrushes give a good account of in the country. The great thing, however, is to get the plants into the ground early, so that they are well established before winter, as there is not much growth in the dull winter days.—J. D.

Dianthus Napoleon III.—This plant is worthy of more extensive cultivation than it receives. Recently I saw a row of it 50 yards in length, and the plants about 18 inches apart, and the sight was worth seeing; each plant had from 100 to 120 of its dazzling crimson-scarlet flowers expanded, and its flower clusters so crowded with buds, that it will flower until October or November. Such a plant is most valuable either as a bedding plant or for planting singly in borders.—R. M.

BEDDING OUT.

It is a pity that C. F. Davis did not, in her first letter, give any indication of her sex. A lady's garden is a different thing from that of one of the sterner sex, inasmuch as the harder work has to be greatly curtailed, unless skilled labour is employed. It has often the advantage, however, of constant little attentions which business men cannot give. With regard to the turf, a hot season, like the present, finds all sorts of holes, which would be invisible in a less trying season. On a dry soil a good preparation of the soil should be made before the turf is laid, and the Grass should be either sown, and of a suitable mixture, or the turf should be carefully selected. I have seen a small lawn permanently ruined, although on a very good soil, by weedy turf from a stiff clay soil being laid down with the clay among the roots of it. The more the roller was used the coarser and weedier the Grass grew. Grass is often mowed year after year, and it does not always occur to the owner that all that substance continually removed must come from somewhere. Lawns should be occasionally dressed with a mixture of guano and bone-dust. In a season like the present Grass should be frequently drenched with the hose.

Cutting out small beds on turf is a mistake every way. With a better knowledge of hardy plants C. F. Davis could have had her front garden as gay with flowers as bedding plants could make it. The one thing that cannot be got without bedding Geraniums is the very intense shades of scarlet and crimson; every other colour can be got with hardy plants. If the space occupied by the small beds had been made into one bed of hardy flowers, at one end, or one side, a brilliant display of flowers could have been made, and the garden would have been many times more interesting. A few plants in flower for a long period is very well, if there are no others, but not when that long period of bloom excludes hundreds of far more beautiful things. The term "muddle mixture" refers not so much to arrangement as regards appearance as to misarrangement as regards culture, such as placing Roses in a light, sandy soil, or Sunflowers or Poppies among Phloxes. Plentiful watering and plentiful manuring are the ways to get over these misplacements. Hardy plants require as much water, or more, than bedding plants, when they are planted in a shallow soil, and when the fork and hoe have been used amongst them in early spring, after they have begun to grow. Plants so treated have to make fresh roots, and have to be watered continually to keep them alive. Those whose gardens are on a dry, well-drained soil should grow Roses, Phloxes, Pentstemons, and similar things in beds of rich, moist, well-prepared soil 3 feet deep, and fill the general garden with plants which do not require so much water, such as Wallflowers, Antirrhinums, Corydalis lutea, Tropæolums, Everlasting Peas, Sedums, Saxifrages, Œnotheras, &c., helped by Portulacas, Petunias, and Geraniums in summer, and have a good show of spring and autumn flowers which do well in dry soils.

With regard to spring flowers, what a world of beauty C. F. Davis denies herself! The beds which were filled with Tulips, Crocuses, Forget-me-nots, and Primroses, might have been ablaze with Anemone fulgens, Florists' Anemones, Pansies, Polyanthuses, Primroses, Daisies, Dwarf Phloxes, Saxifrages, purple Aubrietias, golden-leaved Arabis, Daffodils, and other Narcissi, Parrot Tulips, alpine Auriculas, Scillas, and Primulas, while a few old plants of Geraniums would shade most of these, and give as much flower in the beds in summer as the bedders. Primroses planted in November won't do. The Primrose is comparatively not worth much until it has occupied its place for twelve months. In a season like the present a great help is to mulch the ground about the plants. Another help is to have plenty of climbers on trellises—they shade the ground, and there is no danger of mildew from over-dampness as there would be on a damp, clay soil. No artist objects to colour on Grass, but only to scarlet, crimson, and other bright reds which are discords against Grass green. It is one of the hallucinations of the untrained eye to imagine everything is green. If C. F. Davis has a vegetable box of colours, if she will try to match with patches of colour on paper the colours of Nature, bringing the colour to the edge of the paper so that it can come in apparent contact with the colour to be matched, and then try to get the colours a perfect match, like that of trimmings to a dress, she will see how far the colours of Nature are from being green. No artist paints Turnip or Potato fields, or green Corn or Grass, except when in bloom, when it is all soft, natural shades. Scarlet Poppies in green Corn are not Nature's doing, but man's. A capital instance of how Nature avoids scarlet and green is to be seen in the tuft of stamens in the middle of the double French kinds of the common Field Poppy. Green is placed against white, but not against scarlet or pink. With regard to the accusation of dictation in matters of taste, it should be distinctly understood that all matters of harmony of colour and beauty of form are matters of strict law, which laws can be ascertained by study and learning as the laws of science; those who imagine these things are matters of caprice or individual taste know nothing about it.

It is really scarcely worth while discussing the question of bedding-out. The two peculiarities of the system are its extreme neatness and stiff geometry, and its intense brilliancy of colour and excessive use of scarlet, pink, blue, and yellow, without any proper contrast. Nothing was more difficult in the early days of art education than to get the British public even to look at geometric and formal designs for wall-papers, carpets, chintzes, &c.; they were universally condemned as stiff, showing that of itself the British public have no favour for formal arrangements of vegetable forms. In colour anything in the colours of bedding is absolutely unsaleable, showing that the love of the effects of bedding must be a very insignificant minority.

"A. B. T's" remarks (p. 336) remind me greatly of a well-known Shakespearian quotation about a certain well-known gentleman in black and the scriptures. It is the easiest thing in the world to evolve apparent contradictions out of a series of misquotations, and quotations without context referring to different circumstances. "A. B. T." gives as a quotation: "People are fools to use bedding plants because they are fleeting." I presume he means because the beds are empty after the few months they are in flower. A very valid objection, especially when there is not the slightest necessity for that nine months' emptiness. "You cannot have too many Pansies." The man or woman who names a bed of Geraniums in the same breath with a bed of the best Pansies must have queer tastes. Pansies have infinite variety of colour and marking, and flower early, and also late. I never said, "You must not plant hardy plants in beds." Where else can they be planted? But what I do say is that hardy plants should not be planted in the "finiking" little beds used for bedding, but in beds as large as possible, and that the best way to fill the little beds is to turf them over or throw a number of them into one. You should not place flowers which require rich cultivation near shrubs, but in thinly-planted shrubberies. Woodland plants may be placed if the leaves are allowed to lie as they fall. You must not plant other plants over the roots of Roses, because the soil over these requires frequent hoeing if good blooms are required, and also because the Roses require frequent dressings of liquid manure, which cannot be given if the roots are covered with plants. Standard Roses have no business in single beds, and bush Roses can have their shoots partly bent down to hide the empty ground. I never said "You had better do away with turf," as a general rule, but only that in small town gardens the turf scarcely ever looked well, and occupied more time than it is worth. I never said, "You are not to place trees in your garden," but that, except in large gardens, it is better not to plant large growing trees if flowers are wanted. I never said, "You are never to sweep up the leaves," but that for woodland plants, which naturally live among trees, and whose natural food is leaf-mould, the leaves should be allowed to lie and rot. I never said, "You are to buy hardy plants because bedders cost so much," but for very much more valid reasons. "A. B. T." says her bedding plants never cost her a penny. I do not doubt it, but most people have to buy theirs, and presents of hardy plants are quite as frequent as presents of bedders. What would become of the bedders if they never cost a penny from October to May? What kind of plants does "A. B. T." have experience of which do not bloom for seven years after planting? There is a fair list which bloom the first year from seed; most bloom the second year, and only a few bulbs which none but florists think of raising from seed take seven years to bloom. All plants purchased from a nursery bloom the second year after planting, and nearly all the first year. "You are not to dig, fork, or hoe the ground," except amongst florists' flowers; but you are not to leave the weeds alone, but pull every weed out as soon as it can be handled. The best hardy plant gardeners, I beg leave to inform "A. B. T.," are not professional but practical gardeners, who practise what they preach. "A. B. T.'s" contradictions exist only in her own imagination. I would recommend her to grow hardy flowers, a branch of horticulture of which she evidently knows little, if her plants take seven years to come into bloom.

In reply to "Canonbury," I need only say what I have often said before—that no advocate of the abolition of bedding ever objected to bedding plants as plants. What is objectionable is the arranging of these plants in patterns, and the pinching of them so as to form flat masses of colour. Where, as in "Canonbury's" case, a few Geraniums and Fuchsias can be kept through the winter without trouble there is no more reason why these should not be planted in the garden in summer than there would be against planting Dahlias, Gladioli, or annuals. What is objectionable is the false and blind faith in those things to the exclusion of everything else. Londoners go to the parks; they know skilled gardeners are employed there; they see the hardy plants all in a miserable state, and if they inquire the reason, I have no doubt they are told, as I was—"That these things don't do in towns," which is simply false. Were the bedding plants moved to the same stations that the hardy plants occupy, and treated in the same way, they would present the same miserable spectacle; and were the hardy plants moved to the places occupied by the bedders, and treated in the same way, they would be almost as healthy and floriferous as in the country. "Canonbury" should give hardy plants a fair trial. Raise all plants from seed, plant early—say now; give plenty of rich manure; keep all beds level, and scrupulously wash the plants twice a-week with a syringe, especially the under sides of the leaves. It is the bedding that puts town gardeners wrong. They leave their bedders in the ground as long as they look well, and then in the end of October, or in November, they plant hardy flowers. I visited the Zoological Gardens one year in the second week of October. A lot of foliage plants had been reduced by a sharp frost to the likeness of a lot of rotting seaweed thrown up by a storm. A fortnight later the beds were filled with Daisies, Arabis, &c. That is the kind of blunders our London amateurs follow, and think themselves right, and when the thing fails they blame the plants and not their own mismanagement. Give up bedding—not the bedding plants—and plant hardy flowers in the middle of August, so that they have six or eight weeks in which to establish themselves before winter, and then you will be able to say whether they will succeed or not. I have seen sufficient hardy plants growing and thriving—in far worse positions than "Canonbury"—well enough to satisfy any lover of flowers.

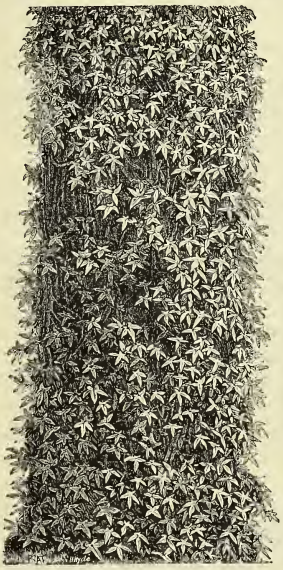
J. D.

—— I have read with interest, not unmixed with amusement, the hot controversy on this subject, and I must say my sympathy is chiefly with "J. D.," as his adversaries seem quite to ignore the fact, stated plainly in his letter of August 15th, that it is not the bedding plants, but the system that he objects to. I met with a case in point the other day at a friend's house. The garden was a blaze of Geraniums, Ageratums, &c., and the lady said to me—"And all these will have to be taken up and put by for the winter." I inquired what they had in the beds in spring and early summer. "Oh! nothing. We have no room for anything but a few plants for the stove house and conservatory." This decided me in my resolve to do away with "bedders" in my own case, and I am going to ask advice on the subject from "J. D." and other lovers of hardy plants.

Our garden is a large one, and, I fear, will take some time to stock. There is a wide herbaceous border running on either side of the kitchen garden walk. This border has been there for over twenty years, and everything has just been stuck in at random, the result being that the large plants have overrun and, in many instances, killed the smaller weaker ones. I want to take the whole border up, divide the plants that have got too large for it, and re-arrange it. This will, I fear, be a difficult undertaking, and it will be very kind of "J. D.," or any other reader of Gardening Illustrated, if he will help me with hints on the subject. I am away from home, and cannot set to work before the 20th of September. Will that be too late for shifting bulbs, &c.? We are rather north (Co. Meath, Ireland), about the latitude of Leeds. I think I must take up half the bed at a time, and put the plants on one side temporarily while the bed is being dug, manured, and cleaned. There are some Roses on their own roots in the border. Must these be left till November? They are old-fashioned sorts, and very free bloomers, so I should not like to injure them. The flower garden is a large one, laid down in Grass, a gravel walk round it, from which three walks converge to beds of Roses in the centre. On both sides of these middle walks, and of the long straight walk leading from the principal entrance to the herbaceous border previously described, are oblong beds, about 12 feet by 6 feet, separated from each other by large "Florencourt Yews," which, I regret to say, send their roots under the beds at either end. There are in all nineteen of these beds, besides the corner beds, and a border under a brick wall, which I am planting with herbaceous plants of a choice description, and bulbs. I should be very grateful for any help and advice respecting the arrangement of these nineteen beds, which I want to lay down permanently, leaving spaces for planting out some Geraniums, &c., in the summer. Hitherto they have been given up to "bedding" only, and all the glass, of which we have not much, has been sacrificed to them. I may add that our garden is very bright and sunny, and, although sheltered from north and east winds, has no shade, and our water supply in summer is a matter of difficulty.

A. H. S.

—— "J. D." (p. 336) asks by what extraordinary muddle of figures and mismanagement we arrive at the conclusion that hardy plants are more expensive than bedding, and require more attention from the gardener? As regards cost, the best answer will, perhaps, be to give a few quotations from the catalogue of a leading nurseryman who makes a specialty of hardy plants: "Herbaceous and alpine plants adapted for general garden decoration, 100 plants in 100 good varieties (nurseryman's selection), £2 10s.," and it is only fair to say that the above selection does not include many of the very choicest of our hardy herbaceous plants. "Bedding plants (nurseryman's selection), 100 plants in single pots, best varieties, 17s. 6d.; the above to include Ageratums, Calceolarias, Cineraria maritima, Cupheas, Dahlias, Gazanias, Geraniums, Heliotropes, Lobelias, Petunias, Salvias, Verbenas, and Violas." Bedding annuals from the same catalogue can be had at 4s. 6d. per 200. Now "J. D." admits that in large establishments it is only a question of first cost, but this is true also of anyone possessing either a small greenhouse or vinery, and from the above quotations it will be seen that for the same sum that I would pay for 100 hardy plants I could purchase 200 bedding plants, and about 700 bedding annuals. So much for cost. Let us now look at the attention they require. It is all very well for "J. D." to say let the weeds have their own way, allow all leaves to lie where they fall, and never use fork, hoe, or rake in an herbaceous bed or border; but let me ask him how many employers will allow their beds and borders to be littered with decaying leaves and flowers? Such practice may find favour with the sloven, or with arm-chair authorities, but there is no gardener worthy of the name who will not look over his herbaceous ground at least once a fortnight. I need not here detail any attentions that have been dealt with by other correspondents, such as watering, &c., but I would say that the majority of our choicest herbaceous plants—at least, such as bloom after midsummer—require a great deal of attention in the way of staking, &c. Perhaps "J. D." is one of those who are against staking; but the majority of gardeners prefer the trouble to the risk of having their best specimens blown to bits by the first gale that comes. In connection with the annual propagation and preservation of bedding plants, I have to say that I never used a hundredweight of coals to keep them in life, that I would not have used had there been no bedding plants about the place, and their propagation is usually performed at a time when there is no extra press of other work on hand. I come now to a statement that I wish to notice particularly—"Gardeners know little or nothing about hardy plants." I sincerely hope that, for "J. D.'s" own reputation, this is the last of a series of insults that he is so fond of flinging at the heads of those who may have the misfortune to disagree with him. To whom, I ask, are we indebted for the vast strides that horticulture has made during the last forty or fifty years? To whom are we indebted for the many new and improved varieties of florists' flowers that appear in our catalogues every year?



An Ivy-clad Tree Trunk.

Who has improved many of our hardy plants, so that now they are no more like those of a hundred years ago than black is like white? The answer is not far to seek. Is it not in a great measure to those very men that "J. D." says know little or nothing about them?

G. Watt.

** *This discussion must now cease, but we will take an early opportunity of making a few observations upon some of the questions raised by correspondents. We shall always be glad if contributors will tell us and their fellow readers how to enjoy more the plants, whether hardy or tender, in our gardens, but we think a continuation of this discussion will lead to no useful result.*—Ed.

Planting out Chrysanthemums.—I quite agree with "J. G. H.," that planted-out Chrysanthemums give infinitely less trouble than those in pots, and, as regards appearance, are immensely superior to their potted brethren. But does he lift them, and put them in pots in autumn, or do they remain out all the time? Because if left out the blooms would be so very inferior in a smoky atmosphere; and then, again, does not the potting check the blooming rather considerably? I have some fine varieties in pots, but as soon as they are allowed to run up tall, all the lower leaves turn brown and drop, as "J. G. H." says. Is it possible to prevent this?—Novice, *Birmingham.*

AN IVY-CLAD TREE TRUNK.

Ivy on trees has a decided charm, and the furrowed bark on the decayed trunk of some old picturesque tree, covered with the delicately and beautifully veined angular lobed leaves of the common Ivy, gives life and richness to the scenery, even in the depth of winter. The annexed wood-cut shows the stem of a tree densely clothed with Ivy. It is erroneous to suppose that Ivy is always injurious to trees. There are many trees that get on well in company with it, though no doubt it sometimes takes them off. But to treat them in the way shown here is essentially a garden practice, well worth following. It is quite easy to keep Ivy within bounds. Pinch the shoots in proper season, so as to form a dense level carpet, and the plant never becomes too strong for the tree. The effect is charming in the summer and autumn and on warm sunny days.

Hardy British Ferns.—A Disputed Question.—On behalf of the committee of the Blackly Floral and Horticultural Society I write you asking if you will kindly name the two fronds of Ferns enclosed in box. We had our annual exhibition on Saturday, August 8th, and the judge disqualified the Ferns from which these fronds have been taken as not being hardy British Ferns, we having offered a prize for best six hardy British Ferns. The exhibitors say it is one and the judge says it is another. —J. R. Haslam, Hon. Sec., *Manchester.*

*** *The two enclosed fronds belong to kinds which are, undoubtedly, "Hardy British Ferns," both being forms of the Polystichum angulare, or commonly called "Soft Prickly Shield Fern," which is widely distributed over the three countries, though rather scarce in Scotland. No. 1 is P. ang. proliferum, a variety originally found in Wales, and No. 4 P. ang. Henleyæ (as far as one can judge without seeing the habit of the plant itself); it is one of the ninety-two varieties of P. angulare enumerated in A. Stansfield and Son's Catalogue of Hardy Ferns, published in 1875. How many more varieties have sprung up since goodness only knows. In any case the judge was certainly wrong.*—Ed.

Caiophora aurantiaca.—May I draw the attention of those of your readers who are interested in curious plants to one which will well repay close study? I mean Caiophora aurantiaca, one of the Loaseæ. It is a half-hardy annual climber of rapid growth, with deeply-cut leaves, and flowers upon long, wiry stalks, somewhat resembling a small Passion Flower or Clematis. The whole plant is more or less covered with stinging hairs, whence its name ("That which bears burning things"). The structure of the flower is very curious. The petals are ten in number, five of them very much larger than the others. The larger ones, which spread out horizontally, are of an orange-red, deeply hooded and keeled; the five smaller ones, on the contrary, are erect, yellowish-green, very concave, and hairy, on their upper margin three strong teeth, tipped with maroon The stamens, which are numerous, are of two kinds; opposite each of the larger petals is a bundle of fertile ones, with long, straight, slender filaments, and then, inserted on each of the smaller petals, two seemingly-abortive stamens, with filaments, thick, arched, and much dilated at the base. The stigma is sessile, forming a five-lobed cushion, which crowns the ovary, and from the centre of this cushion, which is covered with beautifully ringed hairs, rises an elongated pillar. When the flower first opens, the bundles of fertile stamens lie back horizontally, stowed away in the deep hoods of the larger petals, and the abortive stamens, bending forward in an arch, just touch the top of the pillar of the stigma, thus forming an elegant open crown, jewelled at the base by the maroon tips of the teeth of the smaller petals. After a time the fertile stamens rise up one after another from the hoods in which they lie, and, approaching the stigma, discharge their pollen, until at last the form of the crown is lost in the forest of stamens. As the flower fades these stamens draw back from the stigma, and, gathering themselves into five upright sheaves, again disclose the crown. It is very interesting to watch these changes. For those who have microscopes, the ringed bulbous hairs on several parts of the plants, more especially of

the stigma, form very beautiful objects. The seed can be obtained from any of the great seedsmen.—L. L, *Langton Rectory.*

GARDEN OF PLANTS WITH ENGLISH NAMES.

I HAVE taken a fancy to make a garden of trees and shrubs and flowers that have English names. Will you kindly give me a good selection?—H. B.

*** *If you look in Miller's "Dictionary of English Names of Plants" you will find enough to fill a score of gardens; but, confining yourself to simple, obtainable, beautiful, and fragrant things, you may take the following:—*

Aconite
Adam's Needle
Alder
Alkanet
Almond
Anemone
Apple
Arrowhead
Artichoke
Aspen
Autumn Crocus
Azalea
Bamboo
Barberry
Barrenwort
Bay Laurel
Beech
Bell Flower
Bindweed
Birch
Bird Cherry
Bitter Vetch
Blackberry
Blackthorn
Blood Root
Bluebell
Bog-bean
Box tree
Bramble
Broom
Buck-eye
Bullrush
Buttercup
Canary Creeper
Candytuft
Cape Pond Weed
Cardinal Flower
Carnation
Catch-fly
Cedar
Cherry
Christmas Rose
Chrysanthemum
Clematis
Cliff Pink
Columbine
Comfrey
Convolvulus
Cornflower
Corn Marigold
Corn Poppy
Cotoneaster
Cotton Thistle
Cow Parsnip
Cowslip
Crab
Crane's-bill
Creeping Jenny
Crocus
Crow-foot
Crown Imperial
Crown Vetch
Currant (flowering)
Cyclamen
Cypress
Daffodil
Daisy bush
Damson
Daphne
Day Lily
Dropwort
Eglantine
Eryngo
Evening Primrose
Everlasting Pea
Fennel
Fern Bush
Fig tree
Flag
Flame Flower
Flax
Flax Lily
Forget-me-not
Foxglove
Fritillary
Fuchsia
Fumitory
Furze
Gentian
Gentianella
Geranium
Gillflower
Gladwyn
Globe Flower
Globe Thistle
Goat's Rue
Golden Osier
Grape Hyacinth
Grasses
Gromwell
Guelder Rose
Hare Bell
Hawthorn
Heartsease
Heath
Heather
Hellebore
Hepatica
Holly
Holly Oak
Honesty
Honey Locust
Honeysuckle
Horsetail
House Leek
Hyacinth
Hydrangea
Indian Cress
Iris
Ivy
Ixia Lily
Jasmine
Jerusalem Sage
St. John's Wort
Jonquil
Judas tree
Juniper
King Fern
Knot Weed
Laburnum
Lady's Slipper
Lady's Smock
Larch
Larkspur
Laurel
Laurustinus
Lavender
Lavender Cotton
Lent Lily
Leopard's-bane
Lilac
Lily
Lime tree
Locust tree
Loose-strife
Lungwort
Lupin
Madwort
Magnolia
Maiden-hair tree
Mallow
Maple
Marigold
Marlposa Lily
March Marigold
May
May Apple
Meadow Beauty
Meadow Crocus
Meadow Rue
Meadow Sweet
Medlar
Mespilus
Mezereon
Michaelmas Daisy
Mignonette
Milkweed
Milkwort
Mock Orange
Moneywort
Monkey Flower
Monk's-hood
Mountain Ash
Mountain Avens
Mountan
Mulberry tree
Mullein
Musk
Musk Mallow
Myrrh
Narcissus
Nasturtium
Navel-wort
Oak
Oleaster
Orchis
Osier
Ox-eye
Oxlip
Paeony
Pampas grass
Pansy
Partridge berry
Pasque Flower
Pear tree
Pearl bush
Periwinkle
Phlox
Pine
Pink
Plane tree
Plantain Lily
Plum tree
Polyanthus
Pomegranate
Pond-weed
Poplar
Poppy
Primross
Pyracantha
Quamash
Queen's Cushion
Quince tree
Ragged Robin
Rampion
Raspberry
Reed
Redbud
Rest Harrow
Rhubarb
Rocket
Rockfoil
Rock Rose
Roof-foil
Rose
Rose Acaola
Rosemary
Rue Anemone
Sand-wort
Satin-leaf
Savin tree
Saxifrage
Scabious
Scarlet Runner
Scotch Fir
Sea Buckthorn
Sea Holly
Sea Pink
Service tree
Silver tree
Sloe tree
Smilax
Snapdragon
Snowball
Snowdrop
Snowdrop tree
Snowflake
Snowglory
Solomon's Seal
Sow-bread
Speedwell
Spider-wort
Spindle tree
Spring Beauty
Squill
Star of Bethlehem
Starwort
Stock
Stonecrop
Strawberry
Strawberry tree
Sumach
Sunflower
Sunrose
Sweet Briar
Sweet Cicely
Sweet Gale
Sweet Pea
Sweet Sultan
Sweet William
Sword Lily
Sycamore tree
Syringa
Tamarisk tree
Teasel
Thistle
Thorn
Thrift
Thyme
Tick seed
Tiger Flower
Toad Flax
Toothwort
Traveller's Joy
Tree Mallow
Trefoil
Trumpet Creeper
Tulip
Tulip tree
Twin Flower
Valerian
Vetch
Vine
Violet
Virgin's Bower
Virginian Creeper
Wallflower
Walnut
Water-Lily
Weeping Willow
Welsh Poppy
Willow
Willow herb
Wind Flower
Winter Aconite
Winter Cherry
Winter Green
Wistaria
Witch Elm
Woodbine
Wood Lily
Woodruff
Wood Sorrel
Wormwood
Yarrow
Yew tree

AUTUMN-SOWN ANNUALS.

THOSE who have never grown hardy annuals from autumn-sown seed have not yet realised their worth. There is no comparison between plants that have wholly made their growth in late spring and early summer and such as have gathered strength and obtained firm root-hold by the time the genial sun of spring commences to encourage root action. Godetias with stems as thick as the top of a fishing-rod, Saponaria and Nemophila covering some 2 square feet of soil, Clarkia and Collinsia 2 feet high and 18 inches through individually, are what one gets by autumn sowing. I know of few things more handsome and effective than well-grown annuals, grown for their appearance as individual specimens as well as for the effect which they produce in the mass. There are some plants which have no beauty of form worth speaking of—we value them for their brilliancy or other good qualities—but many hardy annuals combine grace with effectiveness in no small degree, although this is only perceived in the case of well-grown plants. Many do not succeed well with hardy annuals, for the simple reason that they delay the sowing until too late a period. This is more especially productive of evil consequences where the soil is of a close, moisture-holding, and, therefore, cold nature; the young plants have no time to obtain a firm hold of the ground ere winter grips them in a firm and often fatal embrace. If they are not killed outright, they lose that freedom and vigour which they must retain if they are to yield us the full measure of their beauty.

The first week in September is quite late enough to sow, and then the position should be sunny, and at the same time swept freely by the autumn breeze, which imparts health and that power of resistance to climatic vicissitudes during the winter months which enables a plant to retain its vital powers intact. Take care that the young plants never become crowded, thin them out to 2 inches or 3 inches apart as soon as they are well in growth, and by mid-October they will have developed into fine sturdy little specimens. In a general way it is not practicable to sow where they are to stand, but if they are to be transplanted let it be done, if possible, quite by the second week in October, so that the roots get some hold of the ground by the winter. This is important, as it sometimes happens that hard frosts with drying winds come in November and December, and then there is not sufficient root action to keep the foliage full of sap, and the leaves then wither and untimely die away. In heavy soils early transplanting is more necessary than where the natural staple is warm and comparatively dry, though in soils which easily parch in hot weather it is best to get the plants into place as early as possible, as then they do not suffer so much when coming into bloom from periods of heat and drought. It is often said that soil should not be rich for annuals, but if you give them room enough you will scarcely err in this respect, as the more luxuriance the finer in quality and larger in quantity will be the blooms. But a word of caution is necessary—the luxuriance must be under control; there should be little signs of it before spring, as a too sappy autumn growth invites destruction. A top-dressing of some artificial or of decayed manure early in March will best answer the purpose, as the spring rains will carry the nourishment down to the roots by the time they most need it. In planting quite 6 inches should be allowed from plant to plant, and if they are to be grown in a mixed border three plants together will be the best arrangement. Although this is a mere question of taste a single well grown specimen looks well, whilst a square yard or more of colour is most effective. Erysimum Peroffskianum, for instance, produces an extremely fine effect when massed, the bright orange tint of the flowers being almost unique; whilst such shrubby growing compact-habited kinds as Godetia Lady Albemarle, which clothe themselves abundantly with foliage, do not so much need to be massed in order to display their beauty. One of the finest and most useful of hardy annuals is Clarkia pulchella, and those who need cut flowers should grow it largely; the flowers last long in water and the whole appearance of the plant is light and elegant. It is also one of the hardiest kinds in cultivation. Being of much branched habit and rather brittle, it, however, requires some support, as, when the plants are large and coming into bloom, rough winds are apt to break off large sprays. Strong twiggy Birch inserted here and there so as to catch the main branches will preserve them intact; there is no need to tie, as the shoots drop into the forks as they grow and there remain. Collinsia bicolor also requires support in a similar manner, as do all that grow anything like a foot high and which branch. Bartonia aurea is an old annual, but one which has lately become rather popular; it is showy and distinct both in foliage and bloom. Nemophilas, blue and white, and Silene pendula are well known; but the pretty little Leptosiphons are not much grown; they are charming little neat-habited plants with beautiful rosy pink or golden yellow flowers, and give satisfaction only when sown in autumn.

J. B.

The St. John's Wort (Hypericum perforatum) has a strong, lemon-like scent when bruised between the hands, and the fingers are stained with a darkish purple-coloured juice contained in the leaves and petals. As this plant was found to bleed at the least touch, it was in former times supposed to possess many healing qualities; so much so, that it was named the "Balm of the warrior's wound." The lower classes in France and Germany pick this species with great ceremony on the 24th of June (St. John's Day), and hang it in their houses as a charm against storms, thunder, and evil spirits. Some of our old medical writers gave it the name of Fuga Dæmonum, as they supposed it to be good against maniacal and hypochondriacal disorders. It was also used by the Scotch formerly as a preventive of enchantment and witchcraft.—M. C. J., *Cork.*

Lady Slipper plants.—In going over some pots of hardy Cypripediums it seemed that some of the North American species are not only partial to soils of widely differing kinds, but that the spare stout roots of some refuse to grow in some composts. C. acaule, for instance, has a decided preference for a free brown loam, C. candidum for a thoroughly decayed vegetable mould, whilst C. spectabile and C. pubescens are less particular; all resent hard or rough material in the way of grit, and if the succulent tips of the roots are examined in pot plants, they will often be found black and decayed when they have come into contact with such substances. Even the pot sides will be found to have stopped their progress, and this may possibly be one of the hindrances to healthy pot culture. Another matter I have observed favouring this view is that in most cases where good growth and flowers have been produced in pots, the roots have made their way over the rims into the Cocoa-nut fibre, which as plunging material covered the rims about an inch. Fortunately, all hardy Lady Slippers are more easily and vigorously grown in the open soil, provided a proper start is made. C. arietinum and one or two others of the less known North Americans I have not so well tried as the above. When once these Orchids have found proper quarters, I fancy many would be surprised to see their vigour and progress and the amount of atmospheric impurity which they will withstand. They may be looked upon as herbaceous plants, needing at most but a little special culture like Lilies, Trilliums, &c.—W.

Border Carnations.—These may be grown in any garden in town or country without any further preparation of the soil than digging it well up, and giving it a good dressing of stable manure. All soils are not, however, equally well adapted for Carnations. If they incline to be of a clayey character so much the better. Light sandy soils with a gravelly foundation are the least suited for Carnation culture. I have, however, grown them well on such soils by digging or trenching them, and placing a good layer of manure in the bottom of the trench. When the plants were put out they were also placed in a layer of loam of about 2 inches deep spread over the surface. Soil from a Melon bed just suits Carnations; in fact, we generally utilise the soil that has grown one class of plants for the production of another class. This year we wanted to put out several hundreds of seedling Carnations, and as the

ground is of a clayey character, the light sandy soil from pots in which Hyacinths had grown was used to place on the surface instead of Melon soil, which is heavy. Last year I planted in an ordinary herbaceous border some of our best Carnations and Picotees, and they flowered remarkably well without any attention, except that of the most ordinary kind. Florists of old could not grow their flowers so well as we do now, although they took more pains to make up their Carnation beds than some people do to make a vine border. There are very few Carnations or Picotees that require coddling up in the greenhouse. We grow them in pots to obtain purer and better flowers for exhibition or to produce an effect in the greenhouse, but in any good garden the same plants flower freely, and produce useful flowers to cut for bouquets.—D.

White Musk Mallow.—I have referred back to several volumes of GARDENING and can find no mention of White Mallow, a pretty, hardy, and most useful plant, lasting a long time, and even throwing out fresh blooms in winter. It seems so little known generally that I should like to recommend it to your readers.—A. J. COURTENAY, *Epsom.*

Digging herbaceous border.—In answer to "J. D." (page 237), it may be sufficient to say that cultivation accounts for the superiority of our garden over wild plants, especially as regards our native plants, though I think he has hit upon a few which may not be improved by cultivation. In my own experience Orobids cannot be grown successfully without a carpeting of some sort, and in that case neither spade, hoe, nor rake can be used.—E. A. H.

13996.—**Pure white Pansy.**—All Pansies are absolutely hardy. There is a pure white bedding Pansy named alba, it has only a few violet lines on it; other white kinds are Beauty and Pilrig Park. White bedding Violas: Climax, Chastity, Countess of Hopetown, Mont Blanc, Marchioness of Tweedale, and Virginalis.—J. D.

REPLIES.

14268.—**Planting under trees.**—You will scarcely find anything better than Periwinkles, which thrive well in shade, and which will soon cover the soil if small plants are set out a foot apart. Both the green and the variegated kinds will succeed, and, if mixed, a cheerful variety of colours will be maintained. St. John's Wort will do well if the shade is not too dense. Ferns of many kinds are, of course, available, and, planted in groups, look well. The following shrubs also do very well in the shade, &c.:—Common Box, Cotoneaster microphylla, the Holly, Berberis aquifolium, B. Darwini, Aucuba japonica, Arbutus, and Rhododendrons. Then, where nothing else will grow, the Ivy will, even where not the faintest glimpse of sun comes.—J. CORNHILL.

—— There is one beautiful native plant like a minature Japanese Honeysuckle (the Golden Netted kind), but I am afraid it would be an expensive matter to stock a Pine wood with it. It creeps along the ground and sends up stems 6 inches high, bearing pairs of small pinkish bells. The name is Linnæa borealis, the Northern Twin flower. It is evergreen and perfectly hardy.—J. D.

14123.—**Treatment of Arum Lilies.**—Callas, or Richardias—or, as "Sphinx" in this query calls them, Arums—are generally grown so as to flower in winter or early in spring, and therefore the treatment described will not suit for the bulk. For summer flowering the winter's rest will be beneficial; indeed, most cultivators after flowering give the roots a rest to ripen off the foliage; but the rest does not extend over a couple of months, when the plants are shaken out and repotted, or else planted out where a good supply of water can be given. A good many years ago I was living at a place in Ireland, and in the centre of the kitchen garden was a large round pond surrounded by Weeping Willows, and round the edge of the pond in the water were a number of very large groups of this Nile Lily. They had been there many years, and always flowered well in summer. They had a rest in winter, as all things do, but were always in water. The nature of the root, which is not a bulb, would tell us that complete drying-off for any lengthened period is not good for it. The fine spathes can only come from strong, vigorous plants. A little drying or cooling-down when the old leaves are ripening is good for them, but this drying may be injurious if too extended.—E. HOBDAY.

14023.—**Cobæa scandens.**—The Cobæa scandens is generally considered a vigorous summer creeper, and I should think the plant in question must have met with some injury, either from some insect at the root or some other cause, as a season like the present should be suitable to it. I am afraid it is not of much use planting now, as they will hardly have time to do much before frost comes. Put out strong plants in May.—E. HOBDAY.

14275.—**Plants for clayey soil.**—In a strong, cold clay the plants named are almost the most unsuitable things that could be chosen, and will only cause disappointment, unless the soil is first got into a light easily worked condition. Until the soil is got into that state all planting should be temporary. If the situation is not altogether too smoky, "Mrs. D." had better try Roses, such as the old Brutus or Brennus, the common Damask, the old Gallicas, with Aimée Vibert and Gloire de Dijon. Tritomas or Kniphofias do well; also Globe flowers, Ranunculus aconitifolius, and Fair Maids of France. Phloxes will do if the soil is well dug, lightened with sand and leaf-mould, or rotted turf, and well manured. Myosotis sylvatica (the common kind requires the same treatment), Day Lilies (Hemerocallis flava, fulva, and Kwanso fl.-pl.), do well; also Polyanthuses; German, or bearded Iris, will do if the soil is lightened on the surface, but the English and Spanish Irises like a light sandy soil. The Siberian Iris would most likely do. Daffodils are suitable, and Spiræas, such as S. venusta and S. palmata, with crimson flowers, and S. filipendula fl.-pl., and S. Aruncus, with white flowers. Clay is a capital staple soil to make a garden of, but requires any amount of labour to make it suitable. Other suitable plants are Pentstemons, Caltha palustris fl.-pl., and Persian and Turkish Ranunculuses.—J. D.

14267.—**White hardy perennial for autumn flowering.**—Matricaria inodora seems exactly to supply this want, and is one of the purest whites of autumn. Of course it can be stopped as the height desired.—ANON.

—— The white Japanese Anemone, perfectly hardy and now beginning to bloom profusely.—J. M. L.

—— "E. H. D." will find Campanula carpatica alba a very pretty hardy dwarf flower for this season. Another of a different style is Pyrethrum Golden Gem, now in bloom, double white flowers. Both can be raised from seed.—ESPERANZA.

14073.—**Diminishing Gorse.**—The only way of diminishing the Gorse without injuring the Heather is to grub it up in winter. Let the Gorse gather into beds or groups with wide stretches of Heather between.—E. HOBDAY.

14282.—**Neglected Jessamine tree.**—In the month of October remove the growths from the wall, and cut out the older growths, reserving a sufficient number of clean, healthy growths to cover the entire surface evenly without crowding them. Being so easily bent they may be trained anywhere, either near the ground or at the top.—J. D. E.

14339.—**Propagating double Nasturtiums.**—These are best propagated by cuttings which can be taken any time whilst they are in flower. They must be protected from the frost by being kept in a greenhouse through the winter.—C. F. DAVIS, *Leatherhead.*

HOUSE & WINDOW GARDENING.

THE BEST HOUSE PLANT.

UNDOUBTEDLY the best of all house plants is the Parlour Palm (Aspidistra lurida). It will live indoors under almost any circumstances, seems to require scarcely any care at all, and will not resent very greatly neglect of even several weeks' duration. On one occasion we omitted to attend to the watering of one of these plants for a considerable time, but a good drink of water set it right again. As a decorative plant it is very valuable, its fine, dark-green, glossy leaves being superb. F.

The Parlour Palm (Aspidistra lurida).

WINDOW GARDENING IN TOWN AND COUNTRY.—IX.

Chinese Primulas.—It is a pity that the fact of these being so amenable to window culture is not better known, for they come with their cheerful flowers at a time when the dearth of bloom in the dwelling is so painfully apparent, and may, by their brightness, be made the means of enlivening the winter months and of bridging over that dreary period which comes in with November, and which lasts till the sun in spring once more exerts its powerful influence on plant life. Last winter a friend of mine had several of his windows aglow with blossom from the beginning of winter till late in spring, and the flowers were as good as those one sees in a general way in glasshouses. The winter was a favourable one for window plants, and every year they might not do quite so well; still the fact remains of the possibility of obtaining good specimens in windows, and even if these plants were considerably inferior to those grown in greenhouses, they would always be welcome as giving bloom in the gloomy winter days. Seed may be sown in April, at which time it will come up very well in a warm room. It requires careful watching so as to maintain the soil in a nice equable state of moisture, otherwise it germinates badly, and it does not come up at all if the soil becomes quite dry; and if maintained in a very wet condition, the young plants damp off as soon as they come through. To succeed perfectly, the soil ought not to be watered from the time the seed is sown until it germinates; and if the precautions are adopted which were recommended in a former number, there will rarely be any necessity to do so. As soon as the young plants appear let them have air, and gradually inure them to the ordinary atmosphere of the apart-

ment, the dry air in which will suit them very well. Do not be too free in sprinkling them, for Primulas dislike that constant wetting of the foliage which many plants delight in. When large enough to handle, prick them out an inch apart in a 4½ pot; and as soon as they have four leaves put them singly into small pots, in equal parts leaf-soil and loam, with plenty of white sand. Pot lightly and keep the soil nicely moist, and by the beginning of August they will be ready to go into 4½ pots. From this time till autumn see that they get plenty of air and have a light position. If crowded or kept in a close room they run to leaf, become unsightly, and do not get substance enough to flower well. After June the right place for them is in a light window in a cool room. By no means keep them in a room where fire is daily made. Primulas require more attention in the matter of watering than most things commonly grown in windows; they must never become quite dry when growing, but they should not be so heavily watered as to cause the soil to come into a close condition, as when such is the case the delicate fibres can no longer work in it freely, and then good-bye to anything like quick, vigorous growth. If they are carefully tended in this matter they will bear, and, indeed, enjoy, all the sun they can get, and should be grown where there is no occasion to let down the window blind in the daytime. They also love exposure to night air when it is balmy, and may be stood out on the window ledge from the time the sun passes away from them till it arrives there again in the morning. This is only imitating the practice of the best growers, who grow them in frames, in order to be able to expose them at night when the weather is favourable for doing so. In potting, be very careful not to bury the crown of the plant, or, indeed, any portion of the leaves, as the one thing to be guarded against is damping off, to which they are liable in the winter. Only just cover the roots, and if the plants are inclined, as is often the case, to lean to one side, insert three short sticks between the leaves and close to their base, which will keep the plant firm in its place. In winter be very careful in watering, only doing so when the soil is nearly dry, and attending to them in the morning, so that the surface gets partly dry by night. In spring, as the days lengthen and light and solar heat increase, they will naturally require more, and must never flag, or the quality of the flowers will be seriously impaired. During April and May they will do just as well in a north window as elsewhere, and, being away from the influence of the sun, the flowers will last much longer.

Cinerarias.—The only serious difficulty in growing these is in preserving them from frost. They must not be grown in a warm room or they run up so weakly that they cannot bloom well, and where no fire is made in winter the frost is apt to get in, and if once frozen they never do any good; they are in this respect unlike Primulas, which do not suffer from being slightly frozen. It is when we get from 20 degs. to 30 degs. of frost that many loose their plants, and some provision must be made to secure them against such destructive periods. A good shelter may be formed of a deep chest, storing them away in it at night and covering up with a blanket; and unless some such provision is made it is of no use trying to grow Cinerarias in the dwelling, they are sure to be killed or injured when two or three very hard frosts occur. Seed should be sown in May, and the young plants grown in the manner recommended for Primulas, only that from the time they are well up they must be grown in a cool atmosphere. A light window in a north aspect will suit them well, and they will do very well in one that fronts the east, but they must be screened from the strong morning sun. Keep the soil nicely moist, and they will grow rapidly during the autumn months, and will commence to throw up bloom early in March. Cinerarias are very liable to the attacks of green fly, but Tobacco powder applied in time is an effectual remedy.

BYFLEET.

14270.—**To clean tennis balls.**—Rub them on a clean Cocoa-nut mat. Don't wet them.—F. M. R.

Competing with amateurs (see page 340).—An amateur is a person who does not make money of his pursuit or who does not carry it on as a business. Surely one who publishes a catalogue or list of goods for sale proposes to make money by so doing and is essentially carrying on a business?—Z.

FRUIT.

Ensuring Gooseberry crops.—Of two growers for market having Gooseberry plantations side by side, the one had a good crop of fruit, the other had next to none. Soil and situation were identical; why, then, this difference? It was simply a question of pruning, for whilst one man pruned his bushes by the ordinary method, the other did not prune at all in winter, merely cutting back the shoots somewhat, and thinning them out a little when the berries were swelling. Years ago my father practised this method with success, and I have heard him say that from the time he did so he never failed to have a crop of fruit—sometimes, perhaps, not very large, but enough to be worthy of the name, even in the worst of seasons. I have a friend who grows Gooseberries rather largely for an amateur, and I could never understand why he had Gooseberries every year without fail when his neighbours frequently had none at all. The garden being sheltered did not account for it, as there are others quite as well favoured in this respect, and in which in an unfavourable year there was scarcely a Gooseberry to be seen. But my wonder ceased when I found that my friend never pruned in the usual acceptation of the word, simply going over the bushes and clipping them in a little. Considering how important the Gooseberry crop is both to the market grower and in the generality of private establishments, the wonder is that the old-fashioned way of pruning has been adhered to so long. Anyone looking at a newly-pruned Gooseberry bush cannot fail to perceive that the season must be very favourable for it to bear a full crop, since the wood is so severely thinned that it has no self-protective power. But non-pruned, the young tender berries are quickly covered with leafage, which is probably quite as efficient a screen from cold winds and rimy frosts as netting or canvas. Of course the bushes get much larger than they otherwise would do; but this is no great defect, as they bear more, and can of course be thinned out when becoming crowded. It is possible that the berries would not be so big generally as by the ordinary way, but this little drawback would be as nothing compared with the benefits derived.—J. C.

Gathering Apples and Pears.—The time for gathering in fruit crops is now drawing on, and I would especially warn amateurs against the too common practice of gathering any sorts that are expected to keep any length of time a day sooner than is absolutely necessary, as instead of ripe luscious fruits they will only get withered and dry hard specimens that will never become fit for either culinary or dessert purposes. This season, owing to intense drought, many kinds of Apples and Pears are dropping from the tree long before they ought to be fit for gathering, but this is no valid reason for gathering the remainder. At the same time it must be remembered that most kinds of Pears are better flavoured if gathered before they are ripe enough to fall from the tree—therefore keep a sharp look out for the first indications of real ripeness in good sound fruit, and gather directly. Early sorts of both Apples and Pears are, as rule, very transient as regards their season of ripeness, and not many trees of one kind should be grown in private gardens, as although something may be done by hastening the earliest fruit by gathering and placing in warm glass-house, and by putting the latest fruits into the coolest quarters, it is not very long at the most that they will keep. Therefore select varieties that follow each other in succession naturally. This year, the trees being heavily cropped, and drought prevailing, premature dropping of fruit takes place; do not mistake this for real ripeness or fitness for gathering.—J. G., *Gosport*.

Barren Strawberry plants.—I have read with pleasure the remarks on this plant on page 319, and wish to offer a few remarks. Some years ago I planted a bank, from plants from a northern nursery, in autumn; in two years the majority had no fruit, but gross plants sending out a quantity of runners. I then had these taken up and planted with plants from a London nursery in spring—every plant showing bud—and have since taken care that every young plant that shows no bud is taken up. In two beds I have not a plant but bears fruit. I wrote to some of the leading horticultural papers asking the question—"Are there bearing and non-bearing Strawberry plants?" In one instance it was answered—"Yes; and remove all plants that do not show bloom." In another—"No; plants that do not bear this year may do so next." In the third—"Would be glad to give you any information, &c., but could not say." In conclusion, I am of opinion that the first was right, and that there are plants that will never bear fruit, and these are the strong vigorous ones that send out plenty of runners, and from which, in many cases, young plants are supplied that are barren also. I have watched this matter closely for some years, and have talked with many practical gardeners upon it, but have seldom found two of the same opinion. I should be glad to have any information that any of your readers may be able to give to throw light upon it.—W. W.

Insects in the orchard.—It is important that arrangements should be made by the owners of orchards for the free run of sheep, swine, and poultry, for devouring the infested fruit which drops from the trees. There are three insects which need special attention, the codling moth, curculio, and Apple maggot. Sheep will pick up and devour the infested and dropping specimens of Apples, Plums, and Pears, and swine will do the same, but they are not so vigilant. Hens pick up fallen Plums early in the season while the fruit is small. Some persons erroneously assert that hens devour the insects alone, but these persons do not seem to reflect that hens cannot reach up the tree-tops and get at the curculios while they are depositing their eggs, nor seize the larvæ as they are leaving the young fruit to enter the ground. The useful work of the poultry is, in devouring both the infested fruit and contained larvæ at one stroke. In addition to the jarring process, there is some reason to believe that Paris green may be successfully used for the curculio, either by acting on the young larvæ or in some other way. There is, therefore, no difficulty in meeting the curculio if proper means are used. With the codling moth there are two well proved remedies—spraying with Paris green, and devouring by sheep and swine. For the Apple maggot, which comes later in the season, there appears as yet to be no remedy devised but beating off the infested fruit for sheep and swine to gather. These insects do not always confine themselves to the fruits which they are commonly suppose to specially attack. The Apple and the Pear are often ruined by the curculio. A large number of the young Apples which dropped from a tree with an abundant crop when they were half an inch or more in diameter, was collected. Out of 800, it was found that all but three were punctured with the Plum curculio, and not infested with the codling moth. It is well therefore to make provision to meet these destroyers with ample appliances; and the orchardist who raises fruit for market, or for home use, should have enough animals to take care of the depredators, as well as to aid in manuring the soil. Sheep sometimes attack the bark of young trees, and we have known swine to strip the stems: but the use of a repelling wash has held sheep in check, and a few twigs of Sweet Brier or Osage Orange bound around the trunk have kept swine at a respectful distance. If in addition to the above mentioned modes of protecting the crop, the use of poisons is added, there will be a reasonable certainty of having fair and handsome specimens.—*Country Gentleman*.

REPLIES.

14269.—**Strawberry cultivation.**—Allowing the runners to remain on the Strawberry plants all the summer does not, I feel sure, exhaust the old plants so much as some people suppose. My reason for thinking so is this: As soon as the runner begins to develop leaves it also commences to form roots, which soon lay hold of the soil, so that in a short time the young plants may be said to have a separate existence, although attached to the parent by the runner. Nevertheless, if for no other reason than appearance sake, I recommend all who can spare the time to remove them as fast as they appear. The removal of runners during the autumn is another matter altogether. On this I hold decided views that they do weaken the plants considerably. The present season will, in all probability, test this question

thoroughly. The first soaking rain we get after this long drought will start our Strawberry plantations into a second growth, and they will, no doubt, produce runners freely, which, if allowed to remain upon the plants until they have formed roots, so as to be able to take care of themselves, must necessarily exhaust the old plants. In view of such a contingency, I think that those who have not yet cleared off the first-formed runners had better let them alone for a few weeks longer. In their present state the old plants will be less likely to form runners in the autumn than they would if they had not been removed.—J. C. C.

—— Leaving the runners on certainly impairs the fruiting power of Strawberry plants, and except when young plants are required the runners should certainly be pinched off, not only through the season, but at all times.—F. B., *Southampton.*

—— If the runners are required for plants it will not do to pinch them off until the fruiting is over. It does not detract from the quantity or quality of the produce to allow the runners to form in the spring, but the plants ought to be kept free from runners during the late summer and autumn months.—J. D. E.

14024.—**American blight on old Apple tree.**—The drought this season has been too much form any old Apple trees. The treatment of the tree in question has been right as far as it has gone. The painting with paraffin should be repeated when the leaves fall, and continued so long as any insects are left. The mulching has been right, but if holes had been made with a crowbar 2 feet apart or so, as far as the roots extend, and filled with liquid manure made from guano, or with artificial manure if no liquid manure tank was at hand, the improvement would soon be manifest. If this treatment had been carried out two or three months ago it would have been better, but it's better late than never.—E. Hobday.

ROSES.

Rose sulphurea.—I have seen some remarks on this in Gardening Illustrated, and, as I know the Rose well, I beg to say it grew luxuriantly in the kitchen garden of my old house twenty years ago; it was planted against the inner north wall, the garden was double square, one inside the other, the soil was a sandy loam, with gravel and chalk subsoil, and it was never watered. This Rose is a native of Persia, and, therefore, rarely likely to flourish in damp spots. It used to be loaded with flowers in our garden, but many of them malformed or showing green centres. The difficulty of getting perfect flowers from this Rose is acknowledged by all rosarians, and it is no doubt the reason it is so little grown now.—A. B. T., *East Anglia.*

Roses and artificial manure.—I may say the manure I used was not one specially prepared for flowers, but was recommended for the garden in general. I know nothing about Clay's Fertiliser, as I have never used it; nor, after my experience of the effects on the Roses of the one I used, have I any desire to do so. I had not heard, until "J. C. C." (p. 326), kindly informed me, that Roses after being manured required more water than those not manured at all. Had I, I should certainly not have done it. I think if "J. C. C." could just have a glimpse of the garden and grounds that I have to attend to, he would say, "Don't make more work for yourself when there is a possibility it would prove a failure." If people would only use the manure they can get at home, I believe the results would not be so disappointing, as it is too frequently with the artificials. Many thanks to "J. C." for his kind advice; but it is too late for 1885. I intend to act on it for the future.—J. L., *Cornwall.*

REPLIES.

14261.—**Root-pruning of Roses.**—This is a difficult question to answer in the absence of better information. If you wish to grow Roses for exhibition, and your soil is both strong and deep, and you prune back to the second or third bud every year, you may lift your Roses at the end of October; once in two years is often enough, but I should not advise lifting or root-pruning in any shape if they are growing in a poor and light soil. On the other hand, if you grow Roses for garden decoration only, even if the soil is of the most suitable description for Roses, you ought not to prune the roots, and should not do much to the branches, unless they are standards. In that case the heads will have to be pruned to keep them within bounds, but it is a great mistake to prune dwarf Roses too much. Only the longest shoots should be shortened back; the ordinary form of dwarf Roses only half as high as one's knees is a mistake; one bush 4 feet high and as much through will produce as many Roses as half-a-dozen of the close-pruned plants.—J. C. C.

—— If they have been worked on the Brier stock it is sometimes necessary to lift and replant them, the object of this being to cut off the suckers close to the roots or stem. If the Roses are on their own roots it is not necessary to lift them. Mulch over the roots with a good dressing of manure early in the winter and let it remain until the Roses are pruned in the spring, when it may be lightly forked in.—J. D. E.

14271.—**Degenerated Roses.**—If you had said how high your Roses are we might have given more precise instructions; as it is, I should say you are quite as likely to obtain plants of the size you want by rooting out your old plants and planting young ones. If you do not care to destroy the old ones, cut them down to within 1 foot of the ground; do this at the end of February, and at the same time take away some of the soil from the roots, and put over them a good layer of rotten farm-yard manure, and then put a part of the soil back again.—J. C. C.

—— If near or in town the Roses are sure to degenerate. Roses are nearly the worst things for a smoky atmosphere. Do not prune at all, but cut out the old wood and preserve the young vigorous shoots which have sprung up from the roots. Carefully bare some parts of the roots here and there, lift them carefully, remove the soil, and fill the spaces with good rich soil mixed with old decayed manure. Take all the soil from over the roots and replace it with the same mixture, tread the soil firm, and finish with a good mulch of manure, which should be hoed in in the spring. The pruning depends on the variety. Where Roses are wanted to make a show in the garden the best way is to bend the shoots down and tie them to strong stakes some distance above their tips, so that the tips of the shoots are 7 inches or so from the ground. This should be done in March.—J. D.

—— Probably old age is the cause of their degenerating. The cure for this is to propagate young stock from them by cuttings, which ought to be taken off with a heel and be planted in autumn. Cutting them down low would cause a more vigorous growth; give a rich surface dressing of decayed manure, and water at the roots in dry weather.—J. D. E.

THE USE OF THE SPARROW.

I have been very much interested in the letters on sparrows of "V. B." and "W. C. C.," and think they take a just view of the character of the sparrow. I would also recommend some of your readers who believe in him to read a little book, lately published by Wesley, from which it will be seen that he not only does infinite harm himself, but drives away from us many more useful and more beautiful birds. Will "W. C. C." tell me what "bat-fowling" round ricks and hedges means? Russell speaks of some kind of decoy for killing sparrows; can anyone tell me about it, as I think the only help is their destruction? I like birds but hate sparrows, and anybody who thinks I am mistaken had better read what Colonel Russell says in the little book in question.—S. M.

Sparrows destroying golden-crested wrens.—I have just, I hope, saved the life of a young golden-crested wren under the following, to me at least, curious circumstances:—A cock sparrow flew down from a tree in my garden, holding the young bird by the beak, and immediately proceeded to beat it violently against the stone pavement. I released the little bird, and it flew away, apparently uninjured, to a tree at a little distance. Is it usual for sparrows to prey upon small birds so fully fledged?—H. W. F. [A somewhat similar case, in which a sparrow was observed to carry off a willow wren, is reported in the *Zoologist* for July last.—Ed. *Field.*]

14062.—**Propagating frame.**—Common inch gaspiping will do for bottom-heat for the propagating frame if well caulked with red lead and hemp.—E. Hobday.

Carnation culture.—Will "Novice" kindly mention the number of Gardening in which is to be found the partiocular article upon Carnation culture, of which he speaks in query 14248? By so doing he will much oblige—Amateur.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

14398.—**Growing Gentianella from seed.**—Wil someone kindly say if I can grow Gentianella from seed, and if so how it should be treated?—I. M. H., *Dublin.*

14399.—**Making Mushroom bed.**—I want to make a bed of Mushrooms in a warm stable. Will anyone kindly give me a few hints as to the mode of procedure?—I. H. L., *St. Albans.*

14400.—**Mangels in orchard.**—Will any fruit grower tell me whether Mangel planted in an orchard would be injurious to fruit-bearing trees—Mangel requiring much manure?—E. W.

14401.—**Treatment of seedling Gladioli.**—Will any grower give me some instructions how to treat Gladioli during the winter? Should they be picked out of the seed box, as they are rather thick?—J. A. C.

14402.—**Pruning Honeysuckle.**—When should an early Honeysuckle, flowering in April, be pruned, and in what manner? Should the long shoots of this year be shortened, and, if so, how much?—L. C.

14403.—**Disposing of house and garden refuse.**—Will any readers tell me their experience as to the value of house refuse, soapy water, Cabbage leaves, &c., as manurial agents? How should they be used?—Diana.

14404.—**Rose plants.**—Will any member of the trade kindly tell me whether Rose plants sent out are mostly budded or grafted?—Auchtermuchty.

14405.—**Heating Cucumber house.**—I have built a span-roof Cucumber house 21 feet long and 10 feet wide. Will any reader kindly let me know how many rows of 3-inch pipes round the house it would take to heat it?—An Amateur.

14406.—**Garden work in autumn.**—Will some kind reader of Gardening give me a few hints as to what should be done in a garden now (small, but in the country)? What could be sown or set for winter and spring?—S.

14407.—**Name of Pelargonium wanted.**—Can you give me the name of a Pelargonium now much used for bedding, large truss, and crimson or scarlet, in colour?—Z. *** *You probably refer to the deep crimson Henri Jacoby.*—Ed.

14408.—**Obtaining large Spanish Jasmine.**—Will any reader tell me where I can obtain large Spanish Jasmine, white, as mentioned in Gardening, Vol. I., page 369? I can meet with it in no nurseryman's catalogue.—Mrs. Blandford.

14409.—**Improving Furze bushes.**—What is the best method to adopt for double Furze bushes which have become very shabby underneath? Would pruning them well make them break from the roots?—E. W. *** *Yes; prune them hard back next April.*—Ed.

14410.—**Heating a span-roof greenhouse.**—Will any reader kindly let me know what length of 4-inch pipe is sufficient for a span-roofed greenhouse, 8 feet wide by 8 feet long, by 8 feet high (say, 572 cubic feet), to keep the temperature sufficiently high for forcing?—J. J. C.

14411.—**Mulberry tree shedding fruit before ripe.**—I have a small Mulberry tree about twenty-five years old which always sheds its fruit before it is ripe. Other trees—Apple, &c., in the same orchard bear well. Situation south of Hampshire. Can any fruit grower tell me a remedy?—Drayton.

14412.—**Gnats in dwelling house**—Can any of your readers tell me how to clear a dwelling house of these pests? I have tried beer and sugar, carbolic powder, chemical salts, &c, and though the salts seemed to have routed the flies, the gnats appear to enjoy the mixture, and increase and multiply.—Loughton.

14413.—**Parsley Fern.**—Will any reader of Gardening inform me what I can do to grow successfully a Norway Parsley Fern? I find that as the fronds grow to the height of 2 or 3 inches they wither away and die.—M. C. J., *Cork.* *** *We have seen this delicate little Fern thrive planted on a rocky mound in a spot shaded by trees.*—Ed.

14414.—**Raising plants from seed.**—Will anyone please give me a few hints as to raising from seed and growing to perfection the following plants: Carnations and Picotees, alpine Auriculas, Show and Fancy Pansies, German Stocks and Asters; also give full particulars as to soil, &c.? I am desirous of growing the plants for exhibition, and any good information would greatly oblige.—Lancashire Amateur.

14415.—**Manure for Kentish garden.**—I have an allotment which wants manuring; it was a hop-ground three years ago. Will any reader tell me whether rag dust and soot would be good for it? I have ½-ton of dust and 12 bushels of soot, and there are 20 rods of ground. Would the quantity be enough, or would anything else be better? It must not be too expensive, as I am only a cottager. When would be the best time to put it on?—Fred, *Maidstone.* *** *"Fred" should have described the soil.*—Ed.

14416.—**Apple tree.**—My Apple tree is planted in a light soil; I believe it bore well last year. It has only had one fruit this, no blossom. Where the latter should have appeared shoots have sprung out these last two months. Do these require moving now, or pruning in November? The tree has not too much foliage—rather scanty. It has had no manure this year.—J. P. L., *Staffs.* *** *Your tree requires winter pruning, and next year it will be productive of what are called fruiting spurs, which spring from the sides.*—ED.

14417.—**Woodlice on Mushroom bed.**—I have some Mushrooms just pushing through the soil, but on examining them I find the crown eaten, and the consequence is they die away. This I attribute to woodlice, as there are swarms of them about. Will someone kindly tell me how to kill them? I have tried arsenic and oatmeal, and flower pots baited with Potato, but still they prefer the Mushrooms. I have also scalded all around the edge of the bed, but do not like to continue it for fear of destroying both the crop and pest.—E. H. K., *Kent.*

14418.—**Common Passion Flower not fruiting.**—Can some reader kindly tell me why my Passiflora cærulea does not fruit? It is a large plant, extending some 25 feet along a garden wall with a south aspect. I raised it from seed four years ago, and it flowered with some five hundred blossoms for the first time last year. It has also flowered well this season, but instead of setting for fruit the blossoms drop off after a day or two. Last year it was thoroughly watered, but this year it has had no water at all, and the roots are now very dry, as a florist in this neighbourhood said that was the only way to have fruit. It was pruned this spring.—FARNHAM, *Surrey.*

14419.—**Name of Narcissus wanted.**—Will some reader of GARDENING kindly tell me the name of a Narcissus that I had in flower in a garden in Surrey, about three years ago? I have tried to procure it from three well-known growers since, but without success. It was one of the Incomparabilis, pure white with orange-red centre. Sutton's Orange Phœnix is like it, but the flower is pale yellow instead of pure white. The Incomparabilis "Eggs and Bacon," of Barr, which I produced, was not so distinct in its white flower and brilliant centre as those I saw in Surrey. I am very anxious to get it, and shall be obliged for any information as to name and where to procure it.—S. E. C.

14420.—**Heating a greenhouse.**—I have a small greenhouse, which I endeavoured to heat during the winter with a round, upright, slow combustion stove, which I fed with small crushed coke. As far as heat was concerned it answered fairly well, but the dust which it created when cleared out was more than I could tolerate, so I took out the stove and placed it in an archway which passes under one end of the greenhouse, and then brought the flue (3½-inch cast iron rain-water pipe) through the floor, and along the entire length of the house, and out through the roof, thinking that, as the greenhouse is very small, this would afford sufficient heat. But I found that unless the stove was full of fire I could not get any heat in the house, although it warmed the archway beautifully. There was also a very close smell from the pipes. Would it be possible to put a coil of small-bore pipe inside the stove, taking out the fire-clay, and carrying the pipe through the floor of the greenhouse to a tank at the end with a return pipe? The coil could not come to the bottom of the stove by 4 inches on account of the draught door. There would be room for a coil 12 inches deep and 9¾ inches external diameter. What I want to know is, would there be room for sufficient fuel to keep it going all night (the stove is about 22½ inches high inside)? What is the minimum bore that would work freely? Should the coils be close together, or should there be a space between them? Would ordinary wrought iron steam pipe do? The distance from the stove to the tank is about 12 feet. Is it possible to achieve the desired result in a simpler manner?—PERPLEXED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14421.—**Transplanting Gooseberries** (*A. B.*).—Transplant your Gooseberry bushes in October. Prune off any straggling roots and make the soil—which should be moderately rich and light—firm.

14422.—**Stonecrop not flowering** (*Diana.*)—The Sedum is S. acre, a common British species. Perhaps the soil is too heavy for it or the situation too sunless. It usually flowers as freely as possible.

14423.—**Cutting in Rhododendrons** (*Brandon.*)—You had better wait until April. The plants will be quite as forward as if cut back in autumn, and you will have the benefit during the winter of what little green there is.

14424.—**Treatment of Anemone japonica** (*Amateur.*)—This plant grows anywhere in the open air, but seems to be most vigorous in moist, rich loams. In such, well established, it will certainly grow quickly enough.

14425.—**Rosa Noisettiana** (*Patience, No. 1.*)—The old-fashioned climbing white cluster Rose is called Rosa Noisettiana.

14426.—**Why do my Stocks die?** (*Reader, Oldham.*)—How is it possible for us to answer your question when you don't say a single word about the treatment you have followed?

14427.—**Destroying Plantains on tennis lawn** (*G. F.*).—Watson's Lawn Sand is said to be very effective in destroying Plantains on lawns. The best, but the slowest, way is to root them out by hand.

14428.—**Is Chamærops Fortunei hardy?** (*Brandon.*)—In the south of Ireland this plant is, we should say, tolerably hardy, but there is no Palm that is absolutely hardy in these islands. It does well in a good light soil well drained.

14429.—**Rabbit wires and creeping plants** (*Patience, No 1*).—No; rabbit wires are not injurious to the plants. Do not nail the plants, but tie them to the wire, and remember that creeping plants look best when allowed to grow naturally.

14430.—**Carnation "Painted Lady"** (*Scolopendrium, Houth.*)—Yes; the Carnation you enclose appears to be the identical variety mentioned in the "English Flower Garden." We have heard that it turned up a year or two ago in Ireland.

14431.—**Thrift for edgings** (*C. T.*).—The common Thrift may be obtained from any nursery; it is a very good plant for edgings, and may be planted throughout September and October, or at any time during winter or spring when the weather is not severe.

14432.—**A "Rhubarb house"** (*A. Halrbrath.*)—If you want early Rhubarb it is an easy matter to get it forward in a stable or Mushroom house or cellar, where there is a little artificial heat; but we have never yet seen a house devoted to the culture of Rhubarb.

14433.—**Present work in a garden** (*Novice*)—You can sow winter Spinach and a few vegetable seeds, and annuals and biennials for next year. As you have only a cold frame you had better store your Geraniums in a warm room or dry cellar free from frost.

14434.—**Manure for light soil** (*E. P., Norwich.*)—Cow manure is considered the most suitable for light soils, but if you really want to make your light soil stiffish, the best plan is to get heavy loam or clay and mix with it, at the same time giving manure.

14435.—**Market reports** (*W. Golder.*)—We go to press so early at present that we do not see that we can give the market reports with any advantage to our readers. If, however, a large number thought the reports would be useful to them we should reconsider the matter.

14436.—**Blooms on Rose trees in pots** (*Mrs. Alexander.*)—Your question is not perfectly clear. We presume you are preparing the plants for next spring's bloom, and, if so, the buds should be gathered. Most growers have their pot Roses out-of-doors at this time of the year.

14437.—**Grape stalks withering** (*A. K.*).—Your vines are probably suffering from shanking. Apply ½ lb. of pulverised saltpetre (nitrate of potash) to each square yard of the vine border and then give the border a good watering to enable the salt to penetrate to the roots of the vines. This is said to be in some cases a quick remedy.

14438.—**What is a "pottle?"** (*Drayton.*) — The measure called a pottle is rather indefinite. According to the *Garden Annual*, it is "a long tapering basket that holds rather over a pint and a-half. A pottle of Strawberries should hold half-a-gallon, but never holds more than a quart; a pottle of Mushrooms should weigh one pound."

14439.—**Failure with bulbs** (*Lancashire Amateur.*)—You probably planted too late or the bulbs were weak. If you purchase sound bulbs during September of the kinds you want and plant them in good garden soil, moderately light, in an open position, there is no reason why you should not be successful. As bulbs are so cheap you had better begin afresh, and destroy the diseased ones.

14440.—**Cocos Weddeliana** (*J. P. L., Staff.*).—This Palm, like most of the Palms, delights in a warm and moist atmosphere, and will not thrive for any length of time in a low temperature and comparative dryness. It would be inadvisable for you to give much water while it is in the drawing-room; you should rather keep it on the side of dryness. While it is in a stove or warm greenhouse a larger supply of moisture will not harm it.

14441.—**Calceolarias and Pelargoniums in frame in winter** (*Young Beginner.*)—Calceolarias do admirably in cold frames or in turf frames—that is to say, in frames with turf sides and glass tops; but Geraniums or Pelargoniums won't do in the same position and want a warmer house, or the old plants may be kept in a dry room if free from frost. What you call spotted, or herbaceous, Calceolarias want the genial temperature of a greenhouse or a gently heated pit in winter.

14442.—**Oleander not thriving** (*R. H. C.*).—We should not expect the Oleander to thrive in a vestibule. It is a native of Palestine, inhabiting the river banks, but exposed to a glorious sun for nearly the whole of the year, and naturally it is impossible that such a plant could get heat enough in an English vestibule. Many gardeners who treat it better than you do, in good warm houses, fail with it. We wish some of our readers who have observed how well this plant is grown in continental gardens would tell us how it is done.

14443.—**White Water Lily** (*R. U.*).—There should be no difficulty in obtaining these roots, as the plant abounds in so many rivers and ponds. It will be hardly necessary for you to apply to any nurseryman for it. As you live in the country, you should be able to get as many creeping stems of the plant as you want from a visit to some of the ponds in the neighbourhood, as many people are very glad to get rid of it, it is so thick. Throwing a few of the racemes into rich mud in a pond ought to be sufficient, but you can sink them by tying them to a brick, and so fix them where you want them. You can plant them any time in autumn, winter, or spring.

14444.—**How to make a rockery** (*Diana.*)—Have nothing to do with any of the materials you mention—bricks, old crocks, sea-shore pebbles, &c. The best rockeries are those in which the fewest stones are usually seen. Begin by throwing up an irregular mound of soil, which should be as picturesque as you can make it. Bury in this mass some lumps of sandstone or limestone, and then fill up so as to allow these stones to be exposed here and there, some half-way, some on the surface, and so on, and in all cases strive to avoid uniformity and to make the rockery as much like a natural rocky bank as possible. Then you can plant dwarf alpine plants round the stones, and if a suitable collection is made they will hug the stones and delight in such a position. By all means avoid the bricks-and-mortar rockworks, which are abominations in gardens, which are ugly to look at, and on which very few plants except weeds will grow. You can have a rockery in partial shade or in full exposure, but the plants which will thrive in the one will not be suitable for the other. You can, in partial shade, grow Ferns and the like, while in full sun all such plants as thrive on exposed mountains will flourish. There are enough Saxifrages, Sedums, and Sempervivums to fill a whole sunny rockery, but it would not be advisable to plant your rockery entirely with these three kinds of plants, and any nurseryman who makes a specialty of alpine plants will give you a selection of the best to grow, either in a sunny or shady position.

14445.—**Gum on Peach** (*E. I.*).—I have seen isolated examples of fruit with gum on the apex as on the one sent. It does not do much harm, and is caused by over-luxuriance in the trees or too much moisture in the atmosphere of the house. Perhaps the border where the roots are is too rich or they have received too much water.—J. D. E.

14446.—**Pear leaves blistered** (*Oswald Foster.*)—The leaves look as if they had been blistered by the sun. I grew Beurre Rance for years in one garden, but there was often something wrong with the leaves, and the fruit would crack or become rusty most seasons, so that I did not plant it at all in our new garden. The slug-worm has not done the mischief; it is evidently the sun that has scorched them.—J. D. E.

14447.—**Rust on Pears** (*Nemo.*)—This is a fungold growth, and is caused, or at least aggravated, by sluggish root action. This may be owing to the roots getting into bad subsoil. The best thing to do will be to see that the roots are in a healthy state and in good, well-drained soil. In winter paint the tree with a mixture of clay, soft soap, and sulphur. The variety is probably Triomphe de Jodoigne. It is in use In October and November. The tree will not be permanently injured.—J. D. E.

UNANSWERED QUERIES.

13889.—**Market measures.**—In market reports I often see the following measures mentioned:—"Flat" (Gooseberries, Cherries, &c.); "Tally" (Cabbages, Radishes, &c.); "Box" (Tomatoes, Cherries, Strawberries, &c.). Will someone state the dimensions of these measures, or the average weight of their contents, or give any particulars that will enable one to form a definite idea of the quantity referred to?—TYRO.

14019.—**Amorphophallus Rivieri.**—Will any of your readers kindly tell me how to treat this plant? I have had a round tuberous sort of root in a pot in my greenhouse for two years, during which time it has not shown any sign of root, but has thrown up very slowly a conical growth about 3 inches high, of what looks like folded leaves. There are some slight indications of rootlets similar to those formed on a Lily stalk in the centre of the tuber. Why it should neither die nor grow is very incomprehensible to me.—BRYNTIRION.

14061.—**Wanted, a white Sweet Brier.**—Can any of your readers tell me where I can find a white Sweet Brier? If there is not one, one ought to be raised.—J. H. B.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it could be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communication respecting plants or fruit sent to name should always accompany the parcel. Correspondents who wish fruit to be accurately named should send several specimens of each of various sizes, and showing any variation of form that exists.*

Names of plants.—*N. L. E. T., Norwood.*—Polygonum cuspidatum (Japan).——*E. G. J.*—Appears to be a weed.——*L. C.*—Specimen insufficient.——*Mrs. Gray.*—1, Abutilon vexillarium variegatum; 2, Plumbago capensis.——*R. W. Green.*—Calycanthus occidentalis.——*W. I.*—Appears to be a climbing Bignonia or Tecoma.——*T. Sharp.*—1, Hellanthus decapetalus; 2, Funkia ovata; 3, Species of Lythrum; 4, Send another specimen.——*L. W.*—Leycesteria formosa. You can raise seedling Araucarias; sow as soon as ripe.——*L. C.*—Alstrœmeria aurantiaca.——*G. C. C.*—Chicory (Cichorium Intybus).——*M. J. H.*—Monarda didyma.——*H. B.*—1, Blechnum Spicant; 2, Cryptogramme microphylla; 3, Kerria japonica; 4, Cytisus racemosus.——*G. E. A.*—Asclepias Douglasi Hook (a very rare plant)——*H. R. Julius.*—Origanum Stipyleum pulchellum.——*D. E. H.*—1, Selaginella Krausiana (denticulata); 2, S. cæsia arborea; 3, Fellies habitata; 4, Pteris serrulata cristata.——*A. J. B., Mrs. H., Composite, and Druid.*—Next week.

TO CORRESPONDENTS.

Notice.—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *we do not give place in our query column. These and others that are not of general interest will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

OBTAINING HEAT RADIATOR (*I H. C.*)—Consult advertisements; or you could probably get what you want through any local hardware merchants.——OBTAINING POTS (*B. Docker*).—Consult our advertising columns.

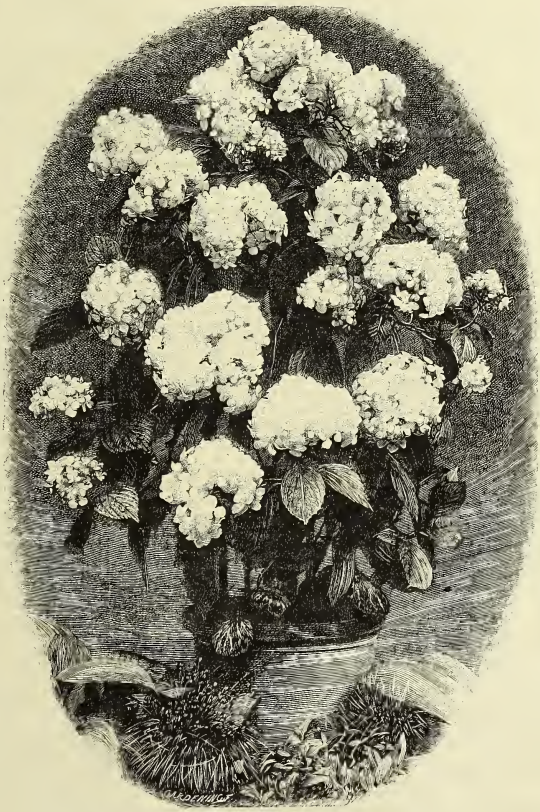
Catalogues received.—*Floral Gems, Fruit of the Future,* and *Raising Forests from Seed.* Viccars Collyer and Co., Central Hall, Silver Street, Leicester.——*Hardy Trees, Shrubs, Conifers, American Plants, &c.,* and *Hyacinths and other Bulbous Roots.* James Veitch and Sons, King's Road, Chelsea, S W.——*Ye Original Little Booke of Daffodils.* W. Baylor Hartland, 24, Patrick Street, Cork.——*Hardy Bulbs and Flower Roots for Autumn Planting.* John Hiscock, 13, Florence Road, New Cross, London, S.E.——*Bulb Catalogue.* Wm. Paul and Sons, Waltham Cross, N.——*Bulb Catalogue.* Webb and Sons, Wordsley, Stourbridge.——*Bulb and other Catalogues.* Liverpool Horticultural Company, Garston, near Liverpool.——*Dutch and Cape Bulbs, Winter Flowers, &c.* James Carter and Co., 237, High Holborn, London.——*Select Bulbous Roots.* Edmund Philip Dixon, Hull.——*Bulbs, Fruit Trees, Roses, &c.* B. S. Williams, Upper Holloway, London.——*List of Bulbs.* R. Sydenham, Tenby-street, Birmingham

OUR READERS' ILLUSTRATIONS.

A well-grown Hydrangea.

This week we publish as one of our readers' illustrations an engraving of a fine Hydrangea, grown by Mr. J. Bayst, to whom we are indebted for the photograph, and who appears to be very successful in the cultivation of these showy plants. He says the plant here shown was a shoot taken off three years back, and struck and treated like a Geranium, except that it received more water and shade until it was rooted. The following year it was potted into a 32-inch pot, and encouraged with liquid manure twice a week until fairly in bloom. Afterwards the plant was placed in the open to harden off, then removed under glass before the frost touched it. About Christmas time it was potted into a 12-inch pot in which it still remains. When the photograph was taken, it had thirty-six blooms, and in June it had as many as sixty-nine promising buds.

Ornamental Grasses.—Those who may have grown any of the following kinds of ornamental Grasses should secure a good quantity for future use whilst they are in perfection. They will not be nearly so fine if allowed to remain on the plant after they are fully developed. A heavy downpour of rain will also spoil their beauty. Of the Agrostis we grow A. pulchella and nebulosa. The former is very pretty and useful for working into button-hole bouquets; the latter is most useful for floral decorations in general. Briza gracilis and maxima are both valuable kinds, the lattter especially so for floral decorations of a bold character. Lagurus ovatus is always useful, especially when associated with Liliaceous subjects. It is very soon spoiled by rain, and should, therefore, be secured on the first favourable opportunity. Hordeum jubatum is another beautiful Grass that ought to be grown in the most limited collections. It thrives best in a moist situation, quickly feeling the effects of a drought. Paspalum elegans is another good and distinct sort. After we have secured our winter stock, each kind is loosely arranged in glass bottles, such as have been used for pickles, &c. We then place them in a spare airy room, not too near the light; no water, of course, is given them. In this way we find that they keep their colour fairly well. Another very useful late kind of Grass is Eragrostis elegans; this is just beginning to unfold its spikes, and in the form of successive crops will continue to do good service till the early frosts spoil their colour. All of these and several other distinct kinds will be found valuable where extensive decorations are carried out during the winter months. Those who have not room to grow these can secure many pretty sorts from the fields, woods, and hedges, all of which help to economise the use of Fern in winter, when there is frequently none too much to spare. Of annuals easily raised from seed, the following will now do good service in the shape of cut flowers, viz, Campanula Loreyi and alba, both extremely pretty when arranged with some spikes of the Agrostis nebulosa and Sweet Sultan; the yellow kind can be used in association with these also, likewise the various colours of the Cornflowers. Salvia patens is valuable for its colour; a spike or two used with white Sweet Pea will give a pleasing effect. For the want of anything better or closer at hand, a few Carrot leaves that are assuming their autumnal tints will be found not to be out of place. The different varieties of Phlox Drummondi are also extremely pretty, especially in the small arrangements. R.



Our Readers' Illustrations: A well-grown Hydrangea, engraved from a photograph sent by Mr. J. Bayst, The Hollies, Gascoyne Road, S. Hackney.

INDOOR PLANTS.

MIGNONETTE IN POTS.

Mignonette is of easy cultivation when once its requirements are understood. Some potfuls are useful and acceptable for decoration at all times, but especially in the spring and early summer; it can then be obtained in greatest perfection. During hot weather Mignonette has a tendency to produce seed so fast that its beauty is soon lost. It is grown largely and well in the London market gardens, and it is but reasonable to suppose that equally good results should be obtained by winter cultivation away in the country where the atmosphere is much clearer. The earlier the seed is sown in September the better, as the plants then get tolerably strong, and are better enabled to withstand the winter. It is best to sow in the pots in which the plants are intended to flower. These should be 5 inches or 6 inches in diameter, and be used clean and well drained. A good proportion of old mortar mixed with rather heavy loam and some dried cow manure I find to be an excellent compost. This can scarcely be rammed too hard in the pots if used somewhat dry, as the roots when once started will penetrate the hardest of soils. In filling the pots care must be taken that the whole of the soil forms one mass, for if it be rammed in separate layers, neither the roots nor water pass through it so freely. A little of the same soil should be sifted for covering the seed after it has been sown. The latter, if good, will only require to be sown thinly, and the pots may be placed in any cold frame until the end of October. Abundance of air should be admitted after the plants appear, and these should be gradually thinned out to six or eight, according to the size of the pot. It is not advisable to thin too much in the autumn, as some of the plants are liable to die away in the winter. Those selected should be the strongest and most evenly placed over the surface.

Through the winter Mignonette is best kept in a cool place where all available light can be obtained and air admitted on favourable occasions. It should not be encouraged to grow in mid-winter, as it then becomes so weak, neither should it be exposed to dry fire heat. A position near the glass in a house where Carnations, Bouvardias, and such like plants flower in winter, suits it admirably, as the circulation of air admitted by the laps of the glass prevents injury to the Mignonette by the necessary fire heat in severe weather. Frames, such as are used for bedding plants and where heat is only applied to expel damp and keep out frost, may also be employed, but as these have often to be covered up during a spell of frost, the house has a material advantage. Some advise keeping Mignonette dry in winter, but I consider this quite a mistake. The plants do not require so much water at that season, but some should be given whenever necessary. If this is not done in all probability they will die when it is given after allowing them to get quite dry. As the days lengthen in spring and the flowers show, plenty of water should be applied. A little artificial manure, mixed at first with an equal portion of dry loam and spread with a label over the surface of the soil, will prove beneficial, and the strength may be increased with safety as the plants progress. A small stick placed to each plant when young will keep them from falling about, and a much better shaped plant can be obtained than if it be tied later on. Batches to succeed these may be sown at intervals during the summer, and, with the exception of selecting a cool position, the same treatment may be adopted.

The best variety we have found for pot culture is a selected form of Miles's Spiral. It is not easy to obtain it true from seedsmen or to keep it true if other sorts are grown. The best plan is to weed out any plants that are not true so soon as the first flowers open, and save seed from the best and most vigorous growing forms; a select strain can thus be obtained even in one season, and it can only be kept true by growing the one variety, and saving seed annually from the spring-flowering plants preferred. The true variety above-mentioned is a vigorous grower, with broad foliage, and the spikes attain a length of 9 inches or more under good cultivation. It would be a great advantage to private gardeners to save seed themselves of any good annual plant they may possess, and such as cannot be obtained true with certainty from other sources. Where numerous varieties have of necessity to be grown near each other for seed production, the inferior forms will seed most freely, and, worse still, the pollen from these becomes distributed to the better ones, and so causes their deterioration. G. K.

Pelargonium Unique.—It is nowadays quite an uncommon occurrence to meet with this Pelargonium in gardens, though when well-grown few are prettier, the flower-heads being compact, distinct in colour, and borne on long stalks; the foliage, too, is agreeably scented. When grown for cutting, it is astonishing the amount of flowers yielded by a few old plants, if a little care and attention be bestowed on them. In a case that came under my observation, some large plants had been employed to cover the end and part of the roof of a greenhouse, which they did perfectly, and being thus well exposed to the light, so that the wood was well ripened, a great profusion of flowers was the result. This Pelargonium is very useful for winter blooming, but for this purpose they are grown in pots, so that they can be shifted about when necessary, as if placed out-of-doors during the summer they bloom more freely when introduced into a gentle heat than if allowed to remain indoors the whole of the year. As a decorative plant, however, this Pelargonium is probably seen to most advantage about the present season of the year, when, if in good health and trained in a bush form, the whole specimen will be laden with its beautiful blossoms. Sports are of frequent occurrence in this plant, and in that way many varieties have been obtained. The Crimson Unique, Rollisson's Unique, and what is known as the Old Unique, are all distinct and well worth growing. Rollisson's, or the Purple Unique, reverts sometimes to the old lilac-coloured form in a curious way, as at times on a large part there will perhaps be a few trusses entirely lilac, while others will have but one or two flowers of that hue, the rest being of the proper tint, while occasionally parti-coloured flowers occur—*i.e.*, with some of the petals, lilac and others magenta-purple.—W. T.

Francoa ramosa.—This plant is invaluable at this time of year for conservatory or other indoor decoration. It produces long branched spikes of the purest white flowers; therefore, plants of it, even in small pots, make a good display, and for association with bright colours it is invaluable. It is of the easiest culture. Seeds sown as soon as ripe in autumn in a pan or box, and kept near the glass in a cool house, produce sturdy plants for potting off singly in spring, when they may be grown on in cold frames until the weather is sufficiently warm for them to be set out-of-doors in a partially shaded position. Some of them will probably blossom during the autumn, but all will make fine plants for flowering the second year. A mixture of loam, manure, and sand suits them perfectly, and if kept well furnished with water and an occasional supply of liquid manure, it is surprising the quantity of bloom which a plant in a 6-inch or 7-inch pot will carry. As window plants they are unrivalled; their leaves withstand dust well, and, falling down, they completely cover the pot, while the branched spikes shoot upwards 3 feet or 4 feet, covered with flowers so profusely as to gain for the plant the appropriate name of Bridal Wreath. They are specially well suited for amateur gardeners, as they only require the coolest of greenhouse culture in winter; in fact a frame with covering enough to exclude frost is just the place for them. Anyone who can grow Calceolarias will find no difficulty in growing this useful plant.—J. G.

Dielytra (Dicentra) spectabilis in pots.—This lovely hardy herbaceous plant is one of the very best things that can possibly be had for growing in pots, which is, in my opinion, the only entirely satisfactory way of growing it; for though hardy, as just stated, it is apt to become injured by spring frosts, on account of the soft young shoots pushing up so early out of the ground, and when they get cut by cold the plants become very much crippled and weakened for the rest of the season. This being so, they should, if planted out at all, be placed in the most sheltered positions that can be found in the borders, one of the best places being on the south side of a wall or fence, where at night during April it is advisable to stick a few evergreen branches around the crowns, and cover them with an inch or two of Cocoa-nut fibre or half-rotten leaves to shelter and protect them. Grown in pots, and kept under glass, the Dielytra is even more lovely and delicate looking than it is out in the open, and those who have plants will do well to take some of them up and grow them on for the greenhouse. This plant is readily amenable to pot cultivation, but it forces easily, although it should not have much heat, but be brought on slowly, as it is only by this gradual and natural process that strong shoots are formed. In lifting the plants care should be taken not to break the roots, which are large, fleshy, and brittle, and if got up intact soon form fresh fibres to feed and push up the strong crowns. If any increase of stock is desired when digging out the plants, that is the time to effect it, as they bear division and may be cut through and as many made as there are shoots or crown buds, as every such portion will grow. It may also be increased by means of cuttings, which root freely if taken off after the young shoots become a little firm, at which time they strike better, as they are less liable to damp.—S. D.

Cocos Weddelliana.—Of small growing or dwarf palms the Cocos Weddelliana is, to my mind, the most beautiful of all. Its small, glossy foliage and exceedingly graceful form are a source of unceasing admiration. One cannot look at it without loving it. Now, this charming Palm is not the tender object it is generally supposed to be. Last winter I submitted a healthy specimen to a good deal of rough usage, to see what it would bear without harm. Three times it was put in a room with the temperature below the freezing point, the thermometer registering 28 degs. on one occasion; the next morning I could not see that it was injured in any respect. It was several times during the winter, sent to the village church to grace the marble font on Sundays, and in other ways it was proved to be a plant that needs no coddling. To-day it is as perfect and beautiful a plant as can anywhere be found. These facts prove two things: First, that its proper place is in the greenhouse where those can grow it who have no hothouse, and a larger number can, therefore, enjoy the luxury of owning a plant of one of the most beautiful of all Palms. Secondly, it can be kept in good health in the sitting-room or parlour in winter, provided the air is not too hot and dry. I place the pot on the lawn during the summer, fully exposed to the sun, where it seems to be perfectly at home.—*Rural New Yorker.*

Rochea falcata.—This is a serviceable plant in autumn. It is most useful when grown in 6-inch or 8-inch pots. Examples wanted to be in flower next year will be benefited by being exposed in the open air to the full sun for a few weeks. The growth by this means gets better matured and solidified than if kept altogether indoors. Those now pushing up their flower-stems will require plenty of air and light to prevent their being drawn up weakly. If there is not sufficient stock, leaf cuttings may be taken off and put in sandy soil round the sides of pots. They will form roots and push out shoots, but must have only as much water as will keep the soil from getting dust dry, or they will rot; the same mishap will also occur if they are kept too close. As soon as they have begun to grow fairly move them singly into small pots, using sandy porous soil, and giving them more water.

REPLIES.

14019.—**Amorphophallus Riverii.**—This Aroid is generally considered to be very accommodating on matters of culture. It is classed with the tropical Arums, but succeeds in a greenhouse temperature, and it also does well planted out in a warm situation in the open air in summer, the tubers being lifted in autumn and kept dry all the winter like Dahlias. If it were June instead of September I should say plant it out in a warm site in the garden border; but under present circumstances it had better be kept in the greenhouse, withholding water when the days shorten. Rest it during winter, start into growth in spring, and about the first week in June plant in the open air.—E. HOBDAY.

14230—**Rhyncospermum jasminoides.**—The plants should be kept, as nearly as possible, in a state of rest through the winter months, by keeping them somewhat drier at the roots; at the same time they should not be allowed to get dust dry, or they will lose their foliage. It is not advisable to keep them in so high a temperature as 50 degs. in cold weather, unless the heat is required for other plants with which they may be associated; a temperature of 40 degs. to 45 degs. is quite hot enough for them in cold weather. February or March is the best time to repot the plants; they require to be potted firmly. A suitable compost is about equal parts good fibrous loam, and peat, with a liberal addition of silver sand.—F. B., *Southampton.*

—— This is a stove or greenhouse plant of easy culture. They may be repotted at any time, but July or August is a good time. They may be potted now if they require repotting. Use a compost of equal parts loam and peat with a good sprinkling of sand. Do not water too freely in winter, but it is bad management to let the soil get quite dry. The plants do not require much pruning; merely cut out the old growths.—J. D. E.

14071.—**Fuchsia blooms dropping.**—When the blossoms of Fuchsias or any other plant drop prematurely, there must be something wrong in the treatment. Are there worms in the pots? Is the soil sour or wet? Are the pots well drained? Are the plants potted in good soil? Or is the growth poor and weak? In the last case the remedy would be more nourishing liquid manure, or a little artificial manure sprinkled on the surface, and watered in. Do the plants get ventilation enough? I think not.—E. HOBDAY.

14109.—**Clematis from seed.**—Sow the seeds when ripe in pans filled with peat, leaf-mould, and sand, the larger proportion being peat, as it is retentive of moisture, and there will be less need for using the watering pot. Press the soil in firmly, making the surface smooth by pressing it with the bottom of a small pot. A space of half an inch or so should be left between the soil and the top of the pan. Cover the seeds lightly with a mixture of silver sand and peat, pressing it down firmly. It is a good plan to water the soil just previous to sowing the seeds, and then there will be no necessity for watering again for some time. If convenient place a square of glass over each pan, and place them in a quiet, shady corner of the greenhouse, or they will do as well, or better, in a pit, where a little warmth can be added when the days lengthen. Most of the seedlings will appear next spring, and when large enough to handle prick them off into other pans, filled with the same kind of compost, and grow till large enough to single out, which may either be done in small pots, or planted out in a nursery bed in the open air, where they can be shaded and sheltered for a time till they are established. —E. HOBDAY.

14260.—**Taking cuttings of Oleanders.**—Take the cuttings in the spring, cutting them immediately below a joint, making several cuts lengthways through the bark, just above the joint. Place them in a glass bottle, filled with water, and, if possible, plunge the bottles in a slight hotbed, where they will quickly root. When the roots are about an inch and a-half long, pot them into a mixture of leaf-mould and turf loam, and place again into the bed for a few days, when they will be established, and can be hardened off.—C. E.

14248.—**Carnation culture.**—A good deal depends on where "Novice" lives, as to what to advise. Some plants that have good characters in the south I have tried over and over again without satisfaction; but assuming he is in the midland country, and pots firmly in stiffish soil—of course, giving due attention to keeping them growing without check—he will find nothing to beat, and few to equal, the following. Let him grow only a few sorts—the best—and as many of them as he likes: S.B. Curzon and George; C.B. Master Fred and Jenny Lind; P. and P.B. Sarah Payne; S.F. Dan Godfrey, Annihilator; P.F., Dr. Foster, James Douglas; R.F., Keet, Sybil; Red Pic., John Smith and Thos. Williams; Purp. Pic., Zerlina and Minnie; Rose, Miss Horner, Mrs. Rudd. This little collection, judiciously cared for from their planting in March, will give "Novice" pictures worth looking at. If really a "novice" I must tell him to nip off all buds to two, or three at most, as soon as removable; nip off all the little wood, only allowing to grow such as he sees can be easily layered. He must, with a little bass, tie round his pods a day or so before opening, to avoid the splitting of the calyx, which spoils the shape of the flower. Some really good flowers in other respects are almost worthless on this account, like T.B. Bryant, the red Picotee. He must keep his

surface soil moist, his pots well drained, and when the flowers open put under any sort of airy cover. Use weak liquid manure from June.—T. C., *Yorkshire.*

14273.—**Chrysanthemums in shed.**—You will certainly spoil your Chrysanthemums if you put them in a shed to flower unless it has a glass roof. Better put them close to a warm wall or fence.—J. C. C.

14060.—**Bulbs for winter blooming.**—There are a great many bulbs that may now be prepared for winter blooming in the greenhouse, and the sooner they are ordered now the better—Hyacinths in great variety, Polyanthus Narcissus in variety, Jonquils, Tulips in great variety, Scilla sibirica, Crocuses, and Snowdrops. Other things might be named, but the above list offers no difficulty either in price or treatment.—E. Hobday.

THE COMING WEEK'S WORK

Extract from a Gardening Diary, September 7th to 12th.

Shifting Cinerarias and Primulas into pots for blooming early; putting in cuttings of double Petunias, Lobelias, and Nierembergias; cutting off all heads of Globe Artichokes that are overgrown; removing all young shoots from Tomatoes in order to expose the unripened fruit to the sun, and gathering those that are ripe; clearing off Strawberry runners from permanent plants, applying a good coating of rotten manure between the rows and forking it in; hoeing amongst Broccoli and all other growing crops to kill weeds before wet weather sets in; planting all spare ground with Cabbage plants to come into use in winter; sowing red and white Turnip Radishes; potting a collection of Campanulas; covering up dwarf Beans with spare lights to protect them from early frosts and heavy rains; roughly digging and heavily manuring a piece of ground lately cleared of Peas for next year's Onions; earthing up Celery and Cardoons; pricking out Black-seeded Brown Cos and Stanstead Park Lettuces; thinning out Spinach and afterwards hoeing between the rows; cutting Grass edgings and turning gravel walks to give them a fresh appearance for the winter; earthing-up Celery whilst the soil is dry and friable; digging ground for autumn-sown Cabbages; clearing off Peas and cleaning the ground for other crops; thinning Turnips; cleaning, weeding, and rolling gravel walks; stopping all laterals on vines; tying out Chrysanthemums: sowing Chervil; thinning out Mignonette in pots; also Lettuce and Endive in seed beds; Dutch hoeing between all Cauliflowers, Cabbages, and newly-planted Lettuce and Endive.

Work in the Town Garden.

Anemone japonica.—One of the prettiest plants now in bloom in the town garden is the Anemone japonica, both pink and white. The white flowering form, sometimes known as A. Honorine Jobert, is the more useful and free-flowering of the two, but both succeed admirably in most town gardens when well established. When strong and healthy they throw up their flower stems to a height of 2 or 3 feet, and produce a long succession of simple and elegant flowers, which, besides looking remarkably well on the plant, are most useful for cut flowers, lasting a long time in water. A deep, fairly rich soil, preferably of a loamy character, seems to suit them best, and a partially shaded situation is desirable, but these plants are by no means particular, and once established, and watered occasionally in dry weather, they are almost certain to grow and flower well in any soil or situation. It is not well to disturb the roots much, but, if increase is desired, they should be divided in spring, when they begin to grow; the offsets may either be potted into small pots, or simply transplanted to where they are wanted, keeping them moderately moist until well established—and indeed it is not well to allow these Anemones to become really dry at any time.

The present has been, unfortunately, a very trying season for almost all outdoor summer and autumn flowering plants, owing to the protracted drought; and whenever there is not an abundant supply of water, and this is regularly made use of, Asters, Calceolarias, Dahlias, &c., are in most cases more or less a failure. But this should not discourage the persevering gardener. We are not often troubled in this country by such a summer as the present, and, after all, in most cases a persevering use of the watering-can or hose goes far towards making up for the absence of rain.

Michaelmas Daisies will now shortly commence to bloom, and though these do not apparently suffer from want of moisture like most other plants, yet they will be greatly benefited by copious supplies of water, or, better, liquid manure, until actually in bloom. Those who have planted these charming plants freely will shortly have their reward, and it is surprising that they are not more general in town gardens, for they literally grow anywhere and anyhow, and never fail to produce charming flowers in great profusion. Moreover, coming, as they do, just before the latest outdoor Chrysanthemums, when there are so few other flowers, they are of the greatest value in any garden, not only as affording a degree of gaiety unwonted at this season, but also as supplying, when required, a large amount of most useful cut flowers with a minimum of trouble. No garden should be without at least a few of these invaluable perennial Asters. The best kinds to grow are A. polyphyllus, A. lævis, A. formossissimum, A. versicolor, A. Novæ Belgæ, and A. Novæ Anglæ. They may be planted at any time, almost, though spring is preferable, and they will succeed in any kind of soil, if this contains a reasonable amount of nutriment. It seems strange that though these plants succeed so well, as do also most kinds of Indian, Chinese, and annual Chrysanthemums, the varieties of C. frutescens (Marguerites) should give such poor results in town air, yet there is no doubt that this is the case. The just now favourite Marguerites will certainly grow to some extent in a town garden, though this can hardly be said of the more delicate yellow flowering kinds, but in most cases the bloom is both scanty and poor; indeed, pure country air seems to be indispensable with these favourite flowers; one proof of this is that they cannot be grown successfully as pot plants, the yellow varieties especially, in nurseries in or near London.

Lantanas.—Another very useful town plant, almost as vigorous as the last, though it will not, of course, stand frost, is the Lantana, now at its brightest and best. This has often been recommended as a substitute for the Verbena, the flowers being somewhat similar; but as no substitute for the latter plant, if seedlings are employed, is required, it may, with more justice, be said to be capable of taking the place of the Geranium in those localities where the colour of that plant is taken from the petals by the impurity of the surrounding atmosphere.

Pot on seedling Primulas as fast as possible, affording abundance of light and air to those that have already rooted out well in the flowering pots. Sprinkling overhead to a moderate extent, but not too late in the day, greatly encourages growth in these plants, though it should not be practised after the middle of October. Keep Cinerarias moving on quietly in a sweet, moist atmosphere; these do not want much shade now. B. C. R.

Glasshouses.

Stove plants.—Any stove plants that have been stood for a time in conservatories or greenhouses, either flowering kinds or such as Dracænas, Caladiums, Alocasias, tender Palms, and the like, should now be removed to the stove, as, if allowed to remain longer in a temperature so much lower in the night than that which they require, the roots get stagnated, and the plants are seriously injured.

Pelargoniums.—Plants of large-flowered and fancy Pelargoniums that were cut down some time back will now have started into growth sufficiently to require potting. The large-flowered section ought to be shaken completely out, and have the long, straggling roots cut away, placing them in pots a size or two smaller than those they have flowered in. The soil best suited to these plants is good yellow loam, to which has been added a liberal proportion of well-rotted manure, run through a sieve, so that all worms may be got out; sand will be required in proportion to the nature of the loam. This section of Pelargoniums requires to be hard-potted, without which they run too much to leaf. The fancy kinds want similar treatment. Be particularly careful that the soil does not get much water until the roots are in motion. After potting keep the plants moderately close for a week or two, syringing them slightly in the afternoons.

Preparing plants for potting-up.—Soft-wooded greenhouse plants that have been turned out in the open ground during the summer with a view to their being taken up and potted for winter flowering, should at once have their roots cut round to prepare them for potting a few weeks hence. By so treating them they not only receive much less check when taken up, but there is the further advantage of being able to get them into smaller pots than their roots could well be reduced to if lifted without any previous preparation. All that is necessary is to sever the roots with a small spade at such distance from the collars of the plants as will secure balls that the pots they are to be put in will take without undue compression. The roots will at once make new feeding fibres that can be secured when the plants are lifted, and that will prevent their feeling the check to an extent that would cause injury to the lower leaves and interference with their flowering, which otherwise would occur unless larger pots were used. It is necessary to see that plants so treated are plentifully supplied with water afterwards, as otherwise with so much root reduction they would flag, and be much injured. Such things as Salvias, Veronicas, Richardias, Chrysanthemum frutescens, berry-bearing Solanums, and others of a like quick-rooting nature, can with advantage be treated in this manner.

Chrysanthemums required to flower in small pots can be induced to produce a much larger head of bloom, and also to retain their leaves better by layering shoots from plants grown in the open ground, than by keeping the plants in pots from the cutting state onwards. The natural disposition of these plants to make roots in a very little time is such that in a few weeks after the shoots have been layered they will be found to have formed a sufficient quantity of roots to enable them to go on without feeling, when severed from the old plants, such a check as will interfere with their blooming, or injure the leaves. As soon as the flower-buds are the size of Peas the stems must be bent down, and each secured to the ground with a hooked stick about 1 foot or 18 inches from the extremity, stripping the leaves off at this point. All that is further required is to put a spade-ful of good loam, to which has been added plenty of rotten dung over each shoot, and to secure the points in an erect position with sticks and ties, keeping the soil well moistened. Some growers notch the stems in the way practised in layering Carnations, but I could never see that Chrysanthemums rooted any better for having been notched. See that Chrysanthemums in pots are kept tied sufficiently to prevent their shoots being broken; and where some of the stock is confined to a single stem, with a view to having large flowers, all the side shoots that they will still keep making must be regularly removed. The plants should still be syringed every afternoon in sunny weather, by which means they will generally be kept clear of aphides.

Primulas.—Such of these as have been raised from early-sown seed will now push up flower-stems. These should be pinched out as soon as they appear. The plants ought to have plenty of light and air. Full exposure to the dew in the night will still benefit them. As the soil gets full of roots give manure-water freely. The stronger the plants get the greater number of flowers will they produce. Double Primulas now in pits or houses, where they can be kept a little warmer than the single varieties, should be stood well up to the light, with no more shade than will suffice to break the full force of the sun. Let them be regularly supplied with manure water in all cases where they have got plenty of roots. Assistance in this way to soft-wooded plants like these is much more effective now, whilst they are in free growth, than it will be later on, when less progress is being made.

Heliotropes.—Where there is room a few large specimens of these—such, for instance, as occupy pots 14 or 16 inches in diameter—will be found of the greatest use in winter, if a temperature of 45 degs. or 50 degs. can be given them A single plant of this description will yield more flowers for cutting than a score of little ones. Standards, on legs 3 to 4 feet high, grown large, are equally useful for cutting as for greenhouse decoration. Any old plants of ordinary size that have been flowering through the spring and summer, in place of being thrown away, as often occurs in autumn, may with advantage be retained. If they can be accommodated with an intermediate temperature through the winter they will give a quantity of useful flowers, and in the spring can be moved into larger pots and grown on in the way here indicated. Small stock of these sweet-scented favourites brought on for winter flowering should be encouraged to make all the growth possible during the next six weeks, as after that time comparatively little progress will be made by the aid of solar heat alone. The flowers as they appear should be picked off those plants that are wanted to bloom later on.

PERPETUAL-FLOWERING CARNATIONS.—Where these have been grown in the open ground with a view to their being lifted they should now be potted. The system of deferring the work until later on is not a good one, as when the weather gets colder they make little root progress in the new soil in which they are placed, a circumstance which, whether the plants are moved into pots, or planted out in the houses or pits, tends to interfere with their growing. These Carnations like a fairly holding soil, with a little leaf-mould and other rotten manure added. In taking them up, care should be exercised that there is no more breakage of the roots than is unavoidable. If to be kept in pots avoid the two extremes of giving more room than necessary, and of putting them in pots so small that the roots will suffer through compression. There must be no exposure of the roots between the taking up of the plants, and their potting. Everything required should be in readiness, so as to get them into their new quarters as they are removed from the ground. This is particularly necessary with plants that have not had their shoots pinched out since early in the summer, as the flower-stems of these will have made considerable progress, and if they receive a check the blooming will be interfered with. Through this cause disappointment often occurs in the flowers not appearing as soon as they are wanted. Syringe moderately overhead once a day when the weather is bright until the roots begin to move, and if there is any trace of aphides present fumigate at once, for if left for a time the insects will increase apace. THOMAS BAINES.

Flower Garden.

IN THE PROPAGATION of tender plants it is important that cuttings should be at once put in. Soft rooted tender ones require a bottom-heat of 80 degs., and to produce this stable litter and leaves are best. Pelargoniums should now be put directly into boxes, and be fully exposed to the sun until the nights become too cold to risk them out; then they must be given ordinary frame treatment. Calceolarias are best struck in cold frames, and should be shaded and kept rather close till the cuttings are rooted, but afterwards be fully exposed to the atmosphere. Cuttings made from the young shoots of Pansies and Violas will strike readily without any protection; a north border having the protection of a wall is the best place, and any kind of light sandy soil will do, provided the cuttings be made firm in it. Preference should, of course, be given to pits and frames if they are at command. Hardy Sempervivums are best propagated by offsets, which are now to be had in abundance; plant them firmly at distances according to size on any dry bank or border, well water them, and protect with netting to prevent them being pulled up by birds. The tender kinds must be increased by cuttings, which strike best on exposed shelves in houses or pits. Most bedding succulents need warmth to strike well.

GENERAL WORK. — Lately-budded Briers should be examined as to the ligatures, some of which may need to be slackened, and others, those on which the buds are growing well, be removed altogether, and the stocks kept free of Brier shoots. The season for planting shrubs and trees being at hand, preparation should be made for the same by getting together the necessary soil and implements. After the first heavy rain the sooner evergreens are removed the better will they succeed. W.

Fruit.

VINES.—The Grapes are now well coloured, but still far from ripe in late houses that were assisted with fire heat in the early part of the year; a continuance of gentle warmth, with liberal ventilation, until the foliage begins to lose its colouring matter, will be highly beneficial to such kinds as Lady Downes, Gros Colmar, and Black Morocco. If the colouring process in the Lady Downes house has been aided by an unrestricted run of lateral growths these may now be gradually brought into subjection by the constant removal of the strongest, and at no time must any part of the trellis be divested of a regular spread of the foliage of this excellent Grape, which so few grow to its best, because they withhold a little fire heat in the spring and trust too much to cold, sunless summers. If, as is sometimes the case with vigorous young Vines, the Grapes do not show a disposition to colour well up to the footstalks, a moderate supply of diluted liquid at a temperature of 90 degs. will very often stimulate the interior surface roots into the action which will produce the desired result.

MELONS.—From this time forward give sufficient fire heat to maintain a night temperature of about 70 degs. with a rise of from 10 degs. to 15 degs. by day, but economise fuel as much as possible by renovating the fermenting material whenever the bottom-heat descends below 85 degs., and close very early with solar heat and plenty of atmospheric moisture to swell off the fruit. Avoid overcrowding, at all times disadvantageous, by the removal of all sprays and laterals, but carefully preserve every old leaf from the rim of the pot upwards, as it is to these we must look for the finish of good fruit. Let the turning and renovation of linings about pits and frames have ceaseless attention, as good Melons without steady heat cannot be expected. Elevate the fruit well above the soil, as stagnant moisture is, after this time, the greatest enemy to frame Melons. Keep the foliage clean and healthy by syringing in favourable weather, and flood the beds with warm diluted liquid, without wetting the leaves, whenever the roots require water. Sulphur and quicklime should be applied to the affected parts without delay, if any indications of canker should appear.

Vegetables.

ALL haulm of Peas, French and Broad Beans, or Lettuces that have run to seed, or anything of a similar description, as soon as they have ceased to bear, or to be of further use on the ground, should be at once removed. Let all ground be well hoed as often as weeds make their appearance. These will not cease to spring for some time yet, growing, as they do, with a lower temperature than that required by most cultivated crops. Where salads are in demand, especially in the spring, it is well now to sow a little Corn Salad and American Cress. These hardy plants will stand any amount of frost, and prove useful in the spring. Sow the seeds in rows 1 foot apart; this will give room to use the hoe in keeping the ground clean. Thin Turnips as they get large enough.

THE KITCHEN GARDEN.

Spring Onions. — Warm, dry weather suits these, as a rule, but in June this year the weather was too dry for them in many parts: it checked their growth and made many of them behind their usual time in bulbing, but now they are going ahead, and if any of your readers have a fixed day or week for taking up their Onions, I would recommend them not to be particular about that this year, but allow them to remain growing as long as they appear inclined to do so. September or about Potato-lifting time is a good season for harvesting Onions, particularly if the weather is dry, and if it is not they are much easier dried in a shed or outhouse when fully matured than if drawn unripe.—M.

Long Surrey Carrots.—The crop of Long Surreys this year will undoubtedly be lighter than it has been for a decade. From the time the seed was sown until the young plants came through there was not enough rain to well moisten the soil, so that a great portion of the seed did not germinate, and a large proportion of the plants were crippled or destroyed by fly before they attained sufficient strength to resist its attacks. To such an extent did many crops suffer that the ground was ploughed over and sown again, but this, of course, must lower the value of the crop, as the roots from such late sowings have not the time to become very large. The late soaking rains very much improved them, however, and where anything like a good plant was obtained the foliage has a healthy, sturdy appearance. Carrots do not mind hot weather when once they have formed roots sufficiently long to penetrate some 6 inches into the ground, but rather the contrary, and as the ground selected for Carrot culture hereabout is always of a light description, the tap root has no difficulty in penetrating it. As the beauty of Long Surrey Carrots depends upon their length and straightness, it would not do to grow them in land of a binding or very stony nature. Colour, too, is much influenced by soil, and it is almost needless to add that the brightest roots find the readiest sale, provided other essential points are present. Some growers fancy that the deficiency in bulk this year will be compensated for by enhanced prices, but I am not so sure that such will be the case. I remember that in 1870 the summer was remarkably dry, only one good moistening shower occurring from April to September, and everyone thought that Carrots would be dear, but the hot weather appeared rather of the two to have benefited the Intermediates grown on the Essex heavy lands; at any rate they came in in large quantities, and Carrots that year were cheaper than they had ever been.—T. C.

Horn Carrots, when from 2 inches to 3 inches long and the same in thickness, are much prized in autumn and winter, as they are so tender and sweet—vastly different from old full-grown Carrots. In spring these little ones are common enough, but in autumn and winter they are rarities. They need not, however, be so, as they can be easily cultivated to come in at these seasons. The French Horn is one of the best to sow just now; it soon acquires the proper size. Very good ones may be grown on a south border where the soil is rich and free. If drills are opened every 15 inches apart, the seed sown thinly, and then covered over with a light soil or pure sand, the young plants will soon make their appearance and gain a useful size before November. Another good way is to make up a firm hotbed, put frames and soil on it, and sow and grow as in the spring. In cold districts, where open-air sowing now would not be productive of any good results, this plan should be adopted.—J. M.

Vegetable seeds, especially Peas, are ripening very fast this season. I have known it to happen in some seasons that from our April sowings we could hardly manage to get our seed in sweet and dry by the end of September, but this year it is ready now and in prime condition. A dry atmosphere favours the ripening of seed, but dryness at the root does it still more, and of late our soil, especially on and near the surface, has been like dust, owing to fierce sun-heat and no rain.—J. M.

Edible-podded Peas.—This is the first season in which I have grown these to any extent, and I am of opinion that they are worthy of more general attention than they receive. A friend of mine not far from here had a batch of five or six varieties of them from a Glasgow firm, but none of them has produced pods longer or wider than one's little finger, and he is not favourably impressed with them. In my case I am thinking about one which I had on trial, which grows 6 feet high, and the pods of which attain a length of 8 inches and a width of 2 inches. These can be used from the time they are newly formed until the Peas in them have attained a large size—a period of some weeks' duration. The pods, too, boil down beautifully, and are tender and well flavoured.—M.

Runner Beans.—These look very well this year, the warm season appearing to have suited them. In this neighbourhood they are sown 3 feet apart, and they never get more than 2 feet high, the practice being to go over them now and then and chop the tips of the shoots off with a sharp knife. When the ground is well stirred and manured they will go on bearing up to late autumn, unless cut off by frost. There can be little doubt that runner Beans are one of the most profitable crops grown at the present time. The first gatherings realise high prices, and there is a long season for them. In some years, of course, they do not yield so plentifully, but in a fair season an acre of land cropped with runners must bring in a good sum of money.—J. C.

The white maggot in Carrots and Onions.—Some six weeks ago the Carrots in our garden were infested with the small white maggot complained of by one of your correspondents, and salt and soot applied by our gardener did no good whatever, this only preventing wire worm; the plants seemed to be dying off fast. This same bed of Carrots is now healthy and flourishing, and the roots sound, and our gardener, who comes from Worcestershire, willingly explained his successful plan of getting rid of the maggot, which is this: He poured a wine-glassful of petroleum on a half-brick, a common red one, not a fire-brick. This absorbed the oil, and was at once put in two gallons of cold water in a watering

can. This was given to the Carrots, watering without a rose, between the rows, and the same soaked brick served for the can being filled three times to a bed 24 feet by 4 feet. It was applied two or three times a-week. The white maggot in our light soil is apt to come after watering with manure water, particularly after dry weather, and the petroleum gets rid of it. Perhaps this practical experience may be of use to some whose crops of Carrots and Onions suffer injury from the white maggot. —J. M. L., *The Midlands.*

Onion maggot.—It may help your readers if I state how I succeeded in destroying maggots on Carrots, and growing Carrots that for years carried off the first prizes at our horticultural shows. When I first came here about twenty-six years ago I could not grow a Carrot to any size at all; they were carried off by the maggot when about the size of one's finger. I well trenched the ground, putting in a pretty good lot of short manure in the autumn, at the same time strewing a pretty thick coat of air-quenched lime, and well working it in. Then again, in the spring, when I sowed the seed, I also strewed a little more; and now I can grow Carrots, and Onions, too. I have never been troubled much with the Onion maggot, as I generally grow Onions in the previous year's Carrot and Parsnip beds.—J. L.

REPLIES.

14121.—**Crooked Cucumbers.**—When Cucumber plants constantly bear crooked fruit it may generally be ascribed to weakness of constitution, either inherited or induced by over-cropping. The Telegraph is a great bearer, and, if overloaded, the fruits may come deformed. Sometimes fruit grows crooked through the ends catching against a leaf or some other obstruction; a little thing will do it.—E. Hobday.

14070.—**Grubs in Cabbage.**—This has been a bad season for vegetables, especially on poor soils. Cabbages, like other things, have lost vigour; and maggots at the root and aphides on the leaves have had a happy time of it. The best remedy for maggots is to dig deeper, use more manure, including soot, change the crops frequently, and, when the plants are transplanted, dip the roots in a thick puddle, made in a pan, of soot and liquid manure.—E. Hobday.

14259.—**Best winter Cucumber.**—Telegraph (Rollisson's Improved)—J. D. E.

—— Telegraph is one of the best, if not the best variety, for winter forcing. The seed should be sown at once.—F. B., *Southampton.*

—— Rollisson's Telegraph is the best sort of Cucumber for winter. To secure strong plants to bear fruit at Christmas the seed ought to have been sown early in August.—J. C. C.

14059.—**Culture of Kohl-rabi.**—The seeds may either be sown now and remain in the seed bed all winter and be planted out in spring, or sown in March and transplanted in May; or the seed may be sown where they are to remain in rows 18 inches apart, and be thinned to 15 inches in the rows. There is no more difficulty in their culture than in that of Cabbages.—E. Hobday.

14035.—**Onions splitting.**—First obtain the seeds from a very good source and then, having manured and cultivated the land well, make it firm by treading or rolling. Splitting is a deformity, and, like any other deformity, can be perpetuated in the seed. Other influences, such as a loose seed bed, conduce to it.—E. Hobday.

14345.—**Lamp for heating small greenhouse.**—I heat my conservatory, 14 feet by 6 feet, with a Rippingille's patent stove. It answers capitally; can always keep up on the coldest night a temperature of 45 degs., or more, if needed.—Robert R. Best, *Torquay.*

Borax for cockroaches.—In Gardening, p. 346, I see under the head of "Cockroaches," a recipe as to using borax. I have tried the same, but without effect. Will "Stouti" kindly inform me how it should be used, whether water should be mixed with it, or whether the floor should be simply strewn with the powder, and how often it should be done to cause the objectionable insects to cease their visits?—H. Edmonds.

14326.—**Birdlime.**—Take any quantity of linseed oil—say half a pint—put it into any vessel that will stand the fire without breaking. The vessel must not be more than one-third full; put it on a slow fire, stir it occasionally, until it thickens as much as required; this will be known by cooling the stick in water, and trying it with the fingers. It is best to make it rather harder than for use. Then pour it into cold water. It can be brought back to the consistency required with a little Archangel tar.—Celer et Audax.

TREES AND SHRUBS.

PRUNING RHODODENDRONS.

14242.—It is too late to prune them this year, for if pruned now they may start into growth, and if we should get a severe winter it would probably kill the growth so made. We are accustomed to pruning Rhododendrons more or less every year, but we always make a point of doing it about the end of February, and then the growth has time to get hardened before winter. You had better cut the whole of the branches down to within 1 foot or 18 inches of the ground, and in after years you can regulate the growth as you please. With some stout wood pegs you can bring the young shoots as near the ground as you like, and by cutting off the tops of the strongest shoots round the edge of the bed, and allowing the centre growth to have its own way, you can keep them quite dwarf; but you must remember that you can prune Rhododendrons too much, and so prevent their flowering. In the most skilful hands it is a risky business, because the varieties of the better forms of Rhododendrons differ so much in habit, that one requires to know something of the character of the plants to be operated upon. In our strong soil if we were to prune much, such strong growing sorts as Mrs. John Waterer, Sir Joseph Whitworth, and Concessum, we should get but few flowers. With the understanding that you must sacrifice one year's flowers, you may prune moderately young plants as much as you like. J. C. C.

TOUCH WOOD.

At this time of the year fungus is frequently seen protruding from tree trunks. There are many sorts, which vary considerably both in size

Polyporus igniarius (Touch Wood).

and character. Our illustration represents Polyporus igniarius, Touch Wood, or Tinder Fungus, so called because its inner substance can be used as tinder, when properly prepared with saltpetre and other materials. The appearance of fungus is a certain sign of a bad condition of the tree; the Touch Wood is particularly fond of Plum trees, and is common in all old orchards where Plums are grown.

14122.—**Rose of Sharon.**—The question put by "St. Michael's" was for the botanical name of the "Rose of Sharon." We must then first determine whether the St. John's Wort or the Rock Rose is intended by that name. With both I have been familiar from my youth, and there is little doubt but that the name "Rose of Sharon" is popularly applied to the St. John's Wort; that Mr. Miller is wrong in calling it the Hibiscus syriacus in his "Dictionary of English Names of Plants;" and that the friend, Mr. Editor, "at your elbow," was right in insisting that the Rose of Sharon is the Hypericum calycinum; it is certainly so known in the trade. The Hibiscus syriacus is a very different flower, and belongs to the Marsh Mallows, order Malvaceæ, and is synonymous with Althæa frutex. The next point is the flower referred to by Solomon in his "Song of Songs," rendered in our authorised version—"I am the Rose of Sharon." The first competitors would seem to be the St. John's Wort, and the Rock Rose, Helianthemum vulgare, a great quantity of which grows in the plains of Sharon. The Hebrew word *Chabatsseleth*, translated "Rose," is never applied to the Rose proper—the etymology is in favour of its signifying a bulbous rooted plant. The Targum has *Narcissus*, the Vulgate rendering being "*flos campi*," flower of the field, whilst "Sharon" might be translated "plain" or "field." In the revised edition of the Bible the rendering is—"I am a Rose of Sharon, a Lily of the Valley;" and if we adopt the Vulgate rendering, and read it as—"I am a flower of the field, a Lily of the valley," the *Narcissus* of the Targum is clearly the flower intended, whilst the association of the "Rose" with "the Lily of the Valley" implies that some flower other than the Rose proper, the Hypericum, or the Helianthemum, is intended. The Narcissus is plentiful in the Plain of Sharon and elsewhere, and is a very favourite flower in the East, and whilst it is uncertain what is really meant by the Hebrew *Chabatsseleth*, the weight of opinion is in favour of a bulbous rooted plant, and of such the Narcissus appears the most likely; and, though reluctant to give up my old friend, the St. John's Wort, as "the Rose of Sharon," I think it is *not* the flower referred to in the Song of Songs.—J. P., *Lancashire.*

—— In my communication on page 348, the Hebrew word should have been written "chabatseleth." Tristram says:—"The Cistus has been supposed to be the Rose of Sharon of Cant. ii., 1., though it is scarcely characteristic of the plain, being rather the plant of the hills."—A Subscriber to Gardening Illustrated.

THE VILLA GARDEN.

(*Continued from page* 363.)

The Chinese Yam.

The Chinese Yam is different from most other kinds in having a much longer root. When it was introduced it was much puffed up, and the seedsmen made a good thing of it. Like many others, I went in for it, because at that time (30 years or so ago) it was thought it might prove a substitute for the Potato, which was looked upon as being doomed. But a very few years served to satisfy most people that the Chinese Yam could never become a substitute for the Potato, though it might be grown as a fancy dish for a change. I took a great deal of pains with its culture, and raised some very large, very ugly roots; but the housekeeper was the only person who cared for them, and so their cultivation dwindled. I tried hard to cultivate the taste of myself and others to like them; but the "praties" beat them out of the garden as they had previously done out of the field. Nevertheless, to those who do like them they are a nourishing article of diet, and may be easily cultivated, and as the ground for them must be deeply worked they will form good preparatory crops for Onions, Peas, Beans, Cauliflowers, &c. The land should be thrown into ridges 3 feet apart during winter, and should be well manured. In spring the sets should be planted along the top of the ridge, 15 inches apart, early in April, and some Pea sticks should be placed for the growth to climb up, as the support given to the haulm adds to the growth of the tubers. Unless the soil is very rich and deep the roots had better remain two years in the ground before they are lifted for use. As they run down very deep, they must be carefully trenched out. They do not keep well out of the ground, and when lifted for use should be packed in earth or sand in a cool cellar, or be buried in a cool, shady spot, with a good thickness of soil over them. The roots not only run down deep, but are largest at the bottom, and this adds to the difficulty of lifting them. The small upper parts of the tubers should be preserved to cut into sets for planting. It may be advisable to start the sets in pots and plant out when the buds are starting; this will prevent any blanks appearing in the rows. E. Hobday.

14075.—**A question of heating.**—Unless the pipes get very hot, or the plants stand close to them, no great harm will be done. Though the soil in the pots may dry rather quicker than if farther off, still this may not be an evil altogether; at any rate, it is very easy to run a strip of wood between the pots and the pipes if it should be necessary. There will be a loss of heat from carrying the return below the ashes. With such small pipes keep them well up.—E. Hobday.

BEES.

SEASONABLE NOTES.

A SURE sign of the end of the honey season having arrived is the destruction and casting out of drone brood, and the worrying of the drones by the worker bees. The drones are driven from the combs and crowd together on the floor board, and soon die from want; some are expelled, and from weakness are unable to return to the hive, and others fall to the ground from the alighting board, and miserably perish, being worried to the last by the workers. On the destruction of the drones being observed all sections and supers should be removed, as honey gathering being at an end the bees will begin to empty supers of their honey, carrying it down into the hive to store for winter consumption.

PACKING STOCK HIVES FOR TRAVELLING.—Great care is necessary in removing established stocks of bees to so pack them as to avoid the breaking away and falling of the combs, such a calamity being almost certain destruction to the bees. The secret of success in removing stocks of bees is the admission of abundance of fresh air into the hives. The internal heat is always greatly increased by the excitement and commotion of the bees on being removed. In moving bar-frame hives the frames should be fixed quite firmly by notched strips of wood being nailed to the floor board, placed at each end of the frames, and the bees confined to the hives by means of perforated zinc, nailed over the entrance and over the tops of the frames in place of the quilt. The perforated zinc should be so placed as to allow the bees to pass freely between it and the tops of the frames. They thus obtain more air than they would if the zinc were fixed close to the tops of the frames, and in addition this relieves the combs of some of the weight of the bees. In preparing straw hives for travelling, they should be inverted and placed in cheese boxes, having a good layer of coarse hay at bottom to prevent jarring. After smoking the bees and turning up the hive, a piece of sacking of open texture, or coarse canvas, should be tied over to confine the bees. A good way to keep the comb firm and steady is to push wedges of crumpled newspaper, or drapers' tissue between them. These paper wedges, being elastic, prevent the jarring of the combs. As a security against combs breaking down in travelling a sharp-pointed stick should be passed through the sides of the hive so as to pierce each comb. This should be done a day or two before removal, which will allow time for the bees to fasten the combs to the sticks and make all secure. There is not so much risk of combs falling in cool weather, and hives may then be removed with greater safety. Straw hives of old tough comb, with sticks passed through them, may be safely moved in cool weather without being inverted if the cown hole and entrance be covered with perforated zinc, the hives nailed to their floor boards, and tied with cord for handling. As soon as the hives arrive at their destination, they should be placed on the site they are permanently to occupy, the perforated zinc removed, and the quilts and roofs put on.

BEES' ENEMIES.—Wasps are great enemies to bees, and begin to be troublesome at this season of the year, making free with weak colonies especially. When any numbers have gained an entrance into a hive, the bees are seldom able to eject them. The most effectual way of checking their attack npon a hive is to contract its entrance; the bees are thereby better able to defend themselves, as they can well guard a small aperture. The zigzag tunnel-like entrance provided to some bar-frame hives, gives the defenders a great advantage over their enemies. All should be done that is possible to defend the hives from the attacks of wasps, for, being so much superior in strength, they not only consume the honey, but destroy large numbers of bees. Search should also be made for wasps' nests, and the wasps destroyed by ponring a little turpentine, tar, or paraffin into the hole leading to the nest, and covering up with clay; this should be done in the evening when the wasps are all within. Many may be taken in wide-mouthed pickle bottles partly filled with a mixture of beer, sugar, and water, and put about in places most frequented by them. At this season more than at any other time of the year stocks of bees are liable to rob one another. A weak hive is sometimes attacked by robber bees, and in a comparatively short space of time cleared of all its stores, the attacking party working early and late till their object is accomplished. Robbing is very easily brought about at this time of year. The greatest care should, therefore, be exercised not to spill or smear honey or syrup on or in the neighbourhood of the hives. Should fighting have commenced the entrance of the hive attacked should be narrowed. This will check the attack, but will seldom entirely stop it. If the besieged stock has suffered much before attention has been drawn to it, the only alternative then is to remove the hive a long distauce.

Boxworth. S. S. G.

The transmission of honey in the comb.—There is a little publication of Messrs. Longmans' called "Modern Bee-Keeping," at the end of Section of XXII. of which book, p. 78, it is stated that, "In no kind of hive will newly-made combs safely endure a journey." That this does not apply to supers after the bees have been removed we have lately proved by the safe transit of one that had been filled in with rice. Being made of wood it was easily secured at bottom with a thin board nailed to it, so that the rice could not shake out. The whole was then put into a biscuit tin, and sent to the railway station, whence it was conveyed in the usual way to London, and to its final destination by the railway van. On opening it every grain of rice ran out, leaving the combs uninjured.—B. S.

14448.—**Uniting bees** (*Mrs. Archibald Godley*).—The small late swarm may safely be joined with the other bees; it would be useless to attempt to winter it alone, as success in wintering not only depends upon sufficiency of sealed stores in the hive, but also upon having colonies strong and possessing a large number of young bees, so that at least four or five combs are well crowded, because a large cluster of bees is able to keep up the necessary degree of warmth in severe weather better than when divided into small clusters; besides this, the consumption of food is less. If the bees are in straw hives the small swarm must be driven into an empty skep; the hive to receive the bees must then be smoked and turned up, and some scented syrup sprinkled over the combs and bees. The syrup may be scented with peppermint or nutmeg; this prevents the bees discovering which are strangers, and, therefore, no fighting takes place. In a few minutes after the bees have been scented, the driven bees may be shaken out of the skep (into which they have been temporarily driven) over the combs of the inverted stock hive, which should then be replaced on its stand. If so desired, the driven bees may be in this way divided between two or more stocks. If your bees are in bar-frame hives you could make an artificial swarm of the weak colony by brushing them off the combs into an empty skep, then sprinkle the stock to receive it with scented syrup, and set their hive on a sheet, raising its front edge an inch or two; next scent the bees in the skep, and shake them on the sheet in front of the stock hive; they will at once enter and become peaceably united. The qneens will, however, fight upon meeting, and one will be destroyed, so that if it be wished to retain the queen in the stock hive, the swarm must be watched while running into the hive and the queen, if discovered, removed.—S. S. G., *Boxworth.*

14449.—**Commencing bee-keeping** (*C. T.*)—The present is a good time to commence bee-keeping, many bee-keepers having at this time of year surplus stocks to dispose of. The demand for pure English honey is increasing year by year, honey companies are being formed, and doubtless a great future is yet before bee-culture, which is certainly one of the most pleasant and profitable branches of rural economy. Honey is now largely applied in foods, drinks, sweets, and medicines. Straw-hive colonies in good order for winteringshould now be purchased. It is not, however, wise for the beginner to start bee-keeping on a large scale; he had better commence with a few stocks, and gradually increase nnmbers as knowledge and experience are gained. It is important that stocks should be headed by young queens of this year, as they will be vigorous and in their prime next season. The old queen leaves the hive with the first swarm, second swarms, or stocks that have thrown off swarms, should therefore be obtained, as these will possess young queens. The bees should be wintered in the straw-hive in which they are purchased, and, if wished, combs and bees can be transferred to bar-frame hives in the spring, or they may be allowed to swarm naturally, and the swarms put into bar-frame hives.—S. S. G., *Boxworth.*

POULTRY.

QUESTIONS AND REPLIES.

14450.—**Poultry keeping for profit.**—I should thank "A Lover of Poultry" very much if he would tell me the way he feeds his poultry for profit.—J. GILBERT.

14451.—**An unfortunate hen.**—Will "Doulting" or any other reader kindly inform me what is the complaint from which my fowl is suffering, and what is the best remedy for it? It won't eat and is very weak on the legs, but about every two minutes it moves backwards and then turns round and round, just as if it were going to have a fit, or going mad. Last summer I had a cock just the same, only rather worse, It used to run round, and then would dash against the wire until it was quite exhausted.—R. B.

14452.—**Chickens becoming blind and dying.**—"A. M." would be glad to know the cause of chickens, fully grown and feathered and nearly three months old, going blind, and eventually dying. She has kept poultry for seventeen years, and never met with such cases before. The chickens have a good run with sea gravel, plenty of green food, and clean water, and are reared on oatmeal, poultry meal, and buckwheat. They droop, one eye becomes quite blind, then the other, and they die. This has now happened to three in succession—one a prize-bred light Brahma, the others ordinary black half Spanish. Is there any cure?

14453.—**Cockerels for breeding** (*P.W.N.*)—Cockerels of the year 1885 will do for breeding purposes next spring. Unless they are very early birds, they should be mated with hens a year older, while two-year-old, or older cocks, are best placed with pullets. This arrangement is better than breeding entirely from parents not fully matured.—DOULTING.

14333.—**The Scotch grey fowl.**—This variety of poultry is, I believe, kept by the undermentioned: D. Bragg, Southwaite Hall, Carlisle; Miss Rose Hubbard, Addington, Winslow, Bucks; Miss L. Harvey, Liberton House, Edinburgh; and C. L. Ralston, Glamis House, Forfarshire.—DOULTING.

14332.—**Feeding fowls.**—The increased returns obtained from boiling the meal will not be sufficient to repay "Ignoramus" for his trouble, unless he keeps a very large stock of poultry. Whilst the boiling is going on the meal requires to be constantly stirred, or it will stick to the bottom of the vessel and get spoiled. Mixing it with boiling water is, in my opinion, quite as economical, if not really more so—for in the former case much time is taken up in preparing the food, and some of the latter is often likely to go sour before it is wanted. If "Ignoramus" will give his birds in the morning some barley-meal and sharps, properly mixed with boiling water, at mid-day some scraps from the table, such as bits of meat, potatoes, &c., and at night some hard grain—either Wheat, Barley, or Buckwheat—the bill of fare will not be a bad one. Hens which have their liberty will not require nearly so much food as those in confinement, and in neither case should more be given than the fowls will pick up at once.—DOULTING.

14397.—**Poultry with swollen feet.**—The birds appear to be suffering from something akin to "Bumblefoot," a disease of the feet which is often found in Dorkings. Some fanciers have an opinion that it is caused by the use of too high perches, so that the feet of heavy poultry get injured when the birds fly down from roost; this, however, cannot be the only cause. "Gardener's" treatment is very good; but after removing the contents of the swelling he should foment the part with warm water, and a day or two later apply some lunar caustic. While the bird is under treatment it should be kept on straw, and not allowed to roost in the ordinary way.—DOULTING.

14454.—**Killing fowls, &c.** (*P. W. N.*)—1. It is a difficult matter to advise upon without seeing the birds. If they are very old—that is, hatched previous to 1884—the probability is that they will not moult for another month, and will be likely to lay again before that time. I should be guided by circumstances. As the hens are to be killed, feed well, so that, if moulting comes on soon, they may be in sufficiently good condition to be at once despatched. On the other hand, if the moulting be deferred, the liberal treatment will have its effect on the

egg basket as well as on the condition of the birds. 2. The moulting season may be said to last from July to October, some birds changing their feathers much earlier than others. Old birds are usually the last.—DOULTING.

14455. — **Unhealthy fowls.** — Will any readers kindly tell me what to do in the following case:—My fowls are dying, especially the chickens; their tongues, roof of mouth, and throat, are thickly covered with a white, leathery growth, so as nearly to close the mouth up, and the breath smells very bad. The chickens are more affected externally; they have large wart-like places on beak and head, and are very hot. I live in the country, and they have any amount of space, but there has been swine fever close by, where they can go. Has this anything to do with it? I shall feel greatly obliged to anyone who will tell me a remedy.—L. DANIELL. *** I think the fowls are suffering from diphtheria, a disease which has of late years wrought considerable havoc in various poultry yards, and which is said to be so difficult to cure that many advise a thorough clearance of the whole stock, and the free use of disinfectants as the best course. The following treatment is recommended by an able authority, and has been successfully tested: "The fowls attacked should at once be placed apart in hospital, free from draught, and a slight aperient given of from one-third to half a teaspoonful of Epsom salts. Meantime, obtain at once from the nearest chemist a bottle of ordinary chlorate of potass and perchloride of iron mixture—every chemist has his own but any will do—and also a bottle of the following dressing:—Carbolic acid, 1 drachm; sulphurous acid, 3 drachms; tincture perchloride of iron, ½ ounce, and glycerine, ½ ounce. With a camel-hair or sable pencil touch all parts which show sores, morning and evening, with this latter dressing; and six hours after the salts begin to give one-quarter ordinary adult doses of the chlorate and iron mixture, feeding meantime on the best soft food, unpeppered, but mixed with warm brandy-and-water; an occasional egg and brandy between two fowls is also of much service. Great care must be taken in anointing the throat; and occasionally a bird may be so irritated by a drop "going the wrong way" as to choke and die. These cases cannot be helped, some such dressing being absolutely necessary; but for bantams and chickens the lotion may be diluted with one-third water. If the mouth and throat appear healing, while there are sores outside which make no progress, these may be treated with lunar caustic as an alternative. When the worst symptoms are alleviated, after-treatment must be guided by circumstances, according as there may be diarrhœa or the reverse; or croup may remain and have to be prescribed for. It should be remembered that the above doses are intended for fowls of good size, chickens and birds of the smaller breeds should have from one to two-thirds of the quantities named. Perhaps some readers have dealt effectively with similar cases, and will describe the treatment adopted?—DOULTING.

14456.—**To fatten Aylesbury ducklings** (*Penguin*).—Feed three or four times a day on Barley meal, mixed with boiling water into a stiff dough. Oatmeal may be used for a change, but it is more costly. If skimmed milk be obtainable on the premises—that is, without paying for it—you should use it instead of the boiling water. The Aylesbury duck fatteners use tallow greaves with the meal, and, I believe meat as well. The food should be cleared up at each meal. As there is no water to interfere with the feeding of the ducklings there will be no necessity to fasten them up, unless the run is a very large one.—DOULTING.

14457. — **Crooked-breasted chickens** (*Anti-deformity*).—Crooked breasts are brought about by chicks roosting too soon, or from the use of too narrow perches. The first difficulty can be got over by keeping the chicks in the coops or a chicken house at night as long as possible, and make them roost on a well-strawed floor. The straw should be well shaken up every day, and changed once a week at least. The perches usually found in poultry houses are far too small; the owners apparently thinking that anything in the shape of a rail will do, so long as it is strong enough to support the birds. The best kind of perch is a ordinary Larch pole, about 4 inches in diameter, split in two and nailed the flat side downwards. The bark should be left on as it enables the fowls to get a better hold than is the case when the perch is planed. If "Anti-deformity," will act as advised with her chickens, and be careful about the size of the perch, crooked breasts among her poultry will be few and far between.—DOULTING.

HOUSEHOLD.

VEGETABLE & FRUIT COOKERY.—XX.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

HOME-MADE JAM,

WHEN properly and carefully prepared, is much cheaper and superior to that which is offered for sale. When making jams or preserves judicious care and attention must be given to the following rules:—1. Let the fruit be sound, dry, free from dust, and, if possible, gathered under a morning sun. 2. Preserve the fruit upon the same day that it is gathered; and as soon after gathering as convenient. 3. Let your sugar be of the finest quality, whether white or brown; there is no economy in using inferior sugar, as it throws up much scum, which has to be removed, and so wastes a large proportion of the jam. 4. Never stir with iron or pewter spoons, for they are liable to spoil the colour of the fruit; but use a wooden spoon or stick for the purpose. 5. If you do not possess a brass preserving pan, substitute a porcelain-lined saucepan, but on no account use an iron or tin-lined pan. Take care that it is scrupulously clean. Do not let the pan rest immediately on the fire, but fix it at least 2 inches above, as the fruit and sugar are very apt to burn when close to the fire. 6. Skim away all froth as it rises, and continue to do this until there is no more. 7. If you wish to preserve the colour and flavour of the fruit boil quickly and stir frequently—indeed, almost constantly—and until the syrup will solidify, when a little of it is dropped upon a cold plate; then pour the jam at once into dry and sound jars; set aside for twenty-four hours, to become cold and firm. 8. Cut some rounds of tissue-paper a size larger than the jars; dip each piece into good sweet oil, and place it immediately on top of the jam; or cut some writing-paper in the same manner, and dip it into brandy, and cover the jam with this; then securely fix over the mouth of the jar some gummed paper, to keep out the air. Store away in a dry and cool atmosphere; if the least damp, the jam will turn mouldy. By careful attention to these rules jam may be kept good for any length of time.

GREENGAGE JAM.—Allow three-quarters of a pound of sugar to every pound of Greengages, which must not be too ripe. After weighing them cut the Plums, and remove the stones, put the fruit into a basin with half the sugar, and let it remain covered for three or four hours; then add the rest of the sugar, and put all into the preserving pan together, and place over the fire and stir continually until the sugar is dissolved. Let the jam boil rapidly for at least thirty to forty minutes, crack half the stones, blanch the kernels, and add them to the jam about five minutes before it is finished. All Plum jam should be very well boiled, as, when this is not done, it is more liable to ferment than any other fruit. When finished pour into jars and cover as directed.

VEGETABLE MARROW JAM.—Select smooth-skinned and full-grown (but not too large) Vegetable Marrows, peel them, cut them in halves, and carefully scrape out all the seeds; then cut the Marrow into strips about an inch wide, and slice these as thinly as possible, or cut the Marrow in pieces to resemble the half of a Plum. When this is done weigh the pieces and allow one pound of sugar, half a teaspoonful of salt, and one Lemon to every pound of Marrow; chop the yellow rind of the Lemon very finely, remove the pith, and cut them in slices, keeping back the pips; put the Marrow, Lemon rind, and slices, salt, and half the sugar into an earthenware vessel, which cover and let stand all night; then strain away the liquid and boil it with the remainder of the sugar for twenty minutes; add the pieces of Marrow, &c., and boil again until each piece looks perfectly transparent; pour into dry jars; let them stand twenty-four hours to set, and cover as before directed. Pumpkin may be preserved in the same manner, but the fruit should be quite ripe, or the rich flavour for which it is famed will not be fully developed. These jams may be varied by the addition of Ginger, Oranges, Almonds, &c., instead of Lemons.

DAMSON CHEESE.—Procure sound, ripe, dry, and freshly-gathered Damsons. Put them into a sound earthenware jar, cover it closely, and stand in a cool oven or in a saucepan with water boiling around the jar, until the fruit is sufficiently soft to break and be passed through a coarse sieve; then weigh the pulp so obtained, and allow ten ounces of the best white sugar to every pound of pulp. Put these into a preserving pan, and simmer gently for two hours, stirring occasionally; then boil rapidly for about half-an-hour, or until the mixture looks thick, and will leave the sides of the pan clean; then add a few kernels, blanched and chopped; pour into shallow dishes or small moulds, and set aside to become cold; cover first with brandied and then with gummed paper, as before directed. This cheese should not be used for three months after it is made, when it should be perfectly firm, so that it may be cut into shapes and served with dessert.

APRICOTS PRESERVED IN SYRUP.—The Apricots for this purpose should be only half-ripe. Split them in halves, take out the stone and remove the skin; put the fruit into a pan with enough cold water to cover them, and stew until each piece is soft, but not broken; pour off the water, and put the fruit into fresh cold water for ten minutes; strain and dry the Apricots thoroughly on a sieve or cloth. Make a syrup with two pounds of sugar and one pint of water, and when this is clear and thick put in the fruit, crack the stones, blanch the kernels, and add them to the syrup. As each piece of Apricot becomes transparent lift it into a dry jar or bottle, and when all the pieces are removed pour the syrup and kernels over the fruit; stand aside until quite cold, and then cover with papers as before directed. All stone fruit may be thus preserved, but great attention must be given to the stewing, in order that it may be sufficiently soft for the syrup to penetrate and preserve it. Should the syrup commence to candy, it must at once be reduced with a little water, and poured over the fruit in a smooth condition.

TRUE OATMEAL PORRIDGE.

IT is usually supposed among English people that Scotch Oatmeal is the best, and no doubt it is excellent; but we have lately had our attention drawn to some excellent samples from Ireland, especially from Drogheda, where the manufacture of Oatmeal is carried on at Hill's mills to an unusual state of perfection. The sample is perfectly clean, and is as free from dust as a sample of some beautiful seed. There is no doubt that our Irish friends are doing excellent work in producing so good an article. We are glad to note that its use is extending very much in England; and it would extend very much more rapidly if people knew that they should boil it properly—which means never less than one hour—and eat it in a simple, wholesome way.

When breakfasting the other day at the Grand Hotel, we were offered, among other things, porridge which was not at all what it ought to be, but merely thin pap in a basin—really a thickish gruel. We told the waiter that that was not porridge, but he replied, "Oh! it's very nice if you put cream and sugar upon it!" This we did not care to do, but an American near us emptied a jug of cream on the pap, and then put a good layer of fine white sugar over that. Naturally the Oatmeal is blamed for the effects of such needless additions; and sometimes it is boiled with milk, which is a heavy, bad way. The proper way is to boil it in pure water, and take it in the consistency of thick pudding, and eat with milk. Instead of adding pap to pap, the right way to eat porridge, especially for those who in any way doubt its effect, is to eat it with a crust of good bread, a rusk, or a dry biscuit. This enables one to eat it with proper mastication and salivation. As regards the irritating qualities of the coarse meal, which some people now begin to talk of, there is not much in that when the boiling is thoroughly done, but if in any case one may have reason to avoid it, there is a perfect

alternative in the Oatmeal flour, of which at least one Scotch house sends out a very excellent sample. Well boiled, it is delicious food, suited for children or invalids. But *Oatmeal flour* should never be obtained from any but trustworthy sources, as there are such facilities for adulteration.

Books on food are not often written by real students of the subject, but the following in Dr. Chambers' "Diet in Health and Disease," is near the mark: "Oatmeal, if imperfectly boiled, as when prepared in a hurry, or not boiled at all, as in brose, is extremely indigestible, and produces the obstinate water brash; but when boiled well, and eaten slowly, so as to become mixed with the saliva, it is a wholesome and nutritious food."

Rosemary hair-wash.—Take camphor 1 oz., borax 1 oz, a few Bay leaves, young shoots of Alder, and a little Box; a good quantity of Rosemary and water in proportion. Put all these leaves in a basin, and let them stand till the water is brown, then strain into bottles over the camphor and borax, which should be broken into small pieces, and put at the bottom of the bottles. When young I always used this wash; my hair was golden brown, very fine, glossy, and curly. All grease spoiled it, from which I infer that Rosemary wash should not be used if the hair is naturally dry, dull, and harsh.—A. B. T., *East Anglia.*

CATS v. GARDENS.*

BEFORE this subject is quite exhausted, I should like to give my experience of "Vigornia's" friend. I could fill columns with my grievances, but will limit myself to a few facts, beginning with the statement that scarcely a day passes that my garden is not injured in one form or another by this "harmless animal"—seed-beds scratched up, valuable seedlings and plants destroyed, cold frames broken in, as my neighbours' cats jump on to them off a high wall, smashing in the glass (this constantly occurs), as well as utterly destroying all tender plants underneath. When they do not jump on my frames they climb up and down a Peach tree, to its great detriment. Then, if the frames are open to admit air, the cats go inside to sleep, and recently destroyed some valuable young plants by lying on them for some hours. My Vegetable Marrows suffered the same fate. We cannot even open our larder window without protecting it from the visits and depredations of the neighbours' cats. My garden is my greatest pleasure, and I work early and late, spare no time, labour, nor money; it injures no one, yet, for the sake of "'Vigornia's' noble friend," it is all labour in vain, unless I protect myself, and I feel quite justified in doing so by any means in my power, as I would from all other vermin, and I heartily sympathise with other sufferers who have given their experiences in these pages.—A. M. G. O., *Ireland.*

—— I have been reading with great interest the different opinions about this, and I am very glad to see "X. Y.'s" defence of poor pussy (p. 307), for I think she really deserves to be championed, if only for the amount of good she does, for my experience agrees with his. I live on the edge of a small country place, and rejoice in the possession of a large garden and lawn. The neighbourhood literally swarms with cats, a fact of which when I kept a lady cat I was painfully aware. When she departed this life (assisted by a trap—I do not wish I knew who set it for their sakes), I got a tom kitten and trained it, and mark the result. Before that there were always ten or a dozen cats every night holding a concert on my seed-beds, and now we never see such a thing. Sometimes I hear them in the distance inflicting their music upon some unlucky being, but we rarely see them. Our own cat does great execution among the sparrows, and it is needed, for there seems no end to them. They eat the grass seeds in spring, they pick the young buds from the trees, they fight other birds, and spoil every flower they can; and then their voices are like an ungreased saw, and always to be heard. Nothing you can do seems to have any effect upon their numbers; they seem proof against all traps. Cats do sometimes scratch up things, but when they bring three or four sparrows every day the slight damage they do ought to be forgotten. I admit the noise they make is not very pleasant, but better that than to have our gardens made flowerless, and have to bear the perpetual annoyance caused by sparrows.—A BELIEVER IN CATS, *Salop.*

—— I see "J. R. S." says the ideal cat I mentioned does not exist in his neighbourhood. My cats were never ideal cats, and I have no doubt did as much damage in the gardens of neighbours, who kept no cat, as is the custom of the tribe. The point of my remarks was that a good strong tom cat, if kindly treated from kittenhood, can easily be trained to avoid doing damage himself, and if he is well fed while growing he will keep every other cat at a distance. Woe betide any neighbour's pussy that dared show his nose through or over my garden fences while my cat was within sight! He had either to scamper for dear life, or get such a pummelling as effectually warned him off the premises for the remainder of his existence. —J. D.

—— I fully endorse the remarks of your many correspondents on the damage caused by the midnight perambulations of these animals. Although I am not a sufferer to any great extent from their depredations, I have just grounds for complaint. Many a night have myself and household been aroused from sweet repose by the abominable noise created by these pests; and many a time have I been reprimanded for putting to flight articles of domestic utility, hoping their descent would have the desired effect of quelling the uproarious and riotous proceedings below. I am sure your correspondent "Vigornia," and others, must possess the virtue of sufferance in a high degree to submit to and endure the inconvenience and damage caused by those wretched miscreants. Or, perhaps, the members of the feline genus in their neighbourhood have the keen perception of discerning between right and wrong (as remarked by one of your correspondents), and therefore keep within their jurisdiction, and nightly go through a series of mute performances. The argument adduced in defence is defective, and does not compensate for the annoyance and injury caused to us poor mortals. In the future, as in the past, I shall still retain my position as judge and jury, and, directly a just sentence is pronounced, this valued pet has to prepare for water and tub, which come into requisition for his demise.—J. T. H., *Tavistock.*

Useful cats.—There is one use to which cats may be put in gardens which has not been alluded to in the cat controversy—*i.e.*, guarding fruits, particularly Strawberries and seeds. Each cat is domiciled in a little kennel; between the kennels, which are about 50 feet apart, a wire is laid down. The cat has a short chain, attached to a collar round its neck, which is fastened at the other end by a ring to the wire. The cat runs up and down the wire, and most effectually keeps off the birds, and curiously enough often catches and kills them. The cats naturally complain a little the first few days, but if well fed soon become quite contented, and no doubt feel a certain satisfaction in working for their living. When first put into the kennel, the food should be placed at some distance along the wire, when they soon learn to run up and down. We have had as many as eight or ten cats at once at work in a large garden, and found them most useful—far more useful, more economical, and more effectual than any other means of protecting fruit and seeds from birds and mice.—DIANA.

The cat a poacher.—I shall be glad if you will answer a question about the domestic cat. Is it any real use about a farmyard? When I came here as tenant two years ago last May, I found six cats that belonged to the premises. I shot four of these, as I found they were carrying off some young partridges I had hatched out; but I left a tom and his lady. This couple had a family in the summer. The following winter I had nine of the cat tribe about the farm buildings, and very hungry they were. I dislike seeing any creature want, so I regularly fed these cats twice a-day. Generally I fed them myself, and though at first they were extremely wild, they became very tame, and always ran out to meet me when I appeared with their food. In the spring these cats by degrees disappeared, and spent their life out-of-doors in the plantations. I may now say that I have a few rabbits, but only, as I consider, enough for my foxes. In the winter all my feline friends returned, and I fed them as usual for about a week, when by some accident a packet of rat poison got into their evening meal.—H. JAY. [There is no doubt that during the spring and summer your cats are living chiefly on young rabbits and game. As they are absent from your premises when the rats and mice are breeding, it is difficult to estimate their economic value. At the best, they are always to be regarded as determined poachers.—ED. *Field.*]

* This discussion must now cease.—ED.

Chrysanthemum stake.—I will give particulars of a stake I have made to support and train my Chrysanthemums for show blooms. I get some strips of wood 1 inch square, and cut them the required length, then cut some strips of copper wire, 18 inches long; one end of these strips I bend round in a loop. I then get a fine bradawl and make five or six holes in the stake, and, taking one of the strips of wire, pass it through the stake and bend the other end round. It thus makes a support for two of the shoots, and by fixing four wires and one single wire at the top for the leading shoot I make a very neat stake for training Chrysanthemums, and if it is given a coat or two of paint it will last for years.—A. KING, *Islington.*

14274.—**Damp walls in greenhouse.**—Stone walls frequently throw damp to the inside, either from the stone being porous, or from the stones being improperly laid, and running the rain from the bedding joints to the inside. A cure may probably be found in the following:—Make a thick ropy lather of common curd soap, with which paint the wall well over in dry weather; allow to dry, and repeat. When this coating is quite dry, follow it with a similarly applied coating of solution of common alum, 2 pounds to one gallon of rain water. If necessary, repeat the whole operation, and the surface of the wall will be waterproof.—W. F.

14264.—**Cement for aquariums.**—I copy the following from "Enquire Within," as it appears to be the cement to which "M. J. S." refers, but I cannot say if it would do for an aquarium:—"*Mastic Cement.*—This is employed for making a superior coating for inside walls, but must not be confounded with resin mastic. It is made by mixing twenty parts of well-washed and sifted sharp sand with two parts of litharge and one of freshly-burned and slaked quicklime, in fine dry powder. This is made into a putty by mixing with Linseed oil. It sets in a few hours, having the appearance of light stone; and we mention it, as it may be frequently employed with advantage in repairing broken stonework (as stairs) by filling up the missing parts."—CELER ET AUDAX.

BIRDS.

14458.—**Canary nestlings dying.**—Can anyone tell me the reason why young canaries have died this year? I have had six pairs of birds which have had three nests each; the young ones have all lived and been healthy for the first week, when they have withered up and died. The hen and cocks are all healthy birds from different strains. Two of the hens reared ten or twelve young ones last year. This year I have reared only six young ones out of about fifty hatched. They are fed on Hartz's Mountain Bread, or Canarydine, or egg. They have plenty of air, fresh water, and green food, and are kept very clean. I have reared canaries with great success other years, but this year they die in dozens without any apparent cause, for they are fed and cared for by the parent birds. I have tried everything without success. I have left off egg food and given all kinds of green and patent foods without any better success. The parent birds are in full song, and strong active birds. Can anyone tell me the cause? Other bird breeders beside myself have had the same bad luck. I should be glad to know if it is an epidemic, if there is any remedy, and if there is any chance of saving the few that are just hatched.—E. C.

14334.—**Doves.**—I feed mine on Canary seed, Wheat, and bread crumbs; this keeps them in splendid health. Care should be taken to give them plenty of clean sand and water to bathe in, of which they are very fond.—J. W., *Brockley, S.E.*

Smithfield Market, Evesham.—List of prices realised 28th August, 1885:—Beans (Kidney), 2s. to 3s. 9d. per pot (40 lb.); Beans (dwarf), 2s. 9d. to 3s. 3d. per pot (40 lb.); Carrots 2½d. to 4d. per dozen; Cucumbers, 7d. to 10d. per dozen; Mushrooms, 7d. to 8d. per lb.; Potatoes (new), 3s. 3d. to 3s. 6d. per pot (60lb.); Vegetable Marrows, 1s. 0d. to 1s. 6d. per dozen; Apples, 2s. 6d. to 5s. 6d. per pot (64lb.); Pears, 2s. 6d. to 10s. per pot (72lb.); Plums (Orleans), 8s. to 10s. per pot (72 lb.); Plums (Pershore), 4s. to 4s. 9d. per pot (72 lb.); Plums (Victoria), 8s. to 29s. per pot (72lb.).

GARDENING ILLUSTRATED.

Vol. VII. SEPTEMBER 12, 1885. No. 340.

BEDDING OUT.

We may perhaps add a few words to the discussion that has taken place in Gardening on this subject. Little is to be gained by disputes as to which is the best way, while much good will be done by our readers helping each other in enjoying the various classes of plants, and in the adaptation of many beautiful plants to different soils and localities. Mr. Watts quotes from a high-priced nurseryman's catalogue of hardy plants. Now this is a very one-sided way of looking at the question, because many people, even cottagers, have beautiful gardens of hardy plants—got in simple ways by exchange with each other. It is also easy, as no doubt Mr. Watts knows, to raise an immense number of fine perennials from seed which will cost only a few pence per packet. There is scarcely a district in the country in which good plants may not be picked up in gardens for the asking, many hardy plants increasing in far greater numbers than the grower has room for. In every place where they are well grown, hundreds are thrown away, simply for want of room. In many cases, too, where they are grown, they are much better if the invigorating system of redivision and replanting is adopted, and in doing this work a great many plants have to be thrown away. We should strongly advise every grower of hardy plants, in clearing out his surplus stock, to leave them "in by the heels" in some unimportant spot of ground, from which, at a certain season of the year, he may offer plants gratuitously or otherwise to cottagers and others who are seeking to improve their little gardens. Many persons could do much good in this way, and spread a love of pretty plants that all might grow, and thus help to open the fairest gate to knowledge. It is only fair, too, to say, as regards the trade, that a good many houses are now beginning to offer these plants at a more reasonable rate. Some, too, give good healthy plants, whereas at one time so few nurserymen attended to them, that people were often obliged to take what they could get. The bedding plants that Mr. Watts enumerates as so cheap, being few in kind and grown in great quantity, are naturally offered at a low price. Many lovely hardy flowers increase slowly—say, for example, Anemone alpina and sulphurea, and the Yuccas. In other cases there are plenty of plants that grow like the grass. The propagation of the Verbena or Geranium is like that of the Aphis in the number that can be obtained from them. Proper attention must be given wherever beautiful gardening is attempted, except in the one phase of judicious wild gardening, in which Narcissus and many hardy plants take care of themselves. As to staking, much may be done by studying how to get rid of it altogether.

We ourselves, having long studied this question and given more attention to it than perhaps anybody else, and having observed what has been done both on the Continent and throughout Britain, feel assured that hardy plants deserve tenfold more attention than they generally get. What we say now will be everybody's opinion ten years hence. An immense change has been witnessed during the past few years, but mainly in the higher class of gardens. By-and-by the general body of amateurs will see that it is to their interest, and to the interest of natural beauty and of good gardening, to pay more attention to the plants of their own and similar countries than to those that require the protection of glass. The annual rotation adopted in the case of bedding plants—the putting out of the young plant into fresh soil every year—is an advantage which, if in part extended to hardy flowers, would quickly give brilliant results. The prolonged bloom and freshness of bedding plants may be secured in many instances in the case of hardy plants by the same tactics. The miserable fashion of growing hardy plants in the shade of poor shrubs and overcrowded evergreens and trees is very unfair to them. They should be brought out into the "open," and the position for every beautiful plant, or family of plants, thoroughly well considered. With many kinds, too, there is the advantage on their side that you have not to plant them every year. We have ourselves made beds that have been beautiful for ten or a dozen years, with the slight attention of cleaning and surfacing, and occasionally a slight change.

These things do not in the least prevent a group, or a series of beds, or a flower-garden, for the tender things growing in the open air that are generally called bedding plants. It is, on the other hand, an undeniable fact that for many years these last have shut out from our gardens things infinitely more beautiful, from the Carnation to the Lily, and a host of equally charming plants.

It is not our wish to publish hard words of any one, and we see no good whatever in prolonging this discussion. There is no doubt that the movement suffers a little by the present generation of gardeners having, unfortunately, been brought up mainly in places where nothing but bedding-plants grew, and therefore they have, like all of us, a great deal to learn; but all who see good things doing well, and well arranged, like to have them. It is a mere question of knowing beautiful things that may be had in the open air, in order to make a step to secure them. We hope our readers will help each other in pointing out how things are well done, or in speaking of places where a variety of beautiful plant life may be seen in the open air. To regard the common mixed border as the only possibility of hardy flower gardening is a huge mistake. There are a variety of phases of flower gardening wholly distinct from, and superior to, the common mixed border, which is almost invariably badly and inartistically done. We have never seen a country seat or garden that did not, from its position and surroundings, suggest distinct and delightful modes of growing hardy flowers; therefore we say all interested in it should see all they can in every type of garden from the cottage to the Botanic Garden, in which, by the way, hardy flowers have been very badly treated, having been grown in the same bed for thirty or forty years.

Ageratum Mexicanum.

OUTDOOR PLANTS.

AGERATUMS.

The Ageratums are among the most lasting of summer bedding plants, as, being comparatively hardy and able to stand a few degrees of frost, they may be planted out earlier than most other tender things. The flowers of all the varieties have plenty of substance, and are not, therefore, much injured by rain, and they preserve their colour throughout the season. The height of the plants varies from six inches to two feet, and the colours of the blooms are pale blue, lavender and white. An excellent variety is Cupid (height, nine inches); it has bluish lavender-coloured flowers of great size, well set off with bright-green foliage. Countess of Stair (twelve inches), pale blue; Mexicanum (twelve inches), pale blue; Queen (twelve inches), a grey blue; and Swanley Blue (about eight inches), dark lavender blue in colour, are also good sorts for bedding. The very dwarf kinds do not flower freely. The variety called Cannell's Dwarf is, perhaps, the best, and it is useful for edgings to small beds. The varieties may all be increased by means of cuttings.—G.

GROWING BULBS IN EARTHENWARE RINGS.

Like many other amateurs, I am fond of growing bulbous plants, but—owing to the fact that I have limited space, and must needs grow them in mixed borders; and that when grown there their exact whereabouts often gets forgotten; and in the moving of other plants and the necessary work of the border the clumps get "dug" in half and the bulbs scattered over the border, producing a most untidy effect; and that some bulbs, like the Tritonias, have a disposition to wander and come up in the heart of another plant—I gave up bulb growing in despair till I thought if I got something that would be strong enough to resist the blow of a spade, and at the same time confine the bulbs to the space allotted to them, I might perhaps be able again to see my favourites in their old quarters. I went to our brickyard and asked the foreman when he was making 9-inch drain tiles to cut me off as the clay form issued from the machine 6-inch lengths of tile, and to burn them specially. On receiving them I at once planted my Tulips, Lilies, &c., in clumps in these rings; the result has been most satisfactory. The rings are plunged into the border 2 inches underground, and the bulbs planted in them and filled up, and they are safe. Their locality does not need marking, for when the spade is at work the ring proclaims its existence, and so is easily avoided; at the same time, being an inch thick, and supported on all sides by the soil, it cannot be broken easily. The advantages are that bulbs needing peat can be grown in a mixed border by merely filling up the ring with the necessary soil; the sides of the pot or ring prevent wandering roots from eating up the food intended for the bulbs.

Let us suppose that five Tulips are put in the first instance into a 9-inch ring; they can be left with advantage two years at least, by which time the size of the clump will proclaim, by the space it occupies, that the ring is pretty full of bulbs, and in the autumn, when the borders are gone over, the ring is just turned out with a clod of earth, filling up its calibre and full of bulbs, which are shaken out, the largest returned, and the rest are stock in hand for the nursery or for giving away. As the rings are straight-sided and have no bottoms, the bulbs stand crowding well, as they can root downward without interruption into the border, and the usual autumn mulch feeds them as well, and the work of planting must not be done

more than once in two or three years. I have now had others made of 6 inches and 4 inches in diameter for smaller clumps and smaller bulbs. The smallest size is used for edgings of small bulbs, such as Crocuses, Snowdrops, and Squills, &c.; the larger ones do well for Lilies, Tulips, Hyacinths, Gladioli, &c. The 9-inch rings cost me 4d. each, and with ordinary care will last a lifetime; the 6-inch cost 13s. a hundred, and the 4-inch 6s. 6d. a hundred. They can be made at any brickyard, and if there were a greater demand for them, they might be supplied much more cheaply, as they take up little room, and the three sizes can be nested together and take up only the room of the 9-inch ring, an advantage where they have to be sent a distance. Their use economises bulbs, as each little corm or bulb is easily found and preserved, and as the whole clump comes up with the ring, no stray bulblets get into the border to disfigure its neatness next season.—H. D. P., *Colchester.*

Increasing Pentstemons.—Pentstemons are grand this year again, and almost every shoot is now terminated by a long fine spike of bloom. Those who have good showy kinds which they would like to save and perpetuate should at once put in cuttings, which, if properly managed, strike freely at this season, and make good plants ready for turning out in the borders early next year. The way to start with them is to take off the young half-ripe shoots and trim them in the ordinary way, leaving them when made about four inches long. They should then be inserted in sharp sandy soil, either in pots or on a shady border, under a hand-light, when, if sprinkled and kept close, they quickly root, and are soon ready for potting-off singly, or planting out, to be wintered under cover of a cold frame. That is the only way of keeping them safe, as, though considered to be hardy, they become crippled during severe weather, and sometimes get entirely killed. To prevent this, when any are left out, it is a good plan to protect them by placing a mound of leaf soil around the collar and sticking a few Evergreen branches over it to keep it from being displaced. Since Pentstemons have been so much improved, many depend on seedlings, and these afford great variety, for, though many may be raised, it is seldom that two are exactly alike, and the diversity renders them all the more valuable. The way to raise seedlings is to sow in a pot or pan filled with finely-sifted soil, and then lay a pane of glass over it and shade till the seeds germinate. This they will soon do if the soil be kept moist by gentle sprinkling or damping, but care must be taken that it does not become over wet. As soon as the young plants are up and large enough to handle, they should be pricked off in pans or potted singly, and wintered up near the glass in any ordinary frame, the same as advised for the cuttings.—S. D.

Clematis flammula and montana.—These beautiful climbers seem to be becoming superseded by their more showy rivals of the Jackmanni type, yet they will doubtless again become popular, for their merits cannot be long overlooked. I have lately seen some beautiful effects produced by allowing Clematis flammula to ramble at will amongst other climbers, and nowhere does it show itself off to greater advantage than when used as a screen to cover old unsightly walls or fences; indeed, the more irregular its mode of growth the more natural it looks. We have an old fence covered with vines of ornamental kinds, Jasmines, and similar plants, and amongst them an old plant of Clematis flammula is allowed to run freely, pushing out a large shoot here and there, and now, when covered with myriads of tiny blossoms, the effect is particularly good. As a climber for covering old tree stumps or bare stems of living trees, there is nothing better than Clematis flammula. C. montana is also equally good for any of the purposes just mentioned, and also as a wall climber; it produces its pretty clusters of little rosette-formed flowers early in the season when pruned in quite close to the wall, but the beauty of climbers is so greatly enhanced by permitting them to hang in natural garlands and festoons, that anyone wishing to have them in their best condition should beware of too close spur-like pruning.—J. G., *Hants.*

FUCHSIAS ON THE COAST.

I am inclined to think that the list of plants that will thrive near the sea is not so restricted as some seem to think. The Fuchsia, for instance, is one of the plants that would not generally be selected for such a situation, except by those who have had opportunties of watching its behaviour. I have seen it on the Somersetshire coast, and I must confess that I was at first somewhat surprised at its luxuriance. It grows in many of the cottage gardens that dip down to the sea. At Watchet I have seen Fuchsias trained to walls to the height of 10 feet, and in the gardens that skirt the coast about Minehead I have seen the best double and single varieties 6 feet and 7 feet high flowering with the greatest freedom, and producing at the same time perfectly-formed and highly-coloured blooms. It must be understood, however, that the locality is favoured by a genial climate during the greater part of the year. Very severe frost is not often experienced there, and everything suffers more from cold piercing winds in the late spring months than from frost in winter. From inquiries I have made on the spot, it appears that the soil of the district suits the Fuchsia admirably without any preparation. It happens that many of the most successful cultivators are cottagers who have not much of either time or money to spare on such subjects, but, having learned from observation how well the Fuchsia thrives, they cultivate it with care, and with the best results. The plants are obtained from slips inserted in some shady corner at any time during the summer whenever they can be had. They remain through the winter where they are put in as cuttings, and are planted out where they are to stand permanently when the cold winds of spring are over.

Varieties.—Such varieties as the Emperor of Brazil, Sir Colin Campbell, Avalanche, Rose of Castile, Mrs. Grant, and Lurline were grown into large bushes three feet and more in height, after being planted out two years, and there were older plants of both double and single varieties five feet high, in the most perfect health, and surpassing in every respect the best grown pot specimens I have ever seen. One notable plant with a single white corolla which I saw in the same district made an impression on me which I shall not soon forget. It was occupying a snug corner in an angle where two walls met, and its graceful branches were hanging over the wall, laden with flowers in such a way as to strike one with astonishment. What might be accomplished with the Fuchsia as a decorative plant in the open, if undertaken by skilful hands and treated with reasonable care, it is not easy to conjecture. Certain it is that in such favoured spots it is capable of being grown to a very large size. So far as I have seen, there is room for improvement in the selection of varieties. It is not often that cottagers have any choice in such matters—they are glad to get the first that comes in their way; but I think if the Fuchsia were taken in hand by any one skilled in plant culture, and if more attention were given to the selection of the most hardy and vigorous growers, more would be done with this flower by those who reside in favoured localities, by the sea and elsewhere, than has yet been accomplished. If such hardy sorts were tried as Riccartoni, corallina, globosa, Tower of London, Charming, Lustre, and Reflex, I feel sure they would succeed, especially if given some slight protection in winter. The cottagers to whom I have alluded tell me that they wrap their plants in pieces of old carpet or bundles of straw on the approach of hard weather; but they do not resort to coverings unless such weather is likely to continue long.

How is it that this flowering shrub has not been more largely adopted by those who reside on or near the South Devon coast? The climate there offers just the condition it requires. There are many places close by the coast, but yet somewhat sheltered, where even zonal Pelargoniums live out of doors for several consecutive years. It is only when we get a cycle of bad winters that they are killed. If, therefore, zonals are capable of enduring the climate, it is certain that Fuchsias, with their more hardy nature and indifference to being covered up for three or four months during winter, will succeed. The capacity of some of the old hardy Fushcias to endure frost has not been sufficiently recognised by those favourably situated as to climate. Only a few years ago there stood within a mile of where I write a huge specimen of one of the old sorts, the name of which I never knew; it had bright scarlet sepals and a dark violet corolla. This plant, standing in the open, had reached a height of nearly 10 feet, and was many yards in circumference, with a stem much thicker than my arm. It endured the severe winter of 1870 and 1871, when we registered 26° of frost; but, unfortunately, rude hands have since sadly mutilated its proportions. I mention this to show that, when properly selected, Fuchsias are much hardier than they are generally belived to be. J. C.

Gardening under difficulties in the "Tower Moat."—In the autumn of 1880, our Yeoman Jailor, who was about to give up his garden (reclaimed from the Tower Ditch, which for sanitary purposes was raised and drained in the year 1843), wished me to take it. I did so on one condition, viz., that a friend of his who had laid out the garden, and always looked after the flower-beds, should do the same for me for the first year. I had a fair knowledge of the kitchen garden, and, being very fond of flowers, I soon learnt sufficient to enable me to take sole charge, and I have from the beginning of 1881 been most successful at all of our annual vegetable and flower shows. Last year was more favourable for the Tower gardens than this has been: the show then was held on the 26th of August. This year the weather has been very unfavourable in many ways:—Drought, flies innumerable, N.E. and S.W. gales, which often uproot the plants and flowers, the soil being so light (made-up soil). I have often had to spend the best part of a day in tying up Dahlias, Sunflowers, Chrysanthemums, &c., &c.; but that is not all, as the sparrows commit great havoc, especially in spring; they eat up my young Beet, or I must have had the first prize, as that is one of my specialties. Last year I had a splendid bed of Beet, and took first prize. There is another great annoyance—stone-throwing by the boys of the Tower and others who have permission to enter the moat for playing at cricket, and often go out of bounds and have a shy at the sparrows—the consequence being that I often find a Sunflower or a Dahlia stem cut in two; and, in addition to those drawbacks named, our show was this year held twelve days earlier. Well, our committee gave us plenty of notice, and I set to work with a will; the consequence was I was more successful than before. This success has not been achieved without a great deal of labour and expense, and I hope it may be an encouragement to a "Disappointed Amateur" and other readers of Gardening Illustrated to try again. I have had many failures during the five years, but in no case, as far as I know, was it the fault of the plants or seed, which I have obtained from various seedsmen. I have from the commencement kept a diary accounting for everything in connection with my garden—even keeping an account of the weather from March 1 to Oct. 31 in each year. If "Disappointed Amateur" could only peruse my diary for a few hours I think he might learn something, and next year he might have a different tale to tell. There are scores of seedsmen in and around London where he could get the full value for his money. I am afraid I am encroaching on your valuable space, but I cannot conclude without telling the readers of Gardening Illustrated with what pleasure I look forward to its issue every week, and the vast amount of information I have obtained from its perusal.—Tower Moat.

Lilium tigrinum.—This and its double-flowered variety are now finely in bloom. The blossoms of the double form are smaller and of a much paler colour than those of the type; the plants are not quite so tall, but are very similar in other respects. The flowers open from the centre in successive parts, divided and arranged evenly behind each other, the stamens in different plants showing various states of transition. It is not so showy as the brightly-coloured spotted flowers of L. tigrinum itself. Fine masses of this Lily may sometimes be

seen in cottage gardens where the bulbs are not disturbed, but merely covered with ashes in winter as a little protection against severe weather. Such masses produce strong spikes annually. L. tigrinum thrives well in Rhododendron beds. A plentiful supply of water at the roots is beneficial both to L. tigrinum and L. auratum when growing in such situations.—G. K.

A good mixed flower-bed.—The following is a description of a circular bed on my lawn, which has been more or less gay all summer: In the centre is a large bushy and well-coloured Acer Negundo variegatum; this is festooned and draped with Tropæolum speciosum. Round the white Maple are a few Lilies, Spiræa palmata, Delphinium formosum, and mixed Antirrhinums. The bed is edged with Funkia subcordata. The Tropæolum is beginning to open its many hundred bloom buds.—W. T.

Senecio pulcher is sometimes spoken of in a disparaging manner, but here in South Devon, in a deep soil and in a rather moist situation, it thrives winter and summer on the open border, and at this time I have several vigorous specimens. I have just measured one of them; it is about 3½ feet in height, with twelve branches, covered with flowers and buds (from three to eight on a branch), large, perfect, and healthy. The flowers are more than 3 inches across, and in colour all that could be wished.—A. H.

Spiræa palmata.—This, if it is to be grown well, must be planted on a partially-shaded situation where there is plenty of moisture, in which all the Spiræas revel. It is the same with Phloxes of the herbaceous kind; but, instead of shade, they require full sun, as without such exposure they grow weedy, and the flowers lack texture and size. Those who desire to see them fine will find it a good plan to mulch round the plants and then water them with liquid manure, giving a thorough soaking at least once a-week if the weather proves dry. This will be a great help to them, and will not only render them larger and better, but make them last longer in bloom.—D. S.

The spear-leaved Japanese Lily (*Lilium lancifolium*).—The several varieties of this lovely Lily are extremely well suited for amateur gardeners, as they require but little glass protection to bring their flowers out in the highest perfection. I know, indeed, several cottagers who have a fine display in autumn, made by plants grown entirely out of doors. The most successful method seems to be to repot as soon as the foliage dies down before winter sets in, using turfy soil and leaf-mould or rotten manure. The pots are then stored away in any shed or cellar secure from frost until growth commences in spring. They are then placed in a cold frame or under some other temporary covering on frosty nights, and as the days lengthen they are set out in open, sunny positions. Great care is necessary not to overwater them, or to let them suffer from lack of moisture, for red spider, if once established on the leaves, soon spoils them. A good syringing after hot days is a great aid to them. When they show bloom the shoots should be securely fastened to neat stakes, but not too tightly, and if a cool glass structure is available, they will make a grand display if brought into it as the blooms are about to expand. All the varieties are good, but the best are album and rubrum; the first nearly clear white, the latter prettily spotted with red.—J. G.

Slugs in gardens.—The extent of the ravages committed by slugs on various kinds of garden crops in a short time, and the distance such small and slow-travelling creatures will crawl backwards and forwards during a single night, are surprising. Slugs are credited with harbouring about Box and other walk edgings, which they do, but there are some plants they do not like to shelter near, and one of these is the Ivy. For a good many years the kitchen garden walks here have been edged with Hedera maculata, a strong growing variegated sort, which is clipped in periodically, making one of the best and prettiest edgings I know, never failing, like Box, and requiring much less care. Since these edgings were laid down slugs have been completely banished from the walk edges, though no more likely place for their haunts could be imagined, because the Ivy is warm and close, summer and winter; but, strange to say, the tenderest plants escaped the ravages of slugs everywhere near it. On the opposite side of some of the borders, where a mulching of loose litter is spread over the roots of fruit trees, they eat Lettuces, Turnips, Kidney Beans, &c., straight before them, returning afterwards to the shelter of the litter; but on the side next the Ivy, sometimes only a few feet off, they never harm anything. This has been going on for years. Grass edgings are amongst the worst for harbouring slugs, and have no business in kitchen gardens or near tender crops, and loose leaves or litter are even worse. The best preventives are frequent digging and trenching of the ground, and stirring of the surface. Dry sawdust sprinkled round plants will keep slugs off as long as it is loose and dry, when they cannot crawl over it; but when battered down by rain it is useless. Lime dustings early in the morning and late in the evening will destroy many of the pests. I have often thought select subjects might be protected from slugs by being dusted over with flowers of sulphur, which keeps birds and mice from eating the leaves and seeds. I have not yet tried it for slugs, but mean to use it on Stocks and Asters, if required.—S.

Clematis on north-east wall.—I planted for an experiment Clematis Jackmanni in front of my house, facing north. It gets scarcely any sun; what little it does get is early in the morning, and part of it is prevented from getting any at all owing to a bay window. It has been in the ground two years, and each summer has given a profusion of bloom, which keeps on a remarkably long time. The soil is yellow loam.—J. W., *Brockley, S.E.*

Fruit-trees in pleasure-grounds.—The two varieties of Pear and Apple that might specially be selected, alike for size, symmetry, productiveness, and flavour, are the old Bergamot and the Blenheim Orange. I am afraid to name the number of bushels that have been gathered in one year from a single specimen of Bergamot; at any rate, the quantity was reckoned by bushels, proof sufficient that the tree was a fine specimen of its kind. The Blenheim Orange has been so often named as the very best Apple for this purpose, that I may leave it with this character, coupling with it the Orange, Strawberry, and Cockle Pippins. The symmetrical proportions of the Medlar have not, I think, been duly recognised. It forms a very handsome tree, nearly perfect in shape, and the foliage is dense—just the sort of tree, in fact, to stand out alone on a small lawn, and furnish a cool retreat during such weather as that which we have lately experienced. Our largest tree has a balloon-like head, the circumference of branches being 21 yards. The Mulberry, too, is another tree that might be planted with advantage, in order to combine the useful with the ornamental. It seldom fails to produce a crop, and where the soil is favourable to its development it makes a handsome tree. Like the Medlar, its foliage, being dense, affords complete shade. A specimen standing on one of our lawns has a girth of 4 feet 8 inches, with a spread of branches 35 yards in circumference. Lastly, let me mention the Siberian Crab. It has, as a rule, a well-formed head, and at this season, when covered with its small, bright-coloured fruit, it is as pretty a sight as can be found in either park or orchard.—E. B.

REPLIES.

14335.—**Tulips.**—The Tulip will flower in five or six years from the seed. How long it may take to come to perfection is uncertain. The flowers will become self or "breeders" first. They will break into the flamed or feathered state, in from two to ten years thereafter—usually in from three to six years.—J. D. E.

14355.—**Yuccas not flowering.**—We have a number of plants of Yucca in the garden, the plants are all eighteen years old, and three of them flowered finely this year. The leaves are beautifully recurved, and they were sent here under the name of Y. recurva. Some varieties flower much more freely than others. Y. gloriosa may not flower for twenty or thirty years.—J. D. E.

14116.—**Killing weeds in lawns.**—My experience with lawn-sand is, that it is of no use whatever to destroy Daises in the lawn. If the material is sown over the lawn it will kill the leaves of the Daises, and partially injure the grass, causing the lawn to have a very untidy appearance; by-and-by the grass will grow green again, so will the Daises, Dandelions, Plantains, and other weeds.—J. D. E.

14419.—**Name of Narcissus wanted.**—The Narcissus "S. E. C." wants is N. incomparabilis albus plenus. The other two kinds are N. aurantius plenus and sulphureus plenus, the last being a pale sulphur self, and the largest of the three. In ordering plants, it is best to give the strictly correct scientific name.—J. D.

14346.—**Growing Lavender and Peppermint.**—The common Lavender is the kind ordinarily grown for distilling. There are other kinds, but they do not find much favour on account of a want of hardiness. Spanish Lavender (Lavendula lanata) has been recommended, and we know of a distiller who planted a large quantity of it, but it was nearly all killed off the first hard winter. The cause of this would seem to be the woolly nature of the foliage, which becomes saturated with moisture, and therefore more acutely feels the cold. Lavender prefers a light and rather stony soil, and the situation should be exposed to the sun, and the natural drainage good. Peppermint also likes a rather porous soil, but of a richer nature.—J. C. B.

Florists and their catalogues.—I should like to say a word or two in reply to "Disappointed Amateur" (p. 362). An amateur myself, I can quite sympathise with him in his disappointment, but I cannot agree with him in casting all the blame on others. I started three years ago with three dozen plants, and lost them all the first year. I was ready to blame everything, the weather, and my greenhouse (which I had just put up), and never for a moment thought that I was to blame. I decided to have no more to do with plants, as my time and space was very limited; but I again tried, and thanks to GARDENING ILLUSTRATED, where I received all my information, and to those who have answered my queries (particularly "J. D. E." and "J. C. B."), I am glad to say I have upwards of 1,000 plants all in good health—twelve windows full, a small greenhouse, and a small garden measuring twenty-four feet by twelve feet (a piece of turf in the middle about six feet by three feet); and all the seeds and plants I have bought have been from those who advertised in GARDENING ILLUSTRATED. I can say with confidence that where I have had failures, in nine cases out of ten, they were due to the want of knowledge of the proper treatment. It would take too much space to enumerate the various plants I have; suffice it to say, that, speaking generally, I only keep two or three of each kind—never more than six, except of Pelargoniums and Geraniums.—C. B., *Bristol.*

—— Although your remarks at the foot of "Disappointed Amateur's" letter were, to my mind, conclusive, my experience may be acceptable. This spring I went to a well-known firm for a packet of "Muir's Prolific Vegetable Marrow Seed." I sowed the same to the best of my ability, but not a single seed germinated. I at once wrote about it, expressing my disappointment, but not only did the firm express regret, but sent me, free and carriage-paid, three beautiful marrow-plants. I also found out afterwards, through a friend, that the fact of the seeds not germinating was due to my own stupidity, and not to any fault of the seedsmen. I merely mention this to show that all are not so black as "Disappointed Amateur's" letter might lead many to think.—NOVICE.

A valuable rat poison.—At this season of the year, as we are approaching the time when vermin, especially of the rat species, will return in numbers from the fields and crowd into granaries, gardens, root stores, houses, and yards, your readers would do well to bear in mind that there is one certain remedy — and that is Sandford's rat poison, to be obtained from Sandford, Sandy, Beds. It is the most certain remedy I have ever tried, and I have tried various vermin killers. Little pellets about the size of a pea are put in the rat-holes or in their runs, care being taken that no other animals are near; the best way is to put them in the holes, or in places that no other animals frequent.—R. S.

14274.—**Damp walls in greenhouse.**—Try Carson's solution for damp walls. I have found it a perfect cure, and I recommend their Anti-Corrosion paint to be used after.—A. B. T., *East Anglia.*

14264.—**Cement for aquariums.**—There is no more lasting or better cement for aquariums than Portland cement; it should be mixed with half its bulk of ground lime and sand in equal proportions.—J. D. E.

Cottage gardening at Salford.—The Corporation of Salford is, we believe, the only Municipal authority which officially recognises and encourages window-gardening and the cultivation of flowers by cottagers. It is somewhat remarkable that this should be a solitary instance, for most large towns now possess public parks, and so have great facilities for useful work of this nature. Recently the Mayor of Salford had the pleasant task of formally opening the fourth annual Cottagers' Flower Show at Peel Park, and in doing so he remarked upon the gradual but regular increase of interest in the exhibition, and of the increased attention paid to the culture of flowers and plants in the poorer parts of the borough. The refining influence of a taste of this kind does not need elaborate demonstration, and the contents of the present flower show are a sufficient proof that care and attention will overcome even the disadvantages of an atmosphere vitiated by manufactures. Who can estimate the pleasure which the colour and odour of these flowers and plants carry into narrow streets and crooked courts? The Salford Cottage Garden Show has now all the appearance of a permanent institution, and its operations might well be imitated elsewhere. That which is done successfully at Peel Park might be done with equal success in the parks of Manchester and other great towns. The head gardener of each municipal park might become a missionary of "sweetness and light" by distributing plants, advising as to the best means of culture, and calling in other good men and true to assess the respective merits of the plants sent in for competitive exhibition. The machinery is ready to hand, and all that is needed for its effective working is a little motive power of kindly knowledge and goodwill. We have to reckon upon the steady growth of the urban population in this country, and not least in this county, and it therefore behoves all to do what they can to make town life healthy, to give it sane and innocent interests, and to impart all the brightness that may be to the homes of those whose lines have not been cast in the pleasant places of the earth. The increase of cottage-gardening will not herald the millenium, but it will add to the health and beauty of the great towns and to the pleasures of the artisan population.—*Manchester Guardian.*

14,345.—**Lamp for heating small greenhouse.**—I have a house the same size as Wm. White's, viz., 6 feet by 8 feet, and have successfully kept the frost out in severe winters by the use of swinging petroleum oil-lamps, 1 inch wick. I hook them on to a small metal chain, so that they hang midway between the floor and roof. When the frost is very severe (*i.e.*, below 20° Fah.), I use two lamps; when an ordinary frost, one is ample—that is, providing the greenhouse is fairly free from air-leakage. By this, I mean defects in glazing and joinery, so that an undue quantity of cold air enters. I paid 1s. 11d. each for my lamps, which are of the common swinging kind to be found at oilmen's. These will go thirteen hours without attention if the wick is turned to a fair height. Great care should be taken not to turn it down too low, as this causes the wick to smell, and injures the plants; care should be taken also not to turn it too high, as lamps have a tendency to burn higher after a little while, and consequently smoke. The light produced by these lamps is brilliant, and I am sure has a salutary effect on the Bulb tribe in bringing them into flower rapidly; this I am certain of, as I had a splendid early show of Hyacinths, Tulips, &c., during the severe winter of '81, when my lamp was alight nearly always. On the Black Tuesday—or rather the heavy snow-storm that fell on the 18th of January in London of that year—one lamp only was burning in my little greenhouse, and when I dug myself into it I found it quite warm, and nearly twenty degrees higher than outside; of course the snow would keep it warm, as it lay some feet thick all round it, and half a foot at the top. But there is a risk in using lamps, because if there should be any drip from the roof, good-bye to the glass chimney, and then good-bye to your plants, which would be speedily turned from green to an intense black. I should advise Mr. White to use a small oil-stove, which would be ample heating-power for his house. I can vouch for them, having used them for some years in two small greenhouses. A word in conclusion, never use the stove except when absolutely necessary, this prevents coddling the plants and keeps them at rest.—J. W., *Brockley.*

THE DECORATION OF CHURCHES.

IN many districts church decoration is, practically, carried on all the year round, and it is satisfactory that much improvement is noticeable in the arrangement of cut flowers and plants. For stiff formal flower-vases and holders are substituted banks of the greenest Moss, with flowers inserted in it as if growing. In this may be seen stately Callas, Brugmansias, and other large flowers, thinly placed, and set off by long trailing sprays of Deutzia, feathery spikes of Spiræa, and large spathes of Anthurium or single or double Pelargoniums, various coloured Azaleas, Anemones, Narcissi, Jonquils, and a host of other things too numerous to mention. These are arranged in shallow water-holders plunged in the Moss. Vases for placing on the altar are in some churches still extensively used; they are fitted with water-holders, so that short-stemmed flowers can be employed. Clear white flowers form the groundwork, backed up by Fern fronds. Azaleas, Deutzias, Callas, and similar flowers are the most popular at this time of year, with a sprinkling of crimson or pink; but, as a rule, only two colours are employed, with a backing of green, for, when seen at a distance, mixtures of several colours are by no means effective, however well they may be arranged. Crosses and designs of various forms, consisting of wire or woodwork, on which flowers are tied with their stems wrapped in damp Moss, are largely employed, and for these flowers with the shortest of stems are selected—such as cannot well be utilised for other decorations, notably Stephanotis floribunda, crimson and white double Daisies, double and single Primroses, and flowers of similar habit of growth. For window-sills coverings of green Moss forming sloping banks constitute the general style of decoration, and in this the flowers are arranged, and at no period of the year is there such a wealth of suitable flowers as in early summer. The woodland Primrose is most useful, tied in bunches with its own leaves. Other hardy flowers, too, are at home on mossy banks, and, skilfully arranged with their own leaves, look as if growing on verdant turf. For the font, a combination of cut flowers and plants is used, the top of the basin being covered with Moss, in which the flowers are inserted, and in the water Calla plants are set; their large white spathes and elegant leaves, rising well up above the basin, have a striking effect, surrounded by Ferns, Spiræas, Deutzias, and similar plants embanked in Moss. Large specimen plants are used with good effect in recesses of the stonework and on each side of the reredos. The most popular of all flowers for Easter is Calla æthiopica; but Ferns are also most useful and appropriate, and the more slender-growing Palms, such as Cocos Weddelliana, look well rising from a groundwork of Lily of the Valley. But, as in the cut-flower department, so in that of plants, the most striking effects are produced by a few well-defined colours, plain green in the way of foliage being far more effective than variegated leaves; and the flowers should consist of quite two-thirds of clear white ones. The other portion should be scarlet, crimson, or pink. For very flat or low decorations, the best of all green groundwork is Selaginella denticulata, grown in shallow tins to fit the desired space. Flowers are inserted in the moist soil, and in the subdued light and still, cool atmosphere of a church it is surprising how long they remain fresh, fair, and fragrant. —J. G.

ROCK-GARDENING.

THERE are few people who amuse themselves with open-air gardening that do not occasionally have aspirations towards a rock garden of some kind. The results of most attempts at rock-gardening is, we are sorry to say, deplorable; and it is so mainly because people, apparently, seldom notice the way in which rocks naturally crop out of the ground. Diversified as they are in texture and aspect there are certain laws which, even in their less beautiful state of degradation, they have to follow.

Natural rock cropping out.

We plead that all interested in rock-gardening should take the opportunity of studying the natural cropping-up and stratification of rocks. A glance at the way in which a single stone comes out of the heath is often instructive. The illustrations that we publish may serve, in the absence of natural models, to point out what we mean. Certainly, in our country, there are many places where the rock itself teaches lessons innumerable, but in southern England and in middle Ireland there are large districts in which there are few opportunities of seeing natural rock, and to residents in those parts the illustrations may not be uninstructive. Among them is one (No. 2) of a group of artificial rocks, not badly made, in the Parc Monceau, in Paris, in which the natural aspect of a flank of rocks cropping out of a hill-side is observed, and the whole is very well covered with Ivy and shrubs. It may be that very few have the means of imitating nature in this way on any large scale; but the most trifling thing done, even a little mass six feet in diameter, will be infinitely better done if those who form it observe the pretty way in which rock comes to the surface.

As to culture, the natural way is a thousand times better than the wonderfully stupid way in which rock-gardens are generally made, there being generally ten stones where one would do, and little soil where the soil ought to predominate. For even in the fields where rock crops up abundantly, there is often plenty of soil, and though some Alpine plants can live in chinks, these must be solid, moist chinks, not leading merely to dry dust! A great many Alpine plants enjoy good beds of soil as much as grass does.

PLANTS IN BLOOM IN DUBLIN DURING AUGUST.

MR. C. E. WOODS sends us the following list of plants in bloom in Dublin during the month of August:—

Accena mikrophylla
Acanthus mollis (Bear's-breeches)
Achillea Ptarmica fl.-pl. (Milfoil)
Achillea ageratoides
Aconitum variegatum (Monkshood)
Agapanthus umbellatus (African Lily)
Agrimonia odorata (Agrimony)
Agrostemma coronaria (Rose Campion)
Alstrœmeria brasiliensis
Althæa rosea
Alonsoa Warscewiczi
Amaryllis longifolia alba
Ammobium alatum
Amaranthus caudatus
Androsace maritima
Anthemis nobilis (Chamomile)
Apocynum cannabinum (Dog's-bane)
Asclepias incarnata
Aster cabulicus
Astilbe rivularis
Botonica stricta
Betonica alopecurus
Cacalia hastata
Calandrinia umbellata
Calycanthus macrophylla
Calystegia pubescens
Campanula pyramidalis
Campanula Tymonsi
Canna (Indian Shot)
Cannabis sativa (Hemp)
Carlina acaulis (Carline Thistle)
Catananche cœrulea
Ceanothus azureus
Ceanothus americanus
Centaurea orientalis
Cerinthe alpina (Honeywort)
Chamæpeuce Cassabonæ
Chelone Lyonii
Chelone barbata
Chenopodium chilense
Cichorium Intybus
Chrysanthemums
Cimicifuga (Bug-wort)
Cirsium arachnoideum
Cistus incanus
Clarkia pulchella
Clematis integrifolia
Clematis Jackmannii
Commelina cœlestis
Cnicus eriophorum
Convolvulus Scammonia
Convolvulus arvense
Convolvulus mauritanicus
Coreopsis lanceolata (Tickseed)
Coreopsis tenuifolia
Coronilla varia
Cynara Scolymus (Artichoke)
Datisca cannabina
Datura Stramonium (Thorn Apple)
Delphinium Consolida (Larkspur)
Dianthus (various)
Digitalis Lindleyana (Foxglove)
Diplacus glutinosus
Dracocephalum sibirica (Dragon's-head)
Echinops Ritro
Echinops sphærocephalus (Globe Thistle)
Epilobium hirsutum (Willow Herb)
Erica vagans (Heath)
Erica ramulosa
Erodium cariifolium (Heron's-bill)
Erodium Richardi
Eucharidium concinnum
Eupatorium cannabinum
Francoa appendiculata
Frankenia lævis (Sea Heath)
Fuchsia gracilis
Fumaria capnoides (Fumitory)
Funkias (Plantain Lilies)
Galega officinalis (Goat's-rue)
Gaillardia picta
Galium rubrum (Bedstraw)
Gentiana cruciata
Geranium lucidum (Crane's-bill)
Geum coccineum fl.-pl. (Avens or Herb Bennett)
Gladiolus Lemoinei
Godetia insignis
Gypsophila
Helianthus multiflorus (Sunflower)
Helianthus annuus
Helichrysum bracteatum
Hemerocallis fulva fl.-pl. (Day Lily)
Hieracium umbellatum
Hyacinthus candicans
Hyssopus officinalis (Hyssop)
Hyoscyamus physaloides (Henbane)
Hypericum prolificum (St. John's Wort)
Hypericum empetrifolium
Iberis umbellata (Candytuft)
Impatiens glandulifera (Balsam)
Inula Heleinm (Elecampane)
Inula squarrosa
Jasminum fruticosum (Jasmine)
Kaulfussia amelloides
Kitaibelia vitifolia
Lathyrus grandiflorus
Lathyrus latifolius (Everlasting Pea)
Lavatera trimestris
Lavandula Spica
Leptandra virginica
Leycesteria formosa
Lilium auratum
Lilium tigrinum
Lilium longiflorum
Linaria Cymbalaria (Toadflax)
Linaria vulgaris
Lobelia Erinus
Lopezia racemosa
Lychnis chalcedonicum
Lychnis dioica fl.-pl.
Lycium europæum (Box thorn)
Lythrum virgatum (Loosestrife)
Lysimachia vulgaris
Malope trifida
Malva moschata alba (Mallow)
Meconopsis Wallichi
Medicago glomerata
Mentha piperita (Mint)
Michauxia campanuloides
Mirabilis Jalapa (Marvel of Peru)
Monarda rugosa
Nepeta pannonica (Cat Mint)
Nicotiana affinis
Nicotiana Tabacum (Tobacco)
Omphalodes linifolia
Œnothera taraxacifolia
Œnothera macrophylla (Evening Primrose)
Œnothera tetraptera
Ononis hircina (Rest Harrow)
Orobanche Hederæ (Broom Rape)
Origanum vulgare (Marjoram)
Ornithopus perpusillus
Oxalis Valdiviana (Wood Sorrel)
Oxybaphus ovatus (Umbrella Wort)
Papaver alpinum (Poppy)
Pentstemon lævigatus
Pentstemon gentianoides
Phlox decussata
Phlox paniculata alba
Phlomis pungens
Phygelius capensis
Physostegia virginiana
Phyteuma orbiculare (Rampion)
Phytolacca decandra (Virginian Poke)
Polygonum Sieboldii
Polygonum cymosum
Potentilla sulphurea (Cinquefoil)
Potentilla Russelliana
Prunella grandiflora (Selfheal)
Psoralea macrostachys
Ricinus communis (Castor-oil plant)
Rhapontica dahuricum
Rhus typhina (Sumach)
Rudbeckia laciniata (Cone Flower)
Rudbeckia pinnata
Salpiglossis variabilis
Salvia patens (Sage)
Sanguisorba officinalis (Great Burnet)
Satureja montana
Scabiosa graminifolia (Scabious)
Scabiosa hybrida
Sedum album (Stonecrop)
Sedum populifolium
Serratula tinctoria (Saw Wort)
Sideritis scordioides (Iron Wort)
Sida Napæa
Silene Schafta
Sisyrinchium luteum
Solidago canadensis (Golden Rod)
Spiræa callosa
Stachys germanica (Hedge Nettle)
Statice Gmelini (Thrift)
Tagetes signata pumila
Tanacetum vulgare (Tansy)
Tupa Feuillei
Tricyrtis hirta
Tigridia grandiflora
Tropæolum majus
Venidium calendulaceum
Veratrum nigrum
Verbascum Blattaria (Mullein
Verbascum nigrum
Veronica incana (Speedwell)
Veronica incisa
Viola cornuta
Yucca gloriosa (Adam's Needle)
Yucca recurva
Yucca flaccida
Zapania nodiflora
Zauschneria californica
Zygadenus chloranthus.

Preserving buds of flowers.—Have any of your readers tried the following receipt for preserving flower-buds, so that they will bloom one or two months after being picked? Gather the buds when nearly ready to open, and seal up the end of the stalk with sealing-wax, wrap the bud in tissue-paper, and put in a tin box perfectly air-tight. When the bud is wanted to open, cut off the sealing-wax, and immerse the stalk in water, in which a little saltpetre has been added. I was very sceptical as to the success of this plan when first told of it. I have tried it with Rose-buds, however, and succeeded perfectly.—C. F. DAVIS, *The Grange, Leatherhead.*

Border Carnations.—"D" must have had a limited experience of these if he thinks they do best in clay soils. Damp in winter is the great enemy of the Carnation, and in clay districts it is very difficult to avoid that. I have tried them in a variety of soils, and have found them of little use in heavy loam approaching clay. I have not tried them in sand, but in coarse grit mixed with light loam and leaf-mould they thrive famously. In the light loam which covers the chalk they are amongst the most suitable plants. An instance of the amount of drainage they will stand is to be seen in the gardens on the Thames Embankment. There, in shrubbery borders on the top of high banks, the Carnations are doing well, but everything else is dying or dead for want of food and water. In the old time, when Carnations for show were grown in open beds and borders, a successful grower betrayed the secret of her success by inadvertently treading on the bed, when her foot sank up to the ankle. The best soil in which to grow Carnations is a light, loose soil of fine texture, well drained, and full of old decayed manure. Old market-garden ground or gravel suits them to perfection.—J. D.

Oleanders.—Last summer (1884) I had an Oleander given me nine inches high. I kept it in a cool greenhouse, with plenty of light and plenty of water. Very early this summer it showed buds, being about two feet high. I then placed it on a high stage facing south, so that the buds should touch the glass, and kept it in a saucer full of water. It flowered profusely. When about four or five flowers were out, I moved it to a west bay-window in the drawing-room, where it has been a glory for two months; the saucer still full of water.—E. R. T.

Lifting Chrysanthemums.—I can fully endorse your correspondent's preference for growing Chrysanthemums planted out rather than in pots. For my part, I am so persecuted by the earwig, that, but for the free growth and easy culture of planted-out Chrysanthemums, I should not get a solitary bloom fit to be seen. I can assure "Novice" that he may lift his plants without the slightest risk, if done with proper precautions. The best time is after the buds are formed, but before they show colour. About a fortnight previous, a sharp spade should be driven in round each, and a good soaking given. A damp, or, at least, a dull day should be if possible chosen for the potting; the plants should be well watered in, shaded, and syringed, or watered overhead regularly for a week or ten days.—J. F. R., *Southampton.*

HOUSE & WINDOW GARDENING.

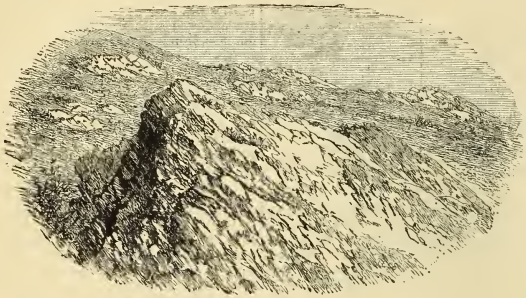
WINDOW GARDENING IN TOWN AND COUNTRY.—X.

Paris Daisies.—The popularity to which these have attained within the last few years is well merited, for of all the flowering plants in cultivation none can give a greater return for such a small amount of care. With plenty of air and water at the roots when growing, Paris Daisies will grow as freely as weeds, and as they are endowed with exceptional powers of endurance, they are very suitable for growing in towns, where the air is more or less impure. Those who have to grow plants under such unfavourable circumstances should try Paris Daisies. For arid, sunburnt, draughty positions they are also suitable, but they will not do in the shade—at least, they do not flower well there, running too much to leaf; they are children of the sun, of which, providing they get enough water and food, they cannot have too much. Another point in their favour is that they do not need repotting every year; they may be kept in the same pots for several seasons, for, contrary to what is generally the case with quick-growing flowering plants, a root-bound condition does not detract from floriferousness – indeed, I think that when the roots are somewhat confined they bloom more freely if supplied with liquid manure from time to time in sufficient quantity to just keep them on the move. One might almost think that floriferousness in plants has received its highest development in the yellow-flowered kind, Étoile d'Or, which was introduced to our gardens several years ago. I have had plants of it in 4½ pots which bloomed continuously for nine months out of the twelve, the individual flowers being large and in every way perfect, and there being as many as forty blooms expanded at one time on a single plant. It would, I think, be difficult to find another plant which would remain in a really good decorative condition for so long a time. The white kinds bloom very freely and continuously, but not for so long a period as the yellow one. If, however, a good show of bloom is required in early spring, the right way is to grow the plants along during the summer without allowing them to flower; then the flowering strength thus accumulated shows itself in a blaze of bloom as soon as the days become bright enough to induce growth. Paris Daisies are of extremely easy propagation, but the cuttings must be taken when they are in full growth and sappy, and before they show signs of flowering. If once the wood begins to harden, they are very shy of making roots. As they, even when restricted in the matter of root-run, soon outgrow the accommodation that a window of ordinary dimensions affords, it is absolutely necessary to propagate from time to time. Any time from April to October will do, but the best cuttings are to be found in spring, as later on they bloom so freely that suitable wood is more difficult to obtain. Those who have a garden will find the plants which have become too large produce an excellent effect if planted out in May. When the pots become filled with roots, the soil should not get quite dry, so that when grown on balconies or window-ledges in summer they will need looking to several times in the course of the day, and three or four times a week they should get liquid manure. In this way they will continue to bloom well all through the summer and autumn; whereas, if they do not get enough water, they become stunted.

Lantanas.—These are neat-growing, free-flowering plants, not so well known to window-gardeners as they deserve to be. They are easily grown, and can be kept through the winter with as little trouble as Fuchsias; and as they do not increase in size so rapidly as the generality of soft-wooded flowering plants, the same plants may be kept for several years. The cultural directions are identical with those given for Fuchsias, with the exception that Lantanas delight in the full sun, a large amount of which is necessary to sufficiently mature the wood to cause a free production of flower-trusses. Old plants pruned in the spring flower more freely than young ones, but from the time the pots get full of roots they must be well fed.

Heliotropes.—Fragrance is so desirable a quality in flowers, that any which are specially

endowed in this way are sure to find universal favour. Scarcely so much, however, is now made of the Cherry Pie as formerly, probably because so many bright-flowered things are available at the present time, and I rarely see this deliciously-perfumed plant grown in windows nowadays. I need scarcely say that the culture is of the simplest; indeed, the Heliotrope is one of those plants that beginners should select to try their hands on. In the winter the



Natural rock (Mica schist).—*See page* 384.

plants should be kept rather on the dry side, as when kept in a cool place they generally lose a good portion of their leaves at that time, so that an overdose of water will cause the young fibres to rot. During the summer they should be grown quite in the open, as if kept in the dwelling they do not get enough air and light to keep them compact and to endow the wood with substance. Young plants flower very well, but, to have the Heliotrope at its best, the plants should be grown on the second year, as, like many other things of a very soft nature, they bloom with greater freedom when a portion of the wood has become quite hard. An essential point is to thoroughly mature the wood, which the autumn breeze and sun will do if the plants are fully exposed thereto. This is the more necessary, as unripened wood is apt to wither away in winter. About the middle of March the growths made the previous summer should be cut back to within two eyes of the base, and the soil kept rather dry till young shoots issue from them. As Heliotropes make a quantity of roots, the soil generally by the autumn being a mass of fibres, the shaking away of a portion of the old earth before repotting—which is done where practicable with plants that have been pruned back—can in their case scarcely be accomplished. Therefore the fresh compost must be firmly pressed in around the old base. Keep the soil nicely moist, and when the young growths are some 4 inches long pinch out the tips, which will cause the usual multiplication of shoots. When these go away freely and the pot gets full of roots, commence at once to feed with liquid manure or topdress. Then you will get compact plants in 6-inch pots, bearing a score or more of good flower-trusses, in which condition Heliotropes are sure to please. The same plants may be grown on again; and, indeed, for an almost unlimited period; but, of course, they will get too large for window culture, when they may be turned out in the open ground in spring; and I know of nothing much nicer than such a well-grown Heliotrope for the centre of a small bed on the grass. A cutting or two put in every year will keep up a supply of young plants to take the place of those which have to be discarded. BYFLEET.

PLANTS FOR WINDOWS.

MANY of your readers are so often inquiring about window plants, that a list of some of those which do really well in a window will, I hope, prove useful. First, there is the Oleander, which has been described as a "gem among plants." It is a native of the East, and is always found by the sides of rivers and streams, and although at one time of the year its roots are immersed in water, the remainder of it is exposed to the baking sun and parched soil of an Eastern climate. This being so, in our country it should receive no more water, from the end of September until March, than will prevent it from flagging, and during the other months it should be kept in a saucer of water. A rich turfy loam is the best soil for it. It is easily propagated by cuttings, which will strike well, inserted in a sandy soil, in a window shaded from the sun until struck. The Camellia is another useful plant for a window, though requiring more care and attention than the Oleander. The great difficulty is to prevent the buds dropping. This is nearly always caused by too much or too little water at the roots, or by draughts, or a sudden change of atmosphere. The soil should be composed of

Naturally-formed rock-work.—*See page* 384.

peat and loam; never re-pot unless it is absolutely necessary, as the roots of the Camellia are delicate and easily injured. Never allow the soil to become dry, and above all never allow water to remain in the saucer. Carefully sponge the leaves at least once a week, to improve their beauty and health. After it has flowered encourage it to make all the growth possible. The double white and double red kinds are best for windows.

To those who have a Wardian case kept in a room, with a fire in winter, the following Ferns and curious plants may be grown:—Asplenium obtusatum (Obtuse Spleenwort), Lycopodium stoloniferum (Creeping Club Moss), Aspidium proliferum (Proliferous Shield Fern), Adiantum cuneatum (Wedge-leaved Maiden's Hair), Asplenium dentatum (Tooth-leaved Spleenwort), and Doodia aspera. Other curious plants will grow with these ferns, such as Sarracenia purpurea (of which there were illustrations in GARDENING of Aug. 15), Cypripedium insigne (Lady's Slipper), C. venustum, Yucca filamentosa variegata (Adam's needle); and the following plants may be suspended from the roof:—Epiphyllum truncatum and Cereus flagelliformis (Rat's-tail Cactus).

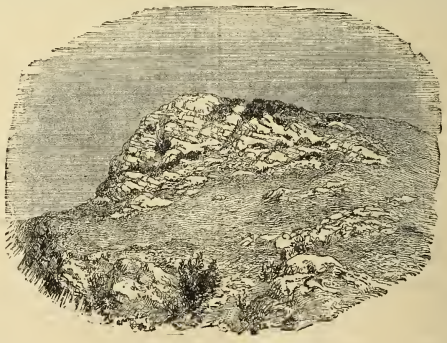
Hydrangeas, Fuchsias, and Geraniums have been too often spoken of in GARDENING to need mention from me beyond saying that they are very suitable window plants. Bulbs, such as Snowdrops, Hyacinths, Tulips, and Vallotas in variety make good window plants. The great thing in growing window plants is to keep them clean from dust, out of draughts, never to allow the soil to become too dry, and never, except where specially mentioned, to allow the pots to stand in water. If in a room without a fire, during winter, and in frosty weather, a newspaper placed over them will protect them from any frost which might penetrate through the glass. Ficus elastica (India-rubber Tree), Eucalyptus globulus, and different Palms all assist to beautify a window.—C. F. DAVIS, *Leatherhead.*

REPLIES.

14340. — **Window plants.** — Hyacinths, Tulips, Polyanthus, Narcissus, and Crocus should be planted in pots about the end of September. Plunge the pots well over the rims in Cocoa-nut fibre refuse, or some similar material. There let them remain until January; by that time the bulbs will have rooted well and started to grow. They would flower if placed in a window; but it would be much better to grow them for some time in a frame, if a greenhouse is not available. They do not obtain sufficient light or air in a window; and it is better not to place them there until they have reached the flowering period.—J. D. E.

ROSES.

Banksian Rose.—It is pretty well known that Banksian Roses are capable of enduring a certain amount of cold weather, but more recent experience shows that a mild winter and a hot summer suits them best, and in selecting a position for them this should be borne in mind, as the results show that in some cases it may be advisable to go a little out of our way sometimes to give them the warmest positions to be had. If this Rose has grown as luxuriantly in other gardens as it has in ours, very careful attention will be required now, or there will be danger of spoiling next year's crop of flowers. It is our practice every year at the end of June to go over our plants, nailing in the growth where there are any vacant spaces to cover, and in the case of old-established plants we shear back rather hard all the growth which has flowered; by doing it thus early in the summer



Natural rock (Limestone).—*See page* 384.

there is ample time for new growth to be made and matured before winter sets in, but this season there has been so much growth made since the plants had their annual pruning, that we have just now gone over them again very carefully, cutting out with a knife all the longest shoots and allowing the short flower-bearing branches to remain. These extend farther away from the wall than we like to see, but there is no help for it, for to cut them off, as just stated, would be to cut away the next season's flowers. The best aspect for this Rose is south or west, as it requires to be sheltered from cold wind, which frequently occurs in the month of May, just when it is putting forth its first flowers. Given a warm aspect and plenty of space for the roots, this Rose is not very particular as to soil. J. C.

REPLIES.

14360.—**Soil for Roses.**—The way in which you have put your question leads me to think you desire to make the conditions as favourable as possible for Roses. If that is so, you must have the border two feet deep of good soil well moved up the whole depth. If the staple is a good holding loam you will only have to trench it up and incorporate with it a good dressing of rotten stable or farmyard manure. If your soil is not of a loamy nature you ought to take away half of it and supply good loam in its place.—J. C. C.

14365.—**Rose Louis XIV.**—I am extremely sorry I cannot tell "Cymro" where this Rose came from, as it was one of a lot left by the last tenant of this place more than seventeen years ago, and though "J. D." considers this a few years only for a Rose to live, it is long enough for its origin to be lost in obscurity. I used to have several, but the severe winters from 1878 to 1881 killed all but one plant, and that has suffered from the east winds this spring, so that it is only now getting a good supply of young shoots—my gardener says too young for cuttings. If "Cymro" will send me his address, mine being in GARDENING for August 29 (p. 362), I would try and send him a cutting in the spring. Another old and very sweet Rose is Comtesse de Courcy; its buds are exquisite. We grow hundreds of Roses, as the soil suits them exactly, and many are quite out of date now, as Lord Raglan, Géant de Batailles, &c.—A. B. T., *East Anglia.*

14337.—**Best Roses for Durham.**—The hybrid China, China and Provence Roses are the hardiest kinds, and as your garden is exposed to the north winds, the hybrid Perpetuals may prove too tender; you may select from the following sorts, and at the same time secure a nice selection of garden Roses without running serious risk. For myself, I should prefer to grow some of the hybrid Perpetuals, and if you get them on their own roots you would not be likely to experience serious loss if a severe winter should come, because if the branches are killed, the crown of the plant would not be injured, and they would soon throw up fresh shoots. The best of the hybrid Perpetuals for your district would be: *Reds*, Charles Lefebvre, Madame C. Wood, Maréchal MacMahon, and A. K. Williams; *light pink* and *rose colour*, Jules Margottin, John Hopper, Abel Grand, and Elie Morel. To these you might add La France, Baroness de Rothchild, Madame Furtado, and Magna Charta; all of these are of different shades of colour. The most hardy roses are, however, the Provence and Chinas: of these you should select, Charles Lawson (rose), Coupe de Hèbe (pink), Paul Ricault (crimson), Paul Perras (pale rose), White Provence, and the old Cabbage Rose. If you want yellow hardy Roses you should have the Persian Yellow and Harrisoni.—J. C. C.

Smithfield market, Evesham.—List of prices realised Sept. 4, 1885:—Beans (kidney), 2s. to 3s. per pot (40 lb.); Beans (dwarf), 1s. 6d. to 3s. per pot (40 lb.); Cabbages, 2d. per dozen; Cabbages (pickling), 5d. to 7d. per dozen; Carrots, 2½d. to 3½d. per dozen; Cucumbers, 9d. to 10d. per dozen; Mushrooms, 6½d. to 8d. per lb.; Potatoes (new), 3s. to 3s. 6d. per pot (90 lb.); Sage, 2½d. per dozen bunches; Vegetable Marrows, 9d. to 1s. 6d. per dozen; Apricots, 7d. to 11d. per dozen; Apples, 2s. to 4s. 6d. per pot (64 lb); Nuts, 5½d. per lb; Pears, 2s. to 9s. per pot (72 lb.); Plums (Orleans), 7s. to 9s. per pot (79 lb.); Plums (Pershore), 4s. to 4s. 9d. per pot (72 lb.); Pears (Victoria), 6s. to 10s. per pot (72 lb.).

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

14459.—**Compost for potting plants.**—Will some reader kindly tell me the best compost for plants in pots generally?—BEGINNER.

14460.—**Autumn sown plants.**—I should be glad to see a list of good hardy annuals and similar plants for sowing at this time of the year. Will any readers give me the names of the best?—CONSTANT READER, *Bath.*

14461.—**Shanking in Grapes.**—Will any Grape-grower tell me the cause of shanking in Grapes, and the remedy?—G. T. *** *Send your other question in accordance with the instructions given above.*—ED.

14462.—**"Assyrian Codlin" Apple.**—Does anyone know an Apple called the Assyrian Codlin? And if so where could it be procured?—X. LOUGHGALL.

14463.—**Tufa for Fernery.**—Will any one kindly tell me the districts in which tufa is found, and where it can be purchased cheaply?—CARBONIFEROUS.

14464.—**Best variety of Rhubarb.**—Will any gardener kindly inform me which variety of rhubarb is the best to grow, combining earliness with flavour, size, and productiveness; pink colour.—C. N.

14465.—**Hawthorn hedge.**—I am desirous of making a good Hawthorn hedge round a piece of land which is totally unfenced. Will any reader kindly tell me the best way to proceed?—NOVICE, *Sheffield.*

14466.—**Creepers for fence.**—Will any farmer, or any gardener who keeps farm-stock, tell me what Creepers I can grow on a close fence to which cows have access? I want something that the animals are not likely to injure.—M. T. P., *Dorking.*

14467.—**Lettuce "China Rose."**—IN GARDENING of the 22nd inst., a correspondent "M." mentions a Winter Radish China Rose. Will he or any other reader tell me where I can get the seed? I have tried here without success.—T. W. S. (*Middlesborough*).

14468.—**Obtaining Melilotus officinalis.**—This is recommended in GARDENING as a good Bee-plant. Will the writer of the note or any other reader tell me where seeds or plants can be obtained.—P. M. *** *This is not the same plant as the Melianthus.*—ED.

14469.—**Vine-leaves shrivelling.**—I have a good Black Hamburg Vine in a lean-to greenhouse. The leaves are all turning brown and shrivelling up. Can any Grape-grower tell me the cause and remedy? It has a number of good bunches of grapes.—W., *Windsor.*

14470.—**Pansies.**—Will "J. D." who in GARDENING of August 11th, 1883, advises us to buy seed of Bugnot's International Prize, and Louis Oilier's Spotted Belgian Pansies, please say where they are to be got. I cannot find them in any of the seed catalogues.—AMATEUR.

14471.—**Large Sunflower.**—Will any reader who has grown large Sunflowers kindly tell me how to make these plants produce the heaviest heads? Should side-shoots be cut off? And what is the best kind of soil, the time of planting, and a good named sort to grow?—F. M. W.

14472.—**Mould in Peaches.**—Will any Peach-grower tell me what is the cause of mould in Peaches, and the best preventive? The season has been dry, the houses well situated, but the Peaches are nearly all moulded on one side, and when cut open the stone is quite rotten.—E. H. T.

14473.—**Stocking a garden.**—Would any readers kindly advise me as to the best vegetables and flowers to grow in my garden in this county. Soil exceedingly light and sandy, very shallow and on chalk, also subject to long spells of drought. What Roses would do well on such a soil?—NORFOLK.

14474.—**Character of the Golden Queen Grape.**—Will any experienced Grape grower who has tried the new kinds tell me the character of the Golden Queen? Is it a free grower, good setter, good producer, and fine in flavour, and would it do in a mixed house with other Vines?—MALT AND HOP.

14475.—**Pruning neglected fruit-trees.**—Will any fruit-grower tell me when Cherry, Apple, and Pear-trees, that have been neglected for two or three years, should be pruned?—IGNORAMUS, *Woodford.* *** *Your other questions must be sent on separate pieces of paper in accordance with the rules, to which we shall strictly adhere.*—ED.

14476.—**A Legal question.**—Will any gentleman learned in the law who reads GARDENING, kindly inform me whether, if I erect a small greenhouse in my garden, twenty yards from residence, the same would become the property of the landlord in the event of my vacating the premises? Could I build it so as to be at liberty to remove it?—C. A. P.

14477.—**Poison for woodlice.**—Can any reader inform me of a good woodlouse poison? My things are eaten up by them. Ferns and all have gone, and my Fernery has become a desert all through them.—Y. Z., T.R.

14478.—**Asparagus seed.**—Can any vegetable grower tell me how to extract the seeds from Asparagus berries? I have got a bed of a good sort seeding freely, from which I wish to plant another bed next spring, but do not know how to manage the seed. Would the berries do if sown and planted whole? I tried last year washing the buds, but failed.—H. D., *Sutton Coldfield.*

14479.—**Cherries for Yorkshire.**—I am thinking of planting some Cherries against a wall, and should be glad if any of your readers could recommend four or five of the best varieties, both for quality and productiveness, that would be likely to do well in the neighbourhood of Wakefield? Bigarreau Frogmore I know—and it is the best Cherry I have tasted, but I want a variety.—J. B. A.

14480.—**Turfing neglected garden.**—I have a moderate-sized back-garden in Surrey, facing east, almost bare through long neglect—poor, dusty soil. Will any practical gardener kindly tell me whether it would cost much to have it turfed, leaving a narrow border? Or can it be sown with Grass-seed? What had I best do? I shall be very grateful for hints as I am—AN IGNORAMUS.

14481.—**Plants for Vinery.**—I have a small heated greenhouse facing the east (with stove and brick flue), in which are two Madresfield Court Vines. Will any reader kindly advise what plants I could best keep without having recourse to the stove, which I am afraid to use in the winter for fear of starting the Vines, and then having to continue the heat? Also what climbers would thrive best on the back wall?—IGNORAMUS, *Cromer.*

14482.—**Hardy Columbines.**—Will any grower of these plants kindly tell me which are the hardiest of the following Aquilegias, and do any of them require the protection of a cool house during the winter months? Aquilegia californica hybrida, A. chrysantha, A. glandulosa, A. Skinneri, A. sibirica, A. caryophylloides, A. grandiflora alba, A. Vervœneana, A. v. atro-violacæ, A. cœrulea, A. c. hybrida, A. glandulosa vera (Grigor's).—A ROCHFORD AMATEUR.

14483.—**Heating small greenhouse.**—I have a lean-to greenhouse, nine feet by six feet. Last winter I tried heating with a radiator, but it was unsatisfactory, and the fumes of the oil spoiled the plants. Will someone advise me what sort of stove or flue I could put into so small a house? I want to keep up a temperature of about fifty at night in winter. "J. G.," *Suffolk*, says he heated a greenhouse of this size with a flue. Perhaps he will be so good as to advise me.—F.

14484.—**Culture of Salvia splendens.**—I have purchased plants of Salvia splendens for several seasons, and lose them at the end of summer. I should be much obliged for particulars as to whether they can be raised best by seeds or by cuttings, and the way to do either.—A SUBSCRIBER. *** *It is a very simply-cultivated plant, and one not easily lost unless its nature is misapprehended. Doubtless some readers who grow it successfully will give a few simple directions for its cultivation by an amateur.*—ED.

14485.—**Treatment of old Apple trees.**—I have several old Apple trees standing in a lawn, on the south side of our house which faces the sea to the north. The trees are bearing very well, but there is a good deal of wood about them which has become dead lately. Ought the trees to be root-pruned, or what treatment should be applied to them? I do not want if possible to disturb the grass, which in this sandy soil would take a long time to recover. Any information will be acceptable.—J. F. L. C., *Birkenhead.*

14486.—**Maidenhair Ferns dying.**—Can you tell me the reason why my Maidenhair Ferns go off in this way? They appear to wither up and get black. Until the last three weeks they did well; they are in a conservatory in moderate heat, and have been well watered; they were repotted about March last, and have been taken out of the house when it has been fumigated.—KILWORTH. *** *We cannot imagine what has caused the failure of your Fern. It is not due to anything in the treatment you describe.*—ED.

14487.—**Stock for greenhouse.**—I have built a greenhouse ten feet by eight, span roof, with heating apparatus on an open situation, one mile outside of a midland town. I should be pleased as an amateur and a working man, who cannot afford anything costly, to receive from any of your readers advice as to a cheap way of getting a stock, and as to the kinds that will follow each other for a little bloom as far as possible throughout the year. I should like a few Roses, and also to raise a few things for bedding.—ANXIOUS.

14488.—**Blue Cornflower.**—In your Aug. 29 issue you mention the Blue Cornflower as "one of the annuals that do so much better if sown this time of year." Which variety of Cornflower do you mean as being "first-rate"? I know the plant, but not the name by which to get it.—CONSTANT READER, *Bath.* *** *We meant the common Cornflower, Centaurea cyanus, of which the usual wild form is blue, but which, in gardens, varies into several purplish and white shades. The prettiest, we think, is the common blue form.*—ED.

14489.—**"Palatine" Lettuce.**—I have frequently seen articles in your columns about Lettuce, and have always looked over the names given, but have never noticed the above—to my mind excellent—variety mentioned. I had some seed given me by a friend who brought it from Paris, but I failed to save any, and the address of the seller has unfortunately been lost. I shall be glad if any of your readers can inform me if it can be got in this country. It does not appear in any of the seed lists, at least under this name.—J. P. H.

14490.—**Tropæolum Jarattii.**—I planted two large tubers last autumn in large pots, and hung them in a cool greenhouse opening out of the drawing-room. They threw up leaves several inches long, died down, and have been resting all the summer. When turned out from the earth, so that I might see if they were alive, both showed they were throwing out roots, though one was half-decayed. What had I better do with them now, and will a hanging-basket from the glass roof be a suitable position?—SALT, *Basingstoke.*

14491.—**Stocking orchard.**—I have just purchased a few acres and a cottage in Kent, and I propose to put in a few fruit trees. If any fruit-growing readers of GARDENING will give me advice as to the best kinds and best methods of planting I shall be much obliged, as I don't know much about it myself. My ground is at an altitude of 450, on chalk, with a varying thickness of loamy clay, full of big flints. I shall have to grub wood to put in the orchard; the trees at present growing are oak, ash, beech, and hazel, and water is very scarce.—J. F.

14492.—**Belladonna Lilies.**—Last autumn I bought two of these, and potted them in twelve-inch pots. They threw up leaves six inches high. I placed them this spring in the pots under a south-west wall. The leaves died down; they have been sheltered by a heavy crop of Nasturtiums from the blazing heat. How should I treat them now? I have seen them flowering splendidly in a warm border in Devon.—Salf, *Basingstoke.* *** *We think it is a question of letting them alone until the plants get established. You might treat yourself to a few tufts from strong plants grown in the open air.—Ed.*

14493.—**Making a Vine border.**—I am just building a greenhouse, which will take in about four Vines. I wish for information how I am to proceed in making the Vine border. Will any reader tell me the best and simplest way to secure good crops?—West Winch, *Norfolk.* *** *"West Winch" does not describe his soil, and probably is not aware that some soils are perfectly fit, without any preparation whatever, for Vine culture, even in our country. Some of our largest Vines, and some of the finest Grapes shown at our exhibitions, have been grown on soils naturally fitted for Vine culture without the great expense of border-making which has to be resorted to in some cases.—Ed.*

14494.—**Heating bed in Fernery.**—Between my stove and greenhouse I have a small fernhouse, nine feet long by nine and a-half feet wide (the Ferns being planted in the ground). The under surface of the lower water-pipe is two feet from level of soil, that of upper pipe two and a-half feet. I am desirous of utilising the upper pipe by making a small forcing-bed, in which to plunge pots, &c. Can any of your readers give me any information as to making such bed; whether the material used should be wood or iron, and whether, by enclosing the one pipe in the forcing-bed, I should too much reduce the heat of the house for tropical Ferns? Water-pipe is four inches in diameter.—G. P. *Dorset.*

14495.—**Protection for Roses.**—I am anxious to grow Marechal Neil, Devoniensis, and Niphetos Roses against a high wall, facing due south, rather exposed, 24 ft. in length. I propose to put up some half dozen uprights, about four inches from wall, with copper wire across from side to side, and at each end a 10-inch board, and the same at top, with an iron rod top and bottom. I intend as soon as frosts set in to cover the whole space with either double or single fish-netting, and to keep entirely covered the whole winter, or until the severe frosts are over. Would any experienced Rosarians give me their opinion whether I should thus be growing them too tenderly, would a covering of a single net be sufficient, or would it be best to leave unprotected?—Q., *Croydon.*

14496.—**Gloxinias.**—Will any good grower advise me in what way I had better treat some young Gloxinias? I have two dozen and more seedlings which (owing to the seed having been put in rather late and being long in germinating) are now only small plants, *i.e.*, with leaves about six inches or more long—leafstalk and all—but strong and healthy, and which have been growing in a greenhouse without any artificial heat till the last few nights, when there has been a fire for the sake of other plants. Had I better keep the Gloxinias growing through the winter and let them flower as soon as possible to test their flowers, or had I better put them in a cooler house and let them rest through the winter? How soon might I hope to flower them if I keep them in some heat, and might I then flower them again next autumn?—Borderer.

14497.—**A mixed question.**—I have a small conservatory, fifteen by seven, leaning against a south wall. I have Palms, Ferns (Adiantums, Pteris, &c.), Heath, Plumbago, Begonias, Petunias, Climbing Rose, Dracæna, Honeysuckle, Azalea, and some hardy plants. Will any one kindly inform me as to the best heat to keep them in in winter; also the coldest they will stand?—X. Y. Z. *** *Your question is very vague, inasmuch as among the plants you mention there are several perfectly hardy species. For instance, some Azaleas are quite hardy; the Honeysuckles and Climbing Roses are also hardy; and there are many hardy Heaths and Ferns. We cannot possibly help you unless we know what plants you have in the house. Certainly, the treatment required by the Dracæna will not suit the hardy plants, nor will the treatment under which the latter flourish be acceptable to the Dracæna. Try to ascertain the names of the plants—we will name some for you if you follow the directions given below—and then write to us again, and we will try to help you.*

14498.—**Failure of Lilium auratum.**—I have seen no satisfactory explanation of the above. A week or two since it was suggested that it arose from the plants being allowed to get too dry. This week too much water is attributed as the cause. A nurseryman here suggests that the cause may be found in the fact that the Japanese growers raise them year after year on the same soil, and, therefore, they deteriorate. I bought this year half a dozen of the finest bulbs I could get. One has been kept in the greenhouse and has done well—now bearing ten grand blooms. All the others—plunged in Cocoa nut fibre in the open air and carefully tended—have gone wrong, after getting within a month of blooming. As two or these had between thirty and forty blooms each I am left lamenting.—Primrose. *** *There is no contradiction in the answers to Queries 14204 and 14379. The plants require to be kept in an equable condition, and extremes of wet and dryness are equally injurious. Perhaps some growers of this Lily will give you further advice.—Ed.*

14499.—**Pelargoniums.**—Last spring I bought two dozen show Pelargoniums in small pots. When I thought they had done flowering I put them out in the garden on a hard surface, preparatory to cutting them down, but they have started flowering again, and are still forming buds. What, then, am I to do—cut them down now, or wait still longer? One authority tells me that the plants are to be ripened in the open air (which mine have been) for two or three weeks, then cut down, then left two or three more weeks in the open air, next re-potted in smaller pots, again left two or three weeks in the garden, and "early in September returned to the greenhouse." How am I to follow this advice in my case, or what had I better do?—Clifton. *** *You do not say why you have not followed the advice you describe. If you have not carried out the plan, you have left it until it is too late. If plants are to be treated after a particular system you must not mind sacrificing a few flowers. The time when you ought to be starting your plants has come before you have even cut them down. Perhaps some good Pelargonium growers will tell you what you had better do under the circumstances.—Ed.*

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14500.—**Hen's manure in garden** (*Etna*).—Use it with other manure in the garden generally.

14501.—**Obtaining Strawberry "Pauline"** (*A. G. H. O.*).—You can get it from Mr. George Paul of Cheshunt.

14502.—**Spots on Aspidistra leaves** (*Nelumbo*).—The leaf appears to have been scalded by the sun shining on it when it was wet.

14503.—**Wintering Coleus** (*C. B. B*).—Yes, you can winter Coleuses in a greenhouse whose temperature averages from forty-five to fifty-five degrees.

14504. — **Soil for striking Pelargoniums, Fuchsias, &c.** (*X. Y. Z.*)—For striking cuttings of the plants you name use sandy soil enriched with a little leaf-mould.

14505.—**Procuring large greenhouse plants** (*S. F. P.*)—You could probably obtain large Palms and Camellias, &c., such as you require, from any good nursery.

14506.—**Earwigs in gardens** (*Liscard*).—Various means of getting rid of these have been described in Gardening from time to time. Have you made use of paraffin in their haunts?

14507.—**Hen's manure and Pansies** (*Etna*).—Your Pansies are probably suffering from an overdose of strong manure such as that from a fowl-house. It should be applied carefully.

14508.—**Obtaining Paradise Quince stock, &c.** (*A. Witchell*).—Apply to any of the great fruit-growing nurserymen in England or France. You must send your other questions on separate slips of paper as directed by the rules.

14509.—**Desmodium grandiflorum** (*Rochford Amateur*).—This plant is not sufficiently hardy to stand our English winters without protection. Probably in the most favoured parts of the country but little protection would be needed.

14510.—**Caterpillars in garden** (*A Disappointed One*).—Gardens, as a rule, suffer from the attacks of caterpillars in Autumn. The best remedy is hand-picking. When they pass into the chrysalis state you will not be troubled by them.

14511.—**Fuchsias after flowering** (*H. W.*).—Let them quietly complete and ripen their growth in any sunny place, and keep them clean. By and by, when there is danger of cold weather, see that they are stored in some place where frost cannot injure them.

14512.—**Azaleas, Ericas, and Oranges in a late Fernery** (*J. Strawberries*).—You may winter them there, but in most places all those plants would be better out of doors in the summer, so as to perfect their growth under the fresh influence of the open air.

14513.—**Early Fuchsias and Pelargoniums for next Year** (*A. P. Westminster*).—You are now too late to get a good result in the way you propose, although your cuttings will still be useful. You should at this period have yourself, or obtain, stock plants fit for the purpose.

14514.—**Treatment of Chrysanthemums** (*H. W*).—You give us no idea of the state your plants are in. The best thing you can do is to see what other Chrysanthemum growers are doing at this season. The plants, of course, ought to be stock and in good health in the open air at the present time.

14515.—**Bedding Plants in Winter** (*Beginner*).—You cannot expect to keep such plants as Pelargoniums, Fuchsias, and other tender bedding plants in winter, in a frame that is not heated; but there are many things that you can keep in a cold frame if you give proper protection. Among these are Carnations and Auriculas.

14516.—**Potting Orchids** (*J. Strawberries*).—Some Orchids grow in the earth, and some in the air. Sphagnum, peat, or common soil should be used accordingly. A certain group grow in the earth like any other plants. If you will state what kind of Orchids you mean, no doubt we or some of our readers will help you.

14517.—**Growing mushrooms beneath living Rooms** (*Beginner*).—Mushrooms can be grown in such a cellar as you describe, but we think it would not be advisable for you to do as you suggest. Apart from the odour that would necessarily arise, there would be a certain amount of dampness which would be prejudicial to the health of the inmates of the house.

14518.—**Covering wall with Ivy** (*Forfarshire*).—The best way is to prepare the soil well by digging it up at a good depth, and, if it is too stiff, putting some light soil among it. Nothing better can be had for the purpose than light rotten leaves. Get good plants of the big-leaved Irish Ivy, well rooted; plant them during the present month, and you may confidently expect good results.

14519.—**Spikes and trusses** (*J. W.*).—The term spiked is generally applied to the flower clusters of Orchids, Delphiniums, Hollyhocks, Gladioli, &c.; and truss is usually applied to Roses and others; but from a garden point of view there is no hard line of distinction. The truss of a Rose means one twig carrying one or more flowers or buds. There is no plant of the name mentioned by you.

14520.—**Obtaining Dutchman's Pipe—Aristolochia sipho** (*W. P. W., Athlone*).—Any nursery that has a collection of hardy plants will be able to supply you with, or get for you, a plant of the "Dutchman's Pipe." It may be planted at any time during the autumn, winter, or early spring. It is commonly classed among climbers in the catalogues of English nurserymen, and in your own locality you would have no difficulty in getting it in the Newry nurseries.

14521.—**Growing climbers on a first-floor Conservatory** (*E. E. G., Surrey*).—We do not think the plan you propose, of growing the creepers in a border underneath the conservatory, and introducing them through holes in the floor, will answer. It would be far better to grow them in tubs or large pots in the conservatory itself, if the floor is strong enough to support them. We see no reason why, if you select pots of proper size, the creepers you mention should not cover the roof, and thrive as satisfactorily as if planted in borders—probably they will grow much better. If your plants are small, do not place them in large pots at first, but in small ones, and repot when the roots require more space.

14522.—**Heating greenhouses** (*R. & others*).—We continually receive enquiries from correspondents as to the merits of different methods of heating greenhouses. It would be well if enquirers would, before writing, look out, by means of an index, the very numerous notes on this subject that have appeared in Gardening from time to time; they would then, in many cases be able to procure the desired information at once. We will, however, continue to insert questions of general interest, and have no doubt that in the future, as in the past, many valuable hints will be obtained from practical readers; but correspondents must bear in mind, that applications as to how to treat any particular stove or lamp, &c., should be addressed to the makers, and not to us. We are desirous of affording every assistance to those in need of it, but cannot admit advertisements out of their proper place.

14523.—**Position for Roses** (*Northwould*).—They would not succeed well on the north side of a wooden fence. It will be better to plant them on the south side; they will there be sheltered from cold winds in spring, while the teas and perpetual flowering varieties will flower well in such a position in September.—J. D. E.

14524.—**Carnations shrivelled in Bud** (*Diana*).—You simply send us a withered shoot and withered buds, and give us no information except that they appear to be dying. The hot weather may have been the cause, if the plants have not been watered. Wire-worm at the roots would cause it, and the culprit is frequently gone before the plants show signs of distress.—J. D. E.

14525.—**Roses budded on Briar** (*H. W.*).—Those buds that have not started, must be kept dormant if possible. Do not cut any portion from the point of the shoots, on which the buds have been inserted. Those buds that have started, and grown a few inches, should be encouraged to make a good growth by the end of the season. The shoots on which they have been budded ought to be cut back to within an inch of the buds.—J. D. E.

14526.—**Pelargoniums diseased** (*Crabstone*).—There is no trace of insects, or of any fungoid growth on the leaves. It seems that the plants have been too much exposed to the sun, or not carefully watered. It is easy enough to be too free with liquid manure. We never use it for Zonal Pelargoniums, unless it is very weak, and the plants are root-bound. If the cultural directions which appear from time to time in Gardening are followed, the plants will be all right; there is no disease.—J. D. E.

14527.—**Culture of yams** (*Loughton*).—The month of May is too late to plant out yams. They ought to be planted in March in light rich soil. The roots should be planted eighteen inches apart, and three feet between the rows. Sticks should be placed to the stems to prevent them from running into each other. Some thirty years ago a gentleman at East Barnet grew a crop of this esculent on a bed of half decayed leaves, covered over with garden mould. The crop was taken up in November, and the weight from twenty-four square yards was forty-two-and-a-half pounds. One tuber was thirty-nine inches long, seven inches in circumference and weighed one-and-a-half pounds. The crop ought to be ready for use in November. The climate in this country is scarcely warm enough to grow the yam, and to do any good with it, it must be cultivated with uncommon care.—J. D. E.

NAMES OF PLANTS.

Naming plants or fruit.—*Persons who wish plants named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communications respecting plants or fruits sent to name should always accompany the parcel. Correspondents who wish fruits to be accurately named should send several specimens of each, of various sizes, and showing any variation of form that exists.*

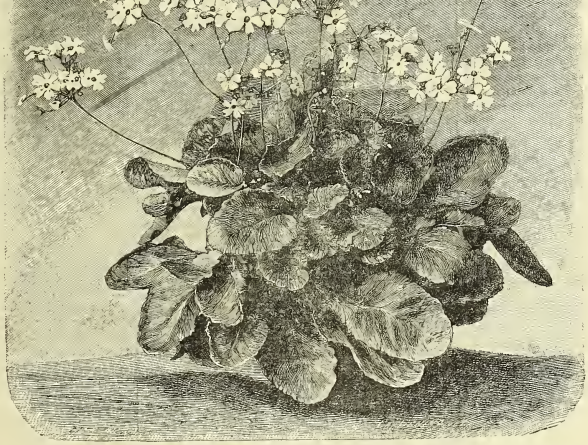
Names of plants.—*M. Collins.*—1. Colutea arborescens; 2. Cupressus Lawsoniana variegata; 3. Elæagnus argentea variegata; 4. Veronica Traversi.——*Before.*—Sedum Sieboldi.——*Warwickshire.*—The specimen is too small.——*E. J. S.*—We do not name Carnations. It is not unusual for these flowers to sport.——*Shustoke.*—1. Lablab vulgaris; 2. Sedum hybridum; 3. S. reflexum.——*J. Burnett.*—Pimpinella magna.——*A. F. White.*—1. Lastrea aristata variegata; 2. Athyrium Goringianum pictum; 3. Pteris scaberula; 4. Solanum jasminoides.——*G. J.*—1. Cytisus racemosus; 2. Coronilla glauca; 3. Azalea indica; 4. Myrtle (Myrtus communis).——*Nortuna.*—Scarlet berried Elder (Sambucus racemosa). In future please enclose letter with specimens.——*Flower in Starch Box.*—Diplacus glutinosus. (See note above. As we receive very many plants for naming, each week, it is absolutely necessary that this rule should be observed).——*Orion.*—Apparently Atriplex Halimus (a sea-side shrub).——*A. Potts.*—1. Adiantum hispidulum; 2. A. glaucophyllum; 3. Asplenium biforme.——*L. G.*—1. Pellæa hastata; 2. Aspidium falcatum; 3. Asplenium bulbiferum; 4. Davallia canariensis.——*T. Colley.*—Clover dodder, Cuscuta Trifolii, a parasitic plant common in clover fields in some seasons.——*W. B. Woodside.*—Wig tree (Rhus Cotinus).——*W. P. G. E.*—Send us your specimens again, and enclose letter with them.——*Miss Reay.*—1. If a Beet-root it is a very inferior sort (specimen is very poor); 2. A kind of Eupatorium; send in flower; 3. Ledum palustre; 4. Saxifraga hypnoides.——*J. R. Bland.*—Next week.——*J. S. D.*—Abelia rupestris.——*Druid.*—1. Athyrium filix fœmina plumosa; 4. Polystichum angulare; 5. Athyrium filix-fœmina Pritchardi; 8. Polystichum angulare cristatum. Please bear in mind that we do not name more than four plants at one time. Several of the numbers fastened to the different specimens became detached in transit.——*C. Bale.*—The Pansy you sent was so withered that it was impossible to express any opinion as to its merits.

Catalogues received.—*Dutch Flower Roots, &c.* W. Smith & Son, 18, Market Street, Aberdeen.——*Bulbs and Tuberous-rooted Plants, &c.* William Bull, 536, King's-road, Chelsea.——*Dutch Bulbs and Flower Roots.* Small & Co., 23, Lime-street, London, E. C.

OUR READERS' ILLUSTRATIONS.

PRIMULA OBCONICA.

This Primrose, sent out from Japan a few years ago, was for some time considered a very delicate and a comparatively unimportant plant. Now, however, after it has been in the hands of a good many cultivators in different parts of the country its true merits have come to light, and it proves to be not only tolerably hardy, but, when well grown, an extremely showy plant. Its colour, a rich delicate mauve, is peculiar, even in the rich Primrose family, where so many varied tints are found; it is a rapid and strong grower, and a most prolific and continuous bloomer—in fact, it is not too much to say that it can be had in flower throughout the year. As we have so many hardy Primroses, and as this plant cannot be termed absolutely hardy, it would not be worth while to grow it in the open air, except in the most favourable situations. It is a capital plant for frame or greenhouse culture, and well repays a little extra attention as regards watering and liberal feeding, &c. No plant could be more easily propagated, either by division or by seed, which it produces abundantly, and it can now be obtained, at a comparatively cheap rate, from any of the large seed-houses. As is the case with many other Primroses, there are several forms of it, the flowers in some being larger and of deeper colour than in others. When a good form has been obtained, growers would do well to propagate it by division of the roots. The illustration shows well the habit of the plant. It is an engraving from a photograph sent by Mr. Bashford, who evidently grows it well.



Our Readers' Illustrations.—Primula obconica. From a Photograph sent by Mr. W. T. Bashford, Portobello, N.B.

INDOOR PLANTS.

JAPAN LILIES IN LARGE POTS.

Those who may never have grown Japan Lilies in the form of large specimens can scarcely realise the full worth of these fine flowers. When you have succeeded in obtaining a specimen some five feet high, with a dozen or more flower-stems bearing between one and two hundred flowers, you may conclude that you have about developed the capabilities of the Lily as a pot plant. But such a result is not obtainable by means of dried-off or imported bulbs; they must be home-grown, so that when potted in the autumn they retain every root made the previous year; moreover, they should be almost or quite as large as a cricket-ball, and then a single bulb will bear nearly thirty flowers. Lilies thus grown are noble objects indeed, crowded with dark lustrous foliage to the rim of the pot, and thickly studded with large blooms perfect in form and colour. Nothing can be better than such plants for conservatory decoration during the autumn months. Early potting is imperative — not later than the middle of November. Shake away all the old soil, and put about a

Dozen good bulbs into a 12-inch pot, giving good drainage, with some rough material on that, and finishing off with a sprinkling of soot to keep worms out. Let the compost be quite sweet. A good mixture consists of loam and peat in equal parts, with a little leaf-soil and some white sand. Just bury the bulb, leaving one-third of the depth of the pot for top-dressing, and give a moderate watering, and store in a cold frame for the winter, looking to them now and then to see that the soil does not quite dry up. There is a great advantage in plunging the pots, as the compost is thereby retained in that unvarying condition which most facilitates root formation. If the soil is well moistened when the pots are plunged, they do not need any water through the winter, and by the end of March the roots will have formed a network round the pots. Then the shoots will push through with great strength when the growing time arrives. The best place for them up to June is a deep pit, elevating them on large pots, and gradually lowering them as they increase in stature. Watering is a very important detail in the culture of Lilies in large pots, as, owing to the larger quantity of soil, there is much danger of its becoming sour before the whole of it is thoroughly permeated with active fibres. My rule is to let the soil get nearly dry before watering, and then give just enough to moisten it through, by which means it is maintained in as free a condition through the earlier stages of growth as when first used. It must, however, be borne in mind that the glass is but to serve as a protection against climatic changes, and that every day when the weather is fine the lights must be drawn off. I do not know of any plant which more quickly resents undue confinement than Japan Lilies, and as they are to go into the open air later on, they should, from the time they start, make as much of their growth in full exposure as possible. From June a sheltered cool position is what they need. I find they do remarkably well where they get the sun up to 12 o'clock, but I also find that the leaves come larger in a north aspect. In tying up the shoots do not bring them all up straight, but rather train them out at different angles, so that the natural manner of growth may be preserved. Thus the general good appearance of the plants is much enhanced, and, in addition to the large bulbs, some of varying sizes are added, working them in round the edge of the pot. These, of course, do not grow very strong, some of them not more than a few inches high, but they form a solid mass of verdure quite overlapping, and in a great measure obliterating, the pot, but withal having so much of irregularity as would characterise a group of Lilies growing naturally. By the time the buds are all developed, the pots will be crammed with roots, and then

In fine weather they will need a good soaking of water once a day. If they do not get as much moisture as they need, the lower leaves turn yellow, and the flowers do not come to their full size; but I may here remark that exactly the same effect is produced by over-watering, the decay of the roots naturally causing a stoppage in the supplies. In a word, Lilies need not only care, but discrimination, in this respect, and he who waters most intelligently will, all other conditions being equal, best succeed in producing fine specimens. Up to the time that the buds are beginning to develop, the top-dressing which has been applied when the stems are about a foot high will suffice to maintain the vigour of the plants, but from that time an occasional dose of liquid manure will increase the size of the blooms and deepen the hue of the foliage. The water should, however, be no more than coloured, as Lily roots are far too tender to admit of strong manurial ingredients, and every third watering is often enough to apply it. If these simple instructions are followed, handsome specimens, more than a yard through and some five feet high, will be obtained—a result which amply repays all labour and care incurred.—J. B.

AZALEAS.

Azaleas, like Camellias, may be had in bloom during much the greater portion of the year if a sufficient stock is at command and they are properly treated. At no time are their flowers more useful for cutting or the ordinary purposes of decoration than through the last two months of the year, when such flowers as are forthcoming under glass have to be wholly depended on. But though Azaleas bear forcing much better than most plants, it is far the best to regulate their time of blooming by the length of time they are kept warm under glass after the season's growth is completed and the buds are set. Where wanted to come up at about the time mentioned, the buds can scarcely be too large and prominent before they are taken out of heat; but, in speaking of heat, through the summer months no more is required than keeping them in a house where the sun's rays are made use of by not giving too much air through the day, and shutting it off completely early in the afternoon. Plants so treated until the buds as large and prominent as those of Camellias in their early stages can later on, when required, be induced to open their flowers with half the heat and in half the time that is necessary when turned out of doors or put in cool quarters under glass before or as soon as the flowers have set. Where Azaleas are required to bloom early, and to be freely used for cutting, the old white kind and Fielder's White, a slight improvement on the former, should find a place, for though some of the newer sorts have better formed flowers, still the much longer and more vigorous shoots which the old varieties named make, permit of the flowers being cut with a correspondingly greater length of wood attached, a matter of great importance in cut flowers. Such examples as were kept for blooming late, say up to June or July, should for six or eight weeks yet be subject to warm treatment, otherwise many of the shoots will never set flowers at all, or be so insufficiently developed as to go blind through the winter. In most cases where this latter mishap occurs it is directly traceable to the buds not being sufficiently formed before the cessation of growth. The whole stock of Azaleas should be frequently examined to see that they are free from their greatest enemy, thrips, also red

spider, which latter sometimes makes its appearance through a deficient use of the syringe, in not getting the water well to the undersides of the leaves. Dipping and washing with tobacco water involves much more labour than fumigation, but it is far more effectual for the destruction of the thrips, and, what is of quite as much importance, it does not injure the leaves, which fumigation often does. Where red spider and thrips exist, it is only necessary to add two or three ounces of Gishurst's compound per gallon of the tobacco-water, which will destroy the spider; that tobacco-water alone seldom does effectually. Azaleas in all their stages require to be much more liberally supplied with water at the root than almost any other genus of fine-rooted, hard-wooded plants. They enjoy a moist condition of the soil, such as would kill the small feeding fibres of most hard-wooded greenhouse subjects. M.

Scarborough Lilies.—Either as a window plant or as a greenhouse bulb, this old favourite has but few equals at this season of the year. We have two varieties, Vallota purpurea and the white-eyed variety known as eximia. They are now very showy, and will continue attractive for several weeks as the successional spikes open their flowers. So far, I believe, this fine old plant has defied all the attempts of the hybridiser, and that numbers of such attempts have been made goes without the saying. I have never yet induced this plant to produce good seed, but shall try again this season. A white Vallota would be a useful plant for decorative purposes, and may not be an impossibility after all.—R.

Saxifraga Stracheyi.—Owing to its flowering very early, this is a useful plant for greenhouse decoration during the first months of the year. It is one of the large-leaved Saxifrages, by some called Megaseas. The flower-stems are much branched and spreading, while the individual blossoms are large and white, with a reddish centre, but when grown under glass they are almost wholly white. The entire flower-stem only reaches a height of six inches or eight inches. Our plants were grown in six-inch pots, and about Christmas removed to the shelter of a frame, where without any heat whatever they came finely into flower by the end of January. Grown in this way, the flowers do not suffer, as they sometimes do, from cutting winds when allowed to expand in the open ground.—T.

Thunbergia alata is a free-growing greenhouse or half-hardy annual well worth cultivation. A friend of mine calls the white variety Black-eyed Susan, on account of the characteristic dark blotch in the mouth of the corolla. Seeds sown in February or March soon form flowering plants, and they may either be grown in baskets or used for fringing the fronts of shelves or staging in the greenhouse or conservatory. The white variety is, as I think, the prettiest, but there are also buff and orange kinds equally showy. There is also a pure white form without the black throat, which is very pretty. As companion plants for these Thunbergias nothing can be prettier than Maurandias, white, lilac, and purple, and they may be grown under the same treatment.—F. W. B.

Cape Lead Wort (*Plumbago capensis*).—This beautiful greenhouse plant is now in flower, and very attractive it is at this time of year. It is one of the most accommodating plants we have, growing and flowering in profusion even in houses that have a much higher temperature than that of a greenhouse. We have it planted out in three different houses, in one of which some flowers may be seen nearly all the summer and autumn, the difference of the flowering season being caused by the degree of heat which it receives. Its pale blue blossoms are so distinct and pleasing that they are always admired. This Plumbago grows freely planted out in tolerably good soil, but its cultivation in pots is seldom satisfactory. Sometimes we hear of it flowering freely in summer outside, and with well ripened old plants and a suitable season such results may be obtained, but under other conditions it is uncertain. A pillar or rafter of a greenhouse or conservatory is best if only one place be chosen, and in such a situation a healthy plant will soon grow and establish itself. It should be allowed to grow to the height required, and then be pruned in annually in autumn after growth is completed. The best results are obtained by thinning out all the weaker growths when quite small, thus encouraging others. Copious supplies of water are needed throughout the summer and until the wood is ripened, when it should be gradually withheld during the resting period. It may be well to point out to beginners that P. capensis flowers on the points of the shoots, and that consequently the latter must be allowed to grow their full length without stopping. They grow freely and hang down gracefully from a pillar or rafter. S.

REPLIES.

14339.—**Propagating Double Nasturtiums.**—All the Nasturtiums are propagated very freely from cuttings. Plant a dozen cuttings in a five-inch pot. They will form roots very speedily in a hot-bed, or more slowly in a close frame or hand-light.—J. D. E.

—— The Double Nasturtium strikes as freely as Zonal Pelargoniums. Get the cuttings about four inches long, cut the base at a joint, and dibble them in a pot of sandy soil; then place in a cold-frame or on a shady shelf in a greenhouse, and they will be rooted in about three weeks, if the sun is kept from them and they are moderately watered.—J. C. C.

14338.—**Chrysanthemums turning yellow.**—The most likely reason is that the drainage is imperfect. Such cases will occur with the best culture. It is a mishap owing to deficient root action.—J. D. E.

14350.—**Grevillea robusta.**—The plants ought to be raised from seeds in a hothouse, and they ought also to be grown on there until they are a foot high. I placed two plants in windows of two separate rooms just two years ago. They have been repotted once in that time, and are now as green and beautiful in appearance as they were when first taken out of the hothouse, and are not four inches taller. The blinds are pulled down if the sun shines brightly on them.—J. D. E.

14372.—**Bedding Geraniums.**—The way I save my old plants, after taking cuttings about the middle of August, is as follows:—I take up the old plants about the middle of October, put each plant in four and a half inch pots, or forty-eights, give a thorough watering, and place on back shelf of greenhouse. I give no more water till the plants begin to break, and then I remove any decayed ends, give a thorough watering, and continue watering as needed. By this treatment I save nineteen out of every twenty, and have done so for the last nine years. If "G. H. E." will try this plan, I think he will be more successful. If he watered his plants after putting them on the shelf before they began to break, that, in my opinion, would cause them to die.—*Balham, Surrey.*

TREES AND SHRUBS.

PLANTING TREES AND SHRUBS.

A FEW timely notes on ornamental trees and shrubs suitable for pleasure-ground and general decoration may be of use. Planting may be done from October till March, but I would prefer the first or the last of the months named, as the weather is generally changeable and trying during the shortest days. I know, too, from experience, that planting between intervals of frost is often injurious to the plants. In dealing with a quantity of trees, I planted part of them in favourable weather in October with the best results; others, again, were put in in January, and much loss occurred; while with the remainder, planted in March, I had greater success. Much, however, depends on the subjects operated on and their condition. It is a mistake to buy very large plants at a distant nursery, in the hope of securing immediate effect with success. I am referring now to such plants as large Hollies, evergreen Oaks, and evergreens generally. Large deciduous trees can, as a rule, be more successfully transferred than evergreens. In lifting any kind of tree, especially when the leaves are on it, the roots should never be divested of soil; on the contrary, as good a ball as possible should be retained. Crowding the roots into a small hole is a great mistake. This may not kill the plant outright, but it will check it for years to come. When lifted, the roots should never be long exposed to the influence of sun or wind. This is one of the very worst things that can happen to them, and should be strictly avoided. When plants are brought in from a nursery, it is, of course, impossible to plant them all at once; but the first attention they require is to cover up the roots with damp Moss, straw, or soil. We begin cutting our bushes in October, and go on from time to time as the weather and other work will allow until March. It is only hedges, Laurel banks, and upright growing bushes near the edges of walks on which we use the shears, the knife or bill-hook being the favourite for all natural-growing bushes. Pages might be written as to the varieties of

Trees and shrubs suitable for gardens; but I will just direct attention to a few. Wellingtonias should only be planted sparingly and in sheltered places. The variegated form of the Wellingtonia is pretty, but not so free in growth as the type. With this tree, as in the case of all other outgrowing and spreading conifers, it is a mistake to plant it too near the edges of pathways, as they soon interfere with the traffic, or have to be cut, thus spoiling their symmetry. The Araucaria, or Chili Pine, is a tree prized by many, and it is alike suitable for the villa front or park. It is only seen to advantage when isolated. It makes a noble specimen on a lawn, and it should be planted in rich deep soil, as in poor material it loses its bottom branches and becomes unsightly. Spruces of different kinds require plenty of space in which to develop their beauty and true character, and they are thus unsuitable for small gardens. They, however, become grand trees when planted singly in favourable situations; the best of them are the White Spruce, Abies Douglasi, canadensis, orientalis, nigra, and Morinda. The Cedars also require much space in which to grow out properly, and where this can be given them they are well worth attention. The Deodar, the Silver or Atlas Cedar, and the Cedar of Lebanon are valuable and good kinds. In the Biotas, or Chinese Arbor-vitæs, we have a grand class of beautiful shrubs, suitable for gardens of all sizes. Orientalis, orentalis aurea, orientalis elegantissima, and orientalis semper-aurescens are the choicest varieties. Cryptomeria japonica and C. elegans are both ornamental, and may be planted in large or small grounds. C. elegans is very attractive, and it will succeed either inland or near the sea. Cypresses are some of the handsomest of all conifers, and they do remarkably well in all climates and situations. The best known of them is Cupressus Lawsoniana, a most elegant and graceful Cypress; and C. erecta viridis, C. macrocarpa, C. sempervirens, C. erecta lutea, and C. erecta elegantissima are all choice sorts. The two last-named are new and very attractive. C. sempervirens forms an erect and conspicuous object. Of Junipers, the Chinese variety is perhaps the best known; it is not only useful for planting here and there on lawns, and about shrubberies, but it is also serviceable for forming edges. Juniperus communis is commoner. The chinensis aurea is a beautiful golden-leaved kind; Sabina forms a low-spreading bush, and virginiana is often termed the red Cedar, owing to its rich colour. In the Picea tribe we have some grand forms of trees, and the best-known type of these is probably P. nobilis, one of the best of all Firs. They require plenty of room in which to develop, and are well worth every care. P. amabilis, P. grandis, P. magnifica, P. Nordmanniana, P. Pinsapo all form magnificent trees. Amongst the Pinus we have a class more noted for producing valuable timber and affording cover and shelter than for forming handsome landscape objects. Pinus austriaca is a very hardy variety, and one which will succeed on land bordering the sea. Thujas are favourite subjects for small gardens; they grow compactly, and make attractive bushes when quite small. T. gigantea grows very tall, but Lobbi is dwarfer and more ornamental, and should always be selected in the first instance. Plicata is the dwarfest of them all. Closely resembling these in many respects are the Thujopsis, or broad-leaved Arbor-vitæ, among which the best are borealis, compacta, and dolobrata. These, as well as the American Arbor-vitæ, make beautiful hedges. The Retinosporas, or Japanese Cypresses, should be included in all collections of conifers, being objects of great beauty. Ericoides, filifera, obtusa aurea, and plumosa aurea are charming sorts, and all suitable for

even the smallest gardens. I have seen them in flower-beds, and also well grown in tubs and large pots. Finally, we have the Yews, and these are so well known as to need little or no recommendation. The common Yew is suitable either for a tree or a hedge. The variegated variety of the Irish Yew is a lovely object amongst masses of dark green-leaved plants, or by itself on a lawn.

Evergreens consist of such subjects as the Aucuba, one of the most accommodating of all shrubs. It is very hardy, and will flourish even in towns, and almost in semi-darkness. Japonica maculata is the golden spotted kind, luteocarpa, the yellow-berried; and viridis, the quite green kind. In buying Aucubas, a male plant should always be secured, and this should either be planted near the female, or it may be kept in a pot and transferred to tree to tree when both are in bloom. If left for a day or two in the midst or under the plants on which it is desired to put berries, the object will be accomplished. The Arbutus, or Strawberry tree, is a lovely object where it succeeds; it thrives best in a mild, humid climate, and it may be called a true seaside subject. It produces very beautiful cream-coloured, bell-shaped flowers, and its fruit has all the appearance of ripe Strawberries. The Sweet Bay is another valuable evergreen, which requires much the same atmospheric conditions as the preceding in order to insure free and rapid growth. We have bushes of it here 16 feet high and as much in diameter. They seed freely, and are very pretty when covered with purple berries. The Barberries constitute another class of beautiful flowering and berry-bearing bushes. Berberis Darwini is the best for the pleasure-grounds; its golden clusters of bloom in spring, and its deep coloured purple fruits afterwards, never fail to please. Box needs no comment. Its value as an edging plant is fully known, and as a bush it has much to recommend it. In the Cotoneasters we have another valuable addition to hardy berry-bearing plants. C. microphylla is the one so often seen on walls, and brightening up the surroundings in winter with its dense crops of bright red berries. C. Simonsi is a larger fruited sort, and one which makes a beautiful bush. Some of the old, as well as the more recently introduced, Euonymuses are amongst the most beautiful of all our choice Evergreens. They are valuable maritime shrubs, and of all the bushes with which I am acquainted, none are more at home in the centre of a town, or in the most smoky of atmospheres. They are suitable for walls, and are equally beautiful in the form of a bush. E. ovata aurea is the golden sort, and E. japonica argenteo-variegata the silver-leaved kind.

Among Hollies there is a great variety, and numbers of them should be included in all ornamental plantations. Ilex aquifolia is the common green kind, and Hedgehog, Silver-leaved, Golden Queen, yellow-berried, Handsworth, and latifolia are the names of a few worth attention. Kalmias are very pretty, but they must have peat in order to ensure their doing well. Laurels have been planted to excess in the majority of instances. They are about the least ornamental of all our Evergreens, and should never be given a front place or be planted anywhere except as screens. Laurustines are ornamental at all times, and, when covered with clusters of pure white flowers, as they generally are throughout the winter, they speak for themselves. The Mahonia is one of the best of all Evergreens for planting as undergrowth, and for very shady places I can name nothing more useful; its yellow flowers and purple berries are also very attractive. The Rosemary is a pretty, sweet-scented, old-fashioned plant, but it is only suitable for a mixed bed. Skimmia japonica and S. fragrans are beautiful in foliage and attractive when covered with red berries in winter. Rhododendrons, I need not say, should be planted everywhere, but hybrids alone should be used for ornamental purposes. Of flowering and ornamental

Deciduous trees and shrubs want of space forbids me saying much, but every well-planted place, no matter what the size of it may be, must include some of them, and from the endless variety a selection should be made of the best. Maples must at once be pronounced the choicest of deciduous trees. They may be had to represent bushes of silver, bushes of gold, and bushes of burning fire. They are quite hardy, very free growing, and should be introduced everywhere. The Acacias are very beautiful when in bloom in May and June, and their prettily-cut leaves retain their verdure throughout the summer. The Almonds are amongst the first of the trees to bloom in spring, and when in full flower at that time, as they invariably are, they have a warm and delightful appearance. Aralia japonica, spinosa, and pentaphylla are noble-foliaged plants, and have a grand appearance mixed with evergreens. The deciduous Berberries have the peculiarity of growing well in the poorest soils and most obscure situations, and are very beautiful either in flower or fruit. The weeping Birch, and, above all, the purple-leaved Birch, should on no account be omitted from lists or selections of trees. The Catalpas have a graceful habit, beautiful flowers, and ornamental leaves. Amongst Cratæguses, or Hawthorns, there are many fine subjects; their flowers never fail to please, while their berries or Haws are equally valued in autumn. The Cytisus, or Laburnums, are another grand class of flowering trees; but few of the best varieties appear to be known, the common yellow flowering one being almost the only one to be seen in the majority of gardens; the white and purple flowering Cytisus should also be introduced, as it is exceedingly lovely when in bloom. The Pyruses are all showy flowering trees; Manlei is the finest of them all; and the Deutzias, especially crenata candidissima and its double variety, are beautiful subjects. The Purple-leaved Filbert is a plant which should be oftener seen than it is, its dark leaves being most effective in tree groups. Hydrangeas are often considered to be too tender for general planting throughout the country; but they are such gorgeous plants in autumn that they deserve to be tried in every possible way. Twenty degrees of frost have not materially injured our plants. Lilacs are more common, but it is a pity that the best varieties of them are not more taken advantage of than they are. The Philadelphus, or Mock Orange, has conspicuous flowers, which are very sweet-scented. Amongst other classes from which a selection should be made may be mentioned the flowering Currants, Snowberries, Viburnums, Weigelas, and the Spiræas. J. M.

Propagating Desfontainea Spinosa.—I know of no more beautiful evergreen shrub than Desfontainea spinosa. It is, however, very seldom seen, partly because it is not quite hardy, and partly because it is supposed to be difficult of increase. For the benefit of those who wish to get the shrub, I may state that about this time last year I received some cuttings. I did not feel very sanguine about them, but I put them in the open ground under a bell-glass, and left them there all the winter. To my surprise, they all rooted readily, and, to my greater surprise, they all flowered when less than 3 inches high. I can scarcely fancy anything more attractive than a potful of these young plants all in flower in the early spring struck from autumn cuttings.—H. E., *Bitton, Bath.*

A good autumn shrub.—Æsculus parviflora, though one of the handsomest of all hardy shrubs, and one, too, that is in full beauty when few others are in bloom, is comparatively seldom seen in this country. This North American Chestnut is, however, perfectly hardy, and only requires to be seen to secure a fuller recognition of its merits. As a rule, it rarely attains the height mentioned by Loudon—viz., ten feet to fifteen feet, and is, perhaps, best treated as a dwarfer subject, a number of the stems being cut away every year. A constant succession of strong shoots is thus secured, and these bear much finer flowers than those produced by older branches. The shoots are slender, spreading, and rooting at the joints where they happen to rest on the soil, with ascending extremities. The tree comes into flower about a month or six weeks later than the other Æsculaceæ, and continues flowering, in the case of large plants on moist soil, for three months or longer, forming one of the greatest floral ornaments of the shrubbery at a season when very few trees or shrubs are in flower. The fruit, which is small, seldom ripens in England, but in America it is said to be eaten boiled or roasted. The plant has red leaf-stalks, glossy dark-green leaves, and long paniculate racemes of white flowers, the long white filaments of which, surmounted by the red anthers, impart to them a fine fringed appearance. In various books, &c., this is found under the names of Pavia macrostachya, Æsculus macrostachya, Pavia edulis, &c., and its English name is "Long Spike-flowered Buck-eye." It delights in a moist situation or near water, and thrives well in a strong clay soil.

REPLIES.

14336.—**Cutting down Laurustinus.**—As this plant is sometimes injured by severe frost, it should always be pruned in the spring, but whether or not the pruning will spoil its flowering for the next year depends upon how much it requires cutting back. If you have to cut back to the old hard wood the growth resulting from it will probably not flower the next year.—J. C. C.

THE VILLA GARDEN.

(*Continued from page* 377.)

Garnishing plants.

According to the present fashion (which, however, may soon change), dishes of fruit are not placed on the dinner-table. That is now given up to flowers and foliage, and the fruit is dished up and set out on a sideboard, whence it is handed round. This, however, refers only to party nights; at other times the dessert goes on the table in the old way. It is said good wine needs no bush; but it is certain good fruit needs some garnishing, and where much fruit is grown for daily consumption, the leaves to dish it up must be thought about and provided. For dishing up Grapes, nothing equals the foliage of the grape-vine. The leaves of some of the late Grapes, such as West St. Peters, Mrs. Pince's Muscat, Barbarossa, and Gros Colman, when ripening off, assume a lovely colour, which condition is maintained for a considerable time, and either black or golden Grapes look well on these brilliant scarlet-veined and blotched leaves. In summer there is usually plenty of leaves to be obtained for dishing up. Besides vine-leaves, which can generally be had, there is

The Curled Mallow, which is very pretty for dishing up all kinds of fruit except Grapes. The seeds are sown in March, and monthly afterwards till August. For placing round Pine-apples and Melons, sprays of the Ice Plant are effective under artificial light. The seeds are sown in spring in heat, and hardened off and planted out in May. It is a rapid-growing plant when it gets well started. Half-a-dozen clusters of plants, three in a pot, will be enough for most places.

Melville's Variegated Kale I have used for Apples and Pears in winter. If well selected when transplanting, the leaves are very pretty, and will be useful for a change in winter. Leaves of the Abutilon Thompsonii are nice in winter. Aucuba japonica, Mahonia Aquifolia, and even the leaves of the Common Bramble, when growing in sheltered places under trees, are very useful Then there are Ferns and Mosses, and such creeping and hanging plants as Tradescantia zebrina and vittata and Panicum variegatum, all of which may be used for garnishing if desired. As regards

Dinner Table Decoration, I am not going to say much, though a good deal might be said without exhausting the subject. Lightness and elegance, rather than massiveness, should be the guiding principle all through. Small, light-foliaged, feathery Palms and Aralias should be used for centres. For common use Cyperus alternifolius, C. a. variegatus, and Grevillea robusta are useful, and nothing hurts them. Small but well-grown plants of Crotons, Dracænas, and Caladiums are bright and effective under artificial light. Small plants of the Maiden-hair Fern are always appreciated for a change. Neat little plants of Begonia insignis and B. fuchsioides, when nicely in flower, are useful in winter. Shallow pans or boxes of Moss, when well furnished, are also useful. To keep up a constant change of plants suitable for table decoration requires a good deal of thought and some pains. To do it well a constant stream of young plants should be coming on, and should be worked in pots of the most suitable sizes,

which should not exceed 5 inches or 6 inches in diameter. If extra large plants are required for a large table, they may be turned out of the pots, and the balls enveloped in paper or Moss, and dropped into the receptacles (mostly silver vases) provided for them. A good deal of variety may be introduced in what is termed

Decoration on the Cloth.—Fern fronds of large or small size may be used to form different combinations. Flowers that will lie flat on the foliage are best, such as Roses, Asters, perennial Sunflowers, Zinnias, Single Dahlias, Poppies, Carnations, Water Lilies, &c. In winter, berries of various kinds will be found useful. Individual taste will suggest many ways of using the materials herein mentioned, and others that will occur to any person who thinks over the matter carefully. There should be no slavish imitation of my lord or my lady. There has been too much of this in gardening; but free scope should be given to individual fancy. E. Hobday.

Forcing Vegetables.

The Pea.—The Dwarf Peas are easily forced in pots; 8-inch pots are very suitable, and the first crop should be started in November. A cool, light, dry house or pit is the best place for them, and the soil should be good turfy loam, enriched, as far as is necessary, with old manure or leaf-mould—something wholesome and sweet. The Peas should be planted moderately thinly all over the surface of the pot, leaving space to add a little fresh soil when they are three inches high. They should be as near as possible to the glass, and a little fire, if the place is heated, may be given in severe weather to keep out frost; or if they are grown in a turf pit, coverings may be used in severe weather. Peas under glass will not bear much artificial heat. It makes the haulm weakly, and a weakly drawn-up stem cannot be expected to carry a large number of well-filled pods. Peas may be planted in pots any time between November and February. Or they may be planted anywhere under glass, during the same period, but they must have plenty of light and free ventilation. Even Dwarf Peas do better when kept in an erect position. So, when three inches high, a few small light sticks should be placed round the edge of the pots for the Peas to cling to. The same attention should be given to Peas planted in the borders of a vegetable forcing-house, or in a pit used for the same purpose.

Late Peas Under Glass.—Peas may be had later in autumn in pots under glass than is possible in the open air, even when the season is more than usually favourable. Sow a dwarf early kind in August and again in September. Stand the pots under the shelter of a north wall for a month or six weeks. Move to a pit or light house, and ventilate freely. There is not much trouble, and a dish or two of green Peas in November or later are sometimes thought much of.

Varieties.—American Wonder, very prolific and early, a good variety for pot culture; Little Gem; Multum in Parvo is rather taller than the kinds first named, but has larger pods. E. Hobday.

FRUIT.

THE CULTURE OF FIGS.

There are two ways of growing Figs—the cool way, and the forcing system—and each requires different treatment in the plants, a fact that should be early understood by all having anything to do with Fig culture. Figs in cool houses, like orchard houses, perfect only one crop in the season; at least, I never knew those fruits which appear towards autumn on the current year's growth to reach their second swelling, and hence pruning should be conducted in conformity with the mode of bearing, *i.e.*, the shoots should never be shortened back or pinched, but be allowed to ripen to their extremities, where the earliest and best fruits will be produced the following season. At Argenteuil, however, the Fig growers adopt another plan; they pinch the bearing shoot above the fruit, and keep it pinched, and train another successional shoot from its base, cutting away the bearing shoot, I suppose, at the end of the season. Branches with ripe fruit on them treated in this way bore the greatest quantity of fine fruit I ever saw. This plan is practised, I presume, in order to drive the sap into the fruit, and at the same time to promote a successional shoot lower down. In principle, the practice is the same as our own, as the terminal points of the successional shoots are depended on to bear the crop, but they are not permitted to show a second crop. In forcing the Fig in our own gardens, I prefer the pot system and the method of pinching to induce a second crop, which is always the best as well as the surest. Three crops can be had, but two are sufficient. The first crop is borne on the points of the last year's shoots, and ripens about the end of May. If the plants have been re-potted the previous autumn the first crop is often a precarious one, as the check to the roots is apt to cause a portion of the fruit to drop; but Figs in pots do not need to be, and should not be, potted annually. I have never allowed pot Figs to go without potting longer than two years; but I have seen a houseful of pot plants that had not been potted for ten years, under a good gardener who assured me they never failed to bear a fine crop, and the fruit on them was as fine for Brown Turkey as any I ever saw. In pinching the shoots for

The second crop, three leaves should be left if the shoots are strong, and four if they are weak. These pinched shoots will generally show a fruit at each joint, and all will ripen. If the growth be strong they may be pinched once again, but not more, and weak plants only once if two crops only are desired. In any case the main object should be to finish the growth of every shoot with a growing point or point bud. If the last pinching is performed too late this growing point will be lost, and although the shoot may show fruit, it may have no leaves beyond, and the fruit will come to nothing. In fact, it may be laid down as a maxim to be strictly adhered to under any system of Fig culture, that every shoot of the current year should ripen off with a terminal bud. No matter how short the shoot may be, there will the best fruit appear the next season.

Soil.—Although the Fig is a wonderfully strong rooter and does well in most soils, it cannot do with a too tenacious or hard loam, especially if firmly potted. Its roots make no headway in such a medium unless it is well mixed with broken lime rubbish and vegetable mould. In any compost of which leaf-mould forms a good proportion it roots amazingly, and for plants in pots, firmly potted, there is nothing better than rotten hot-bed compost, loam, and old lime rubbish, all thoroughly mixed up together and well drained.—R.

Pears that do best in cordons.—Replying to a query of ours, Mr. F. Jamin, of Bourg la Reine, says that the following Pears are among those that do best trained in cordons on wires along walls. They are mentioned in the order in which they come to maturity:—Beurré Giffard, Moncballard, Fondante des Bois (Flemish Beauty), Doyenne de Mérode (Doyenne Baussoch, Double Philippe), Louise bonne d'Ourancher or de Jersey, Seigneur Esperen (Fondante d'automne), Van Mons. Leon Leclerc, Beurré Dumont, Duchesse d'Angoulême, Ne plus meuris, Beurré Bachelier, Passe Colmar, Président Mas, Passe Crassane.

REPLIES.

14341.—**Best Strawberries.**—It is better to plant three varieties. The earliest and best is Pauline, Sir Joseph Paxton for mid-season, and Loxford Hall Seedling for late. The last-named ought to be planted eighteen inches apart, the others two feet.—J. D. E.

—— Princess Alice Maud is one of the most enduring kinds in cultivation; it will last out and fruit well where other kinds fail. A few years ago it was one of the favourite kinds with market-growers, but has had to give place to larger varieties. It is an abundant bearer, good in flavour, and is an excellent preserving kind. Another excellent but little known kind is Bountiful; it is an abundant bearer, is a week later than the first-named, and has such a good constitution that it lives happily where other kinds die; with these two kinds strawberries may be had in the most porous soils. We would also give Vicomtesse Héricart de Thury and President a trial, both being of a robust nature, the first-named especially, and, although rather small in berry, a most abundant cropper. With these four kinds a very good succession can be maintained, there being nearly a fortnight's difference between the earliest and the latest of them. Important points in the culture of Strawberries on light soils are deep cultivation, a firm surface, and a good mulch of manure in spring. The soil should be trenched eighteen inches deep, and this should be done at a time when it may lie and sweeten for some time, previous to planting—if all the winter so much the better. Early in March work in a good dressing of manure, and, choosing a dry time, level the surface and tread it as hard as a gravel path, if you can; or, better still, run a roller over it till it will not take the impress of the foot when trodden upon. The reason for doing this is that the particles of earth are brought so closely together as to better screen the roots from periods of aridity. Loams and soils of a similar nature naturally become close in a short time after working, but sandy soils never do; and the roots, working near the surface, are sure to get burnt just at a time when their activity is most needed. If, after planting, the surface round each plant is mulched with manure, the plants will grow with greater freedom, and watering will, in a measure, be rendered unnecessary. Keep all runners off, and the following March apply a good mulch of long manure.—J. Cornhill.

14342.—**Budding Cherry-tree.**—If done at once you may bud your Cherry-tree. Fruit-buds are put on in the same way as Rose-buds, but if you are a novice, and wish to be sure of converting your tree into a useful one, you had better get some one who understands the work to insert the buds for you.—J. C. C.

14349.—**Peach-tree.**—You cannot do better than add to your collection Early Grosse Mignonne, as it ripens earlier than either of those you already possess, and it is a large handsome sort, of good flavour.—J. C. C.

14371.—**Peaches and Nectarines cracking.**—The rusty appearance on the fruit would account for its cracking. The skin is contracted, and cannot expand with the swelling of the internal part. There is no help for it. The fruit must have been exposed to some pernicious influence, as it has become so rusty.—J. D. E.

14069.—**Melon stems cracking.**—It is not at all uncommon for Melon stems to swell and crack round the base. It is caused probably by a close and over-moist atmosphere. In a well-constructed house, and with ordinary good treatment, the losses from this cause are inconsiderable. Dust the cracked parts with powdered quicklime. The plants are not likely to be affected in this way if they are planted in good loam, sufficiently watered, and if the house or pit where they are grown is well ventilated. Artificial heat is not necessary during the summer months.—J. D. E.

14114.—**Removing fruit-bushes.**—Currant and Gooseberry bushes will bear fruit the season following that on which they were removed; but the crop is generally small. The ground for the reception of the bushes ought to be prepared by being well trenched, working in plenty of decayed manure. Remove the bushes in November, with as many roots as possible; digging out a hole for the roots, wide enough to permit of their being spread out to the fullest extent. Plant the bushes four feet apart in the rows, and allow a space of six feet between the rows. After planting place some short decayed manure over the roots.—J. D. E.

14117.—**Peaches spotting and rotting.**—I have grown hundreds of Peach-trees in pots, and seen hundreds more grown in other gardens and nurseries, during the last twenty years; and never saw any split or become rotten before they were ripe. The most probable reason is that the atmosphere has been too close and damp. The moisture would hang too long on the apex of the fruit, and with a confined atmosphere would cause decay probably. It may be that the variety of Peach has a tendency to split before it is ripe. The Stanwick Nectarine mostly splits before it is ripe, and will decay if there is much moisture. I do not know any other Peach or Nectarine that has this bad tendency.—J. D. E.

14353.—**Fruit-trees not bearing.**—As your trees have only been planted three years you have no cause to complain as yet. The Peaches and Cherries should bear next season. As yours is a strong clay, you will probably find the trees make strong growth. Should this be so, you ought to root-prune, or lift the roots in the autumn of 1886; you must also watch your trees to see whether they blossom or not. If they do not, root-pruning will be a necessity.—J. C. C.

14351.—**Propagating Currants and Gooseberries.**—All Currants and Goose-

berries are very easily propagated by cuttings. November is the best month in which to propagate them. Take off the cuttings with a heel attached, or cut at a joint. They may be 12 inches long. Plant them four inches deep, first removing all the buds or eyes underground with a sharp knife, and the buds two inches above ground. This is to prevent suckers from coming up; and the removal of a few buds above the surface of the ground would produce shapely plants on a clear stem.—J. D. E.

—— These are easily propagated by means of cuttings, which may be put in at any time after the leaves have fallen, February being, perhaps, the most suitable time. Stout, well-ripened shoots should be selectcd for this purpose; a foot to eighteen inches is a good length for the cuttings, and this should be the lower part of the shoot, cutting the top portion away as it is generally imperfectly ripened. The base of the cuttings should be cut off cleanly, taking care not to injure the bark in so doing. In the case of Gooseberries and red and white currants, the buds should be carefully removed from the base of the cuttings upwards, leaving the three outermost; on the black Currants the buds should be allowed to remain. The cuttings may be planted in the open ground, inserted four or five inches beneath the surface, and the soil pressed firmly around them.—F. B., *Southampton.*

THE COMING WEEK'S WORK.

Extract from a Garden Diary, September 14 to September 19.

Clearing out Melons from pits, adding a little more soil and manure, and planting them with dwarf Beans for winter bearing; tying up Lettuces and covering up Endive to blanch; cutting back all young growth of Tomatoes, and exposing the unripe fruit to the sun; clearing off the surface of early Vine border, and giving it a top dressing of loam, horse manure, and coal ashes. Potting Dutch bulbs in a mixture of loam, manure, charcoal, and sand; filling up all spare frames with Lettuce and Endive; dressing early Black Hamburg Vines with composition to kill insects, and erecting a temporary frame over pot Strawberries on which to place spare lights to throw off heavy rains. Looking over all young fruit trees, and applying new ties and stakes where necessary; gathering Hawthornden and Golden Pippin Apples; and also a few Golden Drop Plums. Putting in cuttings of Cerastium under hand-lights; potting off Centaurea candidissima as soon as rooted; also putting a few Primulas and Cinerarias into their flowering pots for early blooming.

Weeding and thinning out all overgrown Parsley; hoeing among all late-planted Endive and Lettuce; putting in Tomato cuttings to furnish plants for early fruiting; and shaking out and re-potting old plants of tricolor Pelargoniums. Thinning out Endive and Lettuce; manuring and roughly digging the ground previously occupied by Cauliflowers; weeding and cutting the runners off pot Strawberries. Preparing frames for Cauliflower plants by putting a thick layer of green turf, grass side downwards, and then one inch of good mould in which to prick out the plants, which are placed six inches apart each way; gathering Reine Claude de Bavay and Coe's Golden Drop Plums. Putting in Tom Thumb and Indian-yellow Pelargoniums in large store-boxes and pots.

Bold flank of artificial rock in public park, covered with Ivy and hardy shrubs.—*See page* 384.

14269.—**Strawberry cultivation.**—It is better to keep the runners of fruiting-plants cut off, thereby throwing the whole strength of the plant into the fruit. If all the runners that come are allowed to remain, the weight of the crop is diminished. At the same time but little harm will be done by leaving a few of the earliest runners, as if pegged-down on the soil they soon make roots, are then self-supporting, and are most useful for forming fresh plantations. If these early runners are planted-out in good ground as soon as they can be safely moved, they grow into large plants by the end of the season, and bear a good crop of fruit the following year.—J. C. B.

14357.—**Unfruitful Plum-trees.**—It is not worth while growing fruit-trees that have been raised from seed, as the chances are against their being fruitful or of good quality. New fruits are of course obtained in this way, but for one that equals standard kinds a hundred are worse. The trees in question should be worked with some good reliable kind, such as the Victoria, which is as useful a plum as we have. Plums are generally budded; if grafted they are apt to "gum." The best way will be to head the trees back hard early in spring, which will cause some strong straight shoots to spring from the base, the best of which can be budded in July or August. If you want a tree quickly you can leave all the shoots and bud them so that in the course of a couple of years you will have a crop of fruit.—J. C. B.

Earthing up Celery when the soil is dry; thinning autumn-sown Carrots and Turnips; weeding Box edgings; gathering Gansel's Bergamot and Dunmore Seedling and other Pears, and Ribston Pippin Apples; sowing Turnip Radishes in cold pits; clearing off a piece of Turnips; and heavily manuring and digging the ground for Coleworts.

Work in the Town Garden.

THE recent rains have thrown most of the occupants of the garden into luxuriant growth, and attention must now be given to reducing or restraining any such over-luxuriance within proper bounds, and to supporting, where necessary, such growth as it may not be advisable to remove. Most kinds of bedding-plants will now need a little careful attention. Geraniums, where not starved and stunted by lack of moisture, will in many cases have grown into quite a thicket, especially if they were planted at all thickly in the first place; so that it will be well now to remove all superfluous branches, especially those thick, sappy, flowerless shoots that often break up from the base of the plants. Pyrethrum (Golden Feather) should have all flower-stalks or buds picked off or cut back, reducing the plants at the same time to reasonable dimensions if they have grown very strong. The same course may be taken with Cineraria maritima or candidissima, Centaureas, and, indeed, anything else that needs it; and even Calceolarias, Verbenas, and Petunias will be all the better for being carefully trimmed up, removing all old flower stalks, cutting out weak or useless shoots, and stopping any too vigorous growths. Petunias that have grown lanky and poor often make a fresh start altogether, and bloom very nicely a second time if cut back rather hard now or a little earlier. Where Pansies and Violas can be grown they will be greatly benefited by similar treatment. Pull up any annuals that are past their best, place strings or twiggy sticks for Convolvulus and other climbers, now at their best. See that Dahlia stakes are long and strong enough, and tie the plants securely to them, removing all useless side shoots, which only weaken the plants. Attention to these and similar matters, especially at this season, greatly prolongs the period of enjoyment of a garden: the time of richest beauty and fullest perfection being past, we want to make the best of what is left during this and next month. Of course the trimmings of Geraniums, &c., come in useful for cuttings where any more are required, and these should all be got in without further delay.

CHRYSANTHEMUMS of the Incurved section, and many of the Japanese also, are now just showing their buds. They should be carefully gone over now, and, particularly if only a few fine, large blooms are desired on each plant, every one of the side shoots formed in the axils of the leaves should be pinched out. Remove also all suckers or breaks from the base of the plants. The crown or central bud will now be well set on some of the earlier varieties, such as James Salter, Lady Selborne, and even Elaine and Mrs. Rundle, &c. If these look promising, and early blooms are wanted, they may be obtained by pinching out the three or four surrounding shoots, as well as all below them. These "crown" buds, if vigorous and well looked after, as a rule produce the finest blooms, both in size and finish; but if you don't want these, pinch them out, and leave one, two, or three of the topmost shoots, each of which will shortly produce a "terminal" bud (with other smaller buds round it), and these give later, but, if well fed-up, very fine flowers. If for cut flowers, I have often left the three topmost terminal buds, *and* the "crown" in the centre, for you can cut this one first, and the others develop later—so you get a succession, though none of them are very large. Again, if you prefer a mass of bloom to fine individuals, you may leave three, four, or five buds on the terminal shoot, and with some varieties, notably Emperor of China, Bouquet Fait, and even such as Mrs. Rundle, this is a very good plan, affording quite a nice bouquet, ready made. In this case, however, I generally remove the *first* (and sometimes the second as well, if they are very thick) bud below the top or terminal one, or they do not have room enough to expand. With the strong-growing, very large-flowering sorts, however, such as Baronne de Prailly, Thunberg, Comte de Germiny, Mdme. C. Audiguer, Empress of India, and the like, there is only one way to have presentable blooms, and that is to grow the plants strongly to one, two, or three single stems (according to size of plant and pot), and remove all but the crown bud, or one terminal, if the first should be too early or not perfect. As soon as the buds can be seen, liquid manure of any kind may—nay, must—be given abundantly, and they will take it pretty strong, too, after a little time. Soot-water, guano, stable manure, anything will do, only let them have enough of it; and, when the buds get a little larger, finish them off with sulphate of ammonia. Attend to tying the branches up properly, for the equinoctial gales will soon be upon us, and the shoots are now heavy and always brittle near the base. For specimens, the proper course is to place a stick to every shoot, but this is not practicable in all cases, so have a few strong sticks for the main shoots, and loop the others loosely to them.

How pretty the dark-eyed blossoms of the Gum Cistus are now; and how well it flourishes and flowers, even in the dingiest localities. Those who have not already obtained this shrub should certainly make up their minds to plant two or three in the autumn, or early next spring.

Grapes under glass are now commencing to colour. To finish them off nicely, keep the house moderately dry, give plenty of air, and put on a little fire heat on dull days or cool nights. Strawberries in pots for forcing should

now be well rooted out in their fruiting-pots,—it is not much use shifting them on after August at latest. Stand them now outside in the full sun on a hard bottom, and give them occasional doses of manure water.

Plant out seedling Carnations raised in spring where they are to flower, though in very smoky localities it is better to keep them in pots under glass through the winter, and plant out in spring. For vigour, and producing a wonderful quantity and succession of bloom, these seedlings far surpass plants from layers or pipings. Auriculas are deserving of every attention in the town garden; remove them from the shady spot they have been occupying through the summer, as all the sun they are likely to get now will do them more good than harm. Prepare a large, well-ventilated frame to receive the plants when the weather no longer permits of their being kept outside; in towns it is well to put them under glass comparatively early, though with abundant air both at top and bottom, if only to keep as much as possible of the November soot and fogs from them. Cinerarias, Primulas, and similar subjects, should now have their growth hardened as much as possible by such exposure to sun and air as is consistent with keeping them slowly moving. B. C. R.

Glasshouses.

FERNS.—Greenhouse and stove Ferns should not be shaded much after this time; only draw the blinds down for a short time in the middle of the day in very bright weather. The form and position of the house in which they are grown, will cause some difference in the extent to which shading will be necessary to this class of plants, but the less they can be made to do with the better. They will also be benefited by a drier atmosphere, and the admission of more air to the house. The joint effect of this will be to discourage growth as the autumn advances; this is as needful for those kinds that are required for cutting, as it is for the larger growing sorts, such as the different tree species. The latter will yet require the use of the syringe, where they have been at all affected with thrips, but, to be effectual in removing these pests, the water must reach the under sides of the Fronds, and be applied freely and without stint. Many of the low-growing Ferns, such as the Cheilanthes, Gymnogrammas, Gleichenias, many of the Adiantums, and most kinds that are required for cutting, are better not syringed at all. Seedling Ferns that have been raised from spores sown early in the spring should, if large enough, be moved into pans, putting them an inch and a half or two inches apart, giving them light, peaty soil, such as will admit of their being moved, when large enough for potting singly, without the roots being broken.

POINSETTIAS. — Where the stock of these consists of old plants that were cut back and started early in the season, or of young plants struck sufficiently early to enable them to get large enough to be placed in cold pits or frames some time back, care must be taken that they are not allowed to remain so long in such quarters as to get chilled by the cold nights that may generally be looked for towards the close of the month, for, if this happens, the plants never flower so well as when kept sufficiently warm to avoid any check to their growth. Where dwarf plants are required, the way to proceed is to keep them in a growing temperature. Cut the shoots half through, about ten or twelve inches below the points, leaving them in this condition for about a fortnight, when the cut will get callused over, after which sever the remaining half and put them, as cuttings, singly in three or four-inch pots, filled with fine sandy soil, to which some rotten manure has been added. They must then be stood in a brisk heat, keeping the atmosphere close and moist until they are well rooted, after which give more air, and stand them close to the glass to prevent their becoming drawn, the object being to get all the strength that is possible into them without their being tall. As the pots get well filled with roots, give manure-water every week. Where Poinsettias are required to produce large heads of flower, the plants should be confined to one stem, so as to concentrate all their energies into the development of a single head of bloom. These are particularly useful for warm conservatory decorations, where the structure is large; when mixed with plants that have light-coloured flowers, the big heads of red bracts are very effective.

EUPHORBIA JACQUINIFLORA. — To grow this useful winter-flowering plant as it should be, it requires to be got well on with early in the season, so as to have the plants large and strong before autumn. To bring out all that the plant is capable of, it must be regularly supplied through the autumn with some stimulant which will impart vigour to it. The shoots should never be stopped, but allowed to grow on without interference; if they reach a height of six or seven feet, and are stout in proportion, the heads of flower first produced will be four or five times the size ordinarily met with, and, after these, the shoots will break out lower down, and bloom freely later on. But, to secure this, they must be kept in a warm-stove temperature through the autumn and winter.

CENTROPOGONS, EUPATORIUMS, AND LIBONIA FLORIBUNDA require to be well seen to now. If their pots are full of roots they should have manure-water every week, without which there is danger of the soil being too much exhausted to afford sufficient sustenance just at the time the plants most require it. This particularly applies to these and other quick-growing plants that require liberal feeding up to the time of flowering.

IXORAS.—When well managed there are few plants that give such quantities of flower over a large portion of the year as these. When grown freely through the season these plants increase much in size, and there is nothing gained by letting them go on, in the way they are sometimes treated, from one year to another without any reduction in their branches. Now is the best season for cutting in all plants of any of the species, or the numerous hybrids that have got too big. Large plants may have their heads reduced one-third or one-half, shortening the strong shoots, and cutting out the weaker ones entirely, after which they should have a thorough washing with insecticide to free them from any insects with which they may be affected. If this work is well done there will be much less difficulty in keeping them down afterwards. When shortened back in this manner the plants should be kept in a brisk stove-heat, so as to get them into free growth again before winter. Managed in this way there should be no difficulty in having them in good bloom in the ensuing spring. To those who have not had any experience in growing Ixoras, it may be well to state that unless a brisk stove-heat can be kept up all the year round it is not much use attempting their cultivation. Nothing less than as much heat, with as much moisture in the atmosphere as is required to grow Cucumbers well through the winter, is sufficient for Ixoras.

GLOXINIAS.—Old tubers that flowered early in the summer, and that now show signs of wanting to go to rest, should be sparingly watered so as to discourage further growth; at the same time the drying-off process must not be carried so far as to cause the leaves to shrivel up whilst yet green. When mismanaged in this way the tubers cannot possibly be in so good a condition for keeping through the winter as if they had undergone a gradual process of ripening.

HARDWOODED GREENHOUSE PLANTS.—In the colder parts of the kingdom it will not be safe to leave the tender kinds of hardwooded plants much longer in the open air, as a few degrees of frost will injure the foliage. This, particularly, applies to such things as Boronias, Hedaromas, Pleromas, Pimeleas, and Chorozemas; consequently, the house in which they are to be wintered ought at once to be got ready, and when there is any sign of frost the plants should be at once got indoors. In the southern counties plants of the kinds named may be left out a week or two later. Heaths will be none the worse for remaining a little longer in the open air, particularly if there is means at hand to protect them from drenching rains, or too low a temperature. A light wood framework, fitted with a roller and blind that can be let down when required, is very useful for plants of this description. Any plants on which a trace of red spider can be found must still be syringed in the afternoons so long as the weather continues warm enough to keep the parasites active; but, whether the plants are indoors or out, the syringing must be done early enough to admit of the foliage getting dry before evening. Such plants as these under notice should have all the air that can be given them after they are housed, in the night time, by keeping the side and roof-lights open when the weather allows of this. THOMAS BAINES.

Flower Garden.

GENERAL WORK.—See that all paths are kept free from weeds, and attend to the cutting away of dead flower stems and fronds. Tying to supports is the most important matter requiring attention in the sub-tropical garden. Castor-oils, Hemps, Blue Gums, and similar tall growers, now when they are so large, quickly snap off with but little wind or wet unless tied up as growth advances. Keep edgings neatly cut and the undergrowth plants stopped back before they encroach on or mar the effect of the larger plants. Single Dahlias seem to be appropriate plants for intermixing with some kinds of non-flowering sub-tropicals; they associate extremely well with the Castor-oils and white-foliaged Solanums. Note should be made of this fact and of other striking arrangements for next season's use.

PROPAGATION.—Pick over the flower-beds frequently, and if cuttings for next season's stock are not yet taken, set about the work at once. Cuttings struck should be placed in cold frames, and the lights drawn off daily; those that are being struck in frames should be exposed as soon as rooted to bring them up sturdily, the better to withstand the winter. Tie up Asters, Everlastings, and any plants of a herbaceous character that would be, or look, the better for such supports.

SHRUBBERY.—The re-arrangement, thinning-out, or making of new plantations of shrubs may now be commenced as soon as circumstances permit, on light soil more especially. Autumn planting is preferable to spring because of the longer period there is for the plants to get established before there is any danger of drought affecting them. Indeed, only when very heavy soils are concerned is it desirable to defer planting till early spring. From the middle of September to the end of November may be said to be the best shrub and tree planting season of the whole year. Deep trenching is the first essential, and manure in proportion to the requirements of the soil. Light sandy or gravelly soils should be given all the stable-manure that can be afforded; indifferent peaty soils the same manure or else plenty of decayed leaves; but good loam and peat need no other preparation than to be broken up deeply and to be freed from all perennial weeds, such as Couch, Nettles, and Docks. The margins or borders of shrubberies where no alterations are contemplated, after being cleaned up, may be planted with spring flowers, such as Forget-me-nots, Silenes, Primroses, Violas, bulbs, &c., there usually being plenty of such plants to spare after due provision has been made for the regular flower-beds and borders.

Fruit.

PLUMS.—Where the choice kind of Plums, including the Gages, Golden Drop, Ickworth Impératrice, and others, are permanently planted in borders, and trained under the roof as Peaches are trained, all the early and midseason kinds in pots should be removed to another house as they are cleared of fruit, if they want repotting, or to the open air, when top-dressing is all that is required. Having cleared the house of all damp-producing subjects, see that the internal borders are moist enough to prevent the trees from suffering from drought, otherwise the fruit will ripen prematurely and shrivel. Then mulch with some light non-conducting material, discontinue direct syringing, and keep the house cool, airy, and well ventilated. As birds, notably the blackbird, and wasps have a great liking for good Plums, and liberal ventilation is absolutely necessary, scrim canvas or close netting should be drawn over all the openings before the fruit is ripe; but if wasps do not trouble the gardener, ordinary fishing-nets will do, as they will keep back the birds.

Vegetables.

YOUNG Cauliflowers should by this time be up and growing. Keep weeds down by

hoeing between the rows, an operation which loosens the soil, and thus does the plants great service. Planting Lettuce, Endive, and earthing up Celery must have just now our best attention. Lettuce sowing (Black-seeded Brown Cos) for a spring supply must be attended to at once. The moist weather invites our friends, the slugs, out from their hiding-places, to which I take care never to allow them to return by adopting the good old plan of laying handfuls of Pea haulm round the border or quarter to be planted; every second morning we visit these whisps and scatter fresh lime on the slugs, which kills all at once. The Celery quarter is treated in the same way. We shall be lifting Magnum Bonum Potatoes this week, all prizes and no blanks; add Champions to them, and your collection of late Potatoes for the present time is complete. Cut all herbs for drying, distilling, &c.—R. G.

THE KITCHEN GARDEN.

The Onion maggot.—I have read much in GARDENING recently about the Onion maggot. Lately a friend told me that wood ashes applied thinly over the bed, either before or after they are up, are a certain preventive—this being the third year he has tried it, and with perfect success. Whether it will act on all soils alike remains to be proved; but it is an experiment within the reach of everyone who likes to try it. I cannot understand the course pursued by "C. M. D.," who boasts of a cure, but keeps the secret to himself!—CONSTANT READER, *Tamworth.*

REPLIES.

14368.—**Autumn Onions for exhibition.**—The best time to transplant autumn-sown Onions is in February. Trench the ground up now, and manure it well, and about Feb. 1 fork in some soot. Plant out the Onions nine inches apart in the rows, and a foot between the rows. Water freely in dry weather during the summer months.—J. D. E.

—— The main secret in obtaining large Onions is liberal treatment of the ground in the matter of digging and manuring. If "Young Gardener" is prepared to treat his ground liberally, it will matter very little which plot of ground he chooses as a site for his Onion-bed. I myself should choose that site which is likely to obtain the greatest amount of sun. In November or December the ground should be trenched or very deeply dug, working in at the same time a liberal dressing of manure; the surface should be left as rough as possible until the time of transplanting. The time of transplanting depends in a great measure on the weather; we transplant as soon after the middle of February as the weather permits. The rows should be twelve or fifteen inches apart, and the plants eight inches apart in the rows. During the growing period they will in hot dry weather be benefited by an occasional watering with liquid manure; or a little Peruvian guano may be sprinkled between the rows; showery weather is the best time to apply this manure, and very little should be used at a time.—F. B., *Southampton.*

14418.—**Destruction of winter Spinach.**—Slugs are very destructive to winter Spinach. Dust the plants with soot, which destroys or drives away the slugs. It is easy to ascertain the cause of the destruction of the plants by watching with a good lamp at night.—J. D. E.

Caterpillars on Cabbages.—Take a handful of common table salt, say about four ounces to two gallons of soft water, and syringe all cabbages infested with caterpillars. I find that this effectually destroys them after the second syringing; a greater proportion of salt is liable to injure the plants.—M. C. I.

14348.—**Large winter Onions.**—The seeds for winter Onions ought to be sown at once. The middle of August to the end of that month is the right time to sow the seeds. Planting the small Onions of the previous year is not a good plan. Many of them run to seed, and most are badly formed.—J. D. E.

—— We have known Onions, so large and fine that they were not distinguishable from the best imported samples, to be grown in the following manner:—The seed was sown in January in warmth, and the young plant gradually hardened off, so as to be sufficiently weather-proof to be planted out in April. The position selected was a very warm one, where the sun came the whole day through, and the soil was an old hot-bed levelled down. Great attention was paid to them in hot weather, so that they never suffered from want of moisture. Some of the bulbs attained quite exceptional dimensions. Probably the same results would be obtained by sowing late in the season, so that there is fair time to get the seed up by winter, keeping them in a frame till the middle of March.—J. C. B.

—— These are invariably raised from seed, which is generally sown about the second week in August; a sheltered, sunny position should be chosen as a site for the seed-bed. The seed may be sown broadcast or in rows, but in either case should be sown thinly: the seedling plants should be kept free from weeds, and in February, if the weather permits, they may be transplanted (see answer 14368).—F. B.

14437.—**Onions for exhibition.**—The very large exhibition Onions are grown in this way. Sow the seeds of a good stock of White Spanish about Feb. 1st. The seeds must be sown two or three in small pots which are termed small sixties; when the plants are well advanced, remove all except one, and grow the plants on for six weeks in a cold frame. They must then be carefully planted out in rich soil, a foot apart. Choose the largest and best-formed for exhibition.—J. D. E.

14272.—**Making an Asparagus-bed.**—Although but a mere amateur myself, I am pleased of the opportunity of giving my very limited experience of the cultivation of this most delicious vegetable with the hope of inducing a more extensive growth of Asparagus by those outside the area of gentlemen and market gardeners. Three years ago I rented a house with a small garden attached, and being desirous of growing Asparagus for my own use (although at the time I knew nothing whatever of its treatment) I procured the catalogue of a local seedsman. The instructions I gathered therefrom are, as near as I can remember, as follows, viz., to trench the ground well in the autumn, adding stable manure two parts and sand one part. Let it remain until the following March or April, level the bed and sow the seed. If you wish to save time procure some plants and put in about May or June. In the autumn cut off the top growth to within one inch of the soil, then give a two-inch coating of well rotted manure and sand, with a little salt sprinkled in. Thin out in the spring to about one foot apart. When the plants are three years old they are ready for use. Cut very gently for a year or two, and by judicious management you will have Asparagus for a lifetime. This year I have had a few dishes of Asparagus from my own bed which was sown with seed on 16th April, 1883. My soil is heavy, inclined to clay; garden, facing south and east, is situated a few miles north of Sheffield. From 3d. of seed I raised enough plants to make a bed twelve feet square. The manure, &c., with which I have dressed the bed has not cost me more than two shillings. My object in mentioning this is to remove, if possible, the idea that Asparagus may only be grown by very experienced hands and at considerable expense. I wish "Towers" every success with his Asparagus bed.—AU REVOIR.

14399.—**Making Mushroom-bed.**—When I first grew mushrooms I followed advice given in these columns some years since, and have been successful. Get some light litter with as little straw as possible — I found that which was collected from the roads much the best; when well fermented turn over four or five times, with two days between each operation, till the temperature is about luke-warm. Make the bed either in the shape of a span-roof with a walk all round, or lean-to, with its back about three feet, with a fall of six or nine inches. When about a milk-warm temperature insert spawn, which can be obtained of any seedsman in bricks. Cut each brick in pieces about the size of an egg (if the heat is inclined to fall, press the soil down firmly with the back of a spade or shovel); deposit the spawn broken as above, four inches apart, cover with a mixture of loam, rotted manure, and the best soil you can get, two inches thick; beat down firmly, and keep moderately moist. By strictly following my advice, "J. H. L." may in a few weeks expect a crop of mushrooms; the milk-warm heat is the secret of success—neither higher nor lower will do.—H. W., *Great Yarmouth.*

A Photographic Club.—A lady is anxious to organise an amateur photographic club with a professional critic, for purposes of improvement. Would any of the contributors to the Illustration Competition care to join? If so, will they please communicate with Miss Griffiths, Littlethorpe, Ripon.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

TOMATOES.

As the Tomato or Love-Apple is so much cultivated, and can now be procured in most towns at a moderate price, we hope that a few seasonable hints respecting this delicious fruit, as well as a few recipes for preparing and preserving it, will be acceptable to our readers. In flavour, wholesomeness, and colour the Tomato surpasses most other vegetables; and there is scarcely any savoury dish (excepting white preparations) that will not be considerably enhanced in flavour by the judicious addition of the Tomato in some form or other. Ripe Tomatoes may be eaten raw, with salad, or cooked in various ways; when green they are more suitable for ketchup or pickling. People accustomed to climb or travel long distances will find a Tomato occasionally during the journey, most refreshing and invigorating; and the slightly acid taste of the fruit renders it very efficacious in allaying thirst.

TOMATOES À LA ST. DENIS.—Carefully remove the stalks from six large and ripe Tomatoes. Cut a small piece away so that with a silver fork or spoon you can lift out the pips, and leave a vacant space surrounded with a firm wall of the Tomato. Prepare a mixture with two ounces of butter, three ounces of cheese, three ounces of fine bread-crumbs, a very little cayenne pepper, salt to taste, the juice of half a lemon, a small quantity of mustard, and two eggs well beaten. Thoroughly well incorporate all these ingredients, and put a sixth part into each Tomato. Butter a deep dish that will stand the fire, place the Tomatoes in it with a small piece of butter on each, and put them into a brisk oven for ten or fifteen minutes. Be careful never to over-season anything that has to be eaten with Tomatoes, as too much pepper or acid will entirely destroy the delicate flavour of this delicious fruit.

STUFFED TOMATOES.—For this purpose choose large and fully ripe fruit. Cut them in halves transversely so as to cut into all the separate sections. Carefully remove the pips, &c., from each half without breaking the skin. Mince some cold cooked meat or fish, and season it according to its nature; mix three ounces of bread crumbs to every six ounces of meat, and moisten with a well beaten egg. Fill each half of Tomato with this preparation, and then place the halves together in the form of a whole fruit again. Roll each one separately in a beaten egg and then cover with bread crumbs. Melt a little butter in a dish, then put in the Tomatoes, which place in a quick oven for about ten minutes. Drain the Tomatoes for a few seconds on porous paper, and serve on a hot napkin. Bread crumbs mixed with finely minced herbs delicately flavoured and moistened with a beaten egg may also be used as a stiffening for Tomatoes without any meat, &c.

TOMATOES AU GRATIN.—Take eight large red and ripe Tomatoes, twelve fresh Mushrooms, one tablespoonful of finely minced parsley, three Shallots, two ounces of lean cooked ham, the yolks of three eggs, three ounces of butter, a very little pepper and salt, a squeeze of lemon-juice, and half-a-pint of sauce. Cut the stalks from the Tomatoes and remove the skin, without spoiling the shape of the fruit. Remove the stalks and skin from the Mushrooms and chop them small; peel, scald, and chop the Shallots, and grate the ham; mix these three ingredients with the Parsley, seasoning, and yolks of eggs. Melt the butter in a shallow saucepan and toss the Tomatoes in it, over a bright and clear fire, for five or six minutes. Then pile them high in the centre of a dish and keep hot, while you cook the Mushrooms, &c., in the same butter that was used for the Tomatoes. Stir continually over the fire until the mixture thickens, and then entirely cover the Tomatoes with this preparation. Have ready one gill of good brown sauce, mixed with one gill of Tomato sauce; make hot and pour round the Tomatoes, &c., and serve as quickly as possible.

STEWED TOMATOES.—Take six large ripe Tomatoes, two ounces of butter, half a teaspoonful of salt, a little white pepper, one tea-

spoonful of white wine vinegar. Skin the Tomatoes, and slice each one into three or four pieces, and put them into a porcelain-lined saucepan, with the butter, pepper, and salt; cover closely with a lid, and stand on the hot-plate to stew very gently for twenty-five minutes. The Tomatoes should then be quite soft; add the vinegar and stir well, and they are then ready to serve with any roasted meat. The Tomatoes may be skinned and cooked whole, if preferred, but will take a longer time than when sliced.

TO PRESERVE TOMATOES FOR WINTER USE.—Have some very wide-mouthed bottles, or stone jars quite clean and dry for this purpose. The fruit must be obtained ripe and perfectly dry, with a short stalk on each Tomato, and should be placed in the bottles immediately after they are gathered. If the Tomatoes are in the least bruised, moist, or the skin broken, they will not keep. Place each Tomato in the prepared bottles or jars, and let them rest lightly one against the other; do not press or overcrowd them, as, being a tender fruit, they will easily bruise. When the bottles are full stop them with corks which fit tightly, and cover the corks thickly all over with resin. When the bottles are all filled and properly stopped, place them neck downwards in a hole dug in the ground, at least two feet deep, and cover them with earth. In case of frost cover the place where the Tomatoes are buried with ashes about a foot deep. Immediately the cork is removed the fruit must be used, or fermentation will take place and the fruit will be spoiled.

TOMATO SAUCE TO KEEP.—Secure some fresh and ripe Tomatoes; break them, and boil them in their own juice in a porcelain-lined saucepan, with a tight-fitting lid, until they are soft enough to pass through a hair-sieve, leaving behind only the skin and pips. Weigh this pulp, and to every pound allow one gill of Chili vinegar, one ounce of salt, half-an-ounce of fresh Garlic, and one ounce of Shallot, finely minced, and boil again until these last-mentioned ingredients are tender; then rub again through a fine hair-sieve. Add the juice of four Lemons to every pound of Tomato-pulp, and boil all until it is of a very thick substance. Pour hot into dry and wide-mouthed bottles; when cold, cork tightly, seal firmly with resin, and store in a cool and dry place.

14528.—**Preserving Pears for winter use.**—Pears are such an unusually large crop this year, that I thought I would ask your readers if they could be preserved for winter use. Sugar is so cheap, that reliable information on the subject might be useful to a large number of the readers of GARDENING. The kinds most suitable, and the stage of ripeness at which the fruit should be used, should be stated.—J. W.

Rosemary hair-wash.—The following receipt may be depended on for Rosemary hair-wash:—Tincture Cantharides, three drams; tincture Cascarilla, five drams; extract Rosemary, eleven ounces; borax, in fine powder, quarter ounce.—W. F.

Non-effervescing lemonade.—The following is very popular in my household:—Take two lemons, slice them very thin, rind and all, into a jug; pour over them one quart of boiling water, add sugar to taste, and one saltspoonful of ground ginger; let it stand till cold, pour off and drink.—MRS. STUART FORBES, *Witherley Lodge.*

REPLIES.

14328.—**Making Tomato-sauce.**—Take seven pounds Tomatoes, sliced, put in a stone jar with two ounces of salt, tie closely and stand in a warm oven for two or three days. Strain off and throw away all the water which remains, then press the pulp through a hair-sieve. Add quarter of a pound of sugar, half an ounce of cayenne, two ounces of ground ginger, three pints of vinegar; then either boil until it thickens or stand in a warm place for several days. I have made the above several seasons; it keeps well for twelve months—the supply does not last longer.—M. H. D.

—— Take Tomatoes when quite ripe and bake them until they are tender, then rub all through a sieve, and to every pound of pulp put one ounce of salt, quarter of an ounce of white pepper, half an ounce of garlic, one-eighth of an ounce of cayenne pepper, quarter of an ounce of shallots, two ounces of brown sugar, a teacupful of mustard-seeds, and one pint of vinegar; then boil all together until it is as thick as cream. Put into sauce bottles with wide necks. The sauce I am now using is three or four years old, and seems as good as when first made.—LEICESTER.

POULTRY.

SEASONABLE NOTES.

THE changeable weather which we have experienced during the last few days ought to remind poultry-keepers that winter is now close upon us, and they should make their arrangements accordingly. Many breeders keep their chickens in the coops at night as long as it is possible to do so, their reasons for adopting this plan being—first, not to injure the breastbones, which are apt to grow crooked if the chickens are allowed to roost too early; secondly, because the young birds get on better when they can be kept entirely away from the older fowls; and thirdly, owing to the want of accommodation in the ordinary roosting-places until the annual drafts of old birds have been sold. A good bed of straw should be placed in the coops, and shaken up regularly every day. On this, so long as the weather continues favourable, the young pullets will do well, but, should the autumn prove cold or very wet, the birds had better be taken to their roosts without delay, or colds may set in, and serious losses be sustained. One cannot be too careful with the pullets of the year, for the question of profit and loss rests entirely with them. But before they take possession of their new sleeping-quarters, the fowl-house, if it has not already this year undergone a thorough cleaning, should be swept out, any necessary repairs done, and then whitewashed; the object being to keep the place fresh and secure from the attacks of vermin, and also as warm as possible for the winter. A lean-to ought to be provided, under which the fowls may run in wet weather, and if a board can be fixed on the floor round the outside to prevent the water splashing in, so much the better.

All cockerels intended for killing, and pullets which were hatched too late in the season to pay for keeping as layers, should be pushed on as fast as possible, so that they may be got off before the cold weather comes. Like the young of all other kinds of domestic animals, chickens do not make much progress during the winter months, and, as they cannot be kept in a healthy state when under cover, except at considerable trouble and expense, it is hopeless to expect any profit from those which are hatched late in the year, unless they can be quickly sent to market. The breeder must not, however, confine his attentions solely to the birds of this year, for the laying stock require looking to as well. Whenever the weather is at all unseasonable, the morning meal should be given warm, and at the end of the month it will be best to do so always. Hens bred in 1884, which may have already moulted, or are now undergoing that process, should get some raw meat chopped small and mixed with their soft food, and if strong ale be used instead of water for mixing the meal, so much the better. The extra diet will enable the birds to get through the period of moulting easier, and they will lay earlier in consequence. If the moulting hens appear to suffer much from the weather, they should be confined during cold days until they are again fully clothed. This will not be necessary except in the case of delicate breeds, or very old birds. Birds hatched previous to 1884, unless very valuable specimens of their breed, and therefore profitable to keep for breeding purposes, should be sold before the moulting season comes on, for it will not pay to keep them during the winter. Fowls moult later every year, and therefore cannot be expected to lay again until the new year is far advanced.—DOULTING.

Selecting fowls.—Much is said about breeding pure fowls; but probably the most desirable as well as cheapest improvement may be made by farmers themselves in selecting eggs for setting from the hens which are known to be the best layers. In the same breed there will be wide differences in this respect, as every observing farmer knows. Often the cross-bred fowls will produce specimens of extraordinary laying qualities, and by breeding from these this desirable characteristic may be perpetuated.—B. C.

REPLIES.

14450.—**Feeding fowls.**—The system I adopt in feeding fowls is the following:—The first meal I give them as soon as they are out in the run. In the short days this consists of barley-meal and bran in equal proportions scalded; after they have eaten that up clean, just a sprinkling of corn, not later than twelve o'clock another sprinkling of corn, and just before going to roost a liberal feeding of corn. I have very great faith in the barley-meal and bran, as the latter contains such a large amount of nutriment. The corn consists of tail wheat, when I can get it from the mill, and maize and barley; this I mix myself, sometimes giving a larger proportion of one and then of the other; by this means I can give a change of their diet, which they seem to enjoy very much.—A LOVER OF FOWLS.

BEES.

14529.—**Bees and flowers** (*J. C.*).—It is not from such cultivated flowers as "Roses, Carnations, Picotees, Pelargoniums, and Calceolarias," that bees derive honey; it is, therefore, quite an error for any one possessing a small garden of such flowers to suppose he is "keeping myriads of his neighbours' bees." It would be, indeed, a poor look-out if the bees were dependent upon the half-acre of garden for their supplies; it would not be worth their while to give it any particular attention, seeing that at the time the above-named flowers are in bloom there is abundance of provision to be collected from fields of White Clover, Beans, Mustard, &c., as well as from the flowers of the Lime, Maple, Sycamore, and other trees. The cultivated flowers which the hive-bee does visit for the nectar they contain are the Crocus, Wallflower, Arabis, Limnanthes, Borage, Aubrietia, Snowdrop, and such like lowly and unpretending flowers, while the more attractive Rose, Carnation, Pelargonium, Calceolaria, &c., are passed over unnoticed as a rule.—S. S. G., *Boxworth.*

14530.—**Feeding bees in straw skep** (*Edw. T.*).—It is now too late in the season to give the bees more room by raising the hive one or two inches from the floor-board. What should have been done, if the hive was crowded with bees during the honey flow, was to cut a piece of straw-work out of the crown of the hive, about three inches in diameter, and place a crate of sectional boxes over it. The bees would thus have been induced to store aloft some pounds of surplus white-comb honey—this only, however, if the swarm was an early one. The hive should now contain sufficient stores to last the bees till April next. Twenty pounds is about the requisite weight, and this amount must be made up by feeding, if necessary. Of course, in weighing the hive the weight of bees and hive must be allowed for. Five thousand bees weigh about one pound. Your hive would probably contain twenty thousand to twenty-five thousand bees. If feeding is found to be necessary, a piece of straw-work must be cut out of the top of the hive, as for supering; this can be done with very little, if any, disturbance to the bees if a sharp knife be used, and if the operator be quiet and confident. Over this hole must be placed the feeder, containing syrup, made by boiling sugar and water together for a few minutes, in the proportion of one pound of sugar to each half-pint of water. Feeders of various patterns can be obtained of the dealers in apiarian appliances; but a very good home-made one may be contrived in the following manner:—In a small block of inch deal cut a round hole the size of the hole made in the top of the hive; over one side of this tack on a piece of perforated zinc. Place this over hole in hive, zinc downwards; fill a wide-necked pickle-bottle with syrup, tie over the mouth a piece of cheese-cloth, doubled, and invert the bottle, resting it upon the perforated zinc, and cover up to protect from robbers.—S. S. G., *Boxworth.*

BIRDS.

QUESTION.

14531.—**Sick Parrot.**—I have a grey parrot about three years old, which, until the last month, talked well, and seemed to be in good health. She now seems very mopy, sitting all day on her roost with her head resting on her feeder, and seems to have no power in her right leg. She always rests on her left side. She talks but little now, and seems to be suffering from hoarseness. If any reader can suggest any treatment that will cure her I shall be very grateful.—ANXIOUS.

GARDENING ILLUSTRATED.

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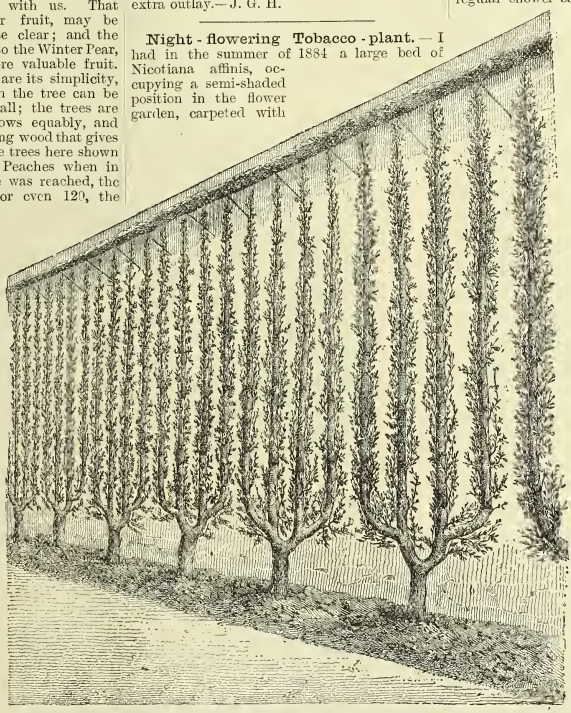
FRUIT.

PEACHES TRAINED ON WALLS.

Our engraving shows a wall of Peach-trees trained in the "U"-form, in the Potagerie, at Versailles. These are quite unlike the usual type of Peach-tree, but they are very well grown and very successful, all the same. Their beautiful and almost mechanical training might be considered difficult, if not impossible; but the engraving is a faithful reproduction of a photograph; and nothing can give too high an idea of the perfect mastery which the growers in this place have over the trees. As will be seen, the Peach is spurred, instead of being trained on the fan principle, as with us. That Peaches, as well as other fruit, may be grown in this way is quite clear; and the method is no less applicable to the Winter Pear, than which we have no more valuable fruit. The advantages of this form are its simplicity, and the rapidity with which the tree can be trained so as to cover a wall; the trees are evenly balanced, the sap flows equably, and the trees are full of fine bearing wood that gives abundant crops. Each of the trees here shown produces from 150 to 200 Peaches when in full bearing; after this figure was reached, the yield was reduced to 150, or even 120, the fruit becoming better in quality as they became less numerous. The sorts grown are the Grosse Mignonne, Madeleine Rouge de Courtoy, and Belle Beausse.



Wall of Peach trees at Versailles (engraved from a photograph).—The trees are shown when in flower, and before the young shoots begin to cover the surface between the erect branches. They are trained in the "U" form, with vertical branches, and are about seventeen years old. The wall is about thirteen feet high, and faces the west, and was covered by the trees in six years. The trees are protected from frost during the flowering season by straw mats temporarily fixed on the top of the wall.

Barren Strawberries.—I cannot entertain a doubt that these plants exist, though I never heard a reason given for it: that a plant here and there should be barren now and then is not surprising, but it is certainly curious that whole beds newly planted should not produce a single fruit. A neighbour of mine bought a lot of fine young plants for a new bed—result, *nil*. He, very wisely, did not wait for a second year's disappointment, and planted a fresh lot in August. In buying by the 100 it may be difficult to examine all the crowns, otherwise experienced gardeners can always tell whether a Strawberry will flower or not.—A. B. T., *East Anglia*.

REPLIES.

14351. — **Propagating** Currants and Gooseberries. — "A. D. F., Surrey," should take well-ripened shoots after the leaves have fallen, October and November being the best time. Cut the lowest portion, say for leave the top part intact, merely shortening a little, as the extremities of the shoots do not push out such stout branches as those from stouter wood; therefore in selecting cuttings put in only those that are of sufficient strength to make good trees. The best position is a partially shaded one, such as a border on the north side of a wall; and the best way to plant the cuttings is to cut out a trench about six inches deep, then put in the cuttings about six inches apart, return some soil and tread the soil very firmly; then return the soil by digging it over, and at one foot distance cut out another trench until the required number of cuttings is inserted. Should the weather be very dry, give a good watering, but, as a rule, the soil is moist enough without artificial waterings. If the above plan is carefully followed, very few of the cuttings will fail to root and make nice thrifty plants the first year. They must be cut down quite low the autumn following, and will make capital plants during the next season, fit for planting out permanently. There is no difficulty about the matter. But beware of propagating second-rate sorts, as the very best kinds, such as are grown by market cultivators, can be had from any nursery where fruit bushes are grown at prices ranging from 3d. to 6d. each, and sorts like Lancashire Lad and Rifleman Gooseberries, and Raby Castle Red and Black Naples Currants will soon repay the extra outlay.—J. G. H.

Night-flowering Tobacco-plant.—I had in the summer of 1884 a large bed of Nicotiana affinis, occupying a semi-shaded position in the flower garden, carpeted with scarlet Geraniums, which was greatly admired by many for its very chaste pure white flowers as well as its delicious perfume. When frost came its mutilated victims were removed from the garden, including the Tobacco, which was cut at the ground, leaving the tubers undisturbed until spring, and they made a much finer bed this year, only requiring a top-dressing and thinning of the growths. Might the plant be classed as a hardy herbaceous one? Last winter was very fine, but with a top-coat of coal-ashes I feel fully convinced the Nicotiana affinis would survive uninjured the severest weather, and prove a very valuable acquisition to the herbaceous beds or borders. I may add that it is very useful in a cut state, keeping up a succession of bloom for a long time.—P. M. D., *Castletown, Carlow*.

OUTDOOR PLANTS.

WATERING IN DRY SEASONS.

The long-protracted drought that has been so trying to gardens, has taught us some practical lessons, not the least of which is the mistake of sprinkling the foliage, and leaving the roots dry, as nothing short of a thorough good soaking, sufficient to penetrate the soil to the depth of one foot, is of any use when the plants are so dust-dry as they have been lately. I have been particular in noticing the effect on several gardens where the owners have made it a rule to come out armed with a pail of water and syringe every evening, and give the plant a regular shower-bath, after which they looked so nice and fresh, but by ten a.m. the next morning the sunshine had completely removed all traces of the dose, and the plants drooped and languished far worse than in the gardens where the owners did not water at all. Even the slight showers that we had during July and August seemed to leave vegetation in a more distressed condition than when the weather was continuously dry, for in set fair weather we get, as a rule, refreshing dewy nights that invigorate the plants far more than any syringing; and I am decidedly of opinion that if those who practise the perpetual sprinkling were to give directly to the roots once a week the same quantity that they give in daily sprinklings, some good would result, as artificial watering, to be of any service, must be thoroughly done, half measures being worse than useless. It would be impossible to convey an exact impression of the quantity of water required for any specified plot of ground; but any one who adopts the following plan may soon convince himself that it takes something more than the sprinkling from a syringe to reach the roots of plants. Take any bed or plot of ground and give it what you suppose is a good soaking, and after an hour to allow it to settle, take a fork and carefully examine the depth it has penetrated, and if you are not surprised at the amount of water it takes to wet dust-dry soil one foot deep I am mistaken. My own idea is that the reason of plants being really injured by surface sprinkling is that the moisture attracts the feeding roots to the surface, where they perish during the alternate dampings and dryings they receive, while those not watered at all strike downward in search of moisture. I am well aware that artificial watering may be most successfully carried out, for do we not grow all our pot plants to great perfection solely by artificial applications of water? But then the soil they are growing is wetted to its lowest extremity, as the feeding roots are as a rule most plentiful in the bottom of the pot; and those who would have their gardens look verdant and gay during hot dry seasons like the present must make the application of water one of the first considerations. The very life of a plant hinges on its ability

to find soluble food within reach of its roots, for if this is lacking, all the ills that plants are heir to soon show themselves, and the garden, instead of being a source of pleasure, is a fruitful source of vexation and disappointment. J. Groom, *Gosport.*

The Fuchsias bedded out in Hyde-park are by no means so graceful as the hardy kinds which one sees in many districts. They seem, indeed, singularly unfitted for bedding. They have no grace or beauty, as the bush kinds have, and they look very dull and poor in colour.

A hardy yellow Carnation.—Seeing your remarks on yellow Carnations in Gardening Illustrated of August 29, I send you a flower of one I grow. It blooms very freely, and makes a quantity of healthy "grass," and is in every respect as hardy as the old clove. The other yellow-ground sent also flowers freely.—S. V. B., *Knaresborough.* *** *It seems a very promising flower.* —Ed.

Gladiolus Colvillei.—This is a very beautiful early species, which is almost hardy in the south, and quite so in dry, well-drained soils. The species is very useful, but the two well-known varieties, alba, or the Bride, and rosea, are much better in colour; the latter is a bright pure rose. By-the-way, what is rose-colour in most people's estimation? It seems impossible to describe colour accurately in words. What I always call rose is the colour of the Sweet Briar Rose and the Scotch Dog Rose.—J. D.

Acanthus.—I was much pleased to see an engraving of my favourite Acanthus in last week's Gardening; it has flowered splendidly with me this year, but those who grow it must beware of an enemy in the shape of a tiny brown snail, which is particularly fond of the leaves; it is so small as almost to escape observation, but will reduce the leaves to lace work if not removed. Another plant which has stood this year's drought very well is the Saponaria fl. pl. (Double Soapwort); it is rarely seen, but is well worth growing in a large garden for its delicious scent. It is not fit for small spaces, as a single crown will cover a circumference of fifteen feet. Another plant which is very showy is Lythrum roseum, but it is not so good at standing drought. Scabiosa venusta has been superb here.—A. B. T., *East Anglia.*

Digging herbaceous borders.—"E. A. H." (page 369) can have noticed wild plants and their native habits but little if she imagines the improvement in them when brought into gardens is due in the least to the spade, the rake, or the hoe. I could show "E. A. H." acres of ground filled with plants in such multitude that any gardener would be considered mad who would attempt to grow a tithe of the plants in the space. Most of these plants would grow more strongly and vigorously if intelligently treated in a garden border, but only because relieved of the competition for food with a multitude of neighbours. It is the way these wild plants behave, and their great superiority in delicacy and beauty of form of leaf and flower, and everything except size and quantity of bloom, combined with the fact that the finer varieties of wild flowers decline to grow in soil which has been disturbed, which has convinced me that the true way with all those hardy plants that we cultivate without interfering with their natural forms, is to find out the station and culture which nature gives them, and give them the nearest approach to the same treatment. "E. A. H." may not be aware that there are many of the most beautiful hardy flowers that cannot be grown, except as miserable, starved specimens, in most gardens, because no place is made for them where they can receive the kindly treatment which nature gives them. I will just mention a few:—Epigæa repens, Cypripediums in variety, Trilliums in variety, Hepaticas, Dog's-tooth Violets, Primulas of many kinds, the finer varieties of our native Primrose, Lilium auratum, L. giganteum, L. pardalinum, L. superbum, Aquilegia cœrulea, A. glandulosa.—J. D.

White Violets.—The most probable cause of the Violets not blooming (see p. 353), is want of leaf-mould. I had a lot of them in my last garden—indeed, they were a troublesome weed but even under a privet hedge, they never flowered well; the blooms came late and scarcely any petals. In gardens where there is a plentiful supply of leaf-mould they flower abundantly. The best way would be to transplant now into a cool, moist, half shady place and lay an inch or more of rotting leaves all about the plants in the autumn. I have found slugs eat off the petals of Violets without touching any other part of the plant.—J. D.

Large Sunflowers.—In January I sowed seed of these in a hot-bed, and when they were about eighteen inches high, planted out a few in a border. I watered them well all through the hot weather with the most wonderful results, as two of them reached the height of eleven feet four inches; another ten feet, with a flower eighteen inches in diameter; while another grew branchy, and had twenty-four flowers on it. I may add that the one with the enormous flower was put out earlier than the others—when only about five inches high—and was entirely covered by the snowstorm on March 22. As I have never grown a Sunflower before, I should be glad to know if the above results are at all rare? The seed I gathered myself from an ordinary Sunflower growing in Berkshire.—F. H. L., *Kent.*

Clematis Jackmanni in Scotland.—Some little time ago, in Gardening, I think the writer of an article on climbing plants stated that he was not aware that Clematis Jackmanni flowered north of Hull. On my father's verandah here that plant is at present one mass of large purple flowers, running all along the top, the stems rising from the end pillar, where the blooms form a pretty contrast to the "Hop" and "Dutchman's pipe" leaves which grow up along with it.—G. Ross Galloway, *Inverness.*

The spear-leaved Japanese Lily (Lilium lancifolium rubrum).—I can thoroughly endorse what "J. G." says in his note in Gardening of Sept. 12 (p. 383) as to this beautiful Lily requiring little glass protection. On Feb. 24 I planted in a southern border adjoining my cottage six bulbs (purchased from an advertiser as Lilium auratum bulbs), which proved to be Lilium lancifolium rubrum. I covered the crown of each with finely-powdered charcoal, through the hot weather gave plenty of water, and about once a fortnight weak manure-water. The result is that I now have forty-six fine blooms from my six bulbs. All bloomed. The greatest number of flowers on one plant is twelve, the smallest six. The marking upon the throats of the blooms is a very deep, rich carnation, about the colour of the clove.—F. H. L., *Kent.*

REPLIES.

14482.—**Hardy Columbines.**—All the plants named are hardy, although one or two are a little difficult to grow. It might be advisable to protect Aquilegia cœrulea and A. glandulosa from too much wet. All like a rich, light, well-drained soil.—J. D.

14480.—**Turfing neglected garden.**—The cheapest and most satisfactory way will be to have the soil prepared by digging and liberal manuring until it is level and of fine tilth. Then sow a proper mixture of seed. By sowing good seed, a good sward will soon be obtained, but by no means forget the manure.—D. J. Y.

14418.—**Common Passion Flower not fruiting.**—It is not usual for this plant to produce fruit until it is older than yours, unless the position is exceptionally favourable; but when it gets six years and more old, and the growth is allowed to ramble all the summer as it chooses, it begins to fruit. I have known plants of a good age that never bore any fruit, so that you need not feel disappointed if your plant does not.—J. C. C.

14370.—**Marvel of Peru.**—The reason of the failure is partly the cold, damp soil, and partly the chilly weather, which has set in so early this year. Marvel of Peru likes a hot, dry place and a light soil, well drained, as it is a very free and deep rooter. My plants sent their roots several feet down and rambled about in all directions. In a clay soil I know, from unpleasant experience, that the damps would just be rising when the blooms were opening, and would cause failure. The roots are very brittle, very poisonous, and will be too ungainly to be kept through the winter.—J. D.

14492.—**Belladonna Lilies.**—As regards pot-culture, you treated your bulbs right until you allowed the Nasturtiums to shelter them, which was a mistake, as they want all the sun they can get. Cannot you plant them out close to a warm wall? as you are not likely to get them to flower satisfactorily in pots. Here in Somerset they flower in warm borders out of doors as well as they do in Devonshire; but, at best, the Belladonna is an uncertain Lily. As to getting them to flower regularly, the summer requires to be hot enough to bake the bulbs in the soil, as we gardeners say. We have already had a few fine flowers this season, and there are dozens of flower-stems peeping through the soil in a border close to a house which is heated nine months out of twelve. They flower more regularly in this border than in any other part of the garden.—J. C. C.

14405.—**Heating Cucumber-house.**—If it is only desired to cut fruit during summer and autumn, two rows of three-inch pipes round the houses will supply quite heat enough; but if Cucumbers are wanted in the depth of winter, then two or three rows more under the bed on each side must be added, making ten rows (or eight) in all, taking the section of the house. In forcing of any kind, and especially with such "touchy" plants as Cucumbers, which are so liable to red spider, it is always advisable to have plenty of heating surface, and so avoid the necessity of making the pipes very hot at any time, as this often has a most injurious effect. It is also really economical in the end, for, with a boiler of suitable power, hard firing has never to be resorted to, even in severe weather, and a great waste of fuel is thus obviated.—B. C. R.

14248.—**Carnation Culture.**—"T. C." (p. 374) has, I think, given some very good advice, in a small compass, to "Novice" on Carnation growing. He might have been a little more liberal as to the number of varieties he would have "Novice" grow, especially as the latter acknowledges himself to have been already fired with the noble ambition of exhibiting. To the Scarlet Bizarres named by "T. C." he might add Arthur Midhurst and Mars; to Sarah Payne P.P.B. he might join Falconbridge and Squire Llewellyn; and to the C B's E. S. Dodwell and Harrison Weir. If "Novice" lives in the south he will probably find Dr. Foster, though a beautiful flower, a weakly grower; but he may have ample compensation in Florence Nightingale and Mayor of Nottingham, both Purple Flakes, and two of the best Carnations grown. If he likes to add old Squire Meynell—still hearty and vigorous after, I believe, fifty years' active service—he will not regret it. In Scarlet Flakes, Clipper and Henry Cannel, and in Rose Flakes, Miss Erskine Wemyss and Jessica, would be worthy additions. As regards the Picotees, for which "Novice" specially asked for information, the list given might well be augmented by the following:—*Heavy Red Edge*—J. B. Bryant (the finest of the class, I think, in spite of the fault to which "T. C." alludes, but which I have never found so pronounced here as he describes it), and Dr. Epps. *Light red*—Violet Douglas, Elsie Grace. *Heavy purple*—Alliance. Piece. *Light purple*—Clara Penson, Alice. *Heavy rose*—Edith Dombrain, Mrs. Payne. *Light rose*—Daisy. *Heavy scarlet*—Constance Heron. *Light scarlet*—Miss Wood, Mrs. Alleroft. If they are received in the autumn, which is the best time, they should be potted in light soil in sixty-sized pots, and wintered in a cold frame. It should be borne in mind, however, that this protection is not designed against frost, but against the winter rains. The lights should be taken off in fine weather, and air kept on at all other times.—M. R., *Clapham.*

14419.—**Name of Narcissus wanted.**—Kindly say if the variety be a double or single Incomparabilis, and I may trace it.—W. B. Hartland, *Cork.*

Gardeners and Hardy flowers.—G Watts (Sept. 5, page 367), can know but lit[illegible] of the history of floriculture, or he would [illegible] that the greater part of the improvement [illegible] floriculture is due to amateurs and not t[illegible] professional gardeners. As a rule amateur[illegible] experiment and find out the way to do thing[illegible], and then publish their experiences for the benefit of the gardening profession. The exceptions to this rule are the nurserymen who bring out new things, but even with them many new varieties are purchased from amateur florists. There is nothing derogatory to the gardening profession in this. An amateur can do as he chooses, a paid gardener has to please his employer, and but very rarely has time to experiment or make improvements. Many improvements have been made by gardeners who have had the good fortune to meet with enthusiastic or appreciative employers. The revival of hardy plant cultivation is wholly the work of amateurs, but on a change of method of garden decoration effected by outside influence, it is simply ridiculous of any professional gardener to feel insulted at the mere fact being stated that he does not know anything of a class of plants he has never before been asked to cultivate. As well might the driver of one of the old stage coaches have felt insulted by being told that he could not drive a locomotive.—J. D.

ROSES.

THE JAPANESE SINGLE ROSE.

Rosa polyantha is one of the prettiest of the single Roses. The flowers are produced in profusion all along the slender branches, are small, very beautiful, pure white, with a golden eye. They are delicately-scented, and invaluable for cutting, while the appearance of the plant when in bloom is charming. There is one bush of it that we have seen—a huge rounded mass, from which the slender branches run outwards three feet or more, loaded with spikes of flowers. Those who are fond of beautiful things, not too showy, cannot do better than make use of one or more of the many varieties of this Rose.

M.

Standard Roses.—When "J. D." says, on p. 350, that "a standard Rose which does not annually send out four or five shoots as thick as a man's little finger, and four or five feet long, cannot be said to grow—it only exists," one must think that he is quite as much in the habit of cultivating the flowers of rhetoric as the flowers of nature. And I should respectfully suggest that he should prune his shoots rhetorical as well as his shoots Rosarian. And, perhaps, a little *root*-pruning of both might

The Japanese Single Rose (Rosa polyantha).

educe somewhat the rude redundancy of each. All of us, at all observant of nature's terms of flowering in such things, know that short-jointed, well ripened, not succulent and sappy, wood is one of her first conditions; and "shoots five thick as a man's little finger, and four or five feet long" can hardly be said to be such as subscribe to these conditions. Gay, I think it is, begins one of his fables with—

> "Lest men suspect my tale untrue,
> I'll keep the probable in view,"—

And may I suggest to your worthy correspondent, "J. D.," that the hyperbolic in describing natural objects, or what ought to be aimed at in cultivation of them, be relegated to the same "Schedule A" as, with him—with but a few happy exceptions—I should vote standard Roses to In saying this, I would by no means reflect upon "J. D.," as to either his veracity or his taste; but I would certainly dissuade any comparatively unpractised cultivator of that beautiful flower from being discouraged if his Roses "do not annually send out four or five shoots as thick as a man's little finger, and four or five feet long," for I should certainly think that some of my very best, as well as certainly most healthy, Roses had quite forgotten themselves if they so deported, or rather so dis-ported themselves. — Another J. D.

Rosa Sulphurea.—"A. B. T." (p. 371) is in error about this Rose, and I hope she will excuse my saying that her error is quite typical of the kind of generalisations which lead people wrong in gardening matters. Rosa sulphurea is a native of Persia, but it does not necessarily follow that it is likely to require but little water. Many of the rivers of Persia lose themselves in marshy lakes. The climate of Persia varies, too, from a sub-tropical one to one colder in winter than our own. Rosa sulphurea is an inhabitant of the marshy districts on the southern shores of the Caspian Sea. "A. B. T." describes its behaviour in ordinary situations exactly. Only in the kind of situation I described does it produce good blooms or open well. It is a very old Rose in English gardens, and is mentioned by many old writers, all of whom notice its bad opening qualities. The small or Pompone variety is a still worse opener, and has disappeared from cultivation in consequence.—J. D.

REPLIES.

14365.—**Sweet hybrid perpetual Roses.**—Rose Louis XIV. is offered in the catalogue of W. Paul & Son, of Waltham Cross. The reason the Rose has almost dropped out of cultivation is not for lack of beauty, as it is one of the loveliest Roses ever introduced, but solely owing to its extremely shy blooming quality. A prominent Rose-grower describes its flowers as "like angel's visits."—J. D.

14495.—**Protection for Roses.**—The arrangements you propose of the uprights and wires is admirable But I am doubtful whether the netting suspended in front will be sufficient to keep away very severe frost. If you could substitute "Frigi domo" canvas for the fish-net you would be more likely to succeed. If this were made into a curtain, to be drawn over the Roses only in the case of frost, it would be better than a permanent covering, as, if the Roses are covered all the winter, they might get too tender. It would not be advisable to leave them uncovered, for, although they might pass through several winters unharmed, the next that follows may seriously injure them. If carefully managed, you will find that the Roses you name will reward you for your trouble.—J. C. C.

Improved flower-pots.—It has occurred to me that an improvement might be made in the common flower-pot by putting three small knobs on the bottom, so as to raise it about a quarter of an inch from the ground, which would prevent the partial vacuum being formed which causes the water to cling round the base, and thus water-log the earth. Perhaps some enterprising maker will try the experiment.—J. J. C. *** *We think pots are too well aërated already. There is no practical drawback whatever in the little moisture that hangs about the bottom of the plants; it is even a gain. The heap of soil in a little baked clay is, if anything, too much exposed to the air, and cultivators of any skill whatever find no difficulty with the common pot. Perhaps, however, in special cases, what "J. J. C," recommends might be desirable.*—Ed.

GARDENING TERMS.

Most amateurs who have to gain their knowledge of gardening, in the first instance, from books and periodicals, are puzzled by the numerous technical terms therein employed, and are often unable, on that account, to benefit from the directions as to culture given by their more experienced brethren. We have sometimes been asked by readers to define the meaning of such terms as "mulching" and "heading;" and in many instances, instructions to "take off with a heel," or "lay in by the heels," convey no idea at all to the reader. We have, therefore, compiled a list of the more unfamiliar of these gardening terms, and have briefly defined each; and we have no doubt that the information here given will greatly assist the less experienced of our readers in profiting from the mine of information contained in the columns of Gardening Illustrated. Should it be found that the list is not quite complete, we shall be glad to define for our readers any further terms of the meaning of which they are doubtful.

Alpine plants.—Plants growing on mountains at high altitudes are so named. Those which are found only on the flanks or lower regions of mountains are termed *sub-alpine*.

American blight.—A woolly insect (known to naturalists by the name of *Aphis lanigera*, *Eriosoma lanigera*, and *Eriosoma mali*), which is very destructive to Apple trees, the branches and twigs of which are sometimes almost covered by white fluffy colonies of these insects. These prey upon the juice or sap, producing excrescences and corroding wounds, which eventually destroy every branch attacked. In winter these insects retire underground, and prey upon the roots.

American plants.—A term specially applied by gardeners to certain plants, such as Rhododendrons, Azaleas, &c., which are grown for the most part in moist peaty soil. They are also sometimes termed *peat plants*.

Annuals.—Plants that spring up, flower, seed, and die within the space of one year from the time they were sown. Annuals sown in spring bloom and perish the same year. Hardy annuals sown in autumn will bloom earlier in the following year, and ripen seed sooner than plants of the same species sown in the spring of that year.

Anther.—The part of the stamen of the flower which contains the pollen.

Aquatic plants.—Plants which naturally grow more or less immersed in the water of ponds, pools, or streams, such as the Water Lily, the Water Violet, the Great Water Dock, &c. They should not be confounded with *bog plants*, which do not grow with any part of their stems constantly immersed in water, but require to have their roots in soil which is kept permanently saturated with moisture. Such are the Sundews, Butterworts, Marsh Orchises, &c. The common Watercress, although it grows best as an aquatic, may also be very well grown as a bog plant, and has even been cultivated in tubs placed in a shady position, and filled with soil kept constantly moist.

Awn.—A long, bristle-like appendage, as the beard of many kinds of Grasses.

Axillary buds, bulbs, and shoots.—Buds, bulbs, and shoots, which are produced in the axils of leaves—*i.e.*, in the upper angles formed by the leaf stalks and the branch or stem out of which they grow.

Baked soil.—Clayey soil, when long exposed to drought, becomes hard and impervious on the surface. In this condition such soil is said to be "baked." The remedy is a suitable admixture of sand, coal-ashes, &c.

Ball.—In lifting trees or shrubs for transplanting, it is often useful to take them up in such a way that the roots will be surrounded by a compact mass of the soil in which they grew. Trees or shrubs lifted in this way are said to be "taken up with a ball."

Bark-bound or hide-bound.—Fruit trees, growing in soil which is either too rich or insufficiently drained, frequently suffer from hypertrophy or excess of sap. This produces over-distension of the vessels underlying the bark, causing the latter to crack in various places, and, in the case of Apricot, Cherry, Peach, and Nectarine trees a more or less plentiful discharge of gum exudes from the cracks thus produced. As this affection is most commonly

the result of imperfect drainage, it will usually disappear at once if the soil is properly drained, the stems of the trees being at the same time well scrubbed with brine. The old-fashioned remedy of scoring the bark downwards with a knife is a hazardous one, and by no means to be recommended, as the wounds thus made are often followed by canker, a far more serious affection.

Basket-plants.—A name given to plants suitable for growing in hanging baskets, over the edges of which they depend in the fashion of the well-known Wandering Jew, or Old Man's Beard (Saxifraga sarmentosa.)

Biennial plants are those which naturally do not live longer than two years. They do not flower until the second year, when, after ripening their seed, they die. If the seed vessels, however, are pinched off at an early stage of their growth, the plants will continue to live for a considerable time longer.

Blanching.—The operation by which the stems of Celery, Cardoons, Seakale, &c., and the hearts of Lettuces, Endives, and Cabbages, are whitened as they grow. This is effected either by earthing-up the stems of Celery, &c., so as to totally exclude the light from the parts which are to be blanched, or else by covering each plant with a blanching-pot made specially for this purpose, or with an inverted flower-pot of suitable size, taking care to stop up the hole in the bottom. Lettuces, Endive, and Cabbages are blanched by simply tying up the outer leaves at the top, so that the inner leaves or heart may be thoroughly protected from the action of light. The effect of blanching is to render the vegetables so treated more delicately flavoured, crisp, and tender, and also to improve their appearance when served up.

Bleeding.—A name given to the exudation of extravasated sap through cracks or fissures in the ruptured bark of fruit trees. This is caused either by excess of sap, arising from over-luxuriance of growth, by an acrid or alkaline condition of the sap, or by local contraction of the sap-vessels. When vines are pruned after the sap has commenced to flow, they will sometimes bleed copiously from the wounds.

Bog-bed.—A bed prepared specially for the culture of bog-plants, by excavating the area required to the depth of about 14 inches, and puddling the bottom and sides with stiff clay to make them water-tight. It is then filled up to the level of the ground with a mixture of peat and loam, and water is admitted from a pipe with a stop-cock, the flow being regulated so that it will just keep the bed constantly saturated. The other end of the bed should have an outlet for the escape of the surplus water.

Bog-plants.—See *Aquatic plants.*

Bolting.—When plants run to seed prematurely, they are said to "bolt." The term is usually restricted to kitchen-garden plants.

Bottom-heat.—Heat artificially applied to the roots of plants in hot-houses by means of hot-water pipes, &c.

Bracts.—Small leaves, somewhat different from the others, seated on the stems.

Breast-wood.—A term applied to the shoots which grow out straight from the front of branches of fruit-trees trained against walls or as espaliers.

Broad-cast.—A mode of sowing by which the seed is scattered over the bed in every direction. The only advantage it possesses is that the work of sowing is done as expeditiously as possible.

Drilling, or sowing in drills, is considered a better method, as it saves seed and labour, and, although in some cases it takes more time to deposit the seed in drills, this is more than compensated by the time saved afterwards in thinning and hoeing.

Budding.—A method of propagating plants (chiefly applied to Roses) by inserting a bud from one plant under the bark of another. For an exhaustive account of the various ways in which this is effected, the reader is referred to "The Art of Grafting and Budding," by Chas. Baltet, published by Lockwood & Co., Paternoster-row. This work is profusely illustrated, and is the best treatise on the subject that has ever appeared.

Bulb.—A leaf bud with fleshy scales, usually placed underground.

Bulbils.—Small bulbs, produced in the axils of the leaves of some plants, as in Lilium bulbiferum.

Burning or scorching.—See *Scorching.*

Cabbaging.—See *Heading.*

Callus.—Hardened exuded matter which forms around the edges of a wound.

Canker.—A disease which first manifests itself in trees by producing swellings or enlargements in the bark which in time extend to the wood underneath. As the swellings increase in size, the bark above them cracks and decays, the wood underneath decaying at the same time. A moderately-sized branch is soon encircled by a belt of decayed bark and alburnum, and, the circulation of the sap being thus entirely prevented, all the parts above the belt of decay perish.

Catkins.—A spike of closely crowded flowers of one sex, in which the perianths are replaced by bracts.

Climbers or climbing plants.—Weak-stemmed plants which have a natural tendency to elevate themselves either by twining around the nearest support, or by attaching themselves to it by means of their tendrils, hooks, suckers, &c. Of both these classes familiar examples are seen in the Kidney-Bean and the Pea. *Creepers* or *Trailers*, on the other hand, do not exhibit any natural tendency to rise above the surface of the ground, along which they travel in a horizontal direction. The common "Creeping Jenny" (*Lysimachia Nummularia*) is a good illustration of this class of plants. Some kinds of creepers, however, are often trained to grow as climbers.

Clingstone.—A name given to those kinds of Peaches and Nectarines in which the flesh adheres firmly to the stone. The term *Free-stone* is applied to the kinds in which the flesh parts freely from the stone.

Cloche.—Another name for *Bell-glass* (borrowed from the French).

Cluster.—A close head of flowers.

Compost.—A mixture of earths and various other ingredients, such as leaf-mould, heath-soil, horse-manure, cow-manure, charcoal, wood ashes, bone dust, sand, burnt peat, &c., varied in composition to suit the plants to which it is to be applied.

Coatings and linings.—When the heat declines in a hot-bed, a wall of fresh, hot fermenting dung is often built round the bed, for the purpose of keeping up the temperature. This is termed a *coating*, and should be made from 18 to 24 inches thick, and as high as the hot-bed. A similar wall, only not so thick, built round the *inside* of a frame on a hot-bed for the same purpose, is termed a *lining*.

Cordon.—A mode of training fruit trees so that all the branches will lie in a horizontal position, right and left, the ends of the branches on one or both sides being grafted on to those of the adjacent trees so as to form a continuous line along the border or around the entire compartment in which the trees are planted. Trees are usually trained at no great height from the ground in this way. There are also oblique and upright cordons.

Corm.—A fleshy bulb-like solid, not scaly, underground stem.

Corolla.—The whorl of floral leaves between the calyx and stamens, usually coloured, called petals.

Crocks.—A gardener's term for the potsherds or small pieces of broken flowerpots which are laid in the bottom of pots for drainage. This operation is termed *crocking.*

Crown or neck.—The upper part of the root of a plant where the stem commences is properly called the *neck.* If leaves issue from this point, together with an herbaceous stem, as in the Carrot and Parsnip, it is usually termed the *crown.*

Cutting-back, or Cutting in.—The operation of shortening the branches in pruning.

Cuttings.—Portions of shoots, roots, or leaves, which, when planted and properly attended to, strike root and exactly reproduce the plants from which they were taken.

Damping-off.—An affection which is often very fatal to seedling plants, especially when grown in frames, and is caused by an excess of moisture in the soil and atmosphere. The plants are generally attacked at the neck, which becomes ulcerated, and if this is not checked at once, the plant speedily perishes.

Deciduous.—A much better term for this is *Summer-leaving*, which see.

Dibble or Dibber.—A pointed wooden implement used for making holes in the soil for plants or seeds. The upper part of a broken spade-handle makes a very handy dibble for general use.

Disbudding.—The operation of pinching off superfluous or misplaced buds on trained fruit trees. The remaining shoots are thereby rendered more vigorous, and winter pruning will be hardly, if at all, necessary,

Drawn.—A plant is said to be "drawn," when the stem and leaves are increased in length to an unnatural degree. This is usually caused by an excess of heat and moisture, and a deficiency of light and air, and commonly happens when plants are placed in ill-lighted positions in greenhouses.

Dressing.—A gardening term for putting flower-beds, borders, &c., in order; also used to signify an occasional application of manure, or some similar substance, to permanent beds, as of Strawberries, Asparagus, &c.

Drilling.—See *Broadcast.*

Dubbing.—Another word for *clipping.* The *dubbings* of a hedge are the parts clipped off.

Earthing-up or moulding.—The operation of heaping soil up about the stems of plants, either for the purpose of blanching them, or of inducing the production of rootlets from the stem, and also protecting standing crops in winter.

Espalier.—In France this term is only applied to fruit-trees which are trained against walls, but with us it is used to denote those which are trained on rails, or trellises of wood or iron, running along the borders of walks in kitchen gardens. Trees trained in this way in French gardens are distinguished by the name of *contre-espaliers.*

Eyes.—A garden name for *buds*, and chiefly used when such buds are used for propagating purposes, as the "eyes" of Vine-cuttings, the "eyes" of Potatoes, &c.

Filament.—The stalk usually supporting an anther.

Filiform.—Like a thread, as the stamens of Maize.

Florets.—The small flowers of composite and other plants, such as Daisy, Scabious.

Forcing.—The operation of compelling plants and trees to bloom or fruit before their natural season by subjecting them to artificial heat in hotbeds or hothouses.

Fore-right shoots are those which grow out frontwards from branches trained against a wall or as espaliers.

Fore-shortening.—A method of pruning back fruit trees in summer, and forest trees at any time, by which the lower branches are shortened without removing them altogether.

Free-stone.—See *Cling-stone.*

Frond.—The leaf-like part of Ferns.

Fruit.—The seed vessel, with its ripe contents and any external appendages.

Fruticose or Shrubby.—See *Herbaceous.*

Fumigation.—The operation of filling plant-houses with the fumes of Tobacco, sulphur, or spirits of turpentine for the purpose of destroying the insects which infest the plants. Tobacco is most usually employed in this way in England, but a far better method has lately come into very general use in France in the employment of vaporised Tobacco-juice. For a full account of the details of this process see *The Garden* for May 3rd, 1884, Vol. xxv., p. 372.

Gland.—A wart-like organ, usually raised above the surface, as on the leaves of many Peaches.

Glaucous.—Green, with a whitish-blue lustre, like the colour of Echeveria secunda.

Glumes.—The scales enclosing the spikelet of flowers in Grasses.

Grafting.—A mode of propagation by which a shoot or scion from one tree or plant is inserted in, or otherwise united to, the branch, stem, or root of another. The various methods by which this is effected are most clearly and comprehensively explained, with illustrations, in Baltet's "Art of Grafting and Budding," published by Messrs. Lockwood & Co., Paternoster-row.

Gumming.—A discharge of gum from the ruptured bark of certain trees when bark-bound. (See *Bark-bound*).

Habit.—A garden term denoting the appearance of a plant or its mode of growth. Thus a plant may be of a dwarf or tall, straggling, or compact "*habit*," &c.

Habitat.—The place in which a plant is found growing naturally in the wild state.

Half-hardy plants are those which require partial shelter, such as the protection of a cold pit or frame in winter.

Hardy plants are such as are able to withstand our ordinary winters without any protection.

Hardening-off.—The process of gradually inuring plants which have been raised in heat to withstand the temperature of the open air before they are planted out.

Heading.—That stage in the growth of Cabbages, Lettuces, &c., in which the plants begin to form a "head." It is sometimes also termed *Cabbaging.*

Heading-down.—The operation of cutting off entirely, or to a considerable extent, the branches of a tree or shrub. It is mostly only resorted to when there appears to be a want of vigour in the subjects, or when they have grown to an undesirable size.

Heel, taking off with a.—When a cutting is taken off with a small portion of the parent branch or stem attached to it, it is said to be "taken off with a *heel.*" The "heel" is the portion of the parent branch or stem, and is considered to be conducive to the cutting striking root with greater speed and certainty.

Heels, laying in by the.—Plants laid in a trench or hole in a slanting position, with their roots roughly covered with soil, until they can be conveniently planted out permanently, are said to be "laid in by the heels."

Herbaceous plants are those whose stems are of soft texture as opposed to woody. By this term they are distinguished from *Shrubby* plants, the stems of which are permanent. Herbaceous plants are either deciduous when the stem dies down, as in a tall Phlox, or evergreen, as in an Alpine Phlox as P. setacea.

Hide-bound.—See *Bark-bound.*

Hybrids or Mules.—Plants raised from seed produced by parents of two different species. They are always barren.

Inarching.—A mode of grafting in which the scion is allowed to remain growing on the parent plant until it is sufficiently united to the stock. See *Grafting.*

Imbricate.—Arranged over each other like the scales of a Fir cone.

Inoculation. — Another name for *Budding,* which see.

Layer.—A layer is a branch bent into the earth, and half cut through at the bend on the under side, the free portion of the wound being called a "tongue." It is, in fact, a cutting only partially separated from its parent, and intended to strike root at the "tongue."

Layering.—Propagating by means of layers.

Laying-in.—A garden term for training the branches of wall trees and espaliers.

Laying in by the heels.—See *Heels.*

Lazy beds.—Beds in which Potatoes are planted, the sets being placed on the surface and covered with the soil dug out of the alleys between the beds.

Leaflets.— The subdivisions of compound leaves.

Lights.—The glazed sliding sashes in frames or houses.

Linings.—See *Coatings.*

Livery.—Soil, if stirred or dug while it is wet, is liable to set close like mortar, and in that condition is said to be livery.

Maiden-tree.—A seedling fruit-tree which has not been grafted.

Moulding.—See *Earthing-up.*

Mulching.—A top dressing of moist stable litter, decayed leaves, or other material, placed over the roots of trees, shrubs, and plants, for the purpose of preventing evaporation and keeping the soil underneath cool and moist in summer, and also protecting the roots from frost in winter.

Mules.—See *Hybrids.*

Neck.—See *Crown.*

Nectary.—An organ which secretes honey.

Netted.—Covered with lines connected together as in network, like some Melons.

Off-sets.—Side bulbs, produced by certain kinds of bulbous roots, by which the species can be propagated.

Off-shoots or *Suckers* are shoots thrown up by a plant from its base, and chiefly occur when the growth of the stem is checked or stopped.

Orchard-house.—A glazed, unheated structure in which hardy fruits are grown in pots usually plunged or planted in the borders.

Pan.—A hard stratum, more or less deep, under the surface-soil, so frequent in some sandy soils.

Peat plants.—See *American plants.*

Perennial plants.—Plants of any kind which naturally continue to live for more than two years.

Petals.—The divisions of a corolla of a flower.

Pinching.—Removing a bud or tender shoot by squeezing it between the thumb nail and the fore-finger.

Pip.—When several flowers grow together from the top of the same stem (as in the Polyanthus and Auricula), each individual flower is termed a *pip,* and all the pips, taken together, are said to form a *truss.*

Pipings.—The side shoots of Pinks, Carnations, and Picotees, when required for propagating purposes, are often detached from the plants by simply pulling them out of the sheath or pipe by which their lower part is enveloped (hence the name of *pipings*), and then planted as ordinary cuttings. This practice is not to be recommended, as the parent plant is often seriously injured thereby. A better way is to take off the shoots with a sharp knife close to the stem, and dress them by cutting off the lower leaves, and allowing about four leaves to remain at the top. Stick them into pots filled with light soil, having a layer of sand on the surface, and place the pots in a frame with a little bottom-heat, watering gently when dry, and shading from the sun until the cuttings have taken root well.

Pistil.—The ovary, style, and stigma taken together.

Pit.—An excavation, or brick enclosure, partially or entirely sunk in the ground, in which is formed the material forming the hotbed on which Melons and Cucumbers may be grown, or various kinds of plants may be forced or propagated. A *cold* pit is one in which no artificial heat is employed, the plants which are placed in it being merely protected by coverings.

Plashing.—A term applied to the operation of thickening a hedge by cutting the branches and leading shoots half through, and then bending, twisting, and interweaving them closely and compactly. This practice was formerly termed *Pleaching,* hence the expression "pleached alleys," meaning walks running between hedges densely interwoven s way. in thi

Plunging.—A garden term for burying pots up to the rim in a bed of soil, sand, or ashes. The object is to ensure a more equable temperature and protect the roots from the extremes of heat and cold. Pots (especially small ones) unprotected in this way suffer by having their contents rapidly dried up by evaporation in summer, while in winter the plants growing in them are more exposed to injury from frost.

Pockets.—Holes made in the ground, or on rock-work, for the reception of seeds or plants.

Pod.—A one-celled and two-valved seed-vessel with the seed arranged along the inner angle.

Pointing-in.—Mixing manure with the surface soil to the depth of an inch or two by stirring it in with the point of a spade or fork. Manure is applied in this way when it is desirable not to disturb any roots which are near the surface.

Pollen.—The dust in the anther.

Pot-bound.—A term applied to a potted plant when its roots have increased to such an extent that they are too much crowded together for the maintenance of healthy action. A plant in this condition should be shifted at once into a larger pot.

Potting-off.—The operation of transferring a batch of seedlings or cuttings from the seed-bed, seed-pan, or cutting-pan into pots, one seedling or cutting being placed in each pot.

Pricking-out.—Transplanting seedlings from the seed-bed into another bed, in which they are placed farther apart from one another, so that they may become better-rooted and stronger before they are finally planted out.

Punnets.—Small shallow baskets in which some kinds of vegetables, such as Radishes, Cress, &c., are sent to market.

Quincunx.—A mode of planting fruit-trees, &c., in three rows, so that the trees or plants in the middle row may occupy the centre of the vacant spaces between those in the outer rows, thus:

. . .
. . .

Raceme.—A spike with stalked flowers, like the flowers of Laburnum.

Retarding.—This process, which is the reverse of forcing, is the checking or arresting the growth of plants so that they will flower or fruit later than they otherwise would, and is often resorted to when a succession of fruit or flowers is desired. The object is attained in some cases by diminishing the supply of heat and light. Thus, plants placed on the north side of a wall or screen will flower and fruit later than plants of the same kind growing on the south side, and Lettuce and Spinach plants may be prevented from running to seed too soon in hot weather by interposing screens, or banks of earth, on the south side between them and the sun. Other plants, again, such as Raspberries and Strawberries, are often cut down in spring, thus compelling them to form fresh leaves and stems which bear fruit in the autumn instead of in summer.

Rhizome.—A prostrate, more or less subterranean stem, producing roots and leafy shoots.

Ridging. — Digging soil into close parallel ridges, so as to expose it thoroughly to the action of the atmosphere or of frost.

Ringing.— Cutting away a ring or belt of bark entirely round a branch, for the purpose of checking the return of the sap, and so rendering the branch more fruitful, and the fruit on it finer.

Root-grafting.—A mode of grafting in which the scion is inserted in the root.

Root-pruning.—Cutting off the extremities of the roots of trees in order to check overluxuriance of growth.

Root-stock.—A thick short rhizome or tuber, as in Iris.

Rotation of crops.—The order in which crops should succeed one another in the same soil; in connection with which the following rules should be borne in mind:—1. Each crop should be as dissimilar as possible from its predecessor. 2. The decaying remains of the preceding crop should not be offensive to its successor. 3. A spindle-rooted crop should succeed a fibrous-rooted crop, and *vice versâ.*

Run.—A plant going to seed is said to be *run.* Also, when the dark colouring of a flower becomes confused or clouded, so that it does not appear distinctly marked on the lighter ground colour, such a flower is termed a *run* flower.

Runner.—A prostrate shoot rooting at its end, as in the Strawberry.

Scion.—The shoot or cutting which is united to the stock in the process of grafting.

Scorching.—The drying up of the roots or leaves from excessive heat is called scorching; the foliage is often scorched by the sun shining upon it through faulty glass.

Self.—A name given to a flower with petals of one colour only.

Sepals.—The divisions of the calyx.

Sets.—The tubers, or portions of tubers, used for propagating Potatoes and other tuberous-rooted plants.

Setting.—Fertilising female blossoms with pollen from the male flowers.

Shanking.—A gangrenous affection which attacks the foot-stalks of Grapes, and also the stems of winter-grown Cabbages. Shanking in Grapes is always the consequence of a diminished supply of sap, occasioned either by the soil in the border becoming exhausted, or by its temperature being too much below that in which the branches are growing. Shanking in Cabbages is caused by the freezing of the stalk where it comes in contact with the soil.

Shifting.—Moving a plant from the pot in which it has been growing to another.

Shrubby or *Fructicose.*—See *Herbaceous.*

Slips.—Young shoots taken off from the parent plant with a "heel" of older wood attached to them. See *Heel.*

Soiling-up.—Another name for earthing-up.

Spike.—A long simple axis, with many flowers without stalks, as the Plantain.

Sport.—A garden term for any deviation from the usual form or colours of a plant or flower.

Spot.—A disease affecting the leaves of Pelar-

goniums, and some other plants, and caused by the supply of moisture being disproportionate to the temperature in which the plants happen to be growing at the time.

Spur.—A lateral or side-shoot, pruned so as to leave only a small portion projecting from the main branch and bearing a few buds. The term is also applied to the short-fruiting shoots which are naturally produced from the stems and branches of some kinds of fruit-trees.

Sparring.—The operation of pruning shoots into "spurs."

Stamen.—The male organ of a flower, usually consisting of a filament and anther.

Standard.—A tree, bush, or shrub grown unsupported by wall or trellis, and trained with a straight stem clear of branches for six feet or seven feet. *Half-standards* are trees, &c., which are trained with the stems clear of branches to about half the height of the branchless stems of standards. Standard Roses are those which have been budded on stocks four feet or five feet high. Half-standard Roses are about half that height.

Stigma.—The cellular part at the top of the style, to which the pollen adheres.

Stock.—The subject on which a scion is grafted.

Stopping.—Pinching or nipping off the end of a shoot or branch with the object of rendering the remaining part more vigorous or to cause it to throw out lateral or side shoots.

Style.—The part between the ovary and stigma.

Succulents or succulent plants.—Plants with thick, fleshy, juicy leaves, such as House-leeks, Cactuses, Mesembryanthemums, &c.

Suckers.—See *Off-shoots.*

Summer-leafing.—A term first used by Mr. Robinson in *Garden* and GARDENING in place of "deciduous." A deciduous tree is one whose leaves fall in autumn.

Taking off with a heel.—See *Heel.*

Tainning.—The operation of reducing the number of seedling plants in a bed, or of young fruit on a tree, in order that the remaining plants and fruit may obtain a larger supply of nutriment and consequently attain a larger and more vigorous growth.

Top-dressing. A dressing (of no great depth) of manure or compost spread over the surface of the soil, where it is allowed to remain without being dug in.

Trailing plants.—See *Climbers.*

Truss.—See *Pip.*

Tuber.—A thickened underground fleshy part of the stem, as in Potato.

Turfing-iron.—A broad, pointed, spade-like implement for raising or detaching turves or sods cleanly from the surface of the soil.

Umbel.—A head of many stalked flowers springing from one point and reaching about the same level. Partial umbels are umbels seated upon the branches of an umbel, the whole forming a compound umbel.

Whorl. Similar organs arranged in a circle round an axis, as the leaves of Galium, and of some Lilies.

Working.—A garden term for *grafting* or *budding.* When the operation of grafting or budding is completed on a stock, that stock is said to be worked. W. M.

A Garden Streamlet.

A GARDEN STREAMLET.

NATURE is so often banished from gardens nowadays, as if she had no part or place there, that it is worth while occasionally to point out by some striking illustration that a garden may still be natural while losing no other charm. The little stream here shown rushing down a grassy valley may be seen emerging from a wood of Pine and other trees, under the shade of which it ripples among Ferns and Sedges. What a charming home such a place forms for naturalising in the Grass numerous hardy and waterside flowers, and how restful is a glance at such a scene for the eyes that have been wearied by patches of blazing colour and geometric artificialities! T.

Ink for zinc labels.—Some time since the following recipe appeared in GARDENING. I have tried it, and found it to be very good:—verdigris, one ounce; sal-ammoniac, one ounce; lampblack, half an ounce; water, half a pint. Mix in an earthen mortar without using a metal spatula; put in small bottles well corked. To be shaken before use, and written with a clean *quill* pen on clean, bright zinc.—W. G.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

14532.—**White Currants.**—I should like to be advised as to the best kind of white Currant for table use.—M. S., *Dungannon.*

14533.—**To keep cut flowers.**—What is proved to be the best thing to add to the water to keep it pure and the flowers fresh for the longest time.—M. S.

14534.—**Plants for entrance-hall.**—What shrubs or foliage plants would be suitable for a large entrance-hall, which is heated by hot-water pipes.—A. B., *Yorkshire.*

14535.—**Hardy Evergreen climber.**—Please say what would be a good hardy Evergreen climber for a wall facing east? E. C. K. *** *There is nothing better than Ivy.*—ED.

14536.—**Slugs in house.**—Will any one kindly advise me how to prevent slugs from coming into a house?—A. M. W.

14537.—**Green tree frogs.**—Will green tree frogs be hurt if the house they are in is fumigated? I cannot find them to take them out.—A. N. S.

14538.—**Drying Pampas Grass.**—Can any one tell "C. H." how to dry Pampas Grass so as to preserve it white and feathery, as it is sold in Covent-garden Market?

14539.—**Exposed Garden.**—Will any gardener tell me if I can grow Peas, Strawberries, and Asparagus well in a garden sloping to north and east near New Cross?—CIVIS.

14540.—**Protective coating for frame.**—Will any of your readers tell me of any good preparation for washing the inside of a Cucumber frame to prevent its rotting?—INSTANTA.

14541.—**Heating by hot-water.**—Will some practical fellow reader kindly give me a few hints as to the principles to be observed in heating by hot-water on the "high-pressure" system?—W. M.

14542.—**"Village Blacksmith" Potato.**—Will any one who knows the "Village Blacksmith" Potato tell me whether it is white or coloured, and in what class it should be shown at an exhibition?—J. H. C.

14543.—**Rabbits and young trees.**—What is the best and cheapest way to prevent rabbits from barking freshly-planted fruit and other trees? Would a coating of coal-tar injure the trees?—PLANTER.

14544.—**Gladiolus from seed.**—Can anyone give me full particulars of the best way of growing Gladiolus from seed? I have no greenhouse, only a cold frame. Any hints will oblige.—LANCASHIRE AMATEUR.

14545.—**White Grape.**—Will any one kindly inform me which is the best White Grape to grow in the same house with Black Hambro' to be ready for exhibition in September.—Z. *** *Foster's Seedling.*—ED.

14546.—**Plants for greenhouse.**—I have a small greenhouse, and I want to fill it with choice flowering plants. Will any reader please give me a list of plants that he can recommend from experience?—J. W. ALLEN.

14547.—**Best Apples for Hereford.**—I have a small orchard near Hereford which I intend stocking with a few good kinds of Apples, for eating and pot fruit. Will any fruit-grower kindly give me the names of the best kinds?—ANXIOUS.

14548.—**Plants for wire baskets.**—Will any fellow-reader of GARDENING kindly tell me what plants I can grow in wire baskets twelve inches in diameter? I have three in an "intermediate" house, and one in a greenhouse.—A. N. S.

14549.—**Heating brick frame.**—Will some fellow-reader kindly advise me as to the most successful way of heating a brick frame nine feet by six? I want it to keep cuttings in through the winter, and to raise plants in.—TWO FRIENDS.

14550.—**A tenant's question.**—I have some Standard Roses that I have budded. I want to know whether I can remove them on leaving the premises? If not, am I entitled to any compensation? I shall be greatly obliged for advice.—P. J., *Shrewsbury.*

14551.—**Oil stove for heating small Greenhouse.**—Would any reader who has had experience in the above, kindly tell me of a cheap and effective Oil-stove? My greenhouse is only seven feet by five feet, and I do not want to go to the expense of a brick flue, &c.—NIBS.

14552.—**Fruit-trees for open situation.**—What Apple, Plum, and Pear trees succeed best on an open situation, near the top of a hill, sloping rather steeply to the north-west by west; medium quality; sub-soil what builders call skerry; locality, Notts?—PLANTER.

14553.—**Heating small greenhouse.**—Will any kind reader let me know the best way to heat a small greenhouse, four feet long by four feet wide by eight feet high. I only want sufficient heat for keeping cuttings of Geraniums, &c., during the winter.—B. RADMOND, *Poplar.*

14554.—**Ferns on porous pots.**—I have got some water-bottles, or Italian water-coolers. They are very porous. Would some one, please, tell me whether I can grow Ferns on them, and, if so, how I should set about the work? Would Adiantum Capillus-Veneris be suitable?—J. H., *Belfast.*

14555. **The "amateur" question.**—Should men

who work in gardens as general labourers be considered amateurs? And are they entitled to compete in Horticultural Exhibitions in amateur classes? I should feel obliged if exhibitors at different shows would express their opinions.—L.

14556.—**Stock for Plum.**—Can any fruit-grower tell me, from his own personal experience, what is a good restrictive stock for the Plum, such as the Paradise stock is for the Apple, or the Quince stock is for many excellent Pears. Also what sorts of Plums are best used.—J. D. of N.

14557.—**Plants for window-boxes.**—I have just had three boxes put to my windows facing north, and should like them to look well all the year round. Will any readers tell me what I can grow in them, and what I can put in them now? I have a greenhouse and intermediate house.—A NEW SUBSCRIBER.

14558.—**Cost of heating by oil.**—Will any reader of GARDENING tell me the cost of keeping a little oil-lamp during the winter, and what oil to use? It is to heat a little space between an outer and inner door where cuttings are kept. Must it be burning night and day, and what should the temperature be?—R. H. C.

14559.—**Painting fruit trees with paraffin.**—Will Peach, Apple, or Pear trees be injured by painting them over with pure paraffin, with a view to preventing the attacks of injurious insects? and is the treatment likely to have the desired effect?—DOLLY. *** *A very good plan. Paraffin is one of the best insecticides.*

14560.—**Stocking greenhouse.**—I have a lean-to house, with wall each side; it gets the sun about seven hours a day; south aspect, and leads out of my back parlour. Will any brother amateur advise me what plants to stock it with, and also how best to set about the work. I want to do it cheaply.—A YOUNG GARDENER, *Bristol.*

14561.—**Roses in Lancashire.**—Will any Lancashire Rose grower tell me if I can grow for exhibition such Roses as La France, Marie Baumann, Merveille de Lyon, &c., in a garden so far north as eight miles south of Bolton, Lancashire? The garden is moderately sheltered, and the soil inclines a little to the clayey.—LANCASHIRE AMATEUR.

14562.—**Ampelopsis Veitchii.**—Is this the only one of the species that will stick to a wall without nailing? If not, is there a better one, and which is it? How high does it grow? Is it a short-lived plant, or will it attain a good age? What is the most suitable soil to plant it in, and what is the best time of year for planting?—V. A., *Cheltenham.*

14563.—**Egg-plants.**—Can any reader tell me if there is any difference between the Egg-plant (purple or white) and the vegetable as known in India as the Brinjab, which is used as a vegetable very generally? If the same, how should they be cooked? as I have some very fine Egg-plant (purple) fruit this year, and should like to turn them to account.—TWYFORD.

14564.—**Forcing Potatoes for Christmas.**—My greenhouse is thirteen feet long by eight feet wide; it has a stage on each side, and is heated with fifty-six feet of two-inch piping, flow and return. I have Geraniums and other plants on the stage, and I should like to know if I could raise Potatoes underneath by Christmas, and what would be the best soil and time to plant?—A. E. W., *Stoke Newington.*

14565.—**Buying greenhouse plants.**—Would there be any advantage in buying a Tacsonia, a Clematis Jackmanni, and a Plumbago capensis now, rather than in the spring, for a small unheated greenhouse?—A. M. W. *** *Unless you know well how to deal with those plants we advise you to wait until the spring. Then buy healthy plants, which will establish themselves during the following summer.*—ED.

14566.—**An "Amateur's Mushroom bed."**—Would "H. S. Nuneaton," who told us about his Mushroom bed on page 342, kindly inform me if there is any particular time to lay Mushroom spawn out, and whether, if covered with hay instead of a mat, the hay should be pressed close to the soil or laid on loosely? Is it absolutely necessary that the beds should be in a dark place?—A. J. B.

14567.—**Saving Geraniums during winter.**—I should like to know how I can save my Geraniums during the winter. I have no glasshouse or frames, but I have a warm, dark cellar. If I simply place them in pots on the shelves in the cellar, will they keep without attention? I have heard that if you shake all the mould from the roots, and hang them up in a dark cellar, they will not die. Is it so?—NEOPHYTE.

14568.—**Wintering Auriculas.**—Will any Auricula grower tell me what is the proper time for removing Auriculas to the greenhouse?—H. WORLY. *** "*H. Worly" refers, no doubt, to the choice-named Auriculas, because the Auricula itself is a perfectly hardy plant throughout the United Kingdom, and wants removal to a greenhouse only as a concession to the requirements of the florist who wishes to show it in pots.*—ED.

14569.—**Overrun by Earwigs.**—Will readers kindly tell me the best means to get rid of a nuisance which we are greatly troubled with at home. We are daily finding Earwigs up and down the house and on our clothes, and they have got so far as the bedroom and in the beds, which is anything but agreeable. I cannot form any idea where they spring from, unless it is from the ground behind our house, which used to be a garden.—DACCA, *Manchester.*

14570.—**Orange trees in dwelling-house.**—I have several Orange and Lemon trees about six inches in height, grown from pips. Will they ever bear fruit if kept in an ordinary dwelling-house?—K. E. M., *Sheffield.* *** *We doubt very much whether you would get any good result from growing Orange trees in a dwelling-house in England. Perhaps, however, some of our readers may have had reason to differ from us, and if so they will kindly let us know.*—ED.

14571.—**Failure of Raspberries in good soil.**—Three years ago I planted Raspberries in an old orchard, having just trenched and manured the ground, but can obtain no fruit. The canes are most rampant in their growth, in fact like a forest. We mulched with manure the first two years, and tried starving this year, but with no better result. The ground is two feet of good soil and then clay. Will any fruit-grower give me advice?—E. H. F., *Surrey.*

14572.—**Greens clubbing.**—Will any vegetable grower tell me how to prevent greens clubbing? The soil in my garden is very light. Last year I cropped one part of it with Potatoes, and used old and thoroughly rotten farmyard manure. In the winter and spring the ground was several times turned, and in June cropped with Greens of different kinds, nearly all of which have clubbed, excepting the curly ones. Would gas-lime or salt applied in winter be of any use as a preventive?—CHESHIRE AMATEUR.

14573.—**Culture of Zonal Geraniums.**—Last May I sowed some Zonal Geranium seeds in a pot in a south window. About half-a-dozen plants came up. I grew them on in the pot until they had made five or six leaves, and then removed them each to pots 3 inches in diameter. The soil used was leaf mould and loam. The plants after removal do not seem to come on at all, whereas before they grew splendidly. Can any grower tell me the reason, and what to do to remedy it?—LANCASHIRE AMATEUR.

14574.—**Grapes shanking.**—Will any experienced Grape-grower kindly inform me how to proceed under the following circumstances? I have a vinery with eight vines, and the roots are allowed to run outside unrestricted; consequently, I believe, I am troubled with shanking. The vines are many years old, but we do not want to root them out for a few years to come. Would it answer to cut down, say, a yard wide from the border, and so sever the roots, and fill in with proper soil? If this will do any good, when should I do it?—R. R. W. G., *Northamptonshire.*

14575.—**"The black Narcissus."**—We have read of "the black Tulip," the Dahlia is common, so, too, the black or Sweet Lily, and the Persian Fritillary, but what is the flower to which the name of "black Narcissus" was applied? In the early accounts of the myth of Proserpine (or Demeter), the flowers she let fall "from Di's waggon Daffodils" are called "black Narcissus." So, too, Kushal Khan, the favourite poet of the Afghans, uses the phrase: "Black Narcissus are thine eyes, thou dear one, so beautiful, so gay!" Can any reader kindly enlighten me as to this misty legend of the black Daffodil or Narcissus?—E. F. B.

14576.—**Improving defective greenhouse.**—I have a greenhouse made of wood, front and one side all glass—top all glass. It has been hitherto of little or no benefit, as it is so very dry, nearly all my plants dying off or doing little good; no matter how often I watered them; one or two days wet seemed sufficient to dry them up. There is no artificial heat. Would any experienced correspondent inform me what to do that the house may not be so dry, and that my plants may live and thrive with a moderate watering? I have spent £2 in plants advertised in GARDENING, and to very little purpose, at least one half having been lost.—J. H., *Isle of Man.*

14577.—**Lilies out of door in Lancashire.**—I have purchased a few bulbs of Lilium auratum, L. speciosum, and L. Thunbergianum. Can I grow these successfully outside, and how? I wish to have them so as to be able to take them into the sitting-room next year when in flower. I have no greenhouse, and my garden is about eight miles south of Bolton, Lancashire.—LANCS. AMATEUR. *** *These Lilies are perfectly hardy in your district if the soil is right, or is made so. We feel sure that many readers will tell you how they grow the plants. We should advise planting out certainly; and cutting the flowers so far as you want them is a much better plan than bringing the plants indoors.*—ED.

14578.—**Deep-planting of bulbs.**—As the bulb-planting season is close at hand, would any reader kindly inform us what is the greatest depth that hardy bulbs may be planted, so that they may be left in the ground undisturbed by the bedding-plants? I would particularly mention Crocus, Lilies, Anemones, Tulips, Iris, Scilla, Hyacinth, Narcissus, Polyanthus-Narcissus, Gladiolus.—C. J. B. *** *This is a very interesting question, upon which we shall be glad if some of our readers will throw light. We have never seen the smaller bulbs treated in this way, but the Hyacinths were perfectly successful in at least one case, and used to flower freely indeed, when undisturbed, for several years at a time, bedding-plants or annuals being put over them in spring or summer.*—ED.

14579.—**Cinerarias damping off.**—I have got a choice collection of Cinerarias which were doing splendidly until about three weeks ago. Since that time I have lost over two dozen of them by damping off at the neck. I have tried all means I know of to save them, but in vain. Would any good grower kindly inform me how to save those that remain. They are now in five-inch pots in a compost of good fibry loam, leaf-mould, and sand, in equal parts, with good drainage. I am very cautious in watering them; their quarters are a cool frame with plenty of ventilation at top and bottom. At all favourable opportunities I let a free circulation of air pass through the frame.—A. BELL, *Co. Dublin.* *** *Your only remedy now appears to be to keep the plants drier, and put them in a dry, moderately warm atmosphere, so that they may recover from the excessive moisture that they have evidently suffered from.*—ED.

14580.—**Renovating lawn.**—"L. E. C." would be glad of advice under the following circumstances:—Some years ago he drained a small bog on the side of a hill of heathery peat soil, and turned it into a lawn and garden. The turf for the lawn he carried from a distance, the soil of the bog being a mixture of sand, peat, and clay, in which only Couch Grass would grow. To make it into a good lawn-tennis ground L. E. C. has had it well rolled, and many of the Plantains of the turf extracted with an iron extractor made for the purpose, and fresh grass-seed sown in the room of the Plantains extracted; but, unfortunately, owing to the dryness of the season, the grass-seed has not sprung up, and the turf is left bare in the places where the Plantains have been extracted. L. E. C. would like to know how best to renew the turf, and what manure to use so as to ensure the fresh grass-seed that may be now growing up, and at what time of the autumn or winter it should be done. Also if it would be a good plan or not to take up the turf, extract any remaining Plantains, relay, and then re-sow it with grass, preparing the ground underneath the turf *first* with manure.—*** *L. E. C. could best attain the object desired, viz., making a good lawn-tennis ground, by stripping off the present turf, digging the ground two spits deep—to allow the roots of the grass to delve deep—retaining the best soil at the top, and forking into the surface three inches of good fresh loam. Tread level, and properly consolidate, and relay the turf, and after it has been properly beaten and rolled, cover the whole over evenly with a light coating of rotted manure broken up finely. The rain during winter will wash into the turf all the essential qualities of the manure, and so enrich it. Keep the manure stirred or moved by a broom or wooden rake, to prevent the grass from getting yellow; what remains of it at the beginning of March remove, and top-dress the whole with road scrapings, passed through a fine sieve to free it from lumps and stones; a light dressing of fine lawn grass seeds sown over this top-dressing, and raked into it, will improve the quality of the turf. On no account should manure be dug into the ground, as it promotes an uneven and patchy growth.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14581.—**Blight on Apple-tree** (*Dolly*).—Your trees are attacked by American blight. Petroleum is the best remedy.

14582.—**Lanky Aralia Sieboldi** (*Borderer*).—By all means cut it back in very early spring, and use the cuttings for propagation.

14583.—**Black Pansies** (*A. Bird*).—Black Pansies are now not so uncommon, and they are often very pretty.

14584.—**Cutting Fuchsias** (*H. W.*).—Cut them close back. As you are a gardener you will readily understand the mode of operation.

14585.—**Blight on Apple-trees** (*A Duffer*).—What you describe is the American blight. Try petroleum again, as it is generally effectual.

14586.—**Mildew on Vines** (*A Duffer*).—Mildew is caused by improper treatment in allowing too damp an atmosphere; this can be easily obviated.

14587.—**Obtaining glass tubes for flowers** (*G. S.*).—Apply to the nearest florist, who will probably be able to supply you with as many as you want.

14588.—**Insects on fruit trees** (*Edwin Clark*).—Your question is not clear. The reply No. 14559 may tell you what you want to know; if not, write again.

14589.—**Transplanting Chrysanthemums** (*J. G., Dublin*).—Yes, you can transplant your Chrysanthemums now. Take up all the roots and as much soil as you can.

14590.—**Planting Turks-cap Lilies** (*M. S.*).—Plant the Lilies as soon as you can—the earlier the better. They are generally planted much too late, and in consequence die or suffer.

14591.—**Cutting back Azaleas** (*Robin*).—If they form symmetrical bushes, well filled, you had better leave them as they are, and no doubt next year they will develop a good crop of bloom.

14592.—**Scale on Fig-tree** (*Auxiou*).—You should try to get rid of the insects as soon as they make their appearance. Scaly insects can easily be washed off such leaves as Figs with soap and water.

14593.—**Mildewed Grapes** (*Essex*).—Yours is a case of mildew. Dust the berries and leaves and all the affected parts with flowers of sulphur, keep the house drier, and do not give any more water.

14594.—**Stage for Cinerarias** (*J. D., Carlow*).—If the temperature and light are right, Cinerarias will do perfectly well on slate, wooden, or stone benches, or on solid beds with a surfacing of ashes or sand.

14595.—**Book on the Rose.**—Rivers' "Rose Amateurs' Guide" will be useful to you. Ellwanger's book is also a very good one, but it is published in America, and you may have some difficulty in procuring it.

14596.—**Treatment of Roche falcata** (*R. M. J.*).—As it has flowered well this year it is evident that you have given it the right treatment. It requires a moderately warm house and dry soil. Give it very little water during the winter.

14597.—**Treatment of Rhubarb in Winter** (*F. S. W., Denbigh*).—If it is in good bearing condition, it wants no attention whatever in winter beyond keeping the ground clean, and perhaps giving a little forking and top-dressing.

14598.—**Wintering bulbs** (*Vernia*).—You must not keep the bulbs in a dark place. Give them light, as light retards growth in the case of bulbs. If you put them in a dark cellar, which is probably moist as well, they may commence to grow.

14599.—**Removing leaves from lawn** (*M. H.*).—There is a machine for the purpose, and any dealer in horticultural implements would no doubt supply you. Our experience, however, is that there is nothing so good as an ordinary birch-broom.

14600.—**Treatment of Hydrangea** (*Vernia*).—You may cut down your Hydrangea now, or later—preferably later on. We should not advise you to put it in a cellar, but should we have a very severe winter it would be advisable to give it some protection.

14601.—**Sowing Anemone sulphurea** (*R. M. J.*).—You had better keep the seed until spring. The best way is to sow the seed of hardy perennials as soon as it is ripe; in this case it should have been sown some time ago. Sow in pots and raise in a cold frame.

14602.—**Pansies for spring blooming** (*A. Bird*).—You may allow them to flower a little, because, if the season be mild, this will not hurt them or make them flower less vigorously. You may remove them if you particularly wish to strengthen the plants.

14603.—**Preventing Camellia buds from dropping** (*A. M. W.*).—Keep them in an equable state of moisture, in a moderately warm and well-ventilated greenhouse. The dropping of Camellia buds is often due to excess of moisture or dryness, of heat or of cold.

14604.—**Taking up Potatoes** (*A. Rover, Devon*).—If you are going to keep the Potatoes through the winter, let them get ripe in the ground before they are dug up. If you intend to use them soon, you had better take them up now, and store them in a cellar—say in flour barrels.

14605.—**Birds and mice eating Grapes** (*Mabor*).—The Grapes are eaten by mice or birds. The damage done by the birds may be prevented by netting placed over the ventilators; mice may be prevented from climbing by means of paper, funnel or cone-shaped, put around the stem.

14606.—**Treatment of Ranunculuses** (*M. Plackett*).—Leave them as they are in the ground, now that they are beginning to break. They should have been lifted a few weeks ago when they had ripened the current year's growth, kept over the winter, and planted out again in spring.

14607.—**Obtaining the Parlour Palm** (*T. C.*).—This plant (Aspidistra lurida) is quite common in the

London market, both in the nurseries that grow for the trade, and in the shops. It is sold at various prices, according to size, and there need be no difficulty whatever in getting it.

14608.—**Plants in flower each month.**—In the *Garden Annual* (price 1s.) you will find a list of the most important plants in flower during each month, and these lists embrace a very good selection. Your own observation, in visiting nurseries and gardens each month, should assist you in your selection.

14609.—**Sowing wild Hyacinths** (*J. O. H.*).—Sow the seed now and another batch in spring. Considering the thousands of acres throughout Britain where these may be found, we should say you would find it easier to get some bulbs, which in many woodland districts are dug up in every spit of earth.

14610.—**Treatment of Chrysanthemums** (*H. W.*).—If you want these to flower so late as Christmas you should keep them as cool as possible—say, in a northern exposure—otherwise they will flower with most others in November. They merely want protection and a dryish atmosphere to get them back.

14611.—**Moving Pelargonium cuspidatum** (*Neophyte*).—This is a plant that is, we should say, very difficult to kill at any time. There can scarcely be any need to remove it, however, before it begins to decay and go to rest. The difficulty generally is in getting rid of it when it gets into a position that suits it.

14612.—**Pruning Walnut tree** (*Mabor*).—It would do no harm to prune the tree during November, by taking out the small branches in the centre, so that the light and air might be admitted, while the symmetrical shape is still retained. If you do not prune it in November you must take care to do it before the sap begins to rise in spring.

14613.—**Wintering tuberous Begonias** (*E. C., Malleria*).—Without a frame or a greenhouse, we think you had better not attempt the cultivation of these. Those who have no greenhouse should pay attention to the enormous number of lovely plants that may be grown in the open air, and which are quite as beautiful as any that require protection.

14614.—**Insects on Rose-trees** (*Mabor*).—You must destroy the scale, or undoubtedly the Rose-trees will be injured. The presence of scale accounts for the appearance of the ants; the latter may be stopped by a ring of plastic gum around the stem, as the trees are not against a wall. Wash with soft soap or Gishurst's compound to destroy the scale.

14615.—**Iris from seed** (*Philip*).—If we are not mistaken in the plant, the blue Iris you mean increases rapidly by division of its root-stocks, and there is no need whatever to raise it from seed, as it is one of the cheapest and commonest plants obtainable. However, if you wish to raise it from seed, it will probably grow freely enough in a cold frame, or out of doors in fine soil.

14616.—**Geraniums in pots out of doors** (*R. A. D.*).—It will not be necessary to put them in larger pots unless you wish to grow them on for greenhouse flowering. If you only want to keep them over the winter to put them out again as bedding plants, it will suit them best to be kept quiet until spring; and they will do in their present pots until you shake them out and re-pot for the spring growth.

14617.—**Name for picture** (*Cromwell*).—We are averse to poetical names for pictures—the picture itself should be the poem. "Iris" would be a pretty name, but as you don't like that why not use the beautiful English name "Flower-de-luce"? The rigmaroles in the art catalogues of those who put long poetical quotations to their pictures are a nuisance. The Iris is frequently alluded to by poets.

14618.—**Early-blooming Roses** (*A. M. W.*).—If you desire early Roses, by all means repot your plants; allow good-sized pots, and keep them out of doors until the cold weather sets in. Then keep them in frames, and at the beginning of the year bring them gradually into a heated house. They will then break into foliage, and your care will probably be rewarded with fine bloom. (Send your other question again on separate pieces of paper.)

14319.—**Begonias after flowering** (*H. W.*).—There are a good many kinds of Begonias now; some (tubrous) are grown out of doors in summer in many parts of the country. As you do not give us any clue to the group or kind you mean, we can only say that, generally, you will be safe in keeping them in a greenhouse, or any warm structure, at rest for some time to come. Some of the tropical species of Begonias are very valuable winter bloomers.

14620.—**Plants for front garden** (*Young Beginner, Bristol*).—If you want the borders filled you had better make use of small growing evergreen shrubs, such as Euonymus, Osmanthus, Skimmias, Aucubas, and small growing Conifers; but if you do not mind having them bare during the winter for the sake of getting a fitting display in spring, you should plant at the present time such things as Daffodils, Scillas, Dog's-tooth Violets, and Hepaticas.

14621.—**Campanula fragilis** (*R. N.*).—You should have no trouble in getting Campanula fragilis from any house that devotes attention to hardy plants, and we have recently, in GARDENING ILLUSTRATED, mentioned the names of some of these firms. You can also grow it from seed. It is sometimes grown as C. isophylla, and you cannot always be certain what plant you may get under the name. The best plan is to buy the plant when you see it in flower.

14622.—**Growing Cactus in windows** (*Lancashire Lad*).—Some of the Cacti grow admirably in windows in country places; but it is a numerous family of plants, and, without knowing the exact kind you refer to, we could not well advise you. Perhaps some neighbouring gardener will name it for you. In any case, you should winter it in the warmest place you have, and, if you keep it over the winter, put it in spring in a hotbed or warm pit in which it can make good growth—that might give it a new lease of life.

14623.—**Hardy annuals for autumn sowing** in London (*L. B.*).—We think that the fact that the hardy annuals in a young state would have to endure all the filth of a London atmosphere is very much against their use, except in such fully exposed and pleasant gardens as are rare in London. The best plants for a London garden are those which come up clean and vigorous in spring, like the bulbs or strong herbaceous plants or trees that lose their leaves completely, and are quite at rest during the season of soot. We have seen a few hardy annuals—Candytufts and Collinsias—survive in the public gardens, but generally the system is not at all the best for London gardens. Articles on the subject have appeared in GARDENING recently.

14624.—**Green fly on Roses** (*Elder*).—Your Roses are infested with the common green fly, Siphonophora. These insects exude from their bodies a sweet, sticky fluid, commonly called "Honey dew," which falls upon the leaves and causes them to hold any dust which may fall upon them. A good syringing with cold water, repeated in half an hour, ought to clean the plants; if it does not, add some soft soap and tobacco water, and again syringe. Wash the plants clean the next day.—G. S. S.

14625.—**Excrescences on Lime-leaves** (*E. R. P.*).—The curious excrescences on your Lime-leaves are galls, made by a very minute gall-mite (*Phytoptus tiliæ*). These galls are by no means uncommon; the mites are so small that they are not visible to the naked eye. By the action of the mite feeding on the underside of the leaf, an abnormal growth is produced, and the leaf grows at the part attacked into a kind of long pocket, surrounding the mites, with a narrow entrance at the underside of the leaf.—G. S. S.

14626.—**Worms on Pear-trees** (*Mrs H.*).—Your Pear-leaves are attacked by slug-worms, the grubs of the Pear Saw-fly (Eriocampa adumbrata). Water the leaves with one ounce of henebane, dissolved in a pail of water, or soot and lime-water, or strong soap-suds. The grubs, having reached maturity, bury themselves in the earth three or four inches below the surface, and then spin a cocoon round themselves and become chrysalides. The earth under the trees which have been attacked should be turned over in the winter, so as to expose the chrysalides to the birds and the weather.—G. S. S.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communications respecting plants or fruits sent to name should always accompany the parcel.*

Names of plants.—*Mrs. Lushington.*—1, Rivina laevis; 2, Spiræa vacciniifolia; 3, Helianthus multiflorus fl. pl.; 4, H. scaber.——*W. B. W.*—Chrysanthemum coronarium fl. pl.——*Amateur.*—Aaron's Beard (Solidago canadensis).——*D. M. Davis.*—Appears to be Onoclea sensibilis, a native of North America, but the specimen is insufficient to name precisely.——*W. G. Glae.*—1, Habrothamnus elegans; 2, Begonia Rex; 3, Grevillea robusta; 4, Adiantum hispidulum.——*Young Beginner.*—Send larger specimen, and number each plainly on outside.——*Copefield.*—Selaginella apus.——*One Who Knows Little.*—Senecio Jacobæus (annual); Purple Scabious (Scabiosa atro purpurea) (biennial).——*T. Waite.*—1, Stachys lanata; 2, seud again in damp moss; 3, Euphorbia Lathyris; 4, Feverfew (Pyrethrum Parthenium).——*E. C. K.*—Jasminum revolutum.——*Vara.*—1, Asclepias curassavica; 2, Juncus juncea.——*Heath End.*—Soapwort (Saponaria officinalis).——*J. R., Handsworth.*—Linaria reticulata.——*Reader.*—Leycesteria formosa.——*A. E. R.*—Lapageria rosea.——*A. Smith.*—Sedum spurium.——*J. Pumphrey.*—Spiræa paniculata; Colutea arborescens (Bladder Senna).——*J. H. Brook.*—1, Virginian Pokeweed (Phytolacca isocandra); 2, common Pyrethrum Parthenium.——*T. Colley.*—It is called the Clover Dodder, and we do not know of any remedy. The quality of the seed sown in the first instance has something to do with its appearance.——*A. G. P., Sheffield.*—1, Cystopteris fragilis; 2, Cannot identify from the half-developed specimen sent; probably Lastrea thelypteris; 3, You must send a better specimen; 4, Cystopteris dentata.——*Vernia.*—Enothera taraxacifolia.——*J. W. Turner.*—Plant with silver underneath is Lychnis vulgaris; send a larger spray of the other; the Fuchsia is not uncommon.——*C. W. S.*—Leycesteria formosa.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*Josiah Beddow.*—Oulin's Greengage; other fruit next week.——*D. Campbell.*—Kirke's Plum. Send Pear next month.

TO CORRESPONDENTS.

Notice—*Some of our readers send us questions to which, because they refer to matters entirely outside the province of* GARDENING, *or are of interest to the questioner only, we do not give place in our query column. These will be dealt with under the heading "To Correspondents." All queries sent to us are noticed, and we will do our utmost to supply the information desired; but correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

LILIUM AURATUM (*W. F.*).—Yes, it is a very handsome spotted and striped petal of the golden-rayed Lily.——MELILOTUS OFFICINALIS (*H. Dixon*).—We cannot forward your letter. A question relating to the plant was asked in last week's GARDENING, and the desired information will doubtless soon be forthcoming.——EXCHANGE (*E. Carslake*).—Thanks for your kind letter. We are sorry we cannot do what you suggest.——GARDENERS' BENEVOLENT INSTITUTION (*M. C. J.*).—The secretary of the institution is Mr. E. R. Cutler, and his address, 20, Spring-gardens, Charing-cross, S.W.——MARIGOLDS (*J. Bishton*).—They are very pretty, but show nothing unusual.——PEACHES (*A Gardener*).—That is a reasonable weight for a Peach.——DESIGNS (*J. B.*).—A book such as you want is published at 171, Fleet-street.——OBTAINING CLOCHES (*C. B. B.*).—Apply to any of the firms that advertise in GARDENING.——NOCTURNAL JESSAMINE (*Amateur*).—We don't know what plant you mean. Send us a specimen, and repeat your question.——PEARS DECAYING (*Civis*).—We cannot help you, as you give us no particulars whatever. Send us a specimen of the fruit, and tell us something about the trees.——INSECTS ON PLUM-TREES (*Dolly*).—Send us specimens of the insect or a branch of the tree.——CAT-TRAP (*Another Dublin Amateur*).—See "Answers to Correspondents," page 376, July 25.

Catalogues received.—*Dutch Flower Bulbs and Spring Flowering Plants.* George Cooling & Sons, Broadstreet, Bath. ——*Bulbs and Plants for all Seasons.* Barr & Son, King-street, Covent-garden.——*Bulbs and Other Flowering Roots.* Samuel Yates, 16, Old Millgate, Manchester.——*Hyacinth, Tulip, Crocus, and other Dutch Bulbs.* Benj. Soddy, 243, Walworth-road, S.E.——*Dutch Bulbs and other Flower Roots.* Henry Middlehurst, 11, Manchester-street, Liverpool.——*Dutch Bulbs and other Flower Roots.* W. Tait & Co., 119, Capel-street, Dublin. ——*Dutch Bulbs and other Bulbous Flower Roots and Plants for Winter and Spring Bloom.* E. G. Henderson & Son, Maida-vale, London, W.——*Dutch and Cape Bulbs, Plants, Seeds, &c.* Young, Oakenhead, & Co., 86, Patrick-street, Cork.

The Virginian Poke-weed.—Please name the enclosed, grown from seed picked up at Gibraltar. The tree was there called the Cabbage-tree, by some the Bella Sombra. I know a tree called the Ombu, frequently seen near habitations on both sides of the River Plate, which appears to me to be similar to the Bella Sombra. Can any reader tell me if these two names—Bella Sombra and Ombu—are synonymous?—J. H. B. *** *What you enclose is the Virginian Poke-weed, or Spanish Caloloe (Phytolacca isocandra), a herbaceous plant. We have never heard the names you mention, and probably they are local.*—ED.

14470.—**Pansies.**—Bugnot's International Prize Pansies are a specialty of Messrs. Carter & Co., High Holborn, London. Louis Odier's five-spotted Pansies can be had from most of the best seedsmen.—J. D.

14264.—**Cement for aquariums.**—I think the following is what "M. J. S." requires; if not, I will send another: Take one gill of plaster of Paris, one gill of fine white sand, one gill of litharge, one-third of a gill of finely powdered resin. Mix well, and bottle and cork it until wanted for use; then mix it with boiled oil and dryers until as thick as putty. Mix the cement only in small quantities, as it dries quickly. It will do for either fresh or salt water.—E. W. WRAY.

14243.—**Fountain in greenhouse.**—You must have the water above the level of the fountain; the more so the better, as you will get a higher jet. I had a small zinc tank made, connecting it with the fountain by a three-eighth composition lead pipe regulated by a tap. The tank is placed on the top shelf at the back of the larger house described in my article (p. 311), and brought through the partition mentioned. I use india-rubber tubing, which fits on tightly and prevents leaking.—J. G., *Suffolk.*

14335.—**Tulips from seed.**—Tulips can be made to bloom from seed in four or five years. The May flowering, or old florists' Tulips flower in that time, but they flower as self-coloured flowers, which were called "breeders." It is from eight to twenty years, according to the old growers, before these breeders "break" into the flames, feathers, or stripes, which distinguish the florists' Tulip. The rearing of the Tulip from seed is an elaborate business, as the radicles have to be checked, or the seed exhausts itself in the production of a long rootlet, and no bulb is formed.—J. D.

Smithfield market, Evesham.—List of prices realised Sept. 11, 1885:—Beans (kidney), 2s. 9d. to 3s. 3d. per pot (40 lb.); Beans (dwarf), 2s. 6d. to 3s. per pot (40 lb.); Cabbages (picking), 5d. to 9d. per dozen; Carrots, 1½d. to 2½d. per dozen; Cucumbers, 7½d. to 10d. per dozen; Mushrooms, 3d. to 5d. per lb.; Potatoes (new), 2s. 9d. to 3s. 9d. per pot (80 lb.); Sage, 2d. to 3d. per dozen bunches; Vegetable Marrows, 9d. to 1s. 6d. per dozen; Apples, 2s. to 4s. 6d. per pot (64 lb.); Damsons, 8s. to 9s. 6d. per pot (72 lb.); Pears, 2s. to 8s. 6d. per pot (72 lb.); Plums (Pershore), 5s. to 6s. 6d. per pot (72 lb.); (Victoria), 8s. to 9s. 6d. per pot (72 lb.).

14627.—**Preserving Kidney Beans for winter.**—Will some of your readers kindly tell me the best way of preserving Kidney Beans for winter use? Last year I cut some up, and placed them in a jar with layers of salt between, and when I required them and turned them out, many were unfit for use.—POTTERY DICK.

Lamp for heating small greenhouse.—I should be grateful if Mr. Robert R. Best will kindly say by what means he contrives to heat his structure to a minimum of forty-five degrees with an oil lamp, *vide* query 14315, page 377. I have a lamp which answers admirably, but I can do nothing like that stated in the paragraph. Does the use of an evaporating-pan add to the heat, or does it only make it moist? if so, is it advisable to employ it?—CONSIDERATE LILIA QUOAD CRESCUNT.

OUR READERS' ILLUSTRATIONS.

THE AMERICAN WHITE WOOD-LILY.

We publish on this page an illustration of one of the most singular and beautiful of all hardy plants, Trillium grandiflorum, which is now a little more common than it used to be. The American Wood-Lily grows from six inches to one foot high, and in a healthy example each stem bears a lovely white three-petalled flower, fairer than the White Lily, and almost as large; but much depends on the vigour of the specimens. It will thrive under almost any kind of treatment, and becomes a free-growing herb of good size in a shady, peaty border in the open air. If placed in a sunny or exposed position, the large, soft green leaves do not get sufficiently developed, and the plant fails to become strong. Depressed shady nooks in the rock garden or hardy fernery will suit it admirably. There are several other species of Trilliums in cultivation, and though none of them are equal to T. grandiflorum, some are pretty, and all interesting. Our illustration is from one of the admirable photographs sent by Mr. Bashford.

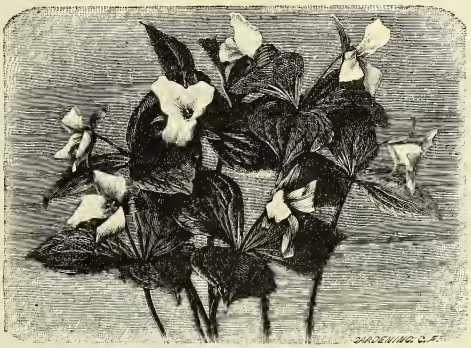
INDOOR PLANTS.

DOUBLE BEGONIAS—(TUBEROUS).

There is no doubt that there is a great future for these plants, principally as decorative objects for the conservatory or greenhouse; unfortunately the delicate fragility of the blooms does not admit of their being used to more than a very moderate extent as cut flowers, unless they can be made use of on the spot, and at once. I do not mean that the blooms do not keep well in water, for as a fact they remain fresh quite as long as most flowers in this way, but the petals are so easily disfigured by even a slight bruise, that it is almost impossible to pack them so as to travel without injury. This objection, however, may be applied to the blooms of several other very favourite plants—notably the Gloxinia—so that it is not likely to prevent a very extended degree of cultivation. The single-flowered Begonias have for some years past been steadily gaining in public favour, and are now very frequently met with, though they are not yet grown in anything like the quantities they should be, and will be ultimately. The simplicity of their culture, the little space or care they need to preserve them through the winter, and above all their brilliant and varied colour and long continuance in bloom, are undoubtedly winning the Single Begonia a place among the very finest and most useful of decorative plants, and the gradual but steady and undeniable improvement that has taken place in them is rendering their value only more apparent each year. But

The double forms have only quite recently, in my opinion—within the last year or two—begun to show their real value, or, to go a point farther, what they are capable of becoming. Of course, we have had double Begonias for years past; but they were certainly much more curious than beautiful, and only showed to advantage at all in a hanging basket, for which many of the older varieties are eminently suitable plants; but, in the hands of a few of the first Begonia-growers, the advances that have been made in these now exquisite flowers, and the improvements in not only size, but in form, colour, and habit, by means of skilful and persevering hybridising, are simply marvellous. In place of the small, pale, pointed blooms, with narrow petals, and a range of colour comprising only a few shades of pink and washed-out reds, we have now—or, at least, we may have, if we like (at present, very few, indeed, can be seen outside of a few nurseries where Begonias are made a specialty)—blooms as large as a good-sized Rose, in some cases with smooth round petals lying flatly and evenly over one another, more like a Camellia than anything else; as double as a Hollyhock or a Ranunculus, and these in every shade of delicate cream-colour, blush, pink, rose, scarlet, orange, &c., from purest white to darkest crimson, besides a few which, if not actually golden, are of a decidedly yellow shade. Then, again, in place of the old, long, straggling habit, with coarse stems, or the weedy-looking growth produced subsequently, with just a stray flower or two at the top, many of the newest varieties bloom at six inches in height, and, devoting all their energies to the production of bloom instead of growth, are at the end of the season still dwarf and bushy plants, well furnished with blooms. The largest flowers—indeed the majority—are of course pendulous, but this year may be seen a few varieties which hold their moderate-sized rosette-like blossoms as erect as Ranunculus or Buttercup. One of the

Most noteworthy characteristics of the double Begonia, particularly in its improved form, is the length of time that its individual blooms remain upon the plant. In this respect it is equalled by no other flower except some of the Orchid family, and I have myself had blooms remain upon the plant, in good condition, from three weeks to a month. Unlike the singles, they do not even then drop off all at once, but petal by petal wither or fall away. This, however, is only the case when the plants are grown in a house without any fire-heat, with plenty of air and space, shade from strong sunshine, and abundant ventilation; and in this way only



Our Readers' Illustrations.—The American White Wood-Lily (Trillium grandiflorum). From a Photograph sent by Mr. W. T. Bashford, Portobello, N.B.

should Begonias (of any tuberous variety) be grown during the summer months. As an instance, I have now a plant in a 32-pot, standing only about a foot in height altogether (from the pot), with three or four branches; it has had for the last month about twenty blooms, fully two inches in diameter, upon it, each perfectly double, and of a lovely, soft, rosy flesh-colour. These hang in clusters of three or four on a stalk all round the plant; it is a seedling raised last year, and one of the prettiest things I have ever had in a greenhouse. For the last month its appearance has hardly changed, and now there is a second (or rather third) lot of blooms coming on to take the place of those that are falling. Another seedling, also raised last year, produced flowers of a very large size, consisting of between thirty and forty separate florets, each on its own footstalk, and each consisting of a large number of petals; this one is the most perfectly double Begonia I have yet seen, and, without exaggeration, must have contained some thousands of distinct petals. One flower, when fully developed, weighed little short of four ounces, and had to be supported by raffia ties, as the stalk could not support the weight. This bloom was produced in only a five-inch pot, on quite a small plant, and I am anxious to see what it will do when grown on to a large size next season. But even these (to say nothing of many others) are surpassed in beauty by some of the new varieties that I have lately seen in well-known nurseries, and as they are being constantly improved year by year, it would be hard to say when or where perfection will be attained.

Propagation.—Double Begonias are, as most florists and amateurs now know, propagated by means of both seeds and cuttings, the former producing all the new forms and colours, and also, as a rule, more vigorous and sturdy plants than those obtained by means of cuttings. These last are, however, useful for perpetuating or increasing any desirable variety, and all named sorts are, of course, propagated by means of cuttings. Most Double Begonias unfortunately deteriorate—some very rapidly—when propagated from cuttings to any great extent; but this is not an absolute rule, the natural constitution of the plant having a great deal to do with the matter; and several sturdy and vigorous kinds—such as "Rosamond," for instance—may be largely increased from cuttings with perfect success. Seedlings are raised in the usual way—by very carefully sowing on a finely-sifted surface of rich light soil, the pot or pan being two-thirds full of drainage material. Nothing seems to promote germination so well as perfectly sweet and thoroughly-decayed leaf-mould mixed with a very little silver sand. The soil must be kept constantly moist, shaded from sunshine, and even from strong light, until the seed has fairly germinated, and a steady heat of about 70 deg. maintained. Good double seed germinates really better than single, as there is less blind seed, or "dust," in it; but the difficulty is to get really good seed—that is seed that will produce a fair proportion of good double flowers, as well as germinate properly. Of course, seed of fairly good quality is to be had, but there is no doubt that good growers will not part with their best seed, and it can hardly be expected that they should do so, and thus sell the "goose that lays the golden eggs." I gave half-a-guinea last year for a tiny packet from one of the first growers, but not half of the plants came double, and very few of those were really good flowers; and with seed from another source this season, my experience is just about the same. In fact, if you know how to do it, and have anything worth saving from, there is nothing like saving seed from your own plants. What I save myself always produces eighty or ninety per cent. of double flowers, and a good proportion of these are a decided advance upon the parent plants; so I have made up my mind to buy no more. Still, I have known several cases where very good varieties were obtained from seed from the same source. Early spring is the

Best time for sowing—say the last week in January or early in February, before the sun becomes so powerful as to cause very rapid evaporation. When fairly up, and showing one or two rough leaves, the seedlings must be pricked off into other pots or pans, similarly prepared, but with the soil a little sandier than before. When large enough, pot off singly into thumb pots, in similar soil, but containing a little loam, and unless they are to be planted out in the open ground, pot on as required until forty-eight or thirty-two-sized pots are reached, which will be quite large enough the first year. As a rule, the plants will show flower when in sixty-sized pots (three to four inches), and any that are not double need not be potted on. A mixture of about two parts fibrous or granular loam, with one part each of leaf-soil or sweet, half-decayed spent hops, Cocoa-nut fibre or peat, and coarse Bedfordshire sand will suit the plants best, and they should be potted more firmly than the single kinds, as the roots are finer. If, however, the plants were not raised early, so as to be got into the five inch or flowering-pots by July, it will be much better to keep them in largish sixty's (three to four-inch pots), feed them a little, and just mark those that promise best for growing on next year. Double Begonias are seldom very fine the first year, and certainly never come to perfection until the

second season; and unless they are simply planted out, just to make bulbs, I think they are really better kept in small pots the first year, unless, as I said, they are raised very early and kept growing on vigorously all along. In any, case it is little or no use shifting them on after July, or the first week in August at latest. You will, however, be able to see what they are likely to be; do not expect any great size, but if any come thoroughly double, and of good shape and colour, mark them for growing on next season. Towards autumn beware of damp, and to this end put a little fire-heat on in cool weather, giving plenty of air at the same time, and water always in the forenoon, so that the plants may be dry by nightfall. When they begin to fall to pieces withhold water, and when thoroughly dried off shake the bulbs out of the soil and store away in a little cocoa-nut fibre, neither wet nor dry, in a temperature of forty to fifty degrees. Look them over occasionally through the winter, and if too dry damp them well, or if wet put in a drier place.

Start the tubers in good time in the spring, say in March, on a gentle bottom heat. Place them in small pots, in equal parts of loam, fresh cocoanut-fibre, sand, and leaf-mould; keep only just moist until fairly started into growth. When these small pots are getting moderately full of roots, remove them from the bottom heat, but still keep in a moderately warm house, say at sixty degrees to sixty-five degrees in the daytime, and in two or three days shift them on into larger pots, using good drainage and the compost previously recommended for potting; to this, however, may be added a small part of some artificial manure—one containing a large proportion of animal charcoal preferably—which will throw additional vigour into the plants. About the best place for the plants during the earlier stages of growth is on a shelf close to the glass, where they will enjoy all the light available, with abundance of air all round them, which will ensure a short vigorous habit and abundance of bloom by-and-by. Do not be afraid of maintaining a moderate degree of heat at this stage—indeed, during the bitter winds we so often get during April and May, it is absolutely necessary if the plants are wanted in bloom by June or July; and with plenty of light, and free ventilation overhead whenever safe to give it, they will do much better than if kept in a chilly stagnant atmosphere. When rooted out, never let the plants want for water, and, if they grow strong and seem to need it, shift on again into pots six, seven, or eight inches in diameter: in fact, whatever shifting is necessary should be done early, before the plants come fully into bloom—it is no use shifting them on after this. Large shifts are not good, but as long as the plants keep growing along vigorously keep them moving on into larger pots, and when they become pot-bound they burst into bloom, and growth practically ceases. The extra nourishment required must then be supplied by means of manure water. Later batches, to flower in August and September, or onwards, may be allowed to start more naturally, and very little heat is required in this case, even at first; when once the warm weather fairly sets in, say about the middle of June, artificial heat may be dispensed with altogether, and then the great danger is from too warm and close an atmosphere. To avoid this, and to do them justice, the Begonia-house should be roomy and lofty, with abundant top ventilation. Side air is, of course, very useful, and should always be available, but cutting draughts are to be avoided; the best plan is to have very large roof-ventilators, or, say, every other sash made to slide half-way down, or nearly so, so that all overheated air may pass away at once, even if the side ventilators are not open. Under these circumstances not only will the plants be more sturdy and vigorous, but the blooms, whether of double or single Begonias, will, with shade from hot sun, develop more slowly, and, possessing more substance, will come larger, last longer, and above all, will never scorch or scald at the edges, a fault which appears directly in a close, hot atmosphere. Cuttings are made of short stubby side-shoots from the base of the plant, taken off with a heel preferably. These should be trimmed and dried for two or three hours before insertion, and then put carefully round the sides of small pots half full of drainage, and filled up with about three parts of sand, and one part each of loam, leaf-mould, and Cocoa-nut fibre. These will strike best on a shelf in a rather warm, moderately-ventilated house, shaded from sun, and kept just moist; they may be put in at any time from May to September. When rooted, pot off singly, and grow on precisely the same as seedlings.

One great point of these Begonias is that they are not attacked by any kind of insects, and by only one disease—a sort of rust, of a fungoid character, which is, however, caused only by want of air and moisture, and never attacks plants either out of doors or in a cool, airy house that is properly looked after. I do not say that the Double Begonias can be grown anyhow, nor that they will be satisfactory muddled up with a lot of other things in an ill-cared-for greenhouse—for they won't; but given a reasonable amount of care, with a nice, clean, airy house, and they will amply repay any amount of attention. One gentleman of my acquaintance has discarded everything else, even all the Single Begonias he had previously, and now has his house full of Doubles, and very handsome and fine many of them are. When the amateur has mastered the details of cultivation, and can grow the plants satisfactorily, he may try his hand at hybridising, saving seed only from the finest, though a few good semi-doubles will be necessary to obtain pollen from. Thus every year he will be able to obtain some improvement, at little cost, but by means of one of the most interesting occupations it is possible to take up. B. C. R.

RAISING EXHIBITION PLANTS FROM SEED

14414.—**Carnations and Picotees** should be sown in spring—March or April—in boxes of light, loamy soil, with good drainage. They will germinate and grow freely in a greenhouse or frame. When large enough, prick off into nursery beds, and plant out early in September where they are to bloom, in good, rich loamy soil and sunny situation. This is the usual method, and they are often sown out-of-doors towards the end of April, needing no glass at all. If, however, they are to be shown as pot-plants they should be potted on when large enough, grown through the summer plunged in an ash-bed in the open, and wintered in a frame, pit, or cold house; they will all bloom the next summer. But as not more than 75 per cent. of seedling Carnations are worth keeping, even from the best seed, and not half of these would be fit for exhibition, it would be a great waste of labour to grow them all on in pots. Carnations in pots or beds should have the soil made quite firm—almost hard—about the roots.

Auriculas, show or Alpine, are to be sown exactly as described above, but keep the soil moister and shade from hot sun. A light, porous loam, fairly rich, will suit these also in all stages. Prick them off on to a lightly-shaded border when large enough, and pot up about September, or plant out where they are to bloom.

Pansies are sown early in spring, say in February, for flowering in summer, or a little later for autumn blooming. These also should be sown in flat, shallow boxes, if possible in a sheltered frame or greenhouse, using a light loamy soil, with a little leaf soil and loam, and good drainage. Keep moderately moist and shade from hot sun. Prick off into nursery-beds or other boxes, plant out when strong enough, and never let them get very dry. You must get the very best seed possible, and raise plenty of plants, for there will not probably be more than two or three plants in a hundred seedlings that will be fit to show. Propagate by means of the little wiry shoots from the base of the plants—if possible, with a scrap of root. For early bloom, sow the seed when it is ripe, say August, and winter the plants in a cold frame, or on a sheltered bed outdoors; as a rule, these autumn-sown Pansies produce the best blooms in spring.

Stocks should be sown as early as possible, February or March, in a gentle warmth—a greenhouse-shelf near the glass, or a kitchen-window. Use a light, rich soil—loam, leaf-mould, and sand in nearly equal parts is about the best; and use extra free and abundant drainage. Prick off into boxes when fit, and plant out in light, rich soil—loam or decayed turf, with some old decayed hot-bed manure and a little charcoal or lime-rubbish, is as good as anything. Shade from hot sun for a week after planting, and if the seed is good you cannot fail to have grand Stocks. Do not sow at all thickly, and, if anything, take more care of the medium and small seedlings than of the larger ones—these are almost always single. If for pot plants, but them singly into three-inch pots from the boxes, and, when strong enough, shift into five or six-inch sizes, using rich, sweet, loamy soil, rammed pretty hard; stand on (or plunge in) ashes out of doors, and when rooted out, feed abundantly with soot and guano-water, liquid stable-manure, &c.

Asters should be sown in the same way, but later—not before the very end of March or after the end of April. Do not press the soil much for these, in the earlier stages particularly; though it must be lightly pressed, and made rather fine on the surface, for all the plants mentioned. Prick off into other boxes with some rough, half-dry, littery manure, or dry spent hops in the bottom; grow on under glass, if possible, till the end of May or early in June, but with plenty of air, and plant out nine inches or a foot apart in beds of rich, deeply-worked soil. Keep moist, and when the growth is getting advanced, supply with liquid manure. When coming into bloom, shade lightly from hot sun, or, if the weather should be wet, place some glazed lights or sashes over the bed, supporting them on short stout stakes. Asters should be planted rather deeply, as they throw out a multitude of roots near the surface.

The great secret of success with any of the above and all similar plants is to keep them growing steadily and vigorously on from the first in rich, but sweet, open soil; never allowing them to become very dry (nor yet sodden) at any time, nor to receive a check, or want for nourishment in any way. If this is accomplished, there need be nothing said about insects, for none will attack them, and with seed of a good strain to start with, success is almost certain. B. C. R.

Primula obconica.—Writing with respect to the engraving of Primula obconica in last week's GARDENING, Mr. Bashford, from whom we received the photograph, mentions that his plant was a cutting from a seedling raised by Mr. Isaac Anderson Henry, who obtained the seed from its native habitat. He continues:—"I don't know whether the great diversity of colour found in this Primula has been noticed. Some are a clear lavender, or light blue; my plants are nearly white. This Primula, from its extreme floriferousness, makes a capital companion to P. floribunda; the latter was first introduced by the Royal Botanic Gardens, Edinburgh, and ought to be grown by everybody. Mr. Lindsay, the curator, by careful selection and cultivation, has succeeded in obtaining a strain which is a distinct improvement on what, from the very first, was a valuable acquisition."

Early-flowering Chrysanthemums.—These are amongst the finest autumn flowers, and deserve to be extensively grown. The habit of the plants is good, and the flowers are carried on the plants in a very picturesque and jaunty way. For cutting they are as useful as for garden decoration, as most of them are devoid of that lumpiness which spoils so many of the later Chrysanthemums as cut flowers. The colours, besides white and yellow, are what ladies term "faded," being just those semi-neutral shades which the firework school of gardeners call "dirty," but which are invaluable to contrast and give value to the more primary shades. Few things have been more pernicious in gardens than the banishment of all colours but scarlet, crimson, pink, yellow, and blue. In dress, indulgence in these colours exclusively is an infallible index of bad taste. It should be considered equally so in gardens. —J. D.

BEAUTIFUL STOVE CLIMBERS.

AMONG all the variegated stove plants that have been introduced to this country there are few, if any, that have attracted so much attention as Cissus discolor, the exquisite markings of its leaves being very handsome. It is a

climber easily propagated, and its subsequent management is equally easy. Cuttings made of the young shoots, consisting of some three or four joints each, put singly into small pots in sand and kept in a close, moist atmosphere in a brisk heat, form roots quickly, after which they should be inured to the air of the house and moved into proportionately larger pots. Use good open rich soil—either peat or loam will answer—as the plants are such free-rooters that they grow and do well in anything, provided it is not retentive of moisture, so that the large quantity of water they need can pass freely off. If to be trained on trellises, they should not be put on these until in the pots which they are for some time to occupy; consequently, in their younger stages, the shoots should be trained round a few sticks till they are large enough to be placed in the pots in which they are to be confined. One stopping will generally be sufficient to cause enough shoots to break to furnish the specimens sufficiently. A brisk stove temperature, with shade when the sun is powerful, is requisite to grow them well; shade is especially necessary in the case of C. discolor, the variegation of which cannot be preserved if the plants are too much exposed to the sun. Large pots are required to grow the more vigorous kinds, such as C. discolor, which will fill a twelve-inch or fifteen-inch pot in six or eight months after it is struck. When to be planted out so as to cover a pillar or portion of a wall in the stove, for which purpose they are well adapted, the plants may be turned out as soon as they have filled six-inch pots with their roots. In all stages of their growth they require to be plentifully supplied with water and syringed overhead daily during the growing season. In the winter they may be cut in freely to keep their heads in bounds. If grown in pots, they may, as soon as they have broken again into growth, be partially shaken out and fresh soil given. When planted out, they soon exhaust the material in which their roots are placed, and should be assisted by surface dressings of good loam, enriched with decomposed manure. The plants can be used for filling large baskets for hanging up, where they can be kept in a stove temperature, without which they make little progress.

There are a number of species in cultivation, but the following find most favour with the generality of cultivators: C. discolor.—This is a climbing plant from Java, of very free growth, with oblong cordate leaves, deeply ribbed, ground colour deep green, beautifully marbled with white, and while young with pinkish red. C. gloriosa.—Another free-growing climber, with velvety green leaves, veined with red. Introduced from Costa Rica. C. Lindeni.—Also a climber, like C. discolor, with tendrilled branches; the leaves are medium-sized, bright green, mottled with white. It comes from Colombia. C. porphyrophylla.—A free grower, very suitable for covering a wall in a hothouse where there is not so much light as most plants require. A native of India, not so handsome as the preceding. Thrips, aphides, mealy bug, and scale will all live on these plants, but the daily use of the syringe will usually be found sufficient to keep the least troublesome in check, and should bugs or scale affect them sponging must be resorted to. T. B.

A Beautiful Stove Climber (Cissus porphyrophylla).

REPLIES.

14401.—**Treatment of seedling Gladioli.**—You must not disturb the seedlings now, even if they are too thick, but allow them to complete their growth in the box; at the end of November you can take the little bulbs out of the soil; or if you have room in a shed from which the frost is excluded, you may let them remain in the box all the winter in the shed; but the soil must be kept dry, and early in March they must be taken out of the soil, and planted out in the open. If you cannot keep them in the soil all the winter, when freed from the soil and the leaves, place them in a flower-pot, and put some sand over them to exclude the air; keep the pot in a cool, dry place.—J. C. M.

14442.—**Oleanders.** Oleanders flower extremely well in tubs out of doors in Paris. In winter they are housed in any outhouse or passage where they can have air, and escape frost. The reason for their not flowering so well in the south of England is that they want much sun, not necessarily heat. However, I have several shrubs of Oleanders, treated as I have described above, and last year they flowered well; this year, insufficiently—probably they need rest.—S. B., *Shere, Surrey.*

Flowers of the twilight.—The garden is most sweet and interesting to me in the evening, when the great white and yellow Evening Primroses unfold their petals pure and fresh after the burden and heat of the day. Night-scented Stocks and Mignonette rival each other in perfume, and white Nicotiana affinis, so insignificant during hot days, becomes a revelation of beauty and sweetness also. It is in the evening or on dull days also that the old Marvel of Peru is seen to best advantage, each bush besprinkled with a thousand silvery stars and breathing with perfume. All these flowers of eventide are very lovely and should be cultivated, as giving to our gardens quite an added charm. While Tiger Iris and Morning Glory are the matin service of the garden, the flowers just mentioned may be appropriately called the evensong.—M.

14477.—**Poison for woodlice.**—Cook Parsnip or Beetroot in a solution of arsenic, and place in the haunts of the woodlice. They will eat greedily, and soon all be killed. The following traps may be used:—*Horse droppings:* Fill some ten-inch pots with half dry droppings, and lay them where the insects congregate. Once a week turn the droppings into the fire, and put fresh in the pots. If this be persisted in, a riddance will soon be made. *Potato:* Into some small pots put cold boiled Potatoes, and cover with moss. Examine night and morning, and transfer the woodlice to a bucket of hot water. The Potatoes will last for some time, and the traps are about the best for the purpose. Wherever toads and tomtits can be induced to stay in the houses, or robins build nests, woodlice soon become scarce, and, therefore, both toads and robins should be encouraged, for if taken early enough, woodlice never become very injurious. They can be poisoned like cockroaches, or trapped like earwigs. A bucket of hot water is in most cases necessary to put them in when the traps are emptied.—From "Garden Pests and their Eradication."—Celer et Audax.

—— If you can have a toad or two in your greenhouse do so. I was infested with woodlice in my greenhouse, and found the toad of great use.—H. Worley.

14408.—**Large Spanish Jasmine.**—Try Mr. Ravenscroft, Granville Nursery, Lewisham.

14459.—**Compost for potting plants.**—The best compost for plants in pots is loam, mixed with a little sand, a little charcoal, and enriched with manure from an old hotbed. The manure and loam should be thoroughly mixed some time before use and frequently turned over. —J. D.

14410.—**Heating span greenhouse.**—If the house is not in a very cold district or exposed situation, two rows of four-inch piping round the two sides and one end of the house will, if properly heated, be sufficient, making in all about forty-eight feet. Otherwise, it would, perhaps, be necessary to add a third row, as it is well to be always on the safe side. The pipes should be placed under the stage, so as to warm everything through from the bottom; but if the beds are solid, then run the flow along near the glass, and bring the returns along the pathway, a few inches only above the ground.—B. C. R.

FLORISTS AND THEIR CATALOGUES.

I HAVE read a "Disappointed Amateur's" letter (p. 362), and I must say that my experience differs entirely from his. Much disappointment there truly is before an amateur attains success, but I do not think we must attribute it all to bad seeds. He says that an amateur will often find himself miserably deceived by the puffery and trickery found in catalogues and guides. If anyone deals with houses that are not to be relied on, they must not expect grand results; for my part, whenever I have bought seeds from good houses, I generally have had good flowers. I have not bought such florists' flowers that I knew I could not grow. With our (that is an amateur's) hand-to-mouth system of growing it is not likely that we can grow the most particular sorts of flowers, to compete with large houses that have every convenience, and I think an amateur is wrong in expecting it; because one thing we are certain about, that the illustrations that we see in catalogues are taken from the very best flowers that they can produce, and what firm would be so foolish as to show their worst? Last autumn and spring I bought seeds which have given results beyond my expectations, for my garden has been one mass of bloom from March, and gardeners have seen them and have said they are splendid flowers. For instance, I raised twenty to thirty Zinnias from a penny packet, and likewise from a packet of Asters, and a gentleman gardener told me he never wanted better. A "Disappointed Amateur" says that for several years he has spent half-a-sovereign in flower-seeds of various sorts, and only once had good Stocks and Antirrhinums. I must think that he has been singularly unfortunate in dealing with bad houses, or else has not done justice to the seeds, for if we want to grow them well it means a great deal of thought and trouble. I, for my part, have not spent more than a quarter of that amount this year, and I can furnish "Disappointed Amateur" with Zinnias, Asters, Annual Chrysanthemums, Stocks, Single Dahlias, Balsams, Verbenas, Phlox, Godetia, &c., almost, if not quite, as good as those shown in the illustration. And my plants were raised in a cold frame, as I have no greenhouse. "Disappointed Amateur" says again he purchased Victoria Aster seed, and when the blooms opened they were about the size of a shilling. I supplied some friends with some of my plants in the spring, and they are nothing like mine only in colour; while I have some blooms three-and-a-half inches across, theirs are only about one-and-a-half inches. As far as my experience goes, I think Asters want exceptionally good treatment if good flowers are to be produced. For instance, for next year's display, I begin, say, in November, by manuring my beds with well-rotted manure, and lay it rough for the winter to be well pulverised by frost; then, in February, rake down smooth, lay one inch of leaf-mould, &c., as a top-dressing; then my beds are ready for the reception of seeds or plants as they are ready from the cold frame. With this treatment, my garden produces me some splendid flowers. If "Disappointed Amateur" would give more attention to these points, I am certain he would see better results. I think, Mr. Editor, that it would be rather too hard to expect you to supply us with the names of firms (quite perfection, mind), and I think it would involve you in great difficulties. I am certain you do all in your power to help us in this particular, and I have always found, when writing to the firms advertised in your valuable paper, that I have been well treated.—M. D. Y., *Combs, Suffolk.*

—— An "Amateur's" experience (p. 362) is, I am afraid, the experience of many. There is a good old Scotch proverb which, being anglicised, is, "A bad reaper never gets a good reaping-hook." Want of skill, want of knowledge, want of thought are too often the cause of an amateur's failures. He "fails to see how a knowledge of gardening can change the colour of a flower or alter its substance;" not being aware that in judging Roses, for instance, substance stands first and colour a good second, both these being the result of good culture. Florists' flowers, as all those named by "An Amateur" are, except Canterbury Bells, require good culture, or they cannot be grown to anything like a satisfactory state. The half-hardy annuals in many of the London parks and public gardens are exactly in the state described by "An Amateur," although any one who understands those matters can see that the strains of seed are the best that can be had. A knowledge of horticulture is just what would have made "An Amateur's" Asters come true.

Asters have to be sown in rather a brisk heat. The moment they have made a few pairs of leaves they should be planted out in a bed of rich soil on a half-spent hotbed, and the instant the weather is warm enough they should go to their blooming places in deep, rich loam, well mixed with old manure, rotted almost to powder. They must never receive a check of any kind. Zinnias require exactly the same culture. Stocks should be sown in just sufficient heat to start them; when they have made their pairs of leaves they should go to the open ground. The bed for them should have been well dug and manured some time before planting. Just before planting, top-dress the bed with two or three inches of old manure, rotted to powder, rich light loam, and leaf-mould, and in that set out the plants three inches apart. They will take as much liquid manure as you like, short of killing them; and should be constantly thinned out, as they show for bloom until they are fifteen to eighteen inches apart, which will get rid of all the singles. Just as the buds show colour, the bed may be dressed with a rich compost, and slightly hoed over; then the plants may be left to themselves. Stocks are the better for lime in the soil, so that if the soil is not chalky, lime or old mortar dust should be added. Marigolds, Pentstemons, and Phlox Drummondii require good soil and plenty of manure. Antirrhinums are of easy culture, but require a light soil with plenty of lime in it, and a sunny place. Whenever amateurs make a failure they should write for advice, and not go on in the dark and then blame the seed.

The amusing caricature in *Punch* a few years back had a germ of truth in it:—"Country grocer and amateur florist: 'Some bacon I had go bad that hot weather we had last year I buried in my garden. Singular circumstance, this year all my Asters come up streaky!'" Having practically taught myself gardening, I can assure amateurs that there is a royal road to success, but that road lies through heaps of leaf-mould, rotted turf, and decaying vegetable refuse, and heaps of decaying and decayed stable and cowshed manure—a road which is generally about the last amateurs are willing to take. Too often the amateur's failures are occasioned by attempting a sort of kid-glove and dinner-dress kind of culture which abhors bad smells, and is afraid to soil its hands.—J. D.

THE KITCHEN GARDEN.

THE ONION MAGGOT.

BEING a constant reader of GARDENING ILLUSTRATED, I have from time to time read many queries from your correspondents relative to the cause, cure, &c., of that troublesome pest, the Onion maggot, and, with the latest correspondence before me, I cannot desist from making a few remarks which may be of service to some of your readers who may have lost all patience in trying to grow this valuable vegetable. I was somewhat amused by the contribution of "C. M. D." who, having found the "perfect cure," prefers to keep it all to himself. Without wishing to wound his feelings, I may say that he reminds me of the wag who, as the story relates, once drew farmers' attention to himself by stating that he had discovered a sure remedy for the disease called "May sickness" in Barley. After keeping it all to himself till he had thoroughly "beat all round the bush," all eyes were directed to him, and he was almost pronounced a public benefactor, until at last he informed the jubilant expectants that to prevent May sickness they must all sow their Barley in June! Now, sir, I do not for a moment presume that "C. M. D.'s" answer to "J. P. C." will be anything of that sort if he does give it, but this I say—why not give his experience, or else why write to you on the subject at all? Your correspondent "O. F." tells us how the eggs which contain the maggot are deposited, which I believe is quite correct, and these facts give rise to the following question: How, if this be the starting-point, can any particular method in the preparation of the bed affect the progress of the development of the maggot?

I quite agree with "W. R." that his method makes all the difference between a crop and none, as its effects upon the bed are somewhat akin to my own. The Onion is a gross-feeder, and its description as such in all works on the subject, naturally tempts the cultivator to dig in a large quantity of manure. At the time I write my Onion-bed for next spring is prepared; and has been since the second Peas were cleared. The bed was thoroughly dug, and a good supply of dung added, consisting of pig and cow bedding in almost a raw state, but thoroughly mixed with the droppings. This is planted with Cabbage, which will give a supply in November, after which the ground is cleared and again dug, and let lie rough till sowing-time; it will then have a dusting over with soot and be levelled with the cultivator, and the seed sown in shallow drills nine inches asunder, raked in, and well rolled.

This last performance is one of the chief secrets of success, and my reason is this, be it right or wrong:—From careful observation I have found that the looser the soil the worse the disease, so this accounts for the failure of the crop when dung is dug in fresh at time of sowing, which keeps the soil more porous than when thoroughly decomposed and incorporated with the soil. My theory is that insects, being endowed with instinctive powers, do not deposit their eggs where there is not every facility for the development of the insect; and where I find the bulbs firmly imbedded no maggot is to be seen. I beg to send you herewith a few specimens. I do not claim that they are over large, but when you take into consideration that they are grown within a mile and a-half of the centre of the town of Birmingham, you will say that your discouraged readers should not give up hope. I am very seldom troubled with the maggot, and I attribute it to the above method. The accompanying bulbs have not yet attained their full growth, but I simply send them as a testimony of their soundness.—W. L., Jun., *Edgbaston, Birmingham.*

[*** *The bulbs sent are perfectly sound and of good size.*—ED.]

STAPELIAS.

STAPELIAS, or, as they are sometimes called, Star-fish flowers and Carrion flowers, are succulent, leafless plants, the branches of which are generally four-sided, toothed, and covered over with dark tubercles, which give the plants a grotesque appearance. Their singular and often beautiful flowers, which spring from uncertain points of the stems, exhibit a variety of colours, forming exquisitely marked or dotted patterns, and, notwithstanding the repulsive carrion-like odour which nearly all the varieties emit, they are extensively cultivated because of their beauty. Stapelias are natives of the Cape of Good Hope, and therefore best suited for greenhouse culture. They do not care for fire heat, and stand the winter better if exposed to the open air from June to September. Cuttings strike in three weeks, and plants can be raised from seed (which should be sown as soon as collected), put in light soil in shallow pans on gentle bottom heat. The best soil for the plants is composed of three-parts loam and one broken brick, but many growers recommend sandy soil. S. Thureti (also called Huernia) is a very dwarf singular little plant, with pale brown striped flowers that are quite glabrous. Its stem has a curious habit of burrowing in the ground, and then rising again. S. tubata is quite a gem in its way, compact in habit. Its flowers, which are produced freely, are densely clothed inside with glandular hairs, which give them a singular appearance. This should prove a favourite with those who are fond of plants more interesting than showy. S. variegata is the most common kind of Stapelia. For beauty of colour and finish of structure few plants surpass it, and, were it not for its bad smell, it would be a general favourite. S. glauca is a free-growing kind without hairs, except a fringe on the margin of the petals. S. grandiflora requires more heat than most of the others; it is hairy, and the smell so like that of carrion that flies congregate on it in numbers. A microscopic examination

of the way in which the maggots—hatched from the eggs which the blowfly, deceived by the odour, deposits upon the hairs of S. hirsuta and allied species—assist in the propagation of the plant, is very interesting. C.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, September 21 to September 26.

Planting early border with August-sown Cabbage plants. Weeding Strawberry ground, and cutting off all runners, afterwards mulching the ground with well-rotted manure. Filling all frames as they become empty with Lettuce and Endive. Sowing Mustard and Cress for succession. Taking up Alternantheras and potting them. Removing all cuttings struck in heat to a cold frame to harden. Pricking out on a large border Carter's Hartwell Early Marrow Cabbage plants to stand the winter. Potting variegated Ivy and a few Carnations. Earthing up French Beans in pots. Lifting a portion of the main crop of Carrots and stacking them away in dry sand in an open shed.

Examining all fresh planted shrubs and putting a few stakes and ties to those likely to be injured by wind. Salting walks. Gathering Louise Bonne of Jersey and Brown Beurré Pears; Wormsley Pippin, Passe Colmar, and other Apples. Taking up plants of Mesembryanthemum cordifolium and potting them for stock. Giving a top-dressing of soil to Cucumber beds. Earthing up Celery. Clipping hedges, and cleaning shrubbery borders. Gathering Coe's Golden Drop Plums, and Barrington Peaches. Potting double white Primulas, Cinerarias, and Solanum capsicastrum. Clearing off a piece of Turnips, and manuring and digging the ground for other crops. Transplanting Early White Naples and Giant White Tripoli Onions. Gathering all unripe Tomatoes, and hanging them up in vineries in a sunny position to finish ripening; also picking Cucumbers, Cauliflowers, hard White Cabbage, and Capsicums for pickling. Potting Hyacinths and Tulips; also early-forcing French Beans. Taking up and potting Tom Thumb and Mrs. Pollock Pelargoniums.

Star-fish flower (Stapelia—Huernia—Thureti).

Star-fish flower (Stapelia variegata).

Glasshouses.

ACHIMENES.—As the last lot of Achimenes go out of flower, stand the plants in a house or pit where there is a little warmth. Give enough water to keep the tops from dying off prematurely, so as to allow of the tubers getting fully matured before being put away for the winter.

GESNERAS.—Encourage the winter flowering kinds of these plants to complete their growth before the days get too short to admit of much progress being made. One of the first essentials is to keep them clear from insects; where mealy bugs exist, they are generally troublesome on these Gesneras, and if allowed to get ahead there is a difficulty in getting rid of them without injuring the leaves. If the stock are in small pots, they will require manure water at times, or the flowering will be deficient. The summer blooming kinds of Gesnera, of which the scarlet G. Cooperii is a representative, will now have done flowering; keep the plants in a moderately warm place, and allow them to die down gradually, when they may either be wintered in the pots they were grown in, or put in dry soil. An intermediate temperature is the safest in which to keep such plants while at rest.

AGAPANTHUS.—The white variety, and also the well-known blue Agapanthus umbellatus—although the latter is so common a plant—are deserving of a place in every garden. Few things are so well adapted for standing about porches or verandahs. The general character of the plants is such that when either in or out of bloom they associate well with buildings; and they are so easily grown—or, more correctly speaking, will bear neglect in the matter of water, and other indifferent usage, so well—that they are among the best things for beginners in plant-growing to try their hands on. Plants that have done flowering should now be stood where they will get all the sun and air possible, and have as much water as will keep the soil moderately moist. By this means the season's growth will get ripened up so as to enable the plants to flower freely; for, although, as already said, Agapanthus will bear a deal of bad usage without seeming to suffer much, there is a great difference in the way they grow and flower when fairly treated.

CINERARIAS.—The earliest plants, if not already in the pots in which they are to bloom, should at once be placed in them; the soil should consist of good turfy loam, with more rotten manure mixed with it than most plants require. Some leaf-mould will also improve it, sand being added as needful. Six or seven-inch pots are large enough for the growth of Cinerarias for ordinary purposes, provided that the plants, after their roots have got well hold of the soil, are regularly supplied with manure-water. To keep up a succession of these useful decorative plants, it is well to have a second lot to follow those raised from the first sowing. These will come in late in spring. This younger stock should not be allowed to remain too long in their first pots, so as to let the roots get closely matted, as if this occurs the plants will not make free growth afterwards. To have Cinerarias as they ought to be when in flower, they should then retain all their bottom leaves; in the absence of these the head of bloom is invariably smaller than where they are present, large and fully developed so as to almost hide the pots. And, in addition, the plants have a much better appearance. To preserve the lower leaves fresh until the plants have flowered, aphides must never be allowed to get a footing on them. The Stock should be looked over every ten days or so, and immediately any insects are found the plants ought to be dipped in moderately strong tobacco-water, a pailful of which should always be kept prepared for use. Where provision of this sort is made, and prompt action taken, there is no necessity for half the amount of fumigation that becomes requisite where any delay takes place.

CALCEOLARIAS.—Plants of these raised from seed sown some time back will now be getting large enough to require pricking out into pans. The soil for them should be finely-sifted loam, with a liberal addition of leaf-mould, which must also be passed through the sieve. This mixture, with a little sand added, will suit these plants in every way. Drain the pans sufficiently, putting in the plants about an inch and a half apart. Give them plenty of light, so that the leaves, as they develop, may have enough substance in them. See that the soil is kept quite moist, as these plants cannot bear their roots to be at all dry.

FUCHSIAS struck from cuttings put in at the time advised will now be well rooted, and should be moved into three-inch pots. Give them good rich soil, made moderately light with leaf-mould rotten manure, and sand. Keep them a little close until the roots get hold of the soil; they should have a place where they will be fully under the influence of light. The atmosphere should be a little more moist than that of a greenhouse, and the temperature higher, so as to keep them gently moving through the autumn and winter. Fuchsias that came early into flower in the spring, and that have kept on blooming since, will, in most cases, now have got shabby in appearance. The best way will be to keep them partially dry at the roots, so as to stop any further growth, and then in the course of a month or so to cut the branches in as close as necessary to prepare them for starting again into growth when the proper time comes round. THOMAS BARNES.

Flower Garden.

HARDY PLANTS.—During the next month or two preparations must be made in the herbaceous garden and on rockeries for a good show next year, as if things are let alone from year to year the stronger plants will overpower the weaker and become sole possessors of the ground. It is in many cases found necessary to take rockeries to pieces after a lapse of four or

five years, and to weed out the rank vegetation which has got deep hold of every crevice. It is well, therefore, to go over both the rockery and open garden at this season; to trim off the clumps that are permanent, to weed out and replant in the reserve garden runners and seedlings, to examine bulbs, taking out those not required and seeing the remaining ones properly soiled and manured, and to fill up all gaps that may be found. Seedlings of Primulas, Snapdragons, Columbines, Androsaces, and similar plants, raised during the summer, should be carefully planted out, and a number of good plants of each potted off, so as to double the chances of preserving them during the winter months. Duplicates should also be made of every good plant in the rockery. All Sedums, Sempervivums, and Saxifragas should be gone over. It is well to grow these plants both in clumps and single crowns, for they have both beauty of mass and beauty of individual form. If the best crowns of these be picked out and planted apart, they grow into grand rosettes, and in due time flower, whilst in the mass they bloom but sparingly, and do not display their full beauty of form. In the same way the Sedums and Sempervivums will come in useful if carefully cultivated. Christmas Roses should also be carefully examined by removing the soil to see that the roots are active and in good health, and manure should be placed on the soil above the rootlets to give vigour to the blooming buds. This plant exhausts the soil by its profuse blooming every year, and merits an annual mulching at this season, which it repays with interest at the very season when its white flowers are most welcome.

Bedding plants are now, except where checked by timely stopping and regulating, getting coarse and rampant in growth, and the floral display is less brilliant; therefore, endeavour to make up for the reduction in quantity of bloom by increased attention to tidiness. Bring up any arrears in the way of propagating by at once getting in all cuttings required. Where old plants are kept for providing a stock of cuttings in spring, cut all the flowering shoots in tolerably close, so that they may make young-growing shoots previous to being lifted. Lobelias we find much more satisfactorily grown from cuttings than from seed, and in order to produce good stock plants they should be cut in pretty closely about a month before they are lifted for potting. Any good Petunias that it may be desirable to retain should be treated in the same way.

Work in the Town Garden.

Greenhouse.—The time is now rapidly approaching when it will be necessary to get all winter occupants of the greenhouse safely housed, so that it will be advisable at once to make preparations for doing so. About the end of September is quite late enough for most plants to be got under cover. If the autumn proves fine, the hardier subjects may stay outside a little later; but most things will, as a rule, take more harm than good outside, especially if there should be any amount of the cold rains that we sometimes experience, these being productive of an immense amount of harm, which often does not show itself at the time. Thus it is well to have the greenhouse or houses thoroughly cleared and cleaned at once, to prepare them for the reception of the new inmates. Turn everything movable out of the house, and, if fresh painting is not necessary, wash down all glass, bars, shelves, staging, &c., with, if possible, warm water, and some carbolic or other suitable soap. Wash with hot lime all wall surfaces, and scrub clean the floor, if of wood, tiles, or cement. Leave the house open for two or three days, and in the meantime go carefully over the entire stock of plants, re-potting those that need it, though except in the case of such as Cineraries, Primulas, &c., it is better not to disturb the roots at this season; still you may see to the drainage of those that have suffered from the effects of worms in the pots, &c.

All, however, should have the dead, useless foliage removed, and insects got rid of by dipping or fumigating; dead or weak wood cut out; staked, tied, or re-labelled where necessary; dirty pots washed, and generally overhauled and put in good repair. Consign any sickly plants to the rubbish-heap. If things are kept moving on as they should be, there will be plenty to fill the available space without these, and, though weakly scraps may be just kept alive through the winter, the first sunny days in March will finish them up, and all the time and care bestowed upon them will be thrown away. When all is done, replace the plants in the house, affording each, as far as possible, the position most suited to its requirements, and from this time on through the winter keep the house as clean, neat, and sweet as possible, removing every dead leaf as soon as seen. Give abundance of air (to all greenhouse subjects) as long as it is safe to do so, and keep all—at least all that are about going to rest—comparatively dry at the root. Watering should now be done in the morning, so as to secure a moderate degree of dryness during the long cool nights. While the house is empty it is as well to overhaul the boilers, pipes, flues, &c., and see that everything is in good working order.

Pot off show and fancy Pelargoniums, just rooted, singly, into three-inch pots, and, if practicable, keep them close for a week or so, till rooted out. Good loam, with a little leaf-mould and sand, is best for these; a shelf near the light is the best place for them through the winter, and they should only have just enough water to keep them fresh until spring comes round again. The same treatment will suit choice double and single Zonals wanted for early spring bloom. For winter flowering Zonals (which are hardly worth attempting, except in comparatively open situations), the best way is to house them early (they have, of course, been standing out in a sunny place, and are getting pretty well pot-bound), with abundance of air and the lightest possible position, which will be far better for them than cold rains or dews outside; and keep dry for the present. Then, if afforded a little heat, more moisture, and fed with liquid manure or ammonia towards the end of next month, they will start afresh and be nicely in bloom by Christmas. For this purpose Vesuvius, Wonderful, West Brighton Gem, and H. M. Pollett are the best of the older varieties, but the double scarlet F. V. Raspail eclipses all others in beauty and general usefulness, though it needs more heat to expand the blooms nicely. Coleus, and indeed all stove plants, must now be subjected to a moderate degree of fire-heat; the Coleus especially will not at any time endure a low temperature, and must be kept just moving in a warmth of at least fifty-five degrees to sixty degrees, if they are to be preserved. Ripen Gloxinias by withholding water and exposing to sun and air—that is, those that have flowered, though seedling plants coming on into bloom may be kept going for some time yet in a warm, moist atmosphere. These will often bloom on into November. Get all necessary cuttings (of Geraniums, &c.) put in at once, and secure a stock of Lobelias for propagating in spring. As we have said before, Petunias, Verbenas, &c., are better left to die in the beds, a fresh stock being raised from seed each spring.—B. C. R.

Fruit.

Melons.—To keep these in vigour, increased artificial heat, both top and bottom, will now be necessary, and the fruit must have the fullest exposure to light by tying aside any foliage that intercepts it. Though less water will be necessary than earlier in the season, avoid dryness; free ventilation, full exposure to light, and an equable bottom-heat never fail to ensure fruit of high flavour. The blooms of late plants should be fertilised, and, as the advanced season renders this crop somewhat uncertain, it will not do to wait for a number of flowers to be ready to fertilise at the same time—the first that appears should be set. Keep the shoots thin, and those producing fruit should be stopped at the first joint beyond the fruit. As soon as all are set, encourage quick growth by closing the house very early. With sun-heat, let the temperature be raised to ninety degrees for an hour or two, and this will have a good effect.

Vines.—Late Grapes should now be nearly ripe, and a dry air should be allowed to circulate freely about them when they have arrived at this state. Lateral growths should now be cut off Vines of all descriptions; late rods, with plenty of healthy foliage, will still produce these shoots, but they must not be allowed to grow more than one inch or two inches, and should then be removed. Be particular to keep the floors of vineries clear of decayed leaves; if they be left lying about where ripe Grapes are hanging, they induce damp among the fruit. Do not allow inside borders to want water, even though the Grapes are ripe, if there is any fear of their shrivelling from want of it; better sacrifice a few by damp than that this should happen. After watering, cover the border with either mats or dry straw, both for the sake of neatness and in order to prevent rapid evaporation. The earliest Vines, on which the Grapes are to ripen in April and May, should be pruned at once, the borders renovated, and the houses cleaned, and, if necessary, painted.

If the walls on which are grown late Plums that it is thought advisable to keep as long as possible are not well coped, the temporary coping-boards used in the spring may be placed over the trees for the two-fold purpose of throwing off wet and carrying the netting which it will be necessary to suspend where wasps and birds are troublesome. Let all newly-grafted trees be examined, as the young scions swell rapidly about this time, and unless the ligatures are loosened and the strongest growths are secured to stakes, they are very liable to get blown out by the wind. As the planting season is at hand, soil and drainage should be got ready for use, and to secure healthy trees from the nursery they should be selected before the leaves fall. The gathering of Apples and Pears will now claim daily attention, in order to secure them as they become ready, and before they get injured by falling from the trees. It does not often happen that every fruit on a tree will part freely at the first picking, but by taking all that are ready, and by leaving the most backward, a valuable succession of all kinds may be secured.

Vegetables.

Turnips sown about the beginning of August are an important crop, as upon them principally depends the winter supply; when sown earlier it is difficult, in many parts of the kingdom, to preserve the young plants from the Turnip beetle. To get a satisfactory return from these late sowings, it is absolutely necessary to allow them plenty of room by thinning sufficiently and in time. Where the first thinning was insufficient, they should at once be again gone over and more pulled out; a space of fifteen inches between the plants every way is not too much.

A little more winter Spinach should now be sown at once on a dry piece of ground, and will come in for use in the spring. It is a good plan to go over the rows, and to partly thin them out, leaving the plants so that they will not become drawn; and to complete the thinning by removing more as they are required for use. Ultimately, those that are left should be about six inches asunder. This vegetable, like all others, cannot stand a severe winter when crowded.

Parsley and other herbs that are in daily request throughout the winter should be attended to. The former, as a rule, winters safely on a dry south border, but a frame placed over it ensures its safety in all weathers. Basil, Tarragon, Balm, and Mint are all easily produced in any warm position in houses or pits, and if planted in pots or boxes they can be conveniently removed as required from one place to another.

General Work.—Taking up late Potatoes must now be attended to. Magnum Bonum is not only thoroughly good, but with me the best of croppers. Champions are again a fine crop of really useful tubers. They are best grown entirely without manure. This variety we grow the most of, and find it better and more profitable than any of the older kinds. Onions, Shallots, and Garlic now being harvested, should be moved daily, an operation done quickly with an ordinary wooden rake. When quite dry do not delay an hour in getting them under cover and safely stored; they are for all culinary purposes, perhaps, the most useful inmates of the kitchen garden. It is a good plan to give Celery a good watering before earthing, but, of course, the foliage must be dry before earthing takes place. Keep a sharp outlook for slugs and the Cabbage grub. The most perfect Lettuce plants are got by sowing thinly on the winter Onion-beds. Thus treated, they are as broad as they are long.

GARDENING ILLUSTRATED.

VOL. VII. SEPTEMBER 26, 1885. No. 342.

INDOOR PLANTS.

WHITE HOOP-PETTICOAT NARCISSUS.

THIS delicate and most graceful little Narcissus that we show on this page we occasionally see in the greenhouses of our friends. We fear that, except in the most happily-situated and the warmest spots, there is not much chance for it out of doors in our country; but surely it is well worth a place in any sunny greenhouse or frame, and we fancy it might even be grown in windows in country houses. Narcissus Clusii commences growing early in September, and flowers in December and January. The bloom lasts for but a short time. We would suggest that a very charming use to which it might be put would be to let it grow on the surface of specimens in pots that would not be often disturbed—such as standard Laurustinus, and various plants in tubs—the soil of which it would serve to hide during a certain part of the year, while it would at the same time get sufficient nourishment without exhausting it much.

WHITE PERUVIAN TRUMPET-FLOWER.

BRUGMANSIA SUAVEOLENS, or the White Peruvian Trumpet-flower, must be classed amongst the finest of our greenhouse plants that assume tree-like proportions. B. Knighti is common in many gardens, and is used effectively outside as a sub-tropical plant. Good specimens of B. sanguinea may also be met with sometimes in greenhouses, but B. suaveolens seems comparatively scarce. This is to be regretted, as its flowers are the most beautiful of all. They are pure white, and in the evening very fragrant. The crop of flowers seems to open nearly all at once, and just for a few days the plant has a fine appearance. Successional flowers are not produced in similar profusion by this species as in the case of B. sanguinea. Brugmansias require space and a rather lofty house to show them off well, as large and old-established plants grow to a height of twelve feet or more, even though cut close in annually. The roots should be restricted in some way, in order to keep them dry when at rest in winter, and also to ensure a free-flowering habit. If grown in large pots, they may be removed from the house altogether after flowering, but this is not always practicable. Plenty of water and liquid manure are requisite when growth is active. B. suaveolens is sometimes spoken of as being a shy flowerer. This term may be applied to it in regard to a succession of flowers, but it can hardly be considered shy when the first batch is open.—B.

CAMELLIAS DURING WINTER.

AMATEUR cultivators of Camellias often find not a few difficulties in the way of managing and flowering them successfully, especially during winter. The plants drop their buds at a time when the cultivator is looking hopefully for a pleasant head of bloom. When housed for the winter, watering must be carefully done, for the giving of either too little or too much will cause the buds to fall off, and the whole season's labour to be lost. What actually causes the buds to fall is the question that exercises the mind of the disappointed cultivator. A bad system of watering has something to do with it. A little water applied frequently—that worst of all known forms of mismanagement—will render the soil moist, and in some cases even sour, for half way down the pots, whilst the lower part of the ball may be as dry as dust. There is nothing more difficult than to get persons to observe this simple rule, "Never water till a plant really requires it, and then soak it"; and an uncongenial soil is also a cause of bud-dropping. Many, knowing that Camellias cannot grow in a strong, heavy soil, mix for them peat and loam; but this results in a sour soil in which Camellias become unhealthy. Sods cut as if for forming a grass plat, taken from a sandy loam—particularly if it grows Foxglove, Heath, or Fern—chopped, or, better still, pulled to pieces when quite fresh, is the best soil for Camellias without any admixture. If not sandy enough, silver sand may be added. If a suitable loam cannot be obtained, the next best soil is a good fibrous peat, unmixed with anything else. Peat soil ought never to be mixed with anything except white sand, if sand be required. Camellias often do well in pure peat, particularly when assisted with a little weak guano water or soot water when growing. The former must be very weak—certainly not more than one ounce to a gallon of water, given once or twice a week. Another cause of Camellias dropping their buds is doubtless a poor exhausted soil from which the plants gain little or no support. A plant, too, which has formed its buds under glass is often turned out of doors, where it is liable to be soaked by heavy and continuous rains, and is night after night exposed to heavy dews. Under these circumstances it will often look healthy; but when brought into a glass-house and subjected to a dry heat, with possibly not enough water at the roots for days together, it is not surprising that the shock produced by so great a change should be injurious. Many a plant also suffers from the extreme dryness of the air during frosty weather. I have often been obliged to water the pathways during frost, and sometimes have even had the evaporating troughs filled with water in winter. Perhaps, however, the most frequent cause of the shedding of Camellia buds is excess of moisture rather than too little of it. The amateur grower should so manage as to keep the soil in which the plants are growing something between dry and damp. When water is administered it should be of the same temperature as that of the house in which the plants are growing. Cold currents of air playing directly on the plants are also injurious at times. D.

White Hoop-petticoat Narcissus (N. Clusii).

Large specimens of Lilium auratum.—During my journeys about Kent I have been in a great number of nurseries and private establishments, and amongst the number was that of Mr. J. J. Lonsdale, The Cottage, Sandgate, near Folkestone. This gentleman owns a very large specimen of Lilium auratum, which is at the present time in its full glory. The plant is shown in a pot measuring two feet six inches across; it stands seven feet high, twenty feet in circumference, it has thirty-eight stems and 275 blossoms on it. One bulb was purchased eighteen years ago, and potted; since that time the ball of earth has never been broken, but simply potted on. It has been shown at Folkestone and several other shows, and has always been first. I believe a fancy price has been offered for it to be taken to London to be shown in some of the exhibitions, but the owner is very chary of letting it go far out of his sight, as he is justly proud of it (and so is his gardener, James Lilley).—J. B., *Dover*.

—— Mr. F. W. Smyth, Wolverhampton, also draws attention to a fine L. auratum, the property of Mr. Charles Neve, J.P., Elmhurst, Tettenhall Wood, near Wolverhampton (gardener, W. Pottifer). This plant measures seven feet six inches in height; circumference, nineteen feet ten inches; number of blooms, 102. The bulb was purchased six years ago, and weighed last November twenty-eight pounds; from this bulb, during the six years, 140 bulbs have been taken, all of them flowering the next season.

—— Mr. M. Mackintosh, of Elgin, states that he has a Lilium auratum of extraordinary beauty. It has developed one single magnificent stem carrying fifty-one large separate and perfect flowers.

"Mother of Thousands."—This quaint-looking little plant, to be seen in most greenhouse collections, is worth the amateur's attention, especially where easily-grown plants are in request. Saxifraga sarmentosa, perhaps more familiarly known by the name of Mother of Thousands, is also an excellent window-sill perennial, and in favourably-situated positions, both in the window and greenhouse, will maintain its fresh, unique appearance during the dull season; and will, moreover, stand several degrees of frost. At least, that is the writer's experience of several years as to its cultivation in a cool greenhouse, where only a charcoal stove has been in use, and where, in winter, only a little sun found its way. Root division during spring is the usual mode of propagation, but at the present time it will root in the house. When rooted, the plants should be placed in their permanent quarters, giving a little tepid water in winter. Its distinctness of character, as compared with other plants, should render it a favourite with amateurs in quest of anything requiring little care. It is an excellent plant for hanging-baskets.—STAMFORD HILL.

Pot Lilies.—The latest flowering Lilies in pots that are now approaching a state of rest should have just water enough to keep the soil from getting quite dry. It is not in the nature of these plants to have the material in which their bulbs are placed dust dry, as pot Lilies are sometimes kept after they have died down, one of the main causes through which they get out of order. In the cultivation of pot Lilies there is one safe rule to follow, that is, never to allow many weeks to elapse after the tops have died down before getting them potted. The soundness of this practice is now so generally admitted that it would seem unnecessary to urge the advantage of it, were it not that so many failures continually occur through putting off the operation until the bulbs have begun to make new roots, which are so fragile that it is impossible to get the old soil away from them and place them in the new without their tender fibres getting broken. When this occurs to any kind of Lily serious injury is done, and in the caseof some sorts, particularly L. auratum, they are often of but little use afterwards. Most Lilies do well in good rich loam with some leaf mould, rotten manure, and sand added. In the case of any kinds that increase fast, such as L. longiflorum and L. eximium, the last-named is much the best for pot culture, as it will produce double the quantity of flowers that L. longiflorum is capable of bearing—all the small bulbs that cluster round the stems, as well as those that will be found among the strong flowering bulbs, should be removed and placed in separate pots until they get strong enough to bloom. It is bad practice ever to allow too many bulbs to remain together in the limited space that a pot affords; seven or eight good-sized bulbs of L. speciosum or any of its varieties are enough for a sixteen-inch pot, and so on, with a proportionately less number to pots of smaller size. For general decorative purposes, pots half the above size, containing half the number of bulbs, will be found the most useful. When potted, the best place for Lilies is in a cold frame or pit stood on some moisture-holding material from which the pots will absorb enough to render it unnecessary to give much water; but still the soil must not be allowed to get too dry for the roots, when they begin to push, to work freely in.—T. Baines.

Greenhouse filled throughout the year.—Having received a great deal of help from many others who have given details of their experience in Gardening Illustrated, I venture to give a short account of my efforts, trusting it may prove helpful to others. Our greenhouse is attached to the house, and about a third is at the side of the house, so that we have a small part which cannot be seen from the room. This is very useful to put boxes with seeds, cuttings, &c., in. In winter we keep up a temperature of from forty to forty-five or fifty degrees only. With no professional help whatever, no other glass besides the greenhouse and a frame, and having the disadvantage of being within three or four miles of Charing-cross, we have had the following plants in bloom throughout the year:—*January:* Roman Hyacinth, Scilla sibirica; Narcissus, Double Roman and Paper White. These Narcissi we find very valuable. *February:* Narcissi as last month. *March:* Azaleas, Arum Lilies (Calla). *April:* Azaleas, Callas, Nicotiana affinis. *May:* Azaleas, Geraniums, Nicotiana, Arum Lilies, White Marguerite. *June:* Same as last month; also Lilium Harrisi, Ivy-leaved Geraniums, and Fuchsia (Earl of Beaconsfield). *July:* Same as last month; also Hydrangea, Heliotrope, and Fuchsia (Avalanche). *August:* Same as last month; also Abutilons, Bouvardias, Plumbagos and Asters, and Petunias. *September:* Same as last month; also Chrysanthemum (La Petite Marie), and a pot or two of Anemone japonica alba, which is, this year, quite a success. *October:* Geraniums, Abutilon (Boule de Neige), Bouvardias, Chrysanthemum (Madame Desgrange). This last is a great acquisition. *November:* Chrysanthemums, sorts too numerous to mention, and Callas. *December:* A few late Chrysanthemums, also Callas. These last cannot be depended upon to come out in such a cool temperature, but we have had one out on Christmas Day for the last few years; once, however, just as the bloom was opening, it got nipped and never opened properly. Besides these we have Palms—Phœnix reclinata, Seaforthia elegans; also baskets lined with Moss and planted with Ferns. Our greatest success is attained with Ferns, Azaleas, and Chrysanthemums. These are splendid every year. We have, however, failed with Camellias (buds fall off), Begonias (buds also fall off), Primulas, Cyclamens. I should like to know whether these can be grown successfully so near London.—North London.

Krætzer's Lily is, without doubt, the most chastely beautiful of the many lovely varieties of L. speciosum (lancifolium), and one, moreover, that is the least known in gardens generally. None of the varieties bear such exquisitely formed flowers, so perfectly symmetrical, and of such snowy whiteness. It is infinitely superior to what is known as the white variety of L. speciosum, which in reality is not pure white, but slightly tinged with pink, and invariably has pinkish midribs at the back of the petals. Krætzer's Lily is pure white, save the medial ribs to each of the petals, which form a green star. As a conservatory Lily at this season it is invaluable, and its snowy blossoms are peculiarly suitable for bouquets, wreaths, &c.—R. S.

The Toad-flower (Stapelia Bufonia) is worthy the attention of any who may have a taste for the curious and interesting. It is easily propagated from cuttings, which should be taken off when the plant has renewed its exhausted energies after flowering. A good sandy loam will do for the striking process. Little water is required, except during a hot summer; but occasional waterings are essential to the proper development of the shoots and health of the plant. It must be placed in heat during winter, as it is of a tender nature; but not so much so as to require removal to a stove—a house with a temperature above freezing-point will suit. I find the best way to water it is to place the pots in saucers of water. I have known overhead waterings cause the stems to turn yellow and die off. The plant attains a height of one foot; the flowers are "five-pointed," star-shaped, of a yellow colour; the face of the petals marked with black lines and spots; the inner petals are also pointed, but not divided like the outer row, neither are they so acute. It is a native of the Cape of Good Hope, introduced to this country about 1789. I would caution all those blessed with a keen scent to beware of the odour arising from the flower, as it is of a very disagreeable nature.—M. Collins.

REPLIES.

14216.—**Growing Tea plants.**—The Tea plant (*Thea Bohea*) will succeed in the temperature of a cool greenhouse in winter.—E. Hobday.

14215.—**Salvia buds dropping.**—It is difficult to say what caused the buds of your Salvia patens to fall, unless the soil is too light and rich, and the plants are overgrown. Under similar circumstances I should try a little stiff soil mixed with that of light character.—E. Hobday.

14232.—**Pruning Cobæa.**—Let the Cobæa go on and flower as long as it will, and as soon as the flowering ceases and the leaves begin to turn yellow, or any of them, and the plants beneath (if any) want more light, cut away all the dangling pieces—*i.e.*, spur it in to the rafter. The variegated forms rather a pretty winter creeper.—E. Hobday.

14218.—**Propagating Palms.**—I have rooted these offsets by taking them off with a sharp knife, planting them firmly in sandy peat, and moving them into a shady corner of an intermediate house. It takes a long time, and all may not form root. In some cases it is possible to get a bit of root with them, and then they will soon establish themselves. Palms are best raised from seeds.—E. Hobday.

14171.—**Plants for London conservatory.**—Among flowering plants may be had the Christmas Rose, various bulbs to be potted now, such as Hyacinths, Tulips, Crocuses, Scillas, Jonquils, and the Poet's Narcissus, Begonia insignis, B. fuchsioides, B. semperflorens, Chorozema, Chrysanthemums of sorts, Coronilla glauca, Cytisus racemosus, Cyclamens, Daphne indica, Chinese Primulas, and Vallota purpurea. The following are useful decorative Ferns:—Pteris tremula, P. cretica albo-lineata, P. serrulata, P. argyrea, Adiantum cuneatum, A. formosum, A. Farleyense, A. tinctum, A. Williamsi, Asplenium bolbiferum, Lomaria Gibba, and Cyrtomium falcatum. Some of the Club Mosses should be grown. Selaginella denticulata and others will be found specially useful.—E. Hobday.

Apples for Pigs.—Will any country reader kindly tell me whether half-ripe apples are injurious to Pigs, and if not, are they of any value to those animals as an article of food?—E. H. F.

PLANTS IN BLOOM IN AUGUST.

"M. C. J." sends us a list of plants in bloom in some gardens near Cork. Among those named are the following, which were not mentioned in the list published recently:—

Alyssum (Madwort)
Anemone (Wind Flower)
Anthericum (Spider-wort)
Antirrhinum (Snapdragon)
Bocconia (Celandine-tree)
Bupthalmum (Ox-eye)
Calceolaria (Fisherman's Basket)
Centranthus (Valerian)
Corydalis (Fumitory)
Crinum (Asphodel Lily)
Cyclamen (Sowbread)
Dahlia
Erigeron (Flea Bane)
Eryngium (Sea Holly)
Escallonia
Eschscholtzia (Californian Poppy)
Gynerium (Pampas Grass)
Harpalium (Prairie Sunflower)
Ismene (Peruvian Daffodil)
Jasione (Sheep's Scabious)
Justicia
Linum (Flax)
Liriodendron (Tulip-tree)
Lonicera (Honeysuckle)
Magnolia
Myosotis (Forget-me-not)
Melissa (Balm)
Nolana (Chilian Bell-flower)
Pansy (Heartsease)
Plumbago (Leadwort)
Pyrethrum (Feverfew)
Rhodiola
Rosmarinus (Rosemary)
Sagina (Pearlwort)
Sambucus (Elder)
Saponaria (Soapwort)
Sempervivum (Houseleek)
Senecio (Groundsel)
Thymus (Thyme)
Tradescantia (Spiderwort)
Tritoma (Torch Lily)
Verbena (Vervain)
Vinca (Periwinkle)
Zephyranthes (Zephyr-flower)

Bat-fowling.—In reply to "S. M." I may say that for bat-fowling, or catching sparrows with a net, we use a net about two and a half yards long by two wide (at its widest part) stretched on two sticks meeting at the top, in the form of an arch. It is far better to buy them ready made, as if the sticks are not well dried they are very heavy. It also requires a beater to carry a light pole for beating, a bull's eye lantern (this may be dispensed with) and a basket covered on the top—say with an old piece of bag, and a part of a stocking let in to put the birds in; this is a very convenient receptacle for all birds taken alive. Occasionally we catch some songsters, such as thrushes, blackbirds, bullfinches, and others. Supposing we try a piece of Ivy at the point where it was thinnest. One holds the net up against the Ivy, the other beats it with the pole, and when the birds fly out they are caught in the net. If the lantern is used it ought to be placed somewhere to shine full on the net, which dazzles the eyes of the birds so that they cannot see. The birds are then put in the hamper, taken home, and sorted. Sparrow pie is a thing not to be despised, as I can testify, by those who are at the trouble to have them cooked. The best time for "bat-fowling" is on a frosty night when all is quiet—you cannot hold the net in windy weather—round ricks, barns, Ivies, hedges, &c. I shall begin soon, when there is no moon, as, if it is light, the sparrows see the net.—W. C. C., *Worcestershire.*

14459.—**Compost for potting plants.**—This question is of considerable importance to all who have to do with greenhouse plants; and those who have not had much experience in their culture are constantly puzzled when a choice plant requires to be potted. Potting soils may be divided into three kinds for all ordinary purposes. That most frequently used by amateurs, who possess only a greenhouse and a few frames, is one composed of good loam (decayed turf is the best), add to the loam a fourth part of decayed frame manure, as much leaf-mould, and some sharp white sand. I like to mix the compound some time before it is required for use. Indeed, as much may be mixed up at one time as will last for six months. This compost is the best for all soft-wooded plants, such as Pelargoniums, Cinerarias, Calceolarias, Chrysanthemums, Roses, Hyacinths, Tulips, Fuchsias, Coleus, Verbenas, Petunias, Abutilons, &c. The next compost is one of two-thirds loam and one-third turfy-peat. This is used for Aphelexis, Camellias, Genistas, Grevilleas, Kalosanthes, the pretty spring flowering Lachenalias, Liliums, Passifloras, Pimelias, Lantanas, Vallotas, &c. A few require to be potted in turfy sandy peat only; the most important being Cape Heaths (Ericas), Epacrises, Azaleas, Dracophyllum gracile, Lapageria rosea and the white variety, and Rhododendrons.—J. D. E.

A suggestion to correspondents.—Will you allow me to suggest that it would be a great convenience to readers if correspondents who refer to articles that have previously appeared in Gardening would indicate the page on which they may be found? It would enable those who are interested in any particular subject to trace back the discussion with facility.—Regular Reader.

FRUIT.

HOW TO STOCK AN ORCHARD.

14491.—This is a very important question, as it will depend very much upon how the work is done as to whether substantial success will be attained or not. In the first place, the soil and position is good. Loamy clay on chalk suits most kinds of fruit trees. The first operation is to trench the ground 18 inches deep, grubbing out the roots of shrubs, trees, and perennial weeds in the process. The work could be done for 1s. 6d. or 2s. per rod, according to the nature of the ground and the state of the labour market. The cheapest and best way is to plant two-year-old trees four feet apart. Were I intending to plant two acres, I would first purchase 1,361 trees at 9d. each—perhaps less. I would trench the two acres, but would plant only half an acre to begin with, which would take 1,361 trees at four feet apart. In two years the trees must be thinned out; but during that period the remainder of the ground will have been cropped and manured for vegetables, and will be in the best condition to be planted with the fruit trees; and if every alternate row on the half-acre is taken up, that will give 680 trees, which, at eight feet apart, will occupy exactly an acre. Every alternate tree in the rows that remain must also be taken up, and they will number 340, the number required to plant the remaining half-acre. The whole space of ground will now be occupied with trees at eight feet apart, and they will be in full bearing the year after they are planted. I would plant half the ground with Apples and the remainder with Plums and Pears. If Cherry-trees are planted, the birds destroy most of the fruit in a small isolated garden. Now as to the varieties. There are 680 Apple-trees which should be made up as follows:—Thirty Devonshire Quarrenden (D), thirty Irish Peach (D), 100 Lord Suffield (K), 150 Cox's Orange (D), fifty Margil (D), 100 Pomona (K), fifty Loddington (K), fifty Golden Noble (K), fifty Sturmer Pippin (D), thirty Prince Albert (Lane) (K), forty Wellington (K). Pears:—Twenty Jargonelle, sixty Williams' Bon Chrétien, sixty Louise Bonne de Jersey, forty Beurré d'Amanlis, twenty Beurré Superfin, thirty Beurré Hardy, thirty Doyenné du Comiee, thirty Windsor, thirty Beurré Bosc, twenty Winter Nelis. Plums:—Twenty Greengage, twenty Transparent Gage, forty Early Rivers, forty Gisborne's, sixty Victoria, forty Diamond, sixty Pond's Seedling, sixty Damsons, forty large Bullace, twenty Orleans. The Apples ought to be grafted on the dwarfing stock, and the Pears on the Quince. Strawberries and small vegetable crops can be grown between the rows. J. D. E.

REPLIES.

14469.—**Vine-leaves shrivelling.** — The leaves of your vines have been scorched by the sun, owing to insufficient ventilation. Give air on the top of the house early another season, and when the thermometer reaches eighty degrees add front air as well. The leaves of your vines may possibly be too near the glass, which aggravates the evil. There ought to be a clear space of sixteen inches between the wires on which the vines are trained and the glass, with a current of air passing over the leaves. Hamburghs do not scorch even in a temperature of 110 degrees, as I have many times proved during the past summer.—J. C. C.

—— This is most likely caused by red-spider attacking the leaves on the under sides, and extracting all the moisture from them. They soon shrivel if the spider is not destroyed, either by syringing or painting the hot-water pipes with a sulphur mixture.—J. D. E.

14472.—**Mould in Peaches.**—This must be caused by a close and moist atmosphere after the fruit has passed the stoning period, and is approaching the ripening stage. The trees ought not to be syringed after the fruit becomes soft to the touch.—J. D. E.

—— The condition you describe may arise from two causes. It is not improbable that the fruit was scorched by sun early in the morning before it was dry. In that case the skin would be parboiled, which would cause the mould to extend to the flesh and ultimately to the stone. A very bad case of mildew would also affect the fruit in the same way, and the fruit in a young state is as often attacked by mildew as are the branches. Rubbing dry flowers of sulphur on the affected parts is a certain cure, if the sulphur is allowed to remain on the fruit for a week, and it will do them no harm. Some of the best Peaches we have picked this season were treated in this way when they were about the size of Walnuts, and the mildew quite disappeared, and left the fruit clean and free from any blemish whatever.—J. C. C.

14479.—**Cherries for Yorkshire.**—Besides the variety named in this question, the best varieties are Early Rivers, Black Tartarian, Elton, Bigarreau Napoleon, and Florence, to ripen in August and keep till September.—J. D. E.

14233.—**The best Currants.** — The new white Dutch and the White Crystal are the best varieties.—E. Hobday.

14461.—**Shanking in Grapes.**—It is not easy to say what is the cause of shanking in Grapes; probably the evil may be traced to several sources, and, if the cause could be found, the remedy might be easy. One feature in the case is worthy of notice, and that is the fact that out-of-doors Grapes never shank. The cause of shanking is, doubtless, some check to the vines in mid-growth—the difficulty is to find out the cause of the check. The most likely cause is want of water at the roots, which shrivels the active rootlets, and checks the flow of sap to the Grapes. Some bad management in the ventilation or other details of the ordinary work may cause it; but I fancy the evil is in the roots getting into a bad state from some cause or other.—J. D. E.

14485.—**Treatment of old Apple-trees.**—There is no doubt that your trees are getting weak through age and growing in a sandy soil, which is too poor for them. You should cut out the dead branches during the winter; but they certainly do not want root pruning. What they want is something to stimulate the roots. The only way to do this is to take away the surface soil in a circle of 16 feet, and 8 inches to 10 inches deep, and put in its place some good turfy loam or half loam and half rotten manure. In this the grass would also soon establish itself again. If you cannot remove the soil, have you any liquid sewage or manure water of any kind that you could apply on the surface over the roots, two or three times this autumn and again next spring and summer? Once a week or fortnight would not be too often unless we have an unusually heavy rainfall.—J. C. C.

14240.—**Grapes and Flowers.**—In reply to "A Puzzled One," allow me to state that we have vines planted in outside borders and brought in through holes left in the brickwork, and in these houses we have a large stage at the back and a smaller stage in front. In these houses we winter all our bedding plants; when these are cleared out, various flowering plants occupy their place, and when the shade from the vines gets too dense for these, the stages are utilised for Ferns, or any plants that enjoy a thick shade. Only when the Grapes are fully ripe are the stages clear of plants, so as to keep the atmosphere dry; and in the autumn most greenhouse plants are better for being fully exposed to ripen the growth, while Ferns and similar plants are removed to cold pits or frames. In other vineries, where the vines have both inside and outside borders, that is by far the best plan; the vines are planted just inside the front wall, that is arched for the roots to get out, and here we erect temporary stages for small plants, or set large specimens on slates or boards; but, as in the other houses, they are only cleared of plants at the time the fruit is ripe—in fact, any one growing Grapes for profit will find but little balance on the profit side if every inch of available space is not turned to account. I may add that with vine roots inside, every drop of water or liquid manure that runs through the pots goes to feed the vines; and I have no hesitation in saying that the very prevalent notion that Grapes and flowers cannot be successfully grown together is entirely a fallacy, for I have proved it myself many years in succession, and any one wishing can see the Grapes hanging now.—J. Groom, *Gosport, Hants.*

14221.—**Raspberries on gravel soil.**—Dig in plenty of rich manure, and some clay will be useful, if obtainable. Either plant in rows six feet apart and train to wires, or plant four feet apart and train to stakes; or you may plant four feet apart, and head down the canes to three feet, and leave them untrained. I have had very fine fruit, and plenty of it, by the latter method during the past summer. Raspberries should always be mulched, especially on gravelly soils, using good rich manures. Select the dampest spot in the garden. A little shade, if not dense, will do no harm. Varieties:—Carter's Prolific, Fastolf, White Antwerp, and October Red.—E. Hobday.

14474.—**Character of the Golden Queen Grape.**—You will find the Golden Queen a capital grower, free setter, and a good cropper; but, as regards its good qualities, I must stop here, for, although the flavour is sweet enough, it is not rich. At best it is only second-rate, and although, after it has hung a time, there is a degree of transparency in the berries, this does not add to their appearance, for it takes on a dingy-brown colour, which is not pleasing. "Malt and Hop" may judge of what its merits are on the table when I say I have orders not to send it in for dessert. That being the case, we have the present week rooted out the vine we had, and put in a Muscat of Alexandria in its place. The Golden Queen does very well in a mixed house, and is a fairly good keeper.—J. C. C.

—— My knowledge and experience of this Grape dates from the day it was first exhibited before the Fruit Committee at South Kensington by the late Mr. J. R. Pearson, of the Chilwell Nurseries, near Nottingham. I thought it the best white Grape I had ever tasted; the berries were large in size and of a clear yellow colour. I was so pleased with it that I ordered a cane to be sent as soon as it was placed in commerce. I tried to grow it in the late vinery, but failed to grow good fruit. It never finished off well; the appearance of the Grapes was always marred by a blackish tint in the flesh, which was also soft or watery, and the fruit did not keep well. Many good growers have failed with it, but when well grown it is a distinct and fine Grape. It is "a free grower, good setter, good producer, and fine in flavour." It will do in a mixed house with other vines, but it is uncertain.—J. D. E.

Old walls.—On looking back through past numbers of Gardening, I see that a correspondent wishes to know of a substitute for moss on old walls. The following, a friend told me, was an excellent plan:—Take some cider grounds and wash all over the wall; then mix up some sand about the consistency of batter, dip the brush in and throw it on the wall in little splotches. Mix some lime and repeat the same, not washing it on, but throwing it on, and the wall will look old. Will some one try this and report his success, as it may be useful?—W. C. C.

Late Pansies.—I enclose you some sample blooms of seedling Pansies which were sown in March and are now one mass of bloom, thus showing what a fine display can be had in a few months from seedlings.—A. Milner, Fagley. *** *The blooms are excellent for this time of the year. Our readers would do well to take the hint given, and practice Mr. Milner's plan of sowing in March so as to get a good late bloom.*—Ed.

14122.—**Rose of Sharon.**—There is another competitor for the honour of this name besides those mentioned—namely, the single Anemone coronaria—which is a native of Palestine. A flower to which a lady would compare herself would be most likely something exceptionally beautiful, and a rose-coloured or red flower would be more likely to attract attention than anything else. Red flowers bloom in sheets on the banks of the Jordan along with the Wild Blue Flax, but whether these are Scarlet Anemones, or our familiar Red Flax my informant sayeth not.—J. D.

Heating small greenhouses. — As so many amateurs like myself have small greenhouses and would like to know the simplest way of heating them, I send particulars of mine. It is eight feet long by four feet six inches wide, seven feet six inches high at back, and six feet high in front. I heated it last winter with an oil stove, for which I paid 15s., and I kept about 100 pots of Geraniums, and Fuchsias, and Maiden-hair Ferns all through the severe weather. I have this summer built another small greenhouse outside my drawing-room eleven feet long and six feet nine inches wide; part of this, five feet by two feet, I have made an aviary of, and the rest I use for flowers; and I intend buying another oil stove with which to heat it. I am sure that if people only knew how little trouble is necessary, those persons who have small greenhouses outside their back doors would make them look pretty with flowers all through the winter. I have no garden at all except the greenhouses I mention, and live in a very confined locality—Peckham, South London.—Amateur.

DASYLIRION GLAUCUM.

The accompanying woodcut will furnish a good idea of the appearance of this interesting plant when in bloom. It has a solid stem, like that of a Draeæna, and the leaves, which are thick and glaucous, spread out graceefully at the base in all directions so as to form a round tuft. The leaves, whose edges are beset with short teeth, are hard and dry, especially at the extremities, and from their midst issues a stout flower stem, which grows to a considerable height. At its base are little leaves, which gradually diminish, so that the higher ones are reduced almost to the size of scales, and soon dry up, as is the case with Yuccas. The clusters of flowers cover the stem for at least two-thirds of its length, but are not showy.

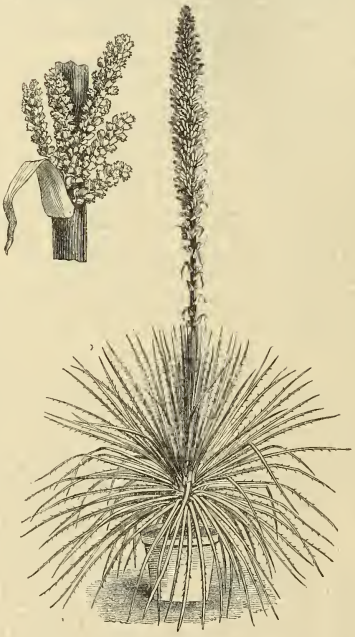
M.

TREES AND SHRUBS.

Planting under Trees.—A knowledge of how to succeed in this matter would be a boon to many persons who would like to have spaces under trees look well, or vacancies filled up, but are afraid to undertake it, as failures so often take place. This was the case with myself, but I succeeded at last. My plan was this: I cut a trench four feet wide by three feet deep, and threw the top spit to the bottom, and cleared it of any roots that might come up with it, for the place was nothing but a mass of roots from one tree to another. In some places I went quite close to the old trees, and have not done them any harm; thus I trenched it from one end to the other, the distance altogether being ninety yards by eighteen yards wide. I had all rough stones picked off, and left it for a couple of months to settle; then in the following spring I planted it with common Laurel, Escallonia macrantha, Laurustinus, Portugal Laurel, Berberis, Lilacs, and occasional plants of Leycesteria formosa and Holly. They have done splendidly. Before that they used to be planted in holes, but always failed; they kept green for a year or two, and always died off, and when taken up they would be full of fungus around the roots, which I attributed to the dead roots of the trees that were thrown back amongst the soil when filling in the holes. I must say also that I left a small green patch, where I planted old Crocuses and Snowdrops that were turned out of pots after blooming, and they are a pretty sight in early spring, where before there was nothing but bare stems of Beech trees and long grass. J. Cornhill has named a list of shrubs that will surely succeed under similar treatment, but not otherwise.—W. H. F., *Co. Wexford.*

14465.—**Hawthorn hedges.**—It is a pity a word was not said about the soil, and whether the situation is wet or dry. The rule in raising Hawthorn hedges is in the first instance to trench the soil to a depth of at least two feet, and if "Novice" wishes to plant his hedge during the coming season this must be done at once. Manure in some form will also be a considerable element towards success. If, after soil has been trenched some months, the situation is considered sufficiently dry, the sets may be planted on the level; but if drainage is necessary, a ditch must be dug outside the line of intended fence. In this case the plants will be laid a little above the ground level on the inside shore of the ditch, and the roots covered by the soil as the digging proceeds. In no case plant on top of the mound formed by the soil from the ditch. The sets are prepared before planting by the stems being cut through in a slanting direction, at about eight inches from the root, in order that young shoots may spring from them close to the ground, as this is important if an effective fence is looked for. There are many other points—such as the best defence whilst the young hedge is growing, weeding and the like, which "Novice" would understand better from observation of the way in which young quick-set hedges are raised in his own neighbourhood, than he would from any amount of written description. Any open time from October until February will do for planting, but the earlier the better.—D. J. Y.

A Fine Araucaria.—We have here an Araucaria (Monkey Puzzle) which, by actual survey just made, measures:—In height, from surface of ground, thirty-two feet, nine inches; in circumference, one foot from surface of ground, four feet, four inches; in diameter of circle of branches, twenty-three feet. The tree stands in a circle of soil seventeen feet in diameter. This circle was formed round the tree in 1869 (autumn), and in its formation all roots, at a distance of eight feet from stem of tree to a depth of one foot from surface of ground, were cut through, in error, by the men employed to make alterations in the drive up to the house. An "inner circle," ten feet in diameter, immediately surrounding the stem of the tree, was arranged as "rockwork," with ferns and stones; outside this inner circle was laid out a "border," five and a-half feet wide, and outside this border, again, was made a ring of stones, one and a-half feet broad; outside the ring of stones came a gravel drive. Since the year 1869 this arrangement has remained unaltered, except that Ivy has overgrown the "inner circle." During all this time the tree itself has received no treatment whatever, but the border has, in due course, been annually manured. Sixteen years ago there were branches on the tree down to within three feet of the surface of the ground; at the present time all the branches lower than six feet four inches from surface of ground have died gradually from the bottom upwards. Of the rest of the tree, *i.e.*, between six feet four inches from ground to top of tree, the branches on the lower half are dying, but those on the upper half are apparently well and growing vigorously. Could you recommend any treatment of the tree whereby the progress of the decay of the branches can be arrested and the growth of the tree improved? If so, you will very greatly oblige.—Thor, *Harleston.* *** *The only remedy would be to improve the general health of the tree. One way to do this is to give a surface dressing of good soil—loam with a mixture of manure. This may arrest the decay, but the bare parts will never be re-covered.*—Ed.



Dasylirion glaucum.

THE KITCHEN GARDEN.

14464.—**Best variety of Rhubarb.**—The best variety to combine earliness with flavour, size, and productiveness, is a variety grown in Essex by the market growers under the name of Champagne.—J. D. E.

14247.—**Insects on Cucumbers.**—The insects are thrips. Fumigate with Tobacco two or three times on alternate evenings. Increase the moisture in the atmosphere.—E. Hobday.

Winter Spinach.—This is a most valuable crop for giving variety to the list of green vegetables in season during the winter months, and its culture is of the easiest kind. As a rule, it is not nearly so much grown as one would suppose. This season it should especially commend itself, from the fact that, owing to the protracted drought, all the varieties of Cabbage, Broccoli, &c., are likely to be a very short supply; and, even if we get rain shortly, the season will be too far advanced for late plantations to make much progress. But Spinach, being of more rapid growth, will, if sown any time during the present month, make good-sized leaves fit for picking during the winter. Any good soil from which crops of Beans, Peas, or Potatoes have been cleared will do for Spinach. Fork it over, and draw drills one foot apart, and if the soil is still dry give the drills a good soaking of water, then scatter the seed along the drills, having previously soaked it for several hours, and cover it with soil, treading it in firmly. For early winter I like the round-seeded or Summer Spinach, sown rather thickly, for as soon as it is six inches high it can be cut right off close to the ground, and every particle is eatable; but for mid-winter and spring the prickly-seeded variety, sown thinly and allowed to develop large leaves that are picked off singly, is the one to rely on, and in severe weather some dry Fern fronds or light evergreen branches should be laid over the bed.—J. Groom, *Gosport.*

14467. **The China Rose Radish.**—"T. W. S.," of Middlesboro', inquires about this useful winter Radish, and says he has failed to procure it; but if his local seedsmen do not keep it in stock, it is because there is not demand enough in that locality to make it worth while to do so. In the South of England it is largely grown by cottage gardeners, as if sown in August it is fit for use during the winter months; and it is by no means a new or rare variety, as it is published in most wholesale seed catalogues. Another variety used for winter is the Black Spanish, but I consider the "China Rose" the best variety to grow. It is now getting late for sowing these winter Radishes, but "T. W. S." must make preparation earlier another year, as this variety is as much superior to the common sorts for winter, as during spring and summer.—J. Groom, *Gosport.*

Bush Vegetable Marrows.—During the intense drought that has prevailed for so many weeks the demand for Vegetable Marrows at greengrocers' shops has been enormous, the main reason being that many other vegetables were either quite unprocurable or very high in price. Vegetable Marrows have been quite double their ordinary price for some weeks past, and one is led to value this very useful vegetable far more than when all the other members of the vegetable tribe are plentiful. Now, in Vegetable Marrows, as in other things, there are several varieties, and one that has been most conspicuous this year for its ability to withstand drought is the Bush Marrow, a variety excellently suited to small gardens, as it takes but very little space. In this part it is largely grown by market-gardeners in the open fields; the plants are put out amongst other crops in May, about a yard apart. No great manure-heaps are required; simply a spadeful is put in with the plant, and when the other crop is cleared off a mulching is put round each plant, and the quantity of fruit they bear is enormous; one cause of this is, doubtless, that there are no long useless shoots to sustain, all the vigour of the plant being concentrated on a tuft of large leaves and fruits at the base of each, the short stubby shoots forming a round mass, or bush. Those that have not yet

given this sterling variety a trial, will, I am persuaded, do well to make a note of it, and grow a plant or two next year, for it is one of those things that the smallest town garden can accommodate, and it requires no special soil or situation.—James Groom, *Gosport, Hants.*

Late Potatoes.—These are likely to prove a very disappointing crop this year, as up to mid-summer they gave promise of a most abundant yield, but the severe drought that set in, with a long protracted spell of east wind, seems to have entirely arrested their growth, and as a rule the tubers are only about half the ordinary size. Many will be debating what course to pursue; but there can be no question that when the tops are dried up, and the skins of the tubers set, it will be best to lift them at once, for if rain comes they will start growing out, and the quality of the tubers will be spoilt to no good purpose. About here the only really good crops this year are of the early sorts, such as American or Early Rose, Beauty of Hebron, and White Elephant,—all sorts that make large tubers in a very short time,—as with me the two first-named where fit to dig before the Ashleaf Kidneys, and were a very much heavier crop. In a dry season like the present the quality is excellent, and if we should get many similar seasons I feel sure that early sorts of Potatoes, that make good-sized tubers before the driest period of the year sets in, will be found useful; for with soil in good condition at planting time there is generally enough moisture to perfect fair crops, but late-planted and late-growing sorts are in need of plenty of rain just at the time when drought is most to be expected.—J. Groom, *Gosport.*

The Onion maggot.—In answer to those correspondents who have been expressing surprise that I have not yet seen fit to publish my remedy for the Carrot and Onion maggot plague, you will kindly permit me to give them, through your columns, my reasons for delay. In the first place, when I wrote to you on this matter it was too late in the season for any one to take advantage of my suggestion, and I therefore considered that I would be inconveniencing nobody by deferring publication until I had, myself at least, tested the efficacy of my method in every possible way. In the second place, when I entered into correspondence with you I was, to the best of my knowledge, the only person who had been pursuing the investigation of this pest on these new lines, and, as there is at first a small cost involved in carrying out the necessary treatment, I was anxious to avoid leading any one into expense and provoking possible disappointment, choosing rather to wait till I had got the remedy applied by different persons, in different soils, and under different circumstances. I had no desire, in short, rashly to increase the number of the already too numerous "specifics," which are, in most cases, believed to be infallible only because they have never been brought to the scratch. My third reason for preferring silence to premature announcement was the fact that, although I was myself thoroughly convinced that the principle had been fully established and the method shown to be beyond all possible cavil, there were nevertheless certain details which I had been going into last season with a view to making "assurance doubly sure." These also I wished to be able to make known without a shadow of hesitation. However, I may state definitely now, that it is my intention to disclose the whole business at the beginning of next season, in good time for all interested to experiment for themselves and ascertain results. Meanwhile, it is only fair to myself to add that, in this quarter at least, I have not been hiding my light under a bushel, but have freely explained my system of cure to all my horticultural acquaintances, several of whom have already tried the remedy and found it triumphantly successful. Begging your readers to excuse me for keeping this secret to myself for a few months yet, and feeling quite sure that they will be none the worse for this little whetting of their curiosity in the meantime,—I am, &c., J. M. D., *Arbroath* (not C. M. D.).

14169.—**Repairing india-rubber garden hose.**—These are difficult things to deal with when they leak through a crack. I have tried to get them repaired, but with only a small amount of success. Binding strips of canvas round the place, well dressed with white-lead, has been useful; it should be bound tightly with copper wire. The bandage must be applied when dry.—E. Hobday.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, September 28 to October 3.

Putting Myrtles and Orange-trees into conservatory; also Heliotropes in pits for winter flowering. Taking up and potting Hollyhocks, and placing them in a cold pit. Pricking out Cauliflowers; also Red and Green Cabbage and more Lettuce. Syringing Azaleas for thrips, using four ounces of soft soap to a can of water. Putting in first batch of Roman Hyacinths and Roman Narcissus to force in slight heat. Roping some onions to put in loft for keeping. Getting up Carrots and Beetroot. Potting Japan Lilies; also Solomon's Seal for forcing. Getting scented-leaved Pelargoniums into pits. Putting in cuttings of Viola cornuta in cold frame. Pricking out Cauliflowers under the protection of a south wall. Putting Primulas into lean-to pits, keeping them at from fifty-five to sixty degrees at night. Putting Eucharis into Cucumber-pit for winter flowers. Getting up all root crops, and getting Onions under cover. Making a frame ready for Calceolaria cuttings. Spreading manure on land for spring Cabbages, and earthing up winter Cucumber plants.

Taking up some seedling Lobelias and putting them in well-drained boxes. Getting all Mignonette, Salvias, and Pelargoniums under cover. Taking up Cauliflowers and putting them into a cool place to keep. Planting Maréchal Niel Roses in greenhouse; also a large quarter of Cabbage out of doors for spring use. Keeping Cucumbers at night about seventy degrees, and the Mushroom-shed about fifty-five degrees. Getting Callas under cover, also Carnations into pits for winter flowering. Housing all greenhouse plants which have been placed out of doors. Planting last year's forced bulbs to bloom in spring. Pricking off four lights of Cauliflower plants in frames. Cleaning June-struck Heliotropes, and putting them in greenhouse. Clearing scale off Peach-trees. Putting rough frame together for the protection of half-hardy plants. Beginning to make turf-pit. Cleaning autumn-sown Onions.

Work in the Town Garden.

Asters.—Almost, if not quite, the brightest plants in any garden, town or country, where they have received a fair amount of attention, are the different varieties of Asters. These, like Chrysanthemums, may be grown with perfect success in any bit of garden, however dull and smoky; all that is necessary is to keep the plants (of a good strain) growing on freely from the first in rich, deeply-worked soil, and they are certain to produce a mass of many and delicately-hued flowers; and in spite of all that that has been recently said against the "bedding" or "massing" system, what can look prettier or more effective than a good bed of Asters on a piece of smooth, green, well-kept lawn? For beds there is no doubt that the dwarf Chrysanthemum-flowered kinds are most suitable—they produce such a mass of fine, handsome blooms on dwarf, sturdy plants. The Victoria Asters certainly produce the largest and most handsome flowers, but, owing to their height, they are more suitable for planting singly, or in threes, in mixed borders, or as a centre for large beds. The Pæony-flowered kinds are very free-flowering, but are not so neat and compact as the first-named sorts, while the "quilled," or Betteridge's, varieties are, at least to our mind, almost hideous, though they grow very freely, and the seed is certainly cheap.

Early Chrysanthemums.—Early, or semi-early flowering Chrysanthemums are also a decided feature. These, with hardly an exception, form neat, bushy plants, well covered with bloom; they should be planted singly, making good second or third-row plants for a fairly wide mixed border. The best kinds to grow are Illustration, blush white; nanum, creamy white; St. Mary, white; Mrs. Cullingford, white, large; Mdme. C. Desgrange, white with yellow centre; Mdme. Piccol, rosy purple; Little Bob, crimson brown; Precocité, bright yellow; Gen. Canrobert, bright yellow, very free; Aigle d'Or, very similar; Anastasia, violet purple, extra fine; Lyon, bright rosy purple, grand; Simon Délaux, soft crimson red, large; and among the newer varieties, Early Blush; Golden Mdme. Desgrange; Isidor Feral, rosy lilac, very pretty; Bacchus, rich crimson; and M. H. Jacotot, very bright crimson, are all exceedingly fine and deserving of general cultivation. These, with the Dahlias, single and double, Japanese Anemones, and a few others, keep up still a very good display.

Clear off annuals, &c., that are gone out of bloom, and prepare the beds for the reception of whatever plants are to occupy them through the winter. In spite of all that is said to the contrary, there is no need for beds that are filled with gay annual or tender plants to remain empty at any time for much longer than is necessary to clear away one set of occupants and replace with another. In town we are certainly tied to a great extent by the limited number of things that will stand the smoke and fogs of winter, but we can still plant Wallflowers, both single and double, Primroses, Polyanthus, &c., and in many places Sweet Williams, Pansies, and many other early blooming hardy perennials or biennials, to say nothing of the whole range of Dutch bulbs. If the beds are intended to be filled with these last,—Hyacinths, Tulips, Crocuses, Snowdrops, &c.—the soil should be thoroughly well worked up and sweetened, and, if necessary, add a moderate quantity of well-rotted manure, with some soft river-sand or road-grit, if the soil is deficient in this respect. By the time this has been done, turning the whole over two or three times with an interval of two or three days between, it will be nearly time to get the bulbs put in, and in the arrangement of these each should be guided by his or her own particular taste more than by anything else. If, however, bulbs are not appreciated, or are considered too expensive (though in these days of cheap auction-rooms this can but seldom be an objection), there are plenty of other plans to follow by which the unsightliness of bare beds may be avoided. A good batch of nice evergreen shrubs, particularly the invaluable Euonymus and Aucubas, both green and variegated, and some Rhododendrons, grown altogether in pots—neat, bushy little plants from one to two feet high—and a similar lot of early and semi-early Chrysanthemums, with a few Veronicas, will be found extremely useful, as they can be plunged at any time where necessary, and again removed without risk or trouble; but bear in mind that anything of this kind, though kept in an out-of-the-way place when not required, must yet be grown *well*, and never be neglected, especially in the matter of watering (and feeding when needed), for leggy, half-starved, plants, in such cases look almost worse than none. The shrubs, especially, must receive extreme care; they should be dwarf, sturdy stuff in the first place, carefully and firmly potted in good sound loam (early spring is probably the best time for potting these, in towns, unless they can be wintered in a cool airy pit or frame the first season, when it would be better done in autumn); during the summer they should be plunged out of doors in cocoa-nut fibre, or just sunk in the ground, in a slightly shaded position, never allowed to want for water, and frequently syringed overhead. These may, when established, be used in beds, borders, or wherever there is a vacancy, or for window-boxes, and will be found most useful. Take, for instance, a circular bed, just cleared of Stocks, Asters, or the like; place a good-sized Euonymus or Rhododendron (in a pot) in the centre, plant a good double row of dark flowering Wallflowers (strong plants) round it, then a row or two, according to size of bed, of a bright yellow kind, and edge with purple Crocus, and I don't think any one could find fault with the effect; or, if you have plenty of Chrysanthemums, put a row of dark, or purple-flowered ones round the central shrub, then some yellow ones, and the Crocus outside; the Chrysanthemums may even be sunk between the rows of Wallflowers, and by the time they are removed, the latter will be well in growth. This sort of thing may be varied *ad libitum*, and can scarcely fail to look well.

Chinese Primulas should all be in their flowering pots by this time. If any are not really fit for shifting they had better be kept over till next season, as I have found it is not much use shifting them on late. Cinerarias need not be hurried; they generally winter best in comparatively small pots, in town air, and never bloom very early. Keep Herbaceous Calceolarias pricked off and growing on quietly; these do best, I think, in wide boxes, about two inches apart, potting them off when they commence to grow in earnest in early spring. Delicate though these are, they will succeed extremely well in a town greenhouse; it is only petting and keeping clean they require to make fine healthy specimens anywhere.—B. C. R.

Glasshouses.

Stove.—Less atmospheric moisture will now be required in the stove; keep any plants that are not making growth somewhat drier at the roots than they wanted to be earlier in the

season. But this must not be carried so far as sometimes practised under the mistaken impression that by thus punishing the plants they will be induced to flower better. If they have not been treated through the growing season in a way calculated to give the requisite solidity to the wood, by plenty of light combined with a moderate admission of air, all the punishing treatment they can now be subjected to will not induce them to bloom more than sparingly.

Allamandas and Dipladenias.—Where several plants of Allamanda and Dipladenia are grown it is well to keep some of them going for the production of flowers for a month or two longer; they will produce blooms if assisted by enough heat. The others, by keeping drier, can be prepared for starting earlier, so as to have them in bloom sooner next spring. In this way the season of bloom will be lengthened, and the advantage of this will be apparent in a supply of these flowers at the season when they are most wanted.

Gardenias and Caladiums.—Gardenias that are well furnished with large flower-buds should now be kept at the warmest end of the house, and be stood where they will get all the light that can be given them, so as to induce them to open their flowers, which are loth to move in the last months of the year, except where under the most favourable conditions. Caladiums that show signs of going to rest should have the supply of water reduced, so as to gradually ripen up the leaves; but this ought not to be done too suddenly, or the bulbs will be injured and interfered with.

Shading.—Where blinds are used for shading the roof, they should now be taken in, and stowed where they will be quite free from damp during the winter. A place should be chosen where the atmosphere is dry through the presence of hot-water pipes, or a flue, so that the material will not absorb the moisture from the damp winter air. Through inattention to this, it often happens that blinds perish faster in winter than when in use during the summer.

Housing plants.—All plants that are susceptible of injury from a low temperature should at once be got into the houses and pits in which they are to be wintered. This will include most of the different kinds of hard-wooded New Holland species, and those of like character from the Cape. Where these are to be kept in a good healthy condition, some judgment should be brought to bear in arranging them in the house, with a view to the well-being of each kind. Those that make any growth during winter must have the lightest positions; for, although the shoot-extension will be little during the dull season, still, if made where there is not enough light, it will be weak, and not calculated to produce flowers of the right character. Such things as Acacias, Eriostemons, Cytisus, and greenhouse Rhododendrons will do with less light than Boronias, Gompholobiums, Leschenaultias, and Pimelias: but all should be stood with their heads well up to the roof, with enough room for each plant to stand clear of those next it.

Ericas.—It will be well to get these under cover without further delay. If there is not a separate house, or pit, in which they can be accommodated, they should be kept together at the most airy end of the house which the other hard-wooded plants occupy. Before getting the stock of greenhouse subjects inside, the whole should be looked over to see that they are free from such insects as red spider, thrips, and aphides, as well as mildew; if any of these pests are present they should be destroyed, otherwise they will exist through the dormant season, and in spring be found more difficult to deal with.

Kalosanthes should be stood with their tops within a few inches of the roof, as light in the fullest volume is to them a necessity, and without it there is no certainty of their blooming.

Pelargoniums, including the large-flowered and fancy varieties, should be put in their winter quarters. They, more than most things, require through the winter a light situation, without which it is not possible to keep the shoots from getting drawn up weakly. This section of Pelargoniums must have the soil kept drier for some months than other things, or they will not make the amount of roots requisite to their well-being.

Primulas are best now in an airy house or pit, where there is less moisture than in frames, which, after the season is thus far advanced, usually cause an undue extension of the leaf-stalks. Cuttings of double Primulas that have been put in recently, should receive all requisite attention to get them well-rooted before the short days come on. This section of Primulas do best through the winter months if kept in an intermediate temperature. So treated, with enough pot-room, and the help of manure-water, they will make large specimens, producing a much greater quantity of flowers than if kept in an ordinary greenhouse.

Salvias.—The principal stock of these useful late-flowering plants should be placed in a house where they can be kept, not only out of the reach of frost, but where they can have a little warmth in cold weather, as, if they get stagnated through being subjected to too low a temperature, their flowering will be affected. Give them manure water regularly, as the bloom they produce will generally be found proportionate to the strength of the plants.

Chrysanthemums.—Where large flowers are wanted it is necessary to thin out the bloom-buds as soon as they are large enough to be got at. The extent to which the thinning is to be carried must be determined by the particular variety, and the size the flowers are required to be grown to. If wanted large, supposing that a plant consists of five or six shoots, one flower to each will be enough; in other cases each shoot may be allowed to carry three or four blooms. The sorts that have reflexed petals will usually be found able to bear more flowers than the incurved kinds. In growing Chrysanthemums for ordinary decorative use it is well to thin part of the stock moderately close, leaving the other portion to carry more; but in all cases it is an advantage to reduce the buds to a moderate extent, as where this is practised the individual flowers will last considerably longer than when the plants carry all the flowers they produce.—Thomas Baines.

Flower Garden.

Hardy plants for winter.—Preparation must now be made for housing such of the bedding plants as it is intended to save. Our plan is to house all tender kinds as soon as there is any danger of injury from frost, and replace the same with hardy plants to stand the winter. In this way the change of the garden from its summer to its winter dress goes on so gradually and imperceptibly as to be hardly noticeable till the whole has been donned in winter garb. Coleuses, Alternantheras, and Iresines are always the first to be destroyed, and as soon as this takes place, we substitute hardy Heaths, dwarf Sedums, Thymes, Ajugas, and small shrubs, such as Retinosporas, Cupressus, Aucubas, Euonymus, and Iris, the one aim in their disposition and arrangement being that the colours and design of the beds shall as nearly as possible be similar to that of the summer arrangement. This combined summer and winter embellishment of the parterre, of course, necessitates a reserve garden for the accommodation of the necessary plants; but much of it may also be of a permanent nature—or at least consist of such plants as will do equally well for summer or winter. This fact we keep in view when making our summer arrangements, and work in all the hardy plants possible—perhaps at the loss of a certain amount of brightness, but this is more than counterbalanced by the lightened autumn labour of changing the plants, and the ensured cheerful aspect of the beds in winter. Those who who have not attempted the winter furnishing of parterre beds, and, as a matter of course, have not yet got the plants for doing it, may make a beginning by using the hardy dwarf carpeting plants that are now so generally used in summer bedding. A ground-work of these with a few small shrubs dotted over it is wonderfully telling in dull winter weather. Bulbs, such as Hyacinths and Tulips, may also be planted in masses, and the ground covered with these live carpets, which also prove a good protection to the bulbs.

Propagating Violets.—This is a good time to increase Violas, for if the old flowering wood was shortened back in August they will now be dense tufts of healthy young shoots, and may be divided, with the certainty of every rooted piece making a good plant if planted out in beds about six inches apart. Violas are moisture-loving plants, but it is surprising how well they withstand drought. In the southern part of the kingdom, where heat and drought are severely felt, no other plant made so good a display of bloom this season as the Viola. Its many and varied colours and its excellent dwarf habit of growth make it the very ideal of a border or carpeting plant; in fact, now that Verbenas have been discarded from so many flower gardens, the Viola is more than ever required to fill their place. Where it is employed for flower-garden decoration it will not be possible to cut back the flowering-shoot without curtailing the summer display, but plenty of soft young shoots will be available for cuttings at the base of the old plants. These strike readily under hand-glasses or cloches, and soon make good plants. I find the following dozen kinds to be a good selection—viz., Holyrood, Souvenir, Waverley, Duke of Perth, Peach Blossom, Blue King, Gold Prince, Mrs. Innes, Picturata, Forerunner, and Blue Perfection. For forming a groundwork under taller-growing subjects, I do not find anything to equal Violas; they keep very dwarf and continue to flower without any break the whole season.—J. G.

Fruit.

Vines.—Houses in which ripe Grapes are hanging may have the temperature gradually lowered, otherwise the black varieties will soon lose their colour; but sufficient fire-heat must be applied to admit of a free circulation of air, and to prevent the berries from damping off at the footstalk. Follow up the removal of laterals from Muscats, discontinue filling the evaporating troughs, and cover up the external borders with glass lights, shutters, or tarpaulings. Prune the early houses of Hamburghs which are to be started in November, and spare no pains in getting them thoroughly cleansed and dressed; also wash and paint all internal woodwork, limewash the walls, and have everything put in thorough working order with as little delay as possible. Shorten back fruiting pot Vines and leave them out-of-doors where the roots can be protected from heavy rain.

Orchard House.—All the mid-season Peaches, Nectarines, and Plums will now have been gathered, and the trees will be in the best possible condition for potting or top-dressing. When all is ready, choose a mild, cloudy day—of which we now have too many—crock carefully and liberally, divest the balls of all sour soil, cut back strong roots and replace them with the tops of the balls sufficiently low to admit of a thin covering of compost at least one inch below the rim when all is finished. It is important that the balls should be thoroughly moist at the time of potting, and the new soil be well rammed with a wooden rammer, otherwise water will pass away without entering the old part, and the trees will cast their best buds in the spring when they ought to be bursting into flower. If it is inconvenient to house the trees, they will do very well on a firm bottom, free from worms, in a warm situation out of doors, where they can be syringed overhead on fine days and moderately supplied with water when they require it. When fresh root action has set in, thin out any surplus wood and shorten back strong shoots to triple buds to keep the trees in shape, but avoid cutting the weak growths, as it frequently happens that the only wood-bud they contain is at the point, and the loss of this from pruning or any other cause would render all the flower-buds abortive. If choice Pears and late Plums have been taken out to give the Peaches more room, these will have been replaced under glass with the October Peaches to ripen up, where, with due attention to watering and protection from birds and wasps, they will hang for a considerable time after similar kinds on walls are over.—M.

Vegetables.

Continue to plant Cabbages as ground becomes vacant; it is time that the main crop for spring cutting should be planted. We plant in lines two feet apart, and but one foot from plant to plant, and as soon as fit for use in spring every alternate one is pulled out, a process which, whilst it ensures an early supply, also admits of the others growing into large Cabbages. Cauliflowers now under hand-lights,

and also Lettuces and Endive, may still be planted out; tie up when dry for blanching the two latter, and take precautions to guard against the first frost: Endive, in particular, quickly begins to decay when once frozen. Cauliflowers in hand-lights must still have full exposure, and a chance lot should be pricked out on a south border. Any that are ready for use should have the foliage bent over the heads to preserve them from frost and from expansion. If lifted and heeled in under a north wall the supply may be continued for a long period. All but the very latest-planted Celery may now be moulded up; the sooner the better. Previous to earthing, we tie up with matting each plant separately; and though the plan is somewhat tedious, it is the only safe way of preventing the soil from gaining a lodgment between the stems. Of course, as soon as the soiling is done, the ties are cut off. Late-planted Celery should be kept free from side suckers and weeds, and the ground should be kept open by surface hoeing.—G.

OUTDOOR PLANTS.

GLADIOLI IN TOWNS.

In many gardens these truly handsome subjects are beginning to reward the grower with their showy spikes of exquisite flowers—so welcome at the present time, when the beauty of some of the earlier garden favourites is upon the wane; and we can understand, having regard to their grand appearance at such a season, and the ease with which they may be grown in most situations in ordinary garden soil, how most amateurs must admire them as they do. In many large gardens at the present time, where these form a conspicuous feature, it would be almost a difficult matter to find anything that would satisfactorily fill their place, adding as they do the charm of variety, both in form and colour, to the other occupants of the parterre. In or near large towns the popular scarlet brenchleyensis and the universally-admired gandavensis—which bears handsome bi-coloured flowers of scarlet and yellow—may be cultivated with every degree of success, and in really smoky situations the first-named will succeed perfectly if planted in a deep loam previously well dug and enriched by a somewhat liberal supply of thoroughly-decayed stable manure; and the cheap rate at which both of these varieties are now to be obtained should render them of too great a value as beautiful, late-summer flowers to be overlooked by the amateur who would at this particular season wish to make the best of his garden. Moreover, unlike many bulbous-rooted subjects which mature flowers from seed only a number of years after sowing, and then, as the case may be, sometimes yield but poor results, the Gladiolus offers to the enterprising amateur an opportunity whereby he may thus succeed perchance in raising, in the course of two or three years at the most, some new variety worth adding to the recently-augmented list of these popular flowers. The finest Gladioli that we have ever seen bore spikes of flowers from eighteen to twenty inches long, of the hybrid section, and were certainly a thing of beauty to be long remembered. The colours were of such infinite variety that it would be mere waste of space here to attempt to describe them. Suffice it to say that the spectator might have looked again and again without being able accurately to define their true colours, so mysterious were they in their delicate loveliness; and these were grown from seed in Sussex clay, without any attention beyond watering, in an allotment vegetable garden, by a professedly unpractised hand. These, like other bulbous or corm-rooted flowers, have challenged a variety of opinions as to the desirability of leaving them, even for a number of years, undisturbed in the ground. In the early part of the year a contributor to the pages of Gardening Illustrated advocated this practice as being advantageous. Soil and locality must, we venture to say, alone determine a matter of this kind; and there is no doubt that this correspondent was so far right when offering such advice, for we once had occasion to dig up a bushel of these bulbs, which had lain for a number of years in a soil of light sandy clay, which would break under the pressure of the foot, and similar to that of the district where this correspondent, we believe, resides (Leatherhead). But a protest against this treatment emanated from a correspondent whose soil consisted of heavy clay, in which there would be a certain risk of the bulbs rotting. In such a soil a handful of coarse silver sand should at the time of planting be applied under the base of these and all bulbs. So treated in good, free loam—a soil in which these plants delight—there need be no fear of injury from rotting when left undisturbed from year to year. Indeed, we have thus left to themselves many of the lancifolium section of Lilies, which have suffered no harm, and have bloomed year after year. These were protected during frost by a liberal top-dressing or mulching of long stable manure, and the amateur will be doing the right thing in thus protecting all bulbs in the event of severe weather.—Stamford Hill.

The Tiger Iris.—About the time when the great flaunting petals of Kæmpfer's Iris die away and we bade adieu to the Iris proper for a time, these gorgeous natives of Mexico burst upon us in all their glory of scarlet and gold. In the early morning sunshine these Tigridias are most lovely. We have several kinds, but none finer than T. grandiflora and T. pavonia alba, the first bright scarlet and the latter pure white with purplish blotches in the cup. Seeing how gorgeous these Tiger Irises really are and remembering how easily they may be grown, it is curious that they are not more plentiful. On cold, wet soils they should be taken up like Gladioli and laid on the floor of a cellar or shed from which frost is excluded. Here, on our light sandy soil, they are perfectly hardy, but a covering of ashes or cocoa-nut fibre would save them in most localities.—T.

The garden in spring.—A writer on gardening, in recommending Dutch bulbs for spring flowering, says that at the time Tulips, Hyacinths, Crocuses, Narcissi, &c., are in bloom, there is practically nothing else in the garden. Dutch bulbs are very useful in the spring garden by way of auxiliaries, and to give contrast, but they should never form a twentieth part of the material used for spring gardening. The best spring flowers, because giving the greatest variety, longest period of bloom, and the least trouble in cultivation, are the Pansies. Pansies from cuttings are comparatively useless for garden decoration, as their period of bloom is short. Seedlings sown in August and planted out in September will often begin blooming at Christmas, and will begin flowering freely the moment the weather will allow them. They bloom far into the summer, and begin again in the autumn as soon as the summer heats are over, continuing until frost. Next after the Pansies are the Primroses. These can be raised from seed, and should be planted out where they are to bloom as soon as large enough; they bloom well the second year. The colours are white, primrose, yellow, orange, lavender, rose, crimson, purple, and maroon. Being sports of the common Primrose, these are perfectly hardy, and only require the annual coating of withered leaves that the native plants receive. Polyanthus Primroses are amongst the best spring flowers, and very profuse in bloom. Alpine Auriculas are capital border plants. Anemones are amongst the showiest plants we have, and of the easiest possible cultivation—light, rich soil, plentifully dressed with leaf-mould, being their principal requirement. Spring Phloxes are beautiful plants, which cover themselves with bloom. Where the soil is moist and rich, Turkish and Turban Ranunculi are extremely showy. These, with Hepaticas, Scillas, Anemone apennina, and A. Pulsatilla, Arabis, Aubrietias, Iberis, Stock-flowered and other Wallflowers, Polyanthuses, Papaver bracteatum, Saxifrages, Irises, and Pyrethrums, are the kind of "nothings" which were forgotten or neglected when all spring flowers were planted in October and lifted in May, and which in all English gardens should make April, May, and the first half of June the months of flowers *par excellence*.—J. D.

14076.—**Vacant spaces.**—"E. W." (p. 365) creates his own difficulty. If he has space for five beds, why not make other arrangements so as to have the space occupied by the five beds filled with one large bed? I devoted a considerable amount of time and thought to the arranging of plants for a continuous effect of bloom in my last garden, and found that fourteen feet for the smallest dimensions was the limit to which a bed or border could be reduced if a continuous bloom was wanted from really fine showy plants. Twenty feet made the matter easy, and every foot after that enhanced the beauty of the bed; because where with fourteen feet you could only have clumps of half a dozen Pansies, Primroses, &c., together, with twenty feet you could have patches a yard or more across, and quite a rich effect of colour. Neither decorative effect nor continuous bloom can be got in the small beds it has been the custom to cut out on the lawn for bedding. These always, even when large, suggest planting in rows parallel to their edges, an arrangement for which hardy plants are not suited. As the size of the beds is not stated, all that can be done is to suggest a few arrangements. It is too late to sow seeds of perennials to bloom next season where the young plants cannot be protected, so that "E. W." is restricted almost entirely to purchased plants and annuals. With regard to the latter, I am sure that "E. W." has not seen good varieties properly grown. The one way to get good annuals is to buy seed from a first-class firm, and pay a good price for it, selecting just a few first-class varieties. The first thing is to get the soil in the beds into a good condition. Dig two spits deep and well mix the soil with old rotten hot-bed manure. For small beds the best edging is either Aubrietia Eyrei grandiflora or Arabis albida variegata. If the beds are small they may be edged with each kind alternately, but if large a row of each plant has a good effect. The prettiest way would be to edge beds 1, 3, and 5 with Arabis. If the beds are small, fill No. 1 with dark purple Pansies, and amongst them plant Polyanthus Narcissus, Grand Monarque, and Soleil d'Or in separate clumps, and white and scarlet Tulips also in separate clumps. When the Tulips are lifted, follow them by Marigold Meteor and Indian Pinks. In bed No. 3 sow next the edging, but about a foot inside of it, alternate clumps of Silene pendula compacta, Leptosiphon roseus, and Saponaria calabrica, thinning the plants out to nine inches apart. In the middle plant mixed single Anemones thinly, and amongst these sow, very early in spring, Sweet Peas, white and invincible scarlet. Bed No. 5, edge with red and white Daisies, leaving spaces to be filled with Phlox Drummondii from seed. Fill the centre with mixed Tulips and follow these with Salvia patens. Beds 2 and 4 may have an edging of yellow and white Primrose Polyanthuses with clumps of blue Nemophila sown between; follow the Nemophila with Whitlavia gloxinioides. Fill the centre of Bed 2 with mixed Tulips, and follow these with ten-week Stocks and early flowering Chrysanthemums. Fill the centre of Bed 4 with mixed Pansies, and plant among them in March and April Gladiolus Colvillei alba (the Bride), and rosea, and mixed white and scarlet Gladioli. The perennials named can be raised from seed in spring, and annuals can take their place for the first year. Lists of annuals have been given from time to time. Early or autumn sowing, early and severe thinning, and good feeding in the early stages of growth are the great points in their culture. When they come into bloom remove all flowers the moment they wither: if that is done the plants bloom for a much longer period. Phlox Drummondii and Indian Pinks can be raised from seed in a sunny window in spring, or seedlings can be purchased from advertisers in Gardening at a cheap rate.—J. D.

Bell-flowered Borage.—This Boragewort (Borago laxiflora), as grown in the ordinary border, has nothing particular to recommend it as a garden plant owing to its straggly habit, but as we saw it the other day on an old rockery, with plenty of room and good soil, few plants are more beautiful. It is particularly appropriate for rough planting in semi-wild situations, or for hanging over rocky ledges in the rock garden. It has large, light blue, star-like flowers and rather handsome foliage. It has the advantage of being a good perennial, and merely requires plenty of room and to be left alone. B. orientalis is suitable for the same purpose; it is more vigorous, and has larger and handsomer foliage. It is easily established in the wild garden, where it is very imposing, associated with early spring flowers.—K.

OUR READERS' ILLUSTRATIONS.

THE MOCASSIN-FLOWER.

The hardy Lady's-slippers are grown by comparatively few persons, and a healthy collection of them is rarely to be seen in cultivation. Of all the hardy species, Cypripedium spectabile, or the Mocassin flower, which is here illustrated, is much the best, and its culture presents no difficulties. It thrives freely in moist peat or bog earth, or rich loam with plenty of leaf soil, and the situation should be somewhat shaded. Our engraving is a reproduction of a photograph taken by Mr. Bashford, of a clump in Easter Duddington Lodge, Portobello, the residence of Mr. Charles Jenner.

PROPAGATION OF CARNATIONS AND PINKS.

Carnations and Pinks are now common in gardens, and one result of the care that has been bestowed upon them has been the raising of greatly improved varieties. During the season there is hardly any end to the supply of cut blooms which they will yield. For this and other purposes there is nothing like having plenty of seedlings, as they grow strongly, and, though many may turn out single, there is sure to be a large percentage of really good flowers, which, if they do not come up to the florist's standard, are good enough in a decorative point of view and make a magnificent show in a border. To be sure of having a fine strain, seed should be obtained from growers noted for them, and though this is not the time of year for sowing, seedlings may be raised thus late; and if care be taken to safely carry them through the winter they will be ready to plant out in spring. It is better, however, to wait till that season, as then there is no danger of losing any, and plants got up then will be little behind those reared in the autumn. The way to prepare for

Raising seedlings is to get pots or pans and well drain them by putting in plenty of crocks, and over them Moss or rough soil; the filling up should be effected with light, finely-sifted soil, and this ought then to be pressed down level and smooth on the top, when, if gently sprinkled with water, all will be ready for sowing the seed. This should be scattered thinly and regularly over the surface, and afterwards lightly covered with sharp sandy soil, when, if the pots or pans are stood in a shaded position in any warm house or frame, the seed will soon germinate and the young plants attain a size large enough for pricking off. This may be done either in boxes or in wide, open pans, the best soil for the purpose being a mixture of loam, leaf soil, and sand, which should be pressed down firmly before the young plants are put in. When this is done it will be necessary to water, and to stand the boxes or pans in a pit or frame where the plants can have a little heat just to give them a start, after which they should be kept cool and up near the glass, where they can have plenty of light and air to prevent any drawing. So treated they will grow sturdy and strong, and by the end of May will be big enough for planting out in the open where it is intended they should stand and form bloom. Besides being raised from seed, there are two other ways of propagating Carnations, Picotees, and Pinks—the one by means of layers, and the other by pipings or cuttings.

Layers are the most certain, as, not being separated from the parent plants, they have the benefit of their support till they strike. To be successful with layers all that is necessary is to select the shoots best situated by being near to the ground, and having trimmed or prepared these by the removal of a few loose leaves, a cut should be made under each, commencing just below a joint and continuing half through the stems and along upwards so as to split them for half-an-inch or so in length, when they will be ready for pegging down and covering with soil. In doing this care is needed not to unduly bend up the points of the layers or they will snap at the cut, and yet it is requisite that they be curved sufficiently to make the parts stand open, so that the earth may come in contact therewith, and if this is sharp and sandy the layers will very soon root. To encourage them to do this water should be given two or three times a week, and as soon as it is found that they are struck, which may soon be seen by examining them, they may be taken off, carefully lifted with good balls, and planted out in the borders. The proper time for layering is as soon as the plants go out of flower, after which there is generally plenty of "grass" or shoots, although these may be made use of at almost any time when they are to be had.

Pipings or cuttings, too, strike best at the same season; take off any shoots that are not well placed for layers, when they should be cut through with a sharp knife just below a joint, and then have the two lower leaves removed by shelling them off close, in order that no portion may be left to cause any kind of damping, which would be the case if the leaves were simply cut away by the aid of a knife. When prepared, the next thing to be done is to insert them, which may be in pots to be covered by bell-glasses, or they may be dibbled in borders to be under the protection of hand-lights, or on beds sheltered by any cold frame. If the last, or in pots, it is a great help towards getting the cuttings to strike if they can have a little bottom-heat, which may easily be afforded by a load or two of fresh manure and leaves or tan, a foot or so in depth, which will give off gentle warmth till they root. If the cuttings are put in under hand-lights the soil should be prepared by being made sandy and then pressed level and smooth, after which they may be inserted moderately thickly, and be kept close and shaded by day. Pinks require the same treatment, and if put in and kept damp by being sprinkled, scarcely one in a hundred will fail. The great enemy of both Carnations and Pinks is the wireworm, which, if in the soil or anywhere near, is sure to find them out and attack them. Before potting, therefore, the loam should be looked over and examined, so that any of these pests may be seen and picked out, and it is a good plan also to mix it with soot, which is obnoxious to the wireworm, but acts well as a stimulant, and thus benefits and nourishes the plants. On borders and in beds wireworm may be trapped by putting just under the soil pieces of fresh-cut Carrot or small lumps of linseed-cake; they get into these baits, and may be taken out and killed. Above ground the worst foes to Carnations are rabbits, which devour the tops wholesale, will take them in preference to any other food, and soon clear off a border. Where these rodents abound, they should always be kept out of a garden, as no shooting or trapping will save plants that they like. To support the blooms of Carnations when they come into flower there is nothing that answers so well as stout wire spirally twisted, with the bottom left clear to stick into the ground, as by using these guards the flower-items can be quickly worked into them without tying. This is necessary when sticks are employed, and at the time of cutting the bloom the ties are a great inconvenience, as they have all to be severed before the stems can be moved; whereas, with the wires they can be drawn out at once. The way to make them is to cut wire into lengths of a yard, and twist three parts of each round a smooth, hard stick, from which they will slip coiled.—D.

Our Readers' Illustrations.—Finely-grown tuft of the Mocassin-flower (Cypripedium spectabile), the handsomest of the hardy Lady's-slippers.

Autumn flowering bulbs.—Hardly have the summer flowers passed away before the Meadow Saffron (Colchicum autumnale) begins to push up its rosy purple flowers. The earliest of the autumn Crocuses, too, are just now beginning to make a show, although for the last fortnight or so an odd one here and there has opened its beautiful petals to the noonday sun. Among the more beautiful of the Crocuses are C. Scharojani, pure bright orange, and C. vallicola, whose flowers are straw-coloured or nearly white. The various autumn Cyclamens, too, are very beautiful in a semi-wild condition just now. The present mode of growing bulbs in small clumps of, say, a dozen scattered about at wide intervals has already had its day, and no doubt much can be said in its favour; but, to give an adequate idea of their beauty in nature, they must be planted by the hundred a few inches or so apart, just as we see the Bluebells in our own woods, where one can hardly step without treading them under foot.—M.

The white-flowered Plantain Lily.—Among hardy perennials in flower just now one of the best is the great white-flowered Plantain Lily (Funkia grandiflora). The large pale-green heart-shaped leaves and the tall handsome spikes of pure white flowers, delicately scented, combine to make this a most desirable border plant. It has, however, its drawbacks, inasmuch as it is a little fastidious in its requirements. It likes a light, warm soil; otherwise it does not flourish to perfection. At the best of times it is not a very free bloomer—not nearly so free as other Funkias; moreover, it has the misfortune to be specially liked by slugs and snails, particularly while young and small. Notwithstanding all this, however, it is a plant that we can ill afford to be without, flowering, as it does, when most other hardy plants are on the wane. On light soil it forms huge tufts which in themselves are quite features of interest. Though the soil in which it grows should be light and warm, it must not necessarily be poor; on the contrary, few plants better repay a little feeding than do all the Funkias, and they are partial to moisture and partiularly grateful for shelter in spring from cutting cold winds.—W. G.

Golden Bartonia.—This annual appears to have rather exceptional powers of resisting drought. During the late hot weather it continued to bloom uninterruptedly, not showing the least signs of distress. It is an old plant, but has for some years been almost lost sight of. The flowers are large, of a bright golden yellow, with a large bunch of stamens in the centre much in the way of the St. John's Wort; the foliage is elegantly formed, and the whole appearance of the plant very distinct. For summer blooming the seed should be sown about the middle of May in well-enriched and deeply-stirred soil, and the plants will then continue in flower up to the middle of September.—J. B.

RULES FOR CORRESPONDENTS.

Questions. — *Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

14628.—**Roses for Yorkshire.**—Will any Yorkshire grower tell me what are the Roses best suited for that county?—BEGINNER.

14629.—**Obtaining Cloches.**—I find a great difficulty in procuring these; will any reader be kind enough to tell me the name of firms who sell them?—C. B. B.

14630.—**Raising Lobelias from seed.**—Will any one kindly tell me the simplest mode of raising Lobelias from seed, and the proper time for setting about the work? I have no heat available.—NOVICE.

14631.—**Wintering Monkey-plants.**—I have some Mimulus or Monkey plants which have bloomed freely during the summer in pots; will some one, who has dealt with a similar case, tell me what treatment they require during the winter?—NORTH LONDON.

14632.—**Virginian Creeper.**—I should like to know the name of the kind of Virginian Creeper that becomes of the most brilliant red in autumn. — IGNORAMUS. *** *Both the common Virginian Creeper and Ampelopsis Veitchii are alike in this respect.*—ED.

14633.—**Raising Calceolarias and Petunias** from cuttings.—I should like to know the best and simplest way of raising yellow Calceolarias and single Petunias from cuttings. I have a cold frame. Will any amateur gardener kindly tell me?—NORTH LONDON.

14634.—**Russian and Neapolitan Violets.**—Will some reader kindly tell me how to grow Russian and Neapolitan Violets in frames? What is the best soil, and what temperature should be kept up? Ought they to be planted at once? I shall be glad of the fullest information.—E. F. T.

14635.—**Culture of Clematis.**—Will some one kindly give me a few hints on the culture of Clematis? I have been most unfortunate with them, having lost three out of five, and the two that remain do not thrive. I have tried to grow them in loam and in a sandy soil, with equal ill-luck.—SPHINX.

14636.—**Apples for Yorkshire.**—Would some practical Yorkshire fruit grower kindly tell me the names of twelve Apples (cooking and dessert), six dessert Pears, and four or five Plums suitable for general household use, for good stiff soil on limestone in Mid-Yorkshire? Would the Cornish Gilliflower do well?—T. F.

14637.—**Renovating Orchard.**—I am about to take up a number of old and worn-out Apple-trees in a small orchard and replace them with pyramids of good sorts. I shall be obliged if any one will tell me how I should proceed, as the ground must be pretty well worn out. The soil is light, and subsoil sand.—CHESHIRE AMATEUR.

14638.—**Rose-buds dropping off.**—I have got a "Niphetos" Rose in a cold greehouse. It has been covered with buds several times this season, but just before coming out the buds turn brown and drop off. The foliage seems quite healthy. Can any correspondent suggest a reason for this?—DUNDONNACHIE.

14639.—**Roses for town greenhouse.**—Will any growers, who have had experience of the following Roses, tell me whether they will flower well in a town greenhouse situated in a somewhat breezy position:—Gloire de Dijon, Duke of Edinburgh, A. K. Williams, La France, and Senateur Vaisse?—ENTHUSIAST, *Liverpool.*

14640.—**Gas-stove for greenhouse.**—Will some one recommend a gas-stove for a greenhouse, which opens out of dining-room? It is twelve feet by eight feet. An oil "Rippingill" was used last winter, but the greenhouse is due east, and the oil-stove only reached forty-five degrees—often only forty degrees.—VERNIA.

14641.—**Plants for shady border.** — I have a border about thirty feet by three, half of which gets no sun, being shaded by the house, while the other half gets a fair share. What flowers can be grown in the shaded part, and when is the best time to sow? Plants must be inexpensive. Any advice would be thankfully received by NOVICE.

14642.—**Mower for uneven ground.**—Would any readers who have tried lawn-mowers which have their knives far apart, and profess to cut long grass, give me the benefit of their experience? I have a rough field in front of my windows, which I do not wish to turn into a lawn, but desire to have it a little trim. Is there any machine that will take off the bents and cut the grass on an unlevel and unrolled piece of ground?—R. B.

14643.—**Tropæolum tuberosum not flowering.**—In the spring I planted some tubers of Tropæolum tuberosum in the open air against a warm west wall and in dry sandy soil. They have covered the wall to the height of seven or eight feet, but as yet there is no appearance of flower on any of them. I would like to know what treatment I should give them another year to induce them to flower.—GLENANN. *** *It is evident that the plants grow well, and we can only recommend you to wait until next year, when you will probably have a good crop of bloom.*—ED.

14644.—**Black Alicante not setting well.**—I have four Vines in my vinery, viz., one Black Hambro', one Foster's Seedling, and two Black Alicante. The two former have given me satisfaction, but the berries on the Alicante vines are very irregular in size, although the bunches are generally fine. As they have no stones, I conclude there must have been wrong treatment at stoning period. The Vines are three years old, have been cropped lightly, and the canes shortened every year as yet. I have endeavoured to follow the advice of Mr. J. Simpson, in his book on "The Grape Vine." Would any grape-growing readers kindly tell me how I have erred?—SUBSCRIBER.

14645.—**Heated-room for wintering tender** plants.—Will any reader who has overcome a similar difficulty help me in my present predicament? I am just moving into a house where there is no glass-house, but as I can very well spare a room, fourteen feet by nine feet, I thought I might winter my Geraniums, Fuchsias, and other plants needing winter protection in that room, by means of either a paraffin, benzoline, or similar sort of lamp kept continually burning. There is a fire-grate in the room where I might have either a coal or peat fire. Any advice on the subject, stating also whether paraffin or benzoline would be injurious to the plants, will greatly oblige.—OLD SUBSCRIBER.

14646.—**Heated pit for Cucumbers.**—Will some practical readers kindly give me their advice on the following subject:—I have a three-light hot-bed thirteen feet long by four and a-half feet high (outside), and four feet inside (at the back), brick walls four and a-half inches thick. I propose to convert it into a heated pit, heated by cinders burnt in a furnace, the flue of which is to be of glazed pipes. My object is to be able to raise Cucumbers, &c., all the year round, which it is not possible to do with a plain manure pit. Moreover, the chances of damping-off are lessened. I should like, therefore, to be informed whether it would really be advisable for me to make this change, the probable cost of the change, and the manner in which it may be best done.—E. W.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14647.—**Work on Gardening** (*A Bad Boy*).—Try Hobday's "Cottage Garden."

14648.—**Grubs on Lettuce** (*T. B. S.*).—Use lime or soot, which would be distasteful to the grubs.

14649.—**Ripening seeds of annuals** (*R. A. D.*).—In all cases the seeds must be allowed to ripen on the plants.

14650.—**Flowers for bees.**—(*Alice E.*)—You will find an article on "Flowers for the Bee Garden" on page 23, March 14.

14651.—**Planting Tulips** (*Beginner*).—Plant during October in any ordinary garden soil; put the Tulips four inches beneath the surface.

14652.—**Narcissus and Daffodils** (*X. Y. Z.*).—There is no "confusion" at all; Narcissus is simply the Latin equivalent for Daffodil.

14653.—**Leafless India-rubber plant** (*E. F. T.*).—The only way to improve the plant is to cut it down, then give it a little bottom heat.

14654.—**Book on Rose-growing** (*Beginner*).—Rivers' "Rose Amateur's Guide," and Ellwanger's book; the latter is published in America.

14655.—**Hyacinths and Tulips for Christmas** (*J. R. D. B.*).—Plant the Roman Hyacinths and Tulips now or during the next few weeks.

14656.—**Roses for Winter blooming** (*Inquirer*).—Give the Roses a rest by all means; keep them drier at the roots, and give plenty of exposure.

14657.—**Leaves of Anemone sulphurea** (*Shustoke*).—The leaves of this Anemone are very finely cut, and not unlike those of the common Cow Parsley.

14658.—**Removing Asparagus** (*Juana*).—Yes; the plants that have been three or four years in the ground can be removed with safety; April is the best time.

14659.—**Raising Calceolarias and Lobelias** (*Novice*).—Calceolarias are raised from cuttings; Lobelias from seed. You will find your question in another column.

14660.—**Geraniums and Fuchsias** (*D. P. Kent*).—You cannot keep these in the open ground all through the winter. You must protect them in some way, preferably under glass.

14661.—**Tritoma Uvaria** (*Perplexed*).—This is not a pot plant. It likes a warm open border in a sunny position; and, of course, you must not expect them to flower until they get old enough.

14662.—**Manure for Kentish garden** (*Fred.*).—Mix the soot and rag-dust together, and dig it in well about February. We think the quantities you mention in Query 14415 ample.

14663.—**Yellow ground Carnations** (*Redditch*).—You may leave the layers in the open air; but it is much safer to pot them, as then they would be secured against all unfavourable weather.

14664.—**Standard of flower-pots** (*E. D. D. S.*).—The pots you describe as sold "elsewhere than in Bury," are made according to the Chiswick standard. The price varies in different localities.

14665.—**Heliotrope not blooming** (*X. Y. Z.*).—We cannot tell you why your Heliotrope does not bloom when you do not say a single word about the mode of culture that you have followed.

14666.—**Wintering East Lothian Stocks** (*Redditch*).—Leave them out in the open air. Should the winter prove very severe, protect them with dried Ferns or some other suitable material.

14667.—**Raising Ferns from spores** (*A. T.*).—The "brown specks" to which you refer are the spores, and a description of the mode of raising Ferns from these was given on page 354 (August 29).

14668.—**Making liquid manure for Chrysanthemums** (*Beginner*).—The smell and colour are generally the guides in the making of liquid manure. Let the colour resemble that of strong tea.

14669.—**Regulating heat in propagator** (*M. A.*).—You do not tell us how the propagator is heated. How, then, are we to advise you as to regulating the heat? Write again, and give fuller particulars.

14670.—**Procuring Hop-plants** (*Puffin*). — The most economical plan would be to get good plants from some Kentish or Hampshire hop-gardens. They are very cheap, and you could get a hundred for a few shillings.

14671.—**A double Irish Peach Apple** (*A Constant Reader, Mullingar*).—Such double apples are by no means rare, but, unfortunately, the Irish Peach Apple is decidedly so in England, and we are much obliged to you for sending us even a deformed specimen of it.

14672.—**Large Radishes** (*Birmingham*).—The Radishes you send are too large for the table; they should be only about half the size, as large size is not a recommendation in a Radish. The specimens, too, are decidedly woolly. It is not too late to get seed.

14673. — **Growing Mushrooms in meadow** (*Schoolboy*).—Get a few "bricks" of good Mushroom spawn, and next June or July dibble it in the meadow. Then, during the dewy mornings of August, you may be able to get a few Mushrooms for breakfast.

14674.—**Aucubas** (*Anxious*).—The leaves are those of the Aucuba. The Aucuba is a diœcious plant, and to obtain berries it is necessary to have both the pollen and the berry-bearing varieties growing near each other. The male plants, of course, do not produce berries.

14675.—**Christmas Cherries** (*S.C.*).—We do not know what you refer to as Christmas Cherries. Send us a specimen, and in repeating your question give us further particulars of your treatment. We may then be able to tell you how to remedy the defect that you complain of.

14676.—**Seed for renovating lawn-tennis ground** (*W. H. B.*).—Your best plan would be to apply to a good seed house, stating the nature of the soil, whether heavy or light, exposed or in the shade. They would then send you a mixture suitable for the purpose.

14677.—**Wintering zonal Geraniums** (*Glenarm*).—You can box them or hang them up by the heels, as you suggest; but the best plan, as you have no good accommodation, would be to do nothing with them, and buy new plants next spring. This would be far more satisfactory.

14678. — **Transplanting Vine** (*Dundonnachie*). — Move it in the latter part of October or November, and put it into a well-drained border of good soil. You do not mention the size or age of the Vine, but if it is two or three years of age, you may expect a few bunches of Grapes next year.

14679.—**Sickly Clematis lanuginosa** (*Warwick*).—We think the best thing you can do is what you suggest—potting it, and sheltering it in a cool greenhouse through the winter; but we cannot give you positive advice, as you do not say anything of the treatment to which you have subjected the plant.

14680.—**Compost for Orchids** (*John Strawberries*).—The compost for potting the Orchids that you name should consist of fibrous peat, broken into lumps about the size of a hen's egg; live Sphagnum Moss, also chopped; a few broken potsherds, a little charcoal, and enough silver sand to keep it open.

14681.—**Propagating Virginian Creeper** (*Ampelopsis*).—Take cuttings as soon as the leaves are off and stick them in soil under a bell-glass. There would be no advantage in striking them in heat now, and the probability is that if you strike them you would so weaken the plants that the hardy struck cuttings would be the best.

14682. — **Blue - flowered Hydrangea** (*Perplexed*).—The plant you mean is probably the common pink Hydrangea, made blue artificially. The colour can thus be changed by the use of water in which alum has been dissolved, or by mixing iron filings with the soil. Some kinds of peat will also effect the same change.

14683.—**Adiantum Farleyense fronds injured** by paint (*W. W.*).—The young fronds of this Fern are very easily injured; no doubt it is owing to the fresh paint in the house. Probably the house was shut up close, which would concentrate the deleterious influence of the paint. We have seen Orchids and other tender plants injured by being shut up in a fresh-painted house. —J. D. E.

14684.—**Propagating Spindle-tree and Cornel** (*Spindle*). — Both the Euonymus and Cornus sanguinea can be increased, but not readily, by cuttings put firmly in the open ground during the autumn months. Much the better way to propagate them is by means of seeds which ripen freely and germinate readily. In the case of the Cornus, rooted suckers can often be detached from established plants.

14685.—**Cuttings of India-rubber plant** (*Jessie*).—It is doubtful whether you could, especially at this time of the year, strike cuttings of the Ficus without bottom heat. If you want a symmetrical plant, your best plan would be to take off the weaker of the two shoots, and let the other grow up so as to make the plant shapely. You must send your other question again. Each query should be sent on a separate piece of paper, and one side only written on.

14686.—**Forcing Rhubarb** (*A Beginner*).—Dig the plants up with a mass of soil round the roots, and place them close together under the stage of the greenhouse; they require no other planting. If they were put in about the middle of November, the Rhubarb would be ready about the middle of December, with a night temperature of about fifty-five degrees. If the temperature is five degrees lower, put the Rhubarb in ten days earlier. It ought not to be watered at all.—J. D. E.

14687.—**Open-air Camellias** (*Shustoke*). — The single kinds and the old double white are generally considered to be the hardiest. You may grow them in the open air in North Warwickshire, but it is another question whether they will flower well. If you have a wall or fence facing south that would be a better position than an open border. Camellias are rarely satisfactory when grown out of doors, and really require protection, as they flower just at the time when cold winds and wet prevail.

14688.—**Forcing Seakale in stable** (*Edith*).—Get some roots, pot them, and stand them on a bed of manure; the heat and darkness will induce them to grow well. It is really not necessary to force much; the ordinary temperature of a stable is often sufficient for both Rhubarb and Seakale. You can put a batch of plants in the stable at intervals during the winter: then you would have a succession of kale. You must yourself choose a firm to patronise; we cannot help you in this direction.

14689.—**Fern-fronds turning brown** (*N. W.*).—There is nothing materially wrong with the fronds sent. When they get old it is usual for them to become brown at the tips. They ought then to be removed, to allow the younger ones space to develop themselves. Some Ferns

require more light and less heat than they sometimes receive in the over-shaded stew-pans sometimes designated plant stoves. Most of the Adiantums like a little sunshine, and should only be shaded from the direct rays of the sun. —J. D. E.

14690.—**A faulty conservatory** (*A Lover of Flowers*).—We should be glad to help you, but it would be impossible for any one to tell you from your letter in what way your conservatory is defective. By far your best plan would be to call in some practical gardener in your neighbourhood, and he would probably be able, after a few minutes' inspection, to tell you what was wrong, and how to remedy the defect which undoubtedly exists. Try this plan, and we have no doubt that you will not again have to record such an annoying disappointment.

14691.—**Apples and Pears blotched** (*Richard Luck*).—The black blotches on the fruits sent are caused by a fungus named Cladosporium dendriticum. The spores or seeds of the fungus sail about in the air, and when they fall upon suitable fruits, germinate and produce blotches and cracking. Some fruits are more liable to attack than others; this is probably owing to the more tender nature of the membrane of some fruits.—W. G. S.

14692.—**Rose-leaves blackened** (*W. C.*).—The sooty stains and patches on the Rose-leaves are caused by a fungus named Capnodium Footii. It often grows on aphis-attacked plants, as in your case; the fungus appears to be aided in growth by the excretions of the insects. All we can recommend is that you should pick off the affected leaves (if possible) and destroy them (to prevent recurrence of the fungus), then take means for the destruction of the aphides.—W. G. S.

14693.—**Scale on Peach-trees** (*Mrs. Ogilby*).—Your Peach or Nectarine trees (I cannot say which the leaves are from) are badly attacked by scales and the Peach aphis or black-fly (Aphis amygdali). To destroy the scales, when the leaves are off unnail the trees as much as possible and dress them with the following mixture:—Boil together for twenty minutes ½ lb. of soft soap, 1 lb. of sulphur, ½ oz. of black pepper, in four gallons of water; if not thick enough to adhere like paint, thicken with lime. To destroy the aphis, syringe the trees with, or dip the shoots in, tobacco water, or dust them well with tobacco powder or snuff; pick off and burn any leaves that are very badly attacked. Keep a sharp look out in the spring, and at once deal with the first that appears.—G. S. S.

14694.—**Renewing old Vines** (*Hullite*).—The best method is to train up young shoots, as has already been done. If they have been fairly well exposed to the light, the wood will be well ripened, and may be depended upon to bear a good crop next season. Cut out the old wood. When it has ceased to bear fruit from the lateral growths it is useless, and must give place to young growths. If Geraniums and other plants of this kind are grown in the house during the winter, it will be necessary to keep the frost out, or the fire may be put on occasionally to dry up damp—say once in a week. Artificial heat may be applied when the buds begin to move in the spring. The house ought also to be kept rather close, to conserve as much as possible of the heat of the sun. In March it may be shut up quite close at four p.m.—J. D. E.

14695.—**Exhibiting Onions** (*Matthew Plackett*).—The question is, Can a judge tell, on seeing onions placed on an exhibition table, whether they are the produce of seeds sown in the autumn or in the spring? We had to face this difficulty two weeks ago at a large exhibition in the south of England. There were about two score of exhibitors in the Onion classes, and the dozen to which the first prize was awarded were thought to be from autumn-sown seeds. A protest was made, and we happened to be one of the judges who awarded the prize. We were totally unable to say when the seeds were sown from which the prize onions had been produced, and declined to take the responsibility of disqualifying them. We told the committee that we were prepared to judge all the productions placed before us, but were not prepared to accuse a respectable exhibitor of fraud on such slender evidence as the appearance of a plate of onions. The seeds might have been sown in pots in frames very early in the year, and grown on carefully afterwards. We do not think any judge could be quite sure in a case of this kind.—J. D. E.

14696.—**Treatment of Cattleya gigas** (*A. N. S.*).—We have treated this splendid Cattleya in several different ways; and were most successful with it when it was grown on a block of wood. When grown in that way, it did not make a second growth in the autumn, and flowered splendidly the following season in July. The only serious objection to the block system is the extreme care required to keep the plants sufficiently supplied with water; if they are neglected the leaves become yellowish, and the check they receive from this cause is often so serious, that the injured plant does no good after. The second way we have grown it was to attach the plant to a length of the stem of a tree Fern; when established, the base of the stem (which is about a foot long) is planted in the usual Cattleya compost. The third way is to pot the plants in a compost of turfy peat, Sphagnum, and clean potsherds, in the same way as the usual run of Cattleyas. They grow freely enough in the peat and Sphagnum, and if the plants are kept near the glass they will flower well. When they have done flowering in July or August, they ought to be kept comparatively dry at the roots, or they will start into growth at once; but they will not be likely to produce a flowering sheath, and this will probably prevent their flowering next season. C. gigas is not so easily managed as C. Mendelii, C. Mossiæ, or C. Trianæ. It requires the same treatment as C. Dowiana, or C. Sanderiana.—J. D. E.

TO CORRESPONDENTS.

M. Collins. The address of the Secretary to the Gardeners' Benevolent Institution is 20, Spring-gardens, Charing-cross, S.W.——*X. Y. Z.* It is impossible for us to make use of articles written on both sides of the paper.——*F. E. G.* We shall be glad to receive the note you refer to.——*Grange.* A book on "Cactaceous Plants" has been published at 171, Fleet-street.——*Trinette.* Several similar questions on the heating of greenhouses appeared in last week's number. There is no charge for the insertion of queries.——*M. A.* You can ascertain the price of the stove in question from the maker, or from any hardware dealer. A cooking-stove would not answer your purpose.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communications respecting plants or fruits sent to name should always accompany the parcel.*

Names of plants.—*Mr. G. Woodman.*—1, Æschynanthus speciosus; 2, Begonia weltonensis; 3, B. metallica.——*R. K. T.*—The long-leaved shrub is Andromeda Catesbæi. We cannot name the other shrub without better material.——*J. J. R.*—Clerodendron fragrans.——*Faldonet.*—1, Californian Pepper Tree (Oreodaphne californica); 2 is common Bay; 3, a kind of Myrtle, probably Myrtus mucronatus.——*Kingstown.*—1, next week; 2, Ceanothus azureus; 3, Probably Libonia floribunda; 4, Specimen insufficient.——*H. T. M.*—1, Not received; 2, Lonicera brachypoda aureo-reticulata; 3, Solidago canadensis; 4, Galatella dracunculoides.——*H. J. T.*—1, Plumbago capensis; 3, Begonia weltonensis; 3, B. ascotensis; 4, B. Evansiana.——*Uncus.*—Please send larger and better specimens.——*C. R. Wisbeach.*—Cyclamen europæum; annual is a variety of Godetia tenella; weed is common Plantain (Plantago media).——*C. Dyer.*—Specimen with red leaves is Nidularium Scheremetiefii; the other is Æchmea discolor.——*Carolus.*—Francoa sonchifolia.——*V. Woodhouse.*—Pepper-bush (Clethra alnifolia).——*H. A.*—1, Selaginella cæsia; 2, Selaginella Wildenowi; 3, Asplenium palmatum; 4, Adiantum setulosum.——*T. A. C.*—1, Lastrea dilatata; 2, Lastrea Filix-mas Jervisii; 3, Cystopteris fragilis; 4, Lastrea dilatata, probably var. interrupta of Moore, or inequalis of Stansfield—near both.——*E. L. St. Maurice.*—1, Adiantum cuneatum grandiceps, entirely different from A. cristatum from West Indies, and not crested at all—A. cristatum is an erect grower with stiff and rigid fronds; 2, A. setulosum; 3, A. rubescens; 4. A. glaucophyllum.——*Silver Stork.*—Rhamnus Frangula.——*Mr. Moules.*—Amelanchier canadensis.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*J. B. Turner.*—1. Bedfordshire Foundling. 2. Old English Codlin. 3. Coa's Pomona. 4. Nonsuch.——*Josiah Beddow.*—3. Not recognised. 4. Cellini. 21. Beauty of Kent.——*Red Flesh.*—Tho Blood-red Pear (Sauguinole).——*W. Carter.*—1 & 2, apparently Bedfordshire Foundling; you can pull them now if necessary, but if the weather is fine it would perhaps be better to let them hang a litle longer.

Catalogues received.—*Flower Roots.*—J. & R. Thyne, 83, St. Vincent-street, Glasgow.——*Daffodils, Tulips, Crocus, Snowflakes, &c.*—Barr & Son, King-street, Covent-garden.——*Dutch and other Bulbs.*—J. Slaymaker, Central-avenue, Covent-garden Market.——*Selected Seed Corn.*—Webb & Sons, Wordsley, Stourbridge.——*Bulb Catalogue.*—Sutton & Sons, Reading.

Smithfield market, Evesham.—List of prices realised Sept. 18, 1885:—Beans (kidney), 2s. to 2s. 8d. per pot (40 lb.); Beans (dwarf), 1s. 6d. per pot (40 lb.); Cabbages, 2½d. to 3d. per dozen; Carrots, 1d. to 1½d. per dozen; Cucumbers, 7d. to 10d. per dozen; Onions, 3s. to 5s. per cwt.; Potatoes (new), 2s. to 3s. 6d. per pot (80 lb.); Sage, 1d. per dozen bunches; Vegetable Marrows, 7d. to 10d. per dozen; Apples, 1s. 9d. to 4s. 6d. per pot (64 lb.); Damsons, 8s. 6d. to 11s. per pot (72 lb.); Filberts, 4d. to 5d. per lb.; Pears, 1s. 6d. to 8s. per pot (72 lb.); Plums (Pershore), 8s. to 12s. per pot (72 lb.); (Victoria), 8s. to 12s. 6d. per pot (72 lb.).

MUSHROOM-GROWING IN CAVES.

A SHORT account of the work of Mushroom-cultivation carried on in the quarries and caves under Paris may be both interesting and instructive to our readers. In the Department of the Seine there are 3,000 quarries, and those which are situated close to Paris are used by the Mushroom-growers. Several of these quarries have horizontal galleries, driven into the calcareous rock from the level of the road, which are large enough to accommodate a good-sized cart, but the majority can be entered only like coal-mines by means of vertical shafts, which are 100 to 125 feet deep. The quarries consist of a number of irregular corridors, varying in height from two feet six inches to seven feet; they are thoroughly ventilated, not only for the sake of the labourers, but for that of the Mushrooms, which will not thrive in confined air. The quarries are let at from £6 to £16 per month, according to the height and extent of the galleries and the facilities for ventilation, convenience as to water-supply, &c.; the galleries of one grower are no less than one and one-eighth mile long and thirteen feet high from floor to roof. Success in Mushroom-growing depends very much on the quality of the manure employed; and it has been found that the best manure for the purpose is that supplied by entire horses, abundantly fed on dry, good, heating food. After this kind of manure comes that of the mule, the ass, the sheep, and the rabbit; the same rule applies in all cases—the harder the animals work and the more heating their diet the more valuable is their manure. When a bed will yield no more Mushrooms, the exhausted manure is sent up the shaft again and re-sold. The making up of the manure-heap which is to supply the beds is an important operation. A spot near the mouth of the shaft is chosen—dry, flat, clean, and as near the water-supply as possible. The necessary quantity of manure is heaped up roughly, and allowed to remain untouched for several days, after which the heap is properly formed; the smallest heaps in the Paris quarries are five and a half yards long by four and a quarter yards across, and three-quarters of a yard high. The position of the border having been marked, the manure is heaped up, each forkful of stuff being shaken so as to mix the droppings and straw together, and all foreign bodies, such as wood, &c., are picked out. The sides are properly dressed and the heap trodden down; it is then left undisturbed for six or seven days, at the end of which time it is turned over, the whole being equally watered, and the outer and drier parts carefully turned into the middle. The bed is then again trimmed up, and allowed to remain undisturbed for another six or seven days, when it is again turned over, each layer being watered when it reaches the thickness of a foot. On the fifteenth day after the heap was first commenced, the manure is carried away to the spot where the Mushroom-beds are made. The beds generally measure from seventeen inches to twenty inches wide at the base, and are separated from each other by a path one foot wide, or even less. The labourer takes the manure up by double-handfuls, shakes it up well, and sprinkles it over the base of the bed for a width of from eighteen to twenty inches. He makes the portion next the wall four inches higher than the outer edge, and, still adding fresh manure, presses it with his hands and knees so as to make it into an even mass. The inclination of the bed

Mushroom-beds in caves.

should be such that the earth to be afterwards added for "soiling" shall not slide off. The centre beds are formed with a rounded double incline, or like the top of a trunk, and are nearly flat on the top for a width of about six inches or seven inches. The height of the beds from the ground is from eighteen inches to twenty inches, and is generally equal to their base. (In cellars where space must be economised, Mushroom-beds may be made almost anywhere—on shelves against the wall, under the staircase, or even on the staircase if the steps are wide enough.) The spawn is prepared in various methods, and the lumps used for planting are two and three-quarter inches long, two inches wide, and one and one-eighth inch thick. These lumps are planted on each slope in two rows, the first eight inches above the ground and the second eight inches from the first. The lumps in each row ought to be from eight inches to ten inches apart from each other, and arranged so that the lumps of the second row will be opposite the spaces of the first. In spawning, the manure is removed from the spot where it is intended to insert the spawn for a width of four fingers and a depth of one and a half inches. The lump of spawn is introduced into the hole, pushed well into the bed, and covered up with the manure taken out of the hole, pressing it down firmly with the left hand. Experience alone can teach the grower the proper moment to spawn the bed; the manure must not be too hot nor too cold, and the most favourable time may present itself at any period between the seventh and the fourteenth day after the bed was commenced. For "soiling" the bed (*i.e.*, covering the whole of the surface with a layer of soil about three-quarters of an inch in thickness) the Paris Mushroom-growers use the chips and powder of the stone taken out of the quarry. This rubbish is passed through a sieve, and the finer portions mixed with fine light dry earth in the proportion of three of the former to one of the latter. The layer is pressed lightly down with the shovel, watered with a fine-rosed can, and allowed to dry until the next day, when the surface of the bed is beaten with a wooden shovel. The beds require no further attention until the Mushrooms appear, beyond watering when the surface shows any signs of getting dry and white. The young Mushrooms appear about forty days after soiling, and form a fitting reward for the patience and perseverance that have been shown. Mice, snails, woodlice, beetles, flies, and mites are the Mushroom-destroyers that should be guarded against. T.

Rose Louis XIV.—Will you permit me to thank J. G., Gosport, through your columns, for the information concerning this Rose, sent privately? I may add that my difficulty has always been with the foliage; it blooms profusely, but the leaves are very tender.—A. B. T., *East Anglia.*

14228.—**Pansies for spring.**—The south winds are not likely to injure Pansies, but the hot sunshine may. Mulch the bed with a mixture of turfy loam and old manure. Let the manure preponderate, and improvise a light shade when the sun gets powerful about April. Keep the bed moist.—E. Hobday.

14246.—**Carnations dying.**—The centipedes will eat vegetable tissue, and possibly they may have done some injury; but it is more likely to be drought, and the exhaustion following over-flowering.—E. Hobday.

14217.—**Garden walks.**—I don't quite know what "Chester" means when he says he wants designs or patterns of garden walks. To be comfortable they must be dry, and this implies a good depth of rubble, say at least a foot, and four inches of good, clean, binding gravel on the top. Too much loam on the gravel encourages the weeds. The surface should be laid so as to throw off the water.—E. Hobday.

14578.—**Deep planting of bulbs.**—I have for the last few years systematically planted my bulbs much deeper than is usually done, and have no reason to complain of their behaviour under this treatment. Small bulbs, such as Crocus, Tulips, Snowdrops, Grape Hyacinths, Triteleia, Gladiolus communis, G. Colvillei, &c., I put at least six inches deep; Scilla campanulata will thrive at twelve inches deep, and, in fact, in old plantations of them the bulbs will usually be found quite that depth. Lilies, Narcissi, Hyacinths, Crown Imperials, and bulbs of their size, go twelve to fifteen inches deep. Late Gladioli I do not put so deep in proportion to their size, as my soil is inclined to be somewhat heavy, but in a lighter material I should certainly put them about nine inches down. And if "C. J. B." is so fortunate as to have the latter staple, I think he may safely increase all the above depths.—T. J. W., *Crowch Hill.*

HOUSE & WINDOW GARDENING.

Musk.—Under the usual treatment adopted by window gardeners this well-known fragrant Mimulus, M. moschatus, has for some weeks been a thing of the past; and, therefore, the appearance of a few healthy plants which we have before us at the time of writing, and which are bearing a profusion of blooms, bids us offer a few remarks to amateurs upon its successful cultivation. These plants were raised from seed in March, and are as fresh-looking as ever; and the amateur who is acquainted with the care necessary to the raising of plants from seed which is apparently mere dust, need apprehend no difficulty in thus cultivating a few plants in the spring. The usual mode is to purchase several plants in a "forty-eight" pot, in which they are too often allowed to struggle. But, forming as they do a number of roots in a small space of time, they soon become pot-bound, and, unless shifted into inconveniently large pots, begin to wear a dingy appearance, and are consequently soon "over." Our plan is to place a single plant in a "sixty" or thumb-pot; as this flourishes and fills the pot with roots (as it soon does), it is shifted on gradually until occupying a "forty-eight," which is sufficiently large to flower it in until the end of the season. The soil is composed of equal parts of good nursery fibrous loam, brown fibrous peat, and a little silver sand, but the two latter will grow the young plants very satisfactorily. In the event of starving several plants in one pot, which results in the ragged appearance referred to above, they should be cut down to within half an inch of the soil and repotted, care being taken that both the old and new soils contain equal, though by no means extreme, moisture. This treatment will soon be followed by fresh growth and a profusion of flowers in no way inferior to the earlier ones, and the plants will continue to bloom until the end of the season, provided they are shifted on—in this particular instance of neglect—until occupying eight-inch pots. Stakes should be placed around the edges of the pots after each shift, care being taken to avoid injury to the roots. Thus the plants do not become weakened for want of support, but grow on vigorously from the time they are started. Though of delicate construction, the few Mimuluses with which we are acquainted are tenacious growers, and the same treatment applies to them. These are the large-flowered M. moschatus Harrisonii, the lovely scarlet or crimson M. ruber, and the handsome bedding trumpet-shaped flower—also an excellent window-plant—of the same family. —Stamford Hill.

14179.—**Flowers for south window.**—Fit a zinc tray in the stand, and once a week take out all the pots and empty out any accumulations of water. The following flowers are gay in such a stand now:—Vallota purpurea, Zonal Pelargoniums, Tuberous Begonias, and Ivy-leaved Pelargoniums round the edge, falling over. By and by will come in Chrysanthemums, Primulas, Erica hyemalis, E. autumnalis, Cytisus racemosus, Coronilla glauca, bulbs of various kinds, which can be brought on elsewhere, and later on an Acacia or two, with one or two Camellias, and a pot or two of Ferns and Mosses, to give tone and character.—E. Hobday.

14180.—**Heating greenhouse and shop.**—I think I should use three-inch pipes, as they are quicker in action; four rows along the front and across one end will do for the greenhouse; but if Cucumbers are required in winter, bottom heat will be required in addition, and two rows of the same sized pipe will keep up a comfortable warmth in the shop if placed round near the outer wall.—E. Hobday.

Surplus hardy plants.—The editorial article on "Bedding Out" in Gardening Illustrated, September 12, has suggested the possibility that some kind amateur gardeners might be willing to bestow some of their surplus stock of perennials on a home for sick poor which has just been built on Woking Common. If hardy plants which would otherwise be thrown away were sent there to blossom, they would gladden the hearts of many who once knew the pleasure of a garden of their own. Contributions of plants would be gratefully received by Miss Rosa Thomas, *St. Peter's Home, Maybury Hill, Woking.*

BEES.

SEASONABLE NOTES.

The results of the honey season just closed have been very satisfactory in some parts of the country; in other districts, however, the yield of honey has been under the average, owing to the fact of natural swarming having been very prevalent. Numbers of hives are proving queenless; young queens have been lost in unusual numbers, making the re-queening of many colonies necessary.

Preparations for winter.—Feeding, where necessary, must now be carried on freely, and all colonies fed up to full weight. Much depends, in successful wintering, upon stocks being strong in numbers as well as heavy in stores. Weak colonies should therefore now be united, two or three together. Those in bar-frame hives can be strengthened by giving them frames of brood from strong colonies. If stimulative feeding be practised, it will induce the queen to continue laying for a longer period than she otherwise would, and thus a large number of young bees in the hive during the winter is insured, ready for work in early spring. Feeding should be completed by the middle of October, when the bees must be crowded into as small a space as possible by division boards placed one on either side of the cluster, and the space between the division boards and the sides of the hive filled with chaff or cork dust; or small cushions, the size of the division board, stuffed with cork dust and sewn through and through to keep them in shape, may be used. These cushions may also be used on top of the frames over the quilt; these will be found to be good draught-excluders, and are easily removed when necessary for examination of the hive. In bar-frame hives the combs do not touch the sides; the heat, therefore, escapes round them, and extra precaution is necessary in order to keep up the temperature. Bees in show hives winter with much less trouble and risk; the combs being built against the top and sides, the heat is well maintained.

Feeding syrup.—The syrup used for stimulative feeding should consist of sugar and water, the proportions being seven pints of water to ten pounds of sugar; that for feeding up, for winter consumption, five pints of water to ten pounds of sugar, boiled for a few minutes. Candy is sometimes given to bees for wintering upon, and is specially useful for late feeding or when stores run short during winter. It is made by boiling about three-quarters of a pint of water, and gradually stirring into it six pounds of white sugar, keeping it stirred to prevent burning. To test when it is sufficiently done, a little is dropped on a plate; if it sets hard when cool it is done. The candy is then poured into bar frames, which are laid upon paper on a flat surface, the frames of candy are then inserted in the hive next the cluster; or it may be poured into saucers, upon paper; the hot syrup settles the paper into form. This can be placed on top of the frames with the paper uppermost, to prevent the candy sticking to the quilt. Burnt sugar is very injurious to bees; great care must therefore be taken in making syrup or candy to prevent burning, by keeping it constantly stirred.

Dysentery.—When bees are fed late in the season upon syrup, and cold weather sets in before they have had time to ripen and seal their stores, they are then unable to produce wax with which to cap the cells; the food, therefore, remains unsealed, and the consumption by the bees of this watery food is very liable to cause dysentery. Many bee-keepers extract all unsealed stores from the combs before closing up for winter. Weak stock are also liable to this disease from their being obliged to consume an excessive quantity of food in order to keep up the necessary temperature within the hive. This may be obviated by making all stocks strong for wintering, by joining weak colonies two or more together. Dampness in the hive from imperfect ventilation will also encourage dysentery. When a stock is found to be suffering from this disease, it should be removed to a clean, dry hive, the soiled combs exchanged for clean ones, and the bees fed upon candy—or have a comb or two of sealed stores supplied to them. The size of the hive should also be contracted by the division-boards to the number of

frames covered by the bees, the hive well protected from cold and wet, and the bees disturbed as little as possible. S. S. G., *Boxworth.*

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXII.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Rhubarb Champagne.—Take thirty pounds of Rhubarb, five gallons of water, fifteen pounds of crushed lump sugar, and twelve Lemons. Wash and dry the Rhubarb stalks, cut them into very thin slices, and remove any part that is decayed, slice the Lemons very thinly, and bruise all in a tub until quite a pulp is formed. Pour the water (which should be warm) over the pulp, squeeze and mix thoroughly with your hands, and break any pieces that may have escaped being crushed. Cover the tub closely and let stand for twenty-four hours. Then strain through a coarse cloth and press so as to extract all the juice from the fruit. When this is done, pour half a gallon more warm water over the pulp so as to obtain all juice and flavour that may remain, and again press all liquor from the pulp. The juice should then be put into a large clean tub with the sugar, and stirred continually until the sugar is quite dissolved. Stand the tub in a warm place, keep it closely covered, and let the contents ferment for three days. It must then be drawn off into a clean cask, placed a little on one side, for the scum that arises to be thrown off, and as this happens the cask should be filled up with some of the remaining "must" reserved for that purpose. As soon as the active fermentation has ceased, the cask should be stood upright, filled again if necessary, and the bung put loosely in, and after a few days, when the hissing noise ceases, drive the bung into the cask as tightly as possible, and make a spile-hole, to give vent if necessary. Let this stand four months, and then the wine should be drawn off from the sediment into a clean cask which has been previously rinsed with brandy. At the end of a month look and see if it be perfectly clear; if not, add half an ounce of isinglass dissolved in a little wine, and, when quite clear, pour the wine into old champagne bottles, with one lump of sugar in each bottle. Cork tightly and secure with wire. Store in a cool place, and in about two months the wine should be ready for use.

Rhubarb Wine.—To every six pounds of Rhubarb, allow one gallon of fresh spring water, three pounds of loaf sugar. Wipe the Rhubarb with a damp cloth, cut it into small pieces, and bruise it in a large wooden tub so as to form a pulp. Pour the water, cold, upon this, cover, and let stand for four days, stirring the mixture well up three or four times each day. On the fourth day squeeze all the liquor through a coarse cloth into a large tub, and to every gallon add three pounds of sugar, and stir until dissolved; cover, and let stand in a warm place for six days, when a crust will be formed on the top. This must be very carefully removed, and the wine put into a clean cask, which must be quite full. The bung must be but lightly put in for a fortnight, and then tightly stopped. In three months draw off the wine into clean bottles, and cork them tightly. This wine will considerably improve by keeping. If the light colour is disliked, a few drops of cochineal, added after the juice is first strained, will give the wine a pretty pink tinge.

Rhubarb and Lemon Marmalade.—Take twelve pounds of Rhubarb, two dozen Lemons, nine pounds of loaf sugar. Wash the Rhubarb, cut it very small, and put it into a preserving-pan with one pint of water. Let these boil very fast until the Rhubarb is reduced to a pulp, then add the sugar and Lemons, which must have been prepared as follows:—Peel the yellow rind from the Lemons very thinly, and cut it into fine shreds; remove all the white pith, and slice the pulp of the Lemons into the preserving-pan, but keep back all the pips, as they have a tendency to make the marmalade bitter. Stir all over a brisk fire until the marmalade is cooked, which should be in about thirty minutes. Carefully remove all scum as it rises. Pour the marmalade hot into jars, and when quite cold cover as directed for jam.

Rhubarb and Apple Jam.—Take one pound of sound juicy Apples, two pounds of Rhubarb (weighed after it is prepared), a quarter of a pound of sweet Almonds, and three pounds of loaf-sugar—pare, core, and cut the Apples small; wash, skin, and cut the Rhubarb; blanch the Almonds, and cut each one into small pieces; crush the sugar, put it into a preserving-pan and moisten with a very little water, and when it is quite dissolved add the Apples, Rhubarb, and Almonds. Let these boil while you stir continually for at least one hour, removing all scum as it rises to the surface. Try a little of the jam upon a cold plate, if it solidifies quickly it is ready to pour into jars, and set aside to become cold before covering. All the recipes in this article are best when prepared late in the season, when the Rhubarb is fully matured, about the end of September or early in October.

14467.—**Cooking Kohl-Rabi.**—Will any housewife describe the best way of cooking Kohl-Rabi? and oblige Mossend.

14468.—**Preserving Green Peas.**—Having more Green Peas than the family can use, I wish to preserve a few quarts for winter use. Would Miss Griggs or any other reader kindly advise me how it is done?—T. M., *Belfast.*

Preserving Plums in their natural state.—While visiting in New Zealand last winter I learnt what seemed to be a very good way of preserving Plums, or any other fruit, in its natural state, to serve for tarts in winter, viz.:—To boil three gallons of water with three pounds of loaf-sugar and one ounce salicylic acid. When cold drop in the fruit. Keep in large stone jars tied down. Can any of your readers inform me whether this acid is used for the purpose in England?—Marie Louise.

14328.—**Making Tomato-sauce.**—Twelve Tomatoes, ripe and red; take off the stalk; cut in halves; squeeze enough to get all the water and seeds out; put them into a stewpan with a Capsicum, and two or three tablespoonfuls of beef gravy. Set on a slow fire till properly melted; rub them through a tamis into a clean stewpan; add a little white pepper and salt, and let them simmer for a few minutes. French cooks add an Onion or Shallot, a clove or two, or a little Tarragon vinegar.—Celer et Audax.

Paraffin-oil cooking-stoves. — During the warm summer months the necessity for keeping up a large kitchen fire throughout the day is often the cause of great inconvenience and unpleasantness in many households. Much of this may now be done away with by the use of one of the many oil cooking-stoves offered in the market. One of these,—"The Family Friend,"—manufactured by Mr. R. C. Bruce, of 74, Lant-street, London, S.E., we have recently had an opportunity of testing in a small way, and found it cook admirably. The operations of baking, boiling, steaming, and frying can all be carried on in one stove; plates and irons can be heated at the same time. A great saving of time and money, and a great gain in the way of convenience, must follow from the use of such admirable articles; and their use will not be confined to the summer months alone. We may add that these stoves (with which are sold the necessary utensils) are cheap, and, being portable, are well adapted for picnics.

14476.—**A legal question.**—An English judge has explained that no man can get damages by law who cannot show that he has sustained damage. If "C. A. P." erects a greenhouse, he will have to leave the ground in as good condition as at present. If the greenhouse has boards for the sides, and rests all on stout pieces of wood driven firmly into the ground, there cannot be any dispute when removing.—Alpha.

—— The greenhouse can be erected as a tenant's fixture, to be removed if required; but it must not be built on a brick foundation. The hothouse builders know how to erect it so that it may be removed.—J. D. E.

—— A greenhouse built on any part of the premises, in the ordinary way, would not be removable by the tenant, as the landlord gets the benefit of all improvements, but C. A. P. may *rent* a greenhouse on the ground, or on a brick or stone foundation, and if removed before the expiration of the tenancy the landlord cannot object; the house must not be fastened to the ground or foundation by even a nail. The best way to avoid all question is to get the landlord's consent in writing to the greenhouse, if erected, being removed by the tenant on his making good all damage; this would apply to any sort of house.—Six and Eightpence.

—— My husband, who is a barrister, has drawn my attention to the following cases bearing on removal of greenhouses:—Greenhouses and hot-houses erected by a market gardener or nurseryman for the purposes of his trade are removable (Penton *v.* Robart); but a conservatory not for trading purposes erected on a brick foundation attached to a dwelling-house, and communicating with it by windows opening into the conservatory, was held not to be removable (Buckland *v.* Butterfield); and so were a greenhouse in a garden, and a boiler built into the brickwork in the greenhouse; but the pipes of the heating apparatus attached to the boiler were held removable (see Jenkins *v.* Getting). My husband says, however, that if a conservatory is placed on bricks—not cemented with them, but only standing on them—the greenhouse could be removed, not the bricks.—C. F. Davis, *Leatherhead.*

A "Rock" of Mushrooms.—*See page* 420.

14466.—**Creepers for fences.**—Why not plant Ivy? I should hardly think a more suitable thing in every way could be selected.—D. J. Y.

14406.—**Garden work in autumn.**—A good plot—say, the fourth of your garden—should be planted up with early Cabbages. It is rather late for Winter Greens and Coleworts, but if a few of each were put in they would come to something. Sow a few rows of winter Onions, and in the open a patch of winter Spinach. The remainder of the ground should be dug up roughly as soon as cleared of the present crops, and left exposed to the action of the air till next spring, when it can be forked over and prepared for other crops.—D. D., *North Surrey.*

POULTRY.

BUYING IN STOCK.

When their premises are suitable for chicken-rearing, and sufficient attention can be given at all times to the young birds, Poultry-keepers cannot do better than raise their own stock. In the first place, home-bred birds are accustomed to the grounds on which they have been reared; then, by breeding one's own pullets, there is no danger of importing disease into the yard, as may be done by purchasing fowls here and there; the trouble in looking for and getting the birds home is avoided, and the breeder has also an opportunity of breeding for certain qualities, whereas in buying he must take his chance. Some fanciers, however, although they would gladly replenish their stocks by home-bred birds, are debarred from doing so by want of sufficient room; others, again, are unable to devote much time to their pets, and find it more satisfactory to buy in young stock every autumn. The best time of the year has now arrived for buying in cockerels and pullets, as breeders have selected all the chickens they intend to keep, and, in order to gain room, will entertain any reasonable offer for their surplus stock. This does not apply only to breeders of exhibition poultry, but even to farmers and others, who ask only market price for their chickens. Unfortunately, agriculturists pay but little attention to the wants of their own yards, for too often they sell, merely to kill, whole broods of promising early chickens, the pullets of which should never leave their birthplace except as old hens. This is one of the principal defects in the management of farm poultry. I should not advise any one who merely wants a few hens to provide him with fresh eggs throughout the year to get his pullets from one holding a high position in the exhibition world. If he does, he will have to pay for them in earnest and his eggs will come expensive. Such poultry-keepers should buy from some one in their own neighbourhood, unless they have a fancy for any particular breed, in which case they must pay for their hobby, as everybody else does. The pullets will be all the better for being thus early introduced to their new quarters, as a change later on checks laying for a time.

But while I think it inadvisable for owners of small yards, who have no other object than eggs in view, to go to much expense when purchasing pullets, I consider one who breeds his own stock may lay out his money to good purpose in buying some of the birds offered by exhibitors. The cockerels and pullets thus offered at low prices, owing to some defect which would tell against them in the show-pen, are, no doubt, refuse stock from the exhibitor's point of view. Still, they are very useful for crossing purposes where there is not much attention paid to show points. A blemish in feathering, for instance, cannot affect the bird when judged from a table point of view, nor can it injure its laying powers. In farmyards, where the stock consists of a medley of breeds, a great improvement can be quickly brought about, and at little expense, by removing all the mongrel cocks at present running about, and placing two or three Dorking cockerels, according to the number of hens kept, in their stead. Other breeds can also be improved in like manner. It must not be supposed that all fowls bred by exhibitors are nearly useless for ordinary poultry-keepers, although it must be admitted that breeding for feather, &c., has too often interfered with egg production. Some years since I remember three dark Brahma hens, hatched from eggs purchased of a very large exhibitor. The birds were all worthless for exhibition purposes, but were some of the best layers I ever knew. They were almost non-sitters, and from them a really good strain of birds might have been obtained by careful crossing. With many fanciers the most convenient way to start high-class poultry-keeping is by purchasing the better specimens of surplus stock. From such birds good chickens often may be bred, and, if judgment in crossing be used, the novice may soon take high rank as an exhibitor. To buy prize birds for breeding purposes is at all times a risky thing to do, and especially in the case of one new to the work, who lacks the knowledge required to mate the birds properly. Breeding, even from inferior stock, gives the owner experience in mating, and this is what so many poultry-keepers are deficient in. Doulting.

QUESTIONS AND REPLIES.

14699.—**Poultry feeding.**—Will any poultry-keeper kindly let me know the weight of food per diem requisite for a dozen fowls? We have thirteen dozen. They get two tin pails (holding about two gallons each) full of corn in the morning, and the same of sharps and scraps (mostly cabbage) at night. They have a run of twenty feet by sixty, and a large field, where they go in the afternoon, yet at present we get hardly any eggs.—Engineer.

14700.—**Fowls hatched by incubators** (*J. Knight*).—You probably mean to ask whether fowls hatched by means of incubators would be fertile. There is no reason whatever to doubt that they would be as perfect as those hatched in the ordinary way.

14701.—**Fowls not laying** (*Civis*).—The only reasons I can give for your fowls not laying are—first, they may be too well fed; and secondly, they may be too old. It is likely that the former is correct, for even old birds usually lay in the summer and autumn—if not moulting. When the birds are very fat, eggs are always scarce. "Civis," again, must remember that hens do not lay immediately moulting is over.—Doulting.

14702.—**Bronchitis in hen** (*F. W. R.*).—The bird appears to be suffering from bronchitis, which should be taken in hand at once, or it may develop into something worse. A simple remedy is to place the patient in a dry and rather warm place, add a little cayenne or ginger to the food, and in the drinking-water place a little nitric acid and sufficient glycerine to make the whole slightly sweet and barely acid to the taste. With this treatment the fowl should soon recover.—Doulting.

14703.—**Plymouth Rocks** (*H. C.*).—The following are a few breeders of these fowls, and from them no doubt some hens can be got: Arthur B. Peirse, Bedale; R. B. Astley, Chequer's-court, Princes' Risboro', Bucks; Arthur Sturgess, Brantingthorpe, Lutterworth; and J. M. Reynvaan, St. Leonard's Poultry Farm, Ringwood, Hants. Fancy prices may be asked, but in any case I do no think "H. C." will get any hens worth having under four or five shillings per head. A friend of mine has lately sold all his surplus birds at that price.—Doulting.

14451.—**Giddiness in fowls.**—The bird appears to be suffering from giddiness, which, unless checked in its early stages, often ends in apoplexy and death. When a bird is first attacked, its head should be held for a minute or so under a water-tap, after which a dose of Epsom salts should be given, and the fowl kept on a low diet. High living is, I am afraid, the cause of the attack.—Doulting.

14455.—**Diphtheria in fowls.**—If the disease referred to by "L. Daniell," in the number for Sept. 5, be really diphtheria, it will be found to yield to frequent small doses of common sulphur. It may either be made into pills with treacle, or a quarter of an ounce may be suspended in eight ounces of gum-water, of which mixture a teaspoonful should be administered every hour or two. Improvement will speedily set in, and cure may be expected in about five days. Such is my experience of this treatment of diphtheria in the human subject, and I shall be glad to learn through your pages that it is equally efficacious in the Gallinæ.—H. V. Knaggs.

BIRDS.

QUESTIONS AND REPLIES.

14704.—**A silent Canary.**—My canary, a male bird, two years old, sang beautifully last year, when I bought him in July until September, and has never sung or attempted to do so since. What can I do to bring back his song? He has not had a companion this year.—Jessie.

14705.—**Parroquet losing feathers.**—I have a grass parroquet that has lost its feathers; about the head and neck it is nearly bare. I thought it was moulting, and think still that it is moulting, but the feathers do not appear to be growing well. It began to lose its feathers in the beginning of July. Could any reader who keeps these birds tell me what to do? I feed them on canary-seed and millet. I also give them a sod of grass and fresh water. They never wash themselves. Mine appears lively enough. It has often its head under its wing.—Miss S.

14706.—**Gas and birds** (*Linnet*).—Impure air is not, of course, desirable whether for birds, plants, or human beings, but you can keep your bird in an ordinary gas-lighted room.

14531.—**Sick parrot.**—Our grey parrot, when about three years old, had a similar illness, and for nine months scarcely spoke. She is now perfectly well and extremely lively, and we cured her in this way:—1. All "tastes and treats" were strictly prohibited. 2. The bird was kept in a warm place, free from all draught, and the cage covered at night. 3. Yolk of hard-boiled egg, with a little caycnne pepper, every other day. 4. One drop of arsenicum in a wine-glass of water in drinking-tin. Since her illness our bird refused her former food (boiled Indian corn), and for sixteen months has lived on canary seed. We give her clean water twice a day, and the egg (chopped small, and cold) after her weekly bath. Repeated change of diet is often useful, and milk-sop and Chilies would be a nice change.—J. O. C., *Leicester*.

14458.—**Canary nestlings dying.**—I too have lost at least thirty young birds in the most unaccountable manner. The parent birds have been perfectly healthy, the food has been the same that I have been in the habit of giving for the last five years, there has been, in fact, no alteration with them in any respect, and I have not lost one old bird since the nesting season; and yet I have had only one, or at the most three, reared in the many nests which have been built, the young birds having died when from two to six days old. I have considered the subject very carefully, and the only reason I can give is this—that we had a succession of cold easterly winds in the spring, and the nights have been very cold. Consequently, as I have never had any fires in my bird-room, the young birds have suffered, but all the others that have survived are very hardy, and getting through the moulting excellently. I expect that these birds will prove very healthy, and will be exempt from asthma, which, however, is but a small consolation for the loss of the others.—Nil Desperandum, *Hastings*.

14483.—**Heating a small greenhouse.**—In reply to "F.," allow me to state that I find the "Tortoise" or slow-combustion boiler the best for keeping up a gentle heat such as he requires; and for a house nine feet by six feet, one of the smallest size would be ample heating power. The best fuel to use is coke, broken up small, and with careful regulation of the draught the fire will burn for several hours without attention. In lighting the fire, some shavings and finely-split wood should be placed at the bottom, and at the top mix the wood and coke together; and when this has got well lighted add some more coke, until a good body of fire is got up, when the draught-door may be nearly closed, and no further attention will be required for several hours. These stoves can be obtained of any good ironmonger.—J. Groom, *Gosport*.

Wood ashes for slugs.—Most old gardens are overrun with slugs and snails. Box edgings and creeping shrubs, useful or beautiful in themselves and themselves uninjured, afford cool and grateful shelter to these hungry marauders, who sally forth at eventide to chaw up one's choicest alpines, or to ensconce themselves in the heart of some delicate little bulb. I am glad to say, however, that Lily and Gentian, delicate Bellflower, and Meconopsis, Erpetion, and Primula minima are comparatively safe with a cordon of wood ashes around them, much more so than when we trusted to soot and lime, the first of which is dirty and the second bad for peat-loving plants. I remember reading somewhere also that wood ashes are found of great service as a manure for Vines.—R. M.

Contradictory orders in gardening.—There is some truth in what your correspondent "A. B. T." says about "contradictory orders," but that is wholly occasioned by the necessity of adapting advice to varying circumstances. Take the most "contradictory orders" I should ever give as an example. Suppose a correspondent writes for advice as to planting and culture, and states his soil is a heavy, cold clay, and very stiff. I know perfectly well that in nineteen cases out of twenty such a correspondent will never be persuaded to adopt the really best course—namely, to cultivate the soil well and deeply for a few years, and add all sorts of lightening materials, and defer all permanent planting until the soil has been got into a light, workable condition. Therefore, in such cases I should advise constant stirring and working of the soil amongst the plants, knowing from experience that when plants are placed in a soil far too stiff for their roots to penetrate they can still be made to do fairly well by constantly manuring and working the soil, the reason being that their roots work along the fissures created by that constant working; but in light soils, which are wanting in tenacity, and where one touch of the fork disturbs the whole soil that a plant roots in, and breaks nearly the whole of its feeding fibres, such cultivation merely means destroying the plants. Similar contradictory orders have to be given in many other cases to suit varying circumstances, or failure will result. The true idea in gardening is to make suitable soils and stations for the plants grown, and then allow Nature to do the rest without interference.—J. D.

REMODELLING A GARDEN.

"A. H. S." (page 366, Aug. 5) has a difficult task before him—not in renewing his herbaceous border, that is an easy matter, but in adapting a very formal and untasteful plan of garden to a kind of decoration different from that for which it has been laid out. Hardy plants are not so suitable to formal arrangements as they are to picturesque effect, which latter is impossible with a garden planned as that of "A. H. S." is. A rosery should always be hidden away in some part of the garden where it can be visited when the Roses are in flower, and be unnoticed when they are out of bloom. A Union Jack arrangement of walks is unmanageable in the last degree, and Yew-trees placed between flower-beds are almost as bad. There is no worse plan of garden possible than one that begins by emphasising the centre. Irregularity is the first element in the picturesque. If I were in "A. H. S.'s" place I should make a clean sweep of the whole affair, and keep only a surrounding walk, making the centre open lawn with irregular beds of hardy flowers, shrubs, Rhododendrons, and Roses round it.

The next best plan to that would be to dig up and turf over all the walks but the centre one, stab up all the yew-trees and plant a clump or two of flowering shrubs about the outside of the lawn, disposed irregularly, so as to avoid a two-sides-alike arrangement. Then throw the whole space of beds and walks into three large beds along the centre walk, two of different shapes on one side, and one of a third shape on the other. This third bed should be arranged so as to take the group formed by the Roses out of the centre, by adding to it on one side. The difficulty of filling small beds with hardy plants in a satisfactory manner is entirely owing to the fact that most of them bloom for a short period. It is equally foolish to exclude them for that reason from all prominent positions, and to have flowerless or shabby beds filled with plants out of bloom; and the only good way is to have large beds, so that sufficient of each kind of plant can be used to form conspicuous masses of bloom, and the plants out of flower can be hidden by those in flower.

Any attempt to fill beds so small as six feet by ten feet with hardy plants with the idea of having them look furnished for the whole year can only result in failure. Make the beds fifteen feet by twenty feet or thirty feet, and the thing can just be managed and no more. The first and most imperative necessity is to get rid of the Yew-trees. No Conifers of any kind should be planted in flower-gardens among the flowers; very few plants thrive well among the decaying leaves from them. If "A. H. S." decides to keep the small beds he might throw two of them into one, and let a big bush Rose take the place of each alternate tree. Small beds would require quite as much trouble in moving plants as bedding plants require, and the only saving would be the house-room and fire for the plants in winter. It is much too late now to begin furnishing the beds in the cheapest way possible; namely, with seedling plants. A beginning should be made in spring with seedling perpetual-flowering Carnations, to flower in 1887, and later with Alpine Auriculas and Primroses. Then, next August, sow a lot of good Pansies. Plants from cuttings are quickly over, but seedlings last the whole season if well fed, and produce an incredible quantity of flowers. Polyanthus Primroses are very useful, as they flower for a long time; the best way to get up a stock is to purchase good plants and save seed, which should be sown as soon as ripe. Border Pinks are very useful, as the leaves look well.

The only way small beds could be made at all presentable would be by edging them with evergreen plants—one, creamy-edged Arabis; a second, Aubrietia; a third, Thrift; a fourth, Gentianella; and so on; filling the beds as much as possible with plants which are either green in winter or come up early in spring. Phloxes, Japanese Anemones, and early-flowering Chrysanthemums come up very early in spring, although they flower in autumn. In the mild climate of Ireland much may be done with autumn-sown annuals. These are green tufts all winter, and can be cleared away in time to make room for half-hardy annuals or bedding plants. With regard to the kitchen garden border there need be no hurry; moving plants from one part of a garden to another is a different thing from planting plants from a nursery, which have to be out of the ground for several days. With all operations of that kind the best way is to do all the thinking first. Make a plan of the border as it is intended to be, and then set to work bit by bit, setting the plants in their stations as the work proceeds, so that nothing need be out of the ground for more than an hour or so. If anything is in the way, lay the plants in shallow trenches in the kitchen garden, and cover the roots with earth until the plants are wanted. The bush Roses should not be moved until November; but old-fashioned summer-flowering Roses are not nearly so much injured by being moved early as the newer Roses which grow freely in the autumn are. It will be better, however, to wait until the leaves fall, as some of these old Roses root very freely, and as much root as possible should be preserved uninjured. All injured pieces should be cut off with a sharp knife. In dividing plants, care should be taken that each piece has some roots attached to it, and the pieces should be cut with as little pressure or tearing as possible. If fresh manure is used when planting, two or three inches of light soil should be placed between it and the roots, so that the young rootlets may be able to avoid it if it is too strong for them.—J. D.

ERECTING A CHEAP SUMMER-HOUSE.

I must admit at the outset that I have not much taste for carpentering; but with the little knowledge of the art I possessed, and a few hours' aid from a professional, I was enabled some little time since to erect in a suitable spot in the garden a summer-house which, if not very artistically finished, was both comfortable and pleasing in appearance. It may be rather late in the season now to introduce a subject of this kind, and my notions of what is proper in a garden may not meet with the approval of everyone; yet I venture to give it for what it is worth, and any improvements suggested by your readers would be as welcome to me as to anyone else. The first thing, then, to be determined upon is size and shape. The former must to a certain extent be dependent on the site available. From the place where I am writing, I have not the opportunity of giving the exact dimensions of the erection under notice, but I am under the impression that they must be something like 7 feet. For the novice in building, a square, or at any rate rectangular, shape will be found the easiest, and this was the shape adopted in this instance. After size and form have been decided upon, the next proceeding will be to dig six holes, one for each corner-post, and one each for the posts forming the entrance These posts should be small, round logs, with the bark intact. Those we used were simply Scotch Fir poles; I have seen Yew tree posts used, with the snags of the branches left, after the fashion advocated by the snag pruners of trees, but I do not consider this any great improvement. The posts should be about 8 feet long, in order that they may be fixed some 2 feet in the ground and stand 6 feet out. If the subsoil is very firm and hard, something less than 2 feet in the ground would answer. To the top of these posts fix four half-round pieces, *i.e.*, with a saw-cut down the centre, in a horizontal position, the convex side with the bark on being downwards. These pieces will thus form the plates for the roof, and also the rails for fastening the boarding, to which we come directly. We have first, however, to fix similar pieces—if not quite so stout it does not matter—from post to post close to the ground, and at each side the erection, except the space in front left for the entrance. These corresponding with the pieces at the top will form the rails, to which boards must be nailed perpendicularly, so as to make the building draught-proof—which is a consideration to many in this climate—the only opening being the entrance, and small spaces at each side to admit of a small frame and a single sheet of glass, which, by fastening small strips to the inside of the boarding, may be made to slide to and fro, if the ventilation from the front is not sufficient.

The boarding I used was ¾-inch Spruce, and this, cut square at the edges, answers very well, as it is white and clean, and, unless the taste of the builder should lead him to think differently, does not require any further treatment in the shape of paint, stain, or the like. If the boarding does not, with merely the top and bottom rail, appear to be stiff enough, another rail may be added at about eighteen inches from the ground and on the inside. This will be quite out of the way, as it will be hidden by the seats and help to support them. The seats may also be made of Spruce board, but will require to be thicker.

We now have an erection consisting of the round posts, and Spruce for boarding—not a very picturesque object in a garden, certainly. It will be noted, however, that the outside of the boarding has been left with a perfectly level surface, as it must be nailed on to the rails from the outside. What we now have to do is to completely cover this boarding diagonally with small split Larch or Scotch Fir poles. Spruce, for this purpose, is not so suitable, as the bark, being smoother, fails to give the rustic appearance which is all important. This, however, is gained by using either Larch or Scotch Fir, and when these half-round pieces are nailed diagonally—with the bark, of course, outside—the effect is very good, and, so far as the taste of the writer goes, quite in keeping with the general surroundings. It will be necessary, however, to have a roof, and this is best made to terminate in a point in the centre. This will probably be a little perplexing to the beginner, but will easily be overcome by fixing the upper ends of the rafters, which can also be made of Fir, to a small round block placed immediately over the centre of the erection. The best way to accomplish this will become apparent on a little consideration. Some laths will be required to nail across the rafters, to which the roofing material can be fastened. In my case, this was common wheat straw, as it was the only available thing at the time. This, of course, was put on by a man accustomed to the work. The only objection to this is the brightness of its appearance. This, however, soon wears off, and becomes browned by the weather. There is a brown covering material used by the builders of this class of structures, which would be altogether more appropriate, but I do not exactly know what it is. Perhaps some reader could furnish the information. Be this as it may, we have here a very comfortable and rustic looking retreat, and at a very small cost. If the owner is fastidious about the whiteness of the interior he can use a little wood stain, and then bring it to suit his fancy. A coarsely woven straw mat to cover the floor I think completes the list, and if the few hints here given set any amateur to try his constructive powers, I do not think he will be disappointed in the result, as there is nothing difficult in thus adding another item to the enjoyments of the garden. Erected in this way there is an absence of the stuffiness and earthliness so often characterising garden buildings.

D. J. Y.

Killing cockroaches.—Some one asks how to kill cockroaches. Perhaps the following plan will be of some use. Take equal parts of moist sugar and fresh plaster of Paris, mix well, and put on the floor near the place where the cockroaches are found, or in a plate. Plaster of Paris can be bought at a penny a pound at a builder's or stonemason's. Mix about two ounces of each at a time. Cockroaches are very fond of sugar. If any readers find this plan answers, I should like them to let me know through Gardening.—V. B.

Soot-water, to be of value, should be properly made. The right way is to put a bushel of soot into a well-made canvas bag, into which a heavy piece of old iron has previously been thrown as a sinker; then tie up the bag tightly, and throw it into a tank or large butt of pure rain or river water. None of the crude carbon makes its escape, but you have all the ammonia and other essential component parts of the soot, which are really soluble, and either for syringing or watering it is of the utmost value. Excepting Orchids, I know of no plants that object to soot-water so made. Eucharis, Pancratiums, Vallotas, and Amaryllis revel in it, and plants syringed with it are rarely troubled by insect pests.—V.

GARDENING ILLUSTRATED.

Vol. VII. OCTOBER 3, 1885. No. 343.

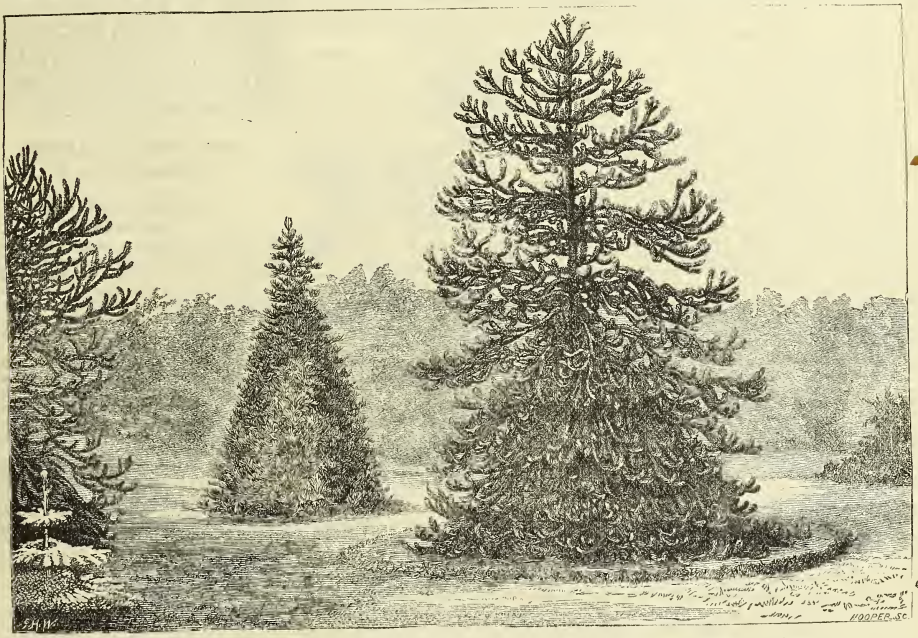
TREES AND SHRUBS.

MONKEY-PUZZLE AND MAMMOTH-TREE.

Our illustration shows two trees, both belonging to what is called the Conifer family, which are probably planted in greater numbers than any other two kinds. One is the "Monkey-Puzzle," as Araucaria imbricata is commonly called, and the other is the Wellingtonia gigantea, or Mammoth-tree of California. Both are what may be termed modern trees, and, as in the case of all things that are new, every one desired to plant them. In some parts of the country they have grown creditably, but, speaking generally, they are both disappointing trees. They have been planted in all sorts of positions, good and bad, thrust under the windows of a cottage, as well as put on the bare hill-sides of a park. In nine cases out of ten the planters did not well consider the positions in which to place these tender Conifers, which, in a natural state, grow in sheltered valleys, and generally in groves, where they afford shelter to one another. The Wellingtonia is, for those who do not object to see a formal tree in their grounds, one of the best that can be planted if the soil is suitable and not too dry—not simply a thin section of good earth over a bed of gravel, as is sometimes given it. It will grow well if liberally treated in good soil. In a generation one may hope to see a tree some thirty or forty feet high, and one can often point with an air of satisfaction to a Wellingtonia planted by oneself, the stem of which may be two feet in diameter.

The same statements may be made of the Araucaria or Monkey-Puzzle. This is a Chilian tree, perfectly hardy, but, like the Wellingtonia, not suitable for all sorts of conditions or situations or soils; and probably there are more bad examples of Araucarias in the country than of Wellingtonias. When one sees a really fine specimen, such as that at Dropmore, in Buckinghamshire, one may call the Araucaria a handsome tree, but in the majority of cases it is not so, having been planted without any consideration as to the suitability of the locality or soil. There can be no question that these trees require good cultivation—a good deep soil to start with and afterwards periodical dressings of good earth. Then, if the situation is suitable—that is, not too cold or bleak—good results may be expected.

W. G.



The Monkey-Puzzle Tree (Araucaria imbricata) and the Mammoth Tree of California (Wellingtonia gigantea) on a lawn.

THE RHODODENDRONS.

The Rhododendron is one of the handsomest plants grown, blooming in April, May, and June, and affording endless variety of colour, from purest white to deepest crimson. One thing only is essential to its welfare, and that is peat soil; and if they are grown in gardens where the soil is not naturally peat, it must be removed for the depth of two feet and peat introduced. As, however, peat in some districts is unattainable, except at a great cost, its component parts, sand, decayed turf, and any thoroughly decomposed vegetable matter, as stable-manure, leaf-mould, and the like, will form a soil in which the Rhododendron will flourish. It delights in shelter and moisture; but by shade I do not mean an overpowering gloom, caused by large trees which exclude sun and air, and deluge the plants with their drip. But if shade can be secured by distant trees, especially from the afternoon sun, it will be an advantage. It is a bad plan to raise the clumps of Rhododendrons above the surrounding surface, as the rain passes away without nourishing the roots. All choice kinds of Rhododendrons are grafted, so look carefully after and destroy any suckers that may sprout up from below. Should any plant grow straggling, prune it; October is the best month for this. Rhododendrons may be transplanted at any time almost, as the roots are always in a ball, but autumn and spring are perhaps the most favourable times for it. Since the Bagshot and Knaphill Nurseries have been started, the Rhododendrons have become so cheap as to be almost within reach of all. Rhododendrons grow very well planted in groups on lawns; as standards can be obtained, there need be none of that flatness that too often characterises beds on lawns. Their usefulness as forced plants for conservatories cannot be too highly estimated. Out of many varieties, the following are the most showy for a small collection:—R. Athène (white, yellow spots), R. Cynthia (rosy crimson), R. Brayanum (bright crimson), R. John Waterer (crimson), R. Fred Waterer (scarlet), R. Lord Sudeley (plum), R. Minnie (white), R. Schiller (purple), The Queen (blush white), Victoria (claret), W. E. Gladstone (crimson), Mrs. R. S. Holford (salmon), album triumphans (pure white).

C. F. Davis, *Leatherhead.*

Spiræa Douglasii is one of the most distinct of the numerous Spiræas now grown in gardens. It has long, shortly-stalked leaves, which are dark green above and covered beneath with a white down. The flowers are red, and borne in rather dense panicles. The species is quite hardy, and attains a height of from five feet to seven feet; it is quite at home in almost any soil or situation, and when in flower is a great ornament in any shrubbery.—J.

Propagating Evergreens.—Many kinds of ornamental-leaved shrubs may be easily increased from cuttings at this time of the year. Laurustinus, Laurels, Aucubas, and evergreens

of a similar nature will form roots with considerable freedom if the right kind of wood is chosen, and a proper position and soil are selected. The north side of a hedge is the best place, as the cuttings are there sheltered from sun, and to a great extent from drying winds. The right wood is that of the current season; make the cuttings with from three to four joints, insert them firmly, leaving two leaves only out of the soil. The success obtainable much depends on the character of the soil, which should be rather light and sandy; natural deficiencies should therefore be remedied. For stiff soils, wood, or even coal-ashes, river sand or old soil from the potting-bench will work the desired end.—J. B.

REPLY.

14513.—**Rabbits and young trees.**—Make a thick paint of equal portions of soot and cow-manure; paint the trees with it, and rabbits will not touch them. Coal-tar is injurious.—J. D. E.

INDOOR PLANTS.

EARLY-FLOWERING CHRYSANTHEMUMS.

OPINIONS will doubtless differ as to whether early-flowering Chrysanthemums are valuable or not. For my own part, I do not care for them. At the same time, however, I am willing to admit that where the demand for flowers in the month of September is great, these Chrysanthemums may be made to fill a useful niche. If they do no other good, they serve by comparison to demonstrate the superiority of the later blooming kinds. One point in their favour must not, however, be lost sight of, and that is, they can be had in good condition with very little trouble. To grow them in pots until one has become quite master of his business in the way of Chrysanthemum culture is a very disappointing undertaking, for if the cuttings are taken too early, or the roots confined for room, they will flower weeks before they are wanted, and in a very indifferent manner. The most satisfactory way, therefore, of dealing with them is to grow them without pots except while in flower. Our plants, which had been planted out in the open ground, were lifted and put into seven-inch and eight-inch pots at the end of August, at which time they were bristling with flower buds and perfectly healthy, with leaves down to the ground. As soon as potted, they were shut up in a cold frame and shaded from bright sunshine until the roots had got sufficient hold of the soil to bear full exposure. In less than a fortnight the plants were well in flower, and, as they had had plenty of room while growing, they were close and compact in growth, and, when potted, did not require a single stick or tie to support them. The first to flower was Madame Desgrange. This is a very useful variety. Mdlle. Jolivart and La Vierge are also good white kinds. The best lilac-coloured sorts are Madame Bachoux, Anastasio, and Souvenir de M. Rampont. Yellow and bronze varieties include Gold Button, Bolide, Chromatella, and Golden Madame Domage. These should be well hardened off about the first week in May; then divide the old plants, and put out strong pieces in good soil in the open. About the middle of June cut them over, even down to the hard wood, *i.e.*, if likely to flower too early. Growers in the north no doubt find this section of Chrysanthemums very useful, as they may be had in flower before severe frost is likely to occur to injure them in the open ground.—J. C.

—— Early flowering Chrysanthemums are particularly useful for prolonging the out-door flowering season. Many of the kinds are of sturdy habits, and little affected by heavy rains, and they may be had in bloom from the end of July until the ordinary sorts come in. Among the best are Madame Desgrange, a stout, sturdy-looking kind; La Petite Marie, Mdlle. Jolivart, Lavallée, Souvenir d'un Ami, Illustration, Mrs. Wood, Lyon, Virginia, Madame Pecoul, Précocité, and Fréderic Marronet.—P.

Dasylirion glaucum.—The Dasylirion figured last week is with us rather a scarce greenhouse plant, and is sometimes grown as a succulent. It is a common plant in certain cities in Italy, where it is planted in the open air, and has a fine effect when associated with Yuccas and such plants.

Fine Begonia leaf.—I send you a photo of a Begonia which I thought might be of interest to you, owing to the great size of the leaf, as I am led to believe by gardeners here that it is the largest they ever saw. I have had the plant about two years, and this last spring, all the former leaves having died, I took it out of the pot and re-potted in good soil, with the result now shown. The largest leaf measured, on the day the photo was taken (Aug. 31), fifteen inches long and twelve inches broad; the second-sized leaf, ten inches by eight and a half inches. The plant is growing in a six-inch pot.—ALEXR. NICOL. *Edinburgh.* *** *Mr. Nicol sends a good photograph of a fine Begonia of the well-known Rex type.*—ED.

The Neilgherry Lily.—Lilium neilgherrense is without doubt one of the finest of the whole genus, and though it is not hardy, it is extremely valuable for greenhouse culture, as it produces its noble blossoms when conservatory flowers are not plentiful. A single specimen of this Lily in full flower is a handsome object, but when groups of as many as a hundred plants are seen together of varying heights, and with the blooms in several stages of expansion, the effect is indescribably fine. This Lily is of free growth and easy culture, and it is to be hoped that now the bulbs have been imported largely it will not be so seldom seen as hitherto in conservatories in autumn.—M.

Lilium auratum in pot.—I enclose a photograph of a Lilium auratum. The bulb was purchased for ninepence, potted Feb. 14 last in mixture of equal parts of peat, leaf-mould, and ordinary garden soil with a little sand. It was grown from first to last in a seven-inch pot, and for the last month had a little liquid manure twice a week. Until it flowered it was in an unheated glass-house. The plant is now a little over five feet from the pot, and has eight large blossoms.—W. B., *Teddington.*

Dahlias as pot plants are most effective for autumn blooming. Having a good lot of young spring-struck plants, we grew them on out of doors, shifting them into larger pots as they required it, until by the end of August they were very fine bushes in ten-inch pots, and covered with flower-buds. They were then transferred to a cool house, that is kept wide open day and night, the glass roof, keeping off heavy rains, being all that is desired at present. They are opening the most lovely flowers, the majority of which are pure white, of the miniature or pompone class, and the Scarlet Cactus Dahlia, so effective as cut flowers. I can confidently recommend them to any one wanting a supply of these useful flowers for church decoration, or the making of funeral wreaths or crosses. When one trusts to the outdoor supply, the purity of the flowers gets tarnished by heavy rains, and only a few degrees of frost will cut off the whole supply, while a few pots will yield a quantity of bloom until the Chrysanthemums come in. Any one giving them a trial is not likely to discontinue the practice. We have a very effective white called Constance, which is very fine for large blooms, and the smaller but very exquisite blooms of Guiding Star are the perfection of what a neat little white Dahlia should be. The roots of these pot plants are always reliable for stock purposes, as there is no fear of their decaying, for, if dried off after they cease blooming, they may be started again in spring with the certainty of yielding a good supply of shoots for propagating.—J. GROOM, *Hants.*

REPLIES.

14492.—**Belladonna Lilies.**—I have had some of these Lilies for four years in eight-inch pots in a greenhouse that is heated in winter. They are on a shelf in saucers near the glass and the ventilator. They have never been re-potted or set out of doors, and they flower every year.—SUNFLOWER, *Dublin.*

14548.—**Plants for wire baskets.**—For an intermediate house there is nothing in the way of flowering plants better than Epiphyllums, as, when grown on their own roots, they soon begin to droop down over the sides, and, getting plenty of light, they are sure to bloom well. Achimenes make good basket-plants, but when in bloom they must go into a cooler place. Russellia juncea is a graceful habited plant, and in the way of fine-foliaged things there is Panicum variegatum, and such Ferns as Davallia bullata and Asplenium flaccidum. For cool houses nothing is so good as Ivy-leaf Geraniums, and in no way do they look so well as in hanging baskets. The variegated kind, L'Elégante, has a charming appearance when well established.—J. CORNHILL.

14560.—**Stocking Greenhouse.**—If a beginner, your best way is to stock your house with such kinds of plants as are of fairly easy culture. Zonal Geraniums, Fuchsias, Lantanas, Lobelias, Heliotropes, Paris Daisies, Vallotas, and tuberous Begonias will keep it gay through summer and autumn, and for winter you can have a few Chinese Primulas, winter-blooming Tropæolums, with a pot or two of the Christmas Rose; to be followed in spring by bulbous flowers, such as Tulips, Hyacinths, Narcissi, Scilla sibirica, the Snow Glory, &c. These will do for a commencement; and, as to obtaining them, you have only to look into the advertisement columns of GARDENING.—J. C. B.

14568.—**Wintering Auriculas.**—The show Auriculas are best wintered in frames until the end of January, which is the best time to place them in a greenhouse. The show kinds are as hardy as any other. Frost does not injure them when they are at rest in winter; but they must be protected from wet.—J. D. E.

14645.—**Heated room for wintering tender plants.**—Last winter I kept about 300 plants, Fuchsias, Geraniums, Petunias, Callas, Cacti, and many other greenhouse subjects, in a room facing east—no sun and only a poor light. The room is sixteen feet by fourteen feet, and was heated only on various occasions, by an ordinary grate-fire, when I used to work in it. Only five plants out of the lot died, and I lay my success in wintering them to the fact that I gave only just water enough to keep the soil from getting dust-dry.—CHAS. J. WISE.

THE VILLA GARDEN.

(*Continued from p.* 392.)

FORCING VEGETABLES.

Asparagus.

THE main essentials for securing a good supply of forced Asparagus in winter are, first a good stock of strong roots, and, secondly, sufficient artificial heat. The best flavoured forced Asparagus is raised on hotbeds made of oak-leaves and stable manure in about equal parts, thoroughly intermixed. The first bed is made in November, and a succession is kept up from then till March. The beds are made of sufficient capacity to supply a steady warmth of seventy-five bottom heat, and this with coverings will give a top-heat of sixty to sixty-five degrees, rising to seventy or seventy-five in the day-time. As regards the roots, the supply of Asparagus being entirely dependent upon the care bestowed upon them in their preparatory stages, it is necessary to say something. Some people force their old beds, making a certain number of new beds each spring to take the place of those removed for forcing. But young plants of three or four years' growth force most easily, and give the best result. When we know how many plants we intend forcing annually, it is a very easy matter to provide that number in succession, year after year. Say we wish to force 1,000 roots annually. We calculate that so many rows across a particular plot of ground, at fifteen inches apart in the rows, will provide the number with a margin of some five or six per cent. over to compensate for deficiencies in strength in some plants. The seeds are sown in March in drills half an inch deep and three and a half feet apart. When the young plants appear, thin out first of all to eight inches apart, and afterwards to sixteen inches, when the strongest plants can be distinguished. I have sometimes left the plants the first year eight inches apart, and the second year, when the young growth appears, taken up every alternate plant, and transplanted them elsewhere. This is a very good plan, as it is making the most and best of things. The first year a row of some dwarf vegetables may be grown between the rows of Asparagus. Lettuces, Cauliflowers, or some crop that does not occupy the land a long time, should be preferred. The second year the Asparagus plants should have all the space for the full development of their growth. I am assuming that the land is in good heart, and that its condition is kept up by top-dressings and mulchings, and that everything should be done during summer to make the

plants strong, for unless the strength is stowed away in the crowns during the growing period, no amount of skill in forcing can place it there, or abstract what has not been placed there. In taking up the roots for forcing no unnecessary injury should be done to them, for, though in looking at the masses of root out of which the crowns spring some may think a root more or less cannot make much difference, still it is important that the roots should be kept as perfect and as fresh as possible.

Forcing on dung beds is a very simple and easy matter, and there should not be much variation in the result. In the shortest days a little more material should be used, as the roots may want an extra fillip to start them and produce steady, continuous growth. The beds should be a foot wider than the frame on all sides, and from four feet to five feet high at back by three feet to four feet high at front, according to the season. As soon as the heat in the frame becomes genial, which, if the beds are made of equal parts manure and leaves, will be as soon as fermentation sets in, three inches of light soil should be placed on the bed, and on this place the roots as close together as possible. When the frame is full cover with four inches light rich compost, and give enough water at eighty degrees to settle all down. Then put on the lights. Mat up nights and cold days till the heads show through the soil. Ventilate a little to give colour and flavour. If white Asparagus is desired, cover the roots more heavily with soil; if green, only a little soil need be used. New beds may be made up as often as is necessary. As a rule, if the management has been right, Asparagus may be cut in about six weeks from the time the roots are put in, something depending, of course, upon the weather. As fast as one lot is done with, and the plants taken out of the frame, the bed may be planted with Potatoes or sown with Radishes or Carrots. Or it may be pulled down and rebuilt with a little fresh material, or a lining may be placed round it and a fresh lot of Asparagus roots placed in. There are other ways of forcing Asparagus. I have mentioned the first, because it is simple, easy, and inexpensive where the materials can be collected on the place, as they can in many instances. It involves a great sacrifice of plants, and, if much forcing is done, a good breadth of land has to be given up for the growth of the roots for forcing. This has led in many places to

Permanent beds being made, fitted beneath with hot-water pipes, laid in brick chambers, or else laid in a bed of rubble, and on this rubble a bed of rich soil is placed, strong Asparagus plants being planted therein, and, when strong enough for forcing, a fire is lighted, and the lights are placed on. One boiler would heat quite a group of Asparagus pits, starting them in succession as required. The cutting must be discontinued before the roots are too much exhausted, and liquid manure would have to be used freely during the growing season. In May the lights might be taken away and either used for something else or packed away in the dry till next season. The permanent bed system of forcing involves much outlay at first, but afterwards the cost is not great. Asparagus may be forced without removal, by having deep trenches lined with bricks between the beds which are to be forced. The trenches at the proper season are filled with warm manure and leaves, frames and lights being placed on the beds at the same time. One or two beds may be covered with frames and lights without any fermenting matter. Simply shutting in the sunshine will hasten the Asparagus a good deal, and the produce from these will fill up the blank between the last forced bed and the first from the open ground. Besides the methods of forcing above noticed, the roots may be lifted and planted in large pots and placed in a vinery or Peach-house or forcing-house of any kind. Where only small dishes are required for one or two people, this is an economical way of raising it. The pots may first be placed in the Mushroom-house, and be moved to a warm, light house to give flavour when the Asparagus heads are several inches high. Boxes will answer the same purpose; so will also baskets or hampers —anything, in fact, that will hold the roots will do. This method, like the one first noticed, destroys the roots. Old flat baskets, such as nurserymen use for packing plants in for their customers, are capital things for forcing Asparagus in; and they may be placed in any house or pit with a night temperature of sixty degrees or so. As regards

Varieties, the Colossal seems more vigorous in a young state than the common kind, and youthful vigour is important in raising plants for forcing. If well done by, the plants ought to be ready for forcing when three years old, though, if fine produce is desired, four-year-old plants from the seed will be better. Some people think there is only one variety of Asparagus; but any one may see on almost any beds, especially if recently made, a white and a green variety. The Colossal, no doubt, is a selection from some vigorous plant; and now so many people are going in for Asparagus culture that it might answer any one's purpose who had leisure to raise by selection improved varieties of Asparagus. There is nothing impossible in it—patience and perseverance will certainly produce some useful result.

Carrots.

A nice genial bottom-heat of sixty-five to seventy degrees, such as is produced by a bed of leaves with just enough stable manure mixed with them to hold them together, will force Carrots in the best possible manner. The first

A Florist's Anemone.

bed should be made up early in the new year, and as the heat rises place on the bed six inches of light sandy soil. Level and firm it a little, and sow the seeds thinly broadcast. When about an inch high thin out to two inches apart, and sift a little light rich soil over them. Other beds may be made up in succession if required; in fact, there is no difficulty in obtaining young Carrots all the year round, as the winter supply can be obtained from a sowing of early Scarlet Horn on a warm border in July, leaving them in the ground, and drawing them fresh as required, sheltering them in severe weather with dry fern or litter. The best variety for forcing is the early French Horn. Early Horn Carrots may be raised in spring without glass. Dig out a trench two feet deep, fill in with warm manure, place six inches of good soil on the top, and sow the seeds, covering thinly with light sandy soil, and protect the bed at night and during cold days with hoops and mats.

Cauliflowers.

Veitch's Forcing Cauliflower has small compact hearts, very close and white. The habit of the plants is dwarf and sturdy, and it is well adapted for forcing, succeeding well in pots or planted out on a bed of leaves and manure, in a pit, or in the borders of a low, light house. Cauliflowers are not generally required before May; indeed, by growing a good stock of late Broccoli there is no difficulty in obtaining good white heads of Broccoli as late as the middle of June. But young early Cauliflowers are generally more esteemed than late Broccoli; at any rate it is as well to have two strings to one's bow, and where there is space under glass, or where a temporary hotbed can be made in a warm, sheltered corner, Cauliflowers will not cost much to produce. A Cauliflower that turns in so quickly need not be sown so early as the Early London. Sow in November, under glass, in a box; prick off singly into three-inch pots, plunge the pots in a bed of leaves near the glass, and shift into larger pots as more space is required, still keeping the plants near the glass in a pit or house where there is a little warmth. As the days lengthen, a little more heat may be given if it is necessary to hasten their growth, but forcing should not be done unless full light can be given. Very nice little Cauliflowers can be grown in six-inch pots if the pots are plunged in leaves or sawdust, or something that will generate a little warmth. I have sown the seeds as late as Christmas, and cut from the plants in May by growing them on in heat. The forcing should be gently done, especially when the plants are getting large; there should be plenty of ventilation, and they should occupy a very light position. Liquid manure will be a great help during the latter part of the time.

E. Hobday.

OUTDOOR PLANTS.

WINDFLOWERS.

The Anemones or Windflowers are a noble genus of plants to which very much of the beauty of the world in spring and early summer is due in all northern and temperate countries. There are over seventy species known, and when in early spring (or what is to us, in Northern Europe, winter), the valleys of Southern Europe and sunny sheltered spots all round the great rocky basin of the Mediterranean are beginning to glow with colour, we see the earliest Windflowers in all their loveliness. Arid and huge masses of mountain that in the distance look barren and verdureless carry on their sunny sides carpets of Anemones in countless variety of hue. These belong to well-known favourites in our gardens — the common Windflower (A. coronaria) and the Peacock Anemone. Later on the Star Anemone (A. stellata) begins; in April the Anemone Hepatica shows itself. Further east, while the common Anemones are aflame along the Riviera valleys and terraces, the lovely blue winter Anemone (A. blanda) is open on the hills of Greece; a little later on the Apennine Anemone (A. apennina) blossoms in Southern Italy. Meanwhile our Wood Anemone has begun to adorn the woody places throughout the northern world, afterwards ascending to high treeless places on the mountains, the open wind-swept downs at the same time beginning to show the purple of the Pasque flower (A. Pulsatilla) here and there through the brown Grass. The Grass has become tall and richly green before the stately and graceful Alpine Windflower (A. alpina), adorns with its flowers all the natural meadows of the Alps; as soon as its large flowers are succeeded by the long, silky heads of fruit the snow is melting from the high Alpine Windflowers, which soon flower, fruit, and are ready to take their eight or nine months in their snowy bed. These are but a few of the many examples of what is done for the northern and temperate parts of the world by these beautiful plants.

The Poppy Anemone (A. coronaria), of which the plant we illustrate is a variety, is a native of the south of Europe. The single sorts may be readily grown from seeds, sown in the open air in April; the double varieties may be planted in autumn or in spring, or at intervals through the winter, to secure a continuity of flowers; but the best bloom is secured by September or October planting. It does best in a rich, deep loam, but is not very fastidious. The flowers appear in April and May, and often through the winter; they are red, white, and purple in colour.

CHRYSANTHEMUMS WITHOUT GLASS.

Except the Rose, the Chrysanthemum is, perhaps, the most popular of flowers. And deservedly so. What other plant or family of

plants is there that will reward so little pains and so little skill with such a harvest of bloom —abundant, beautiful, long-lasting, and varied in tint and form, and that, too, in the dullest season of the floral year? But simple as is the orthodox culture of the Queen of Autumn, it presents two serious difficulties to the rank and file of the great army of amateurs, who, like the rank and file of all armies, are important collectively, if humble individually. The Chrysanthemum has two prime necessities; it must have moisture while in growth, and protection when in flower. The first of these peculiarities must give pause to the teetotallers, especially as it loves its drink strong; and the second is, doubtless, a great stumbling-block to the free-traders. Anyhow, if deprived of the first, its lower leaves will wither and drop, and its growth will be stunted and poor; and if the second is withheld, its large and delicate blooms will be spoilt by frost, rain, and "blacks." Now, when the sultry days of July and August are here, the anxious amateur may drench his thirsty pets in the morning; but when he returns from business, how will he find them? Drooping horribly. On the other hand, when the fogs of damp November are upon him, what is he to do? If so happy as to own a little "glass," it will now be choke-full of bedders and other tender things; and even windows are not often sufficiently capacious, if available at all. These great difficulties—"Great let me call them, for they conquered me," as Zanga says so modestly—"I have at least overcome on this wise":—

Firstly, I don't have pots. I eschew orthodoxy—I never found it pay; I am a heterodox horticulturist. I plant the plants in the open ground—the openest ground I can afford; in fact, between the potatoes, to save room, good distances between, but handy to the walks. The Potatoes are Early Rose, which are dwarf in the haulm, and soon die down. The Chrysanthemums should be got out as early as possible, say March. The soil is rich, and replenished, after June, with liquid manure. In the first part of the season slugs are troublesome, and in the later part earwigs are awful. Lime-dusting at night is "a short and easy method with" the slimy slug; but with the active earwig there is, alas! no way but tedious trapping. Staking must be seen to in good time. As soon as the buds are clearly distinguishable they are thinned; how much can only be determined by experience. My object in thinning is not so much to increase the size of the blooms as to prevent their being crowded. I rarely stop my Chrysanthemums (the earwigs do enough of that!); but when I do, it is early in the season—as soon, in fact, as they are established in their places. Just before the buds show colour, I look out a south wall, or some such sheltered but open place, carefully lift the plants, and put them in as close together as they will go, dwarf plants under tall leggy ones, and so on, to get as many as possible into a small space. They are kept shaded and moist at both root and leaf for some days, according to the weather. A week or so previous they had a sharp spade driven in round them, and a good soaking of water, to encourage the formation of a fresh crop of short roots. Treated thus I do not find them suffer in any way; the blooms even are of a fair size and excellent form. Over the row, just clearing the tallest, I erect a roof, consisting of a light wooden frame, crossed with twine, to support a covering of oiled calico, which may be made to roll up in fine weather. Unbleached calico is the best, and boiled linseed is the oil, laid on with an ordinary paint-brush. I like to get this done in the warm weather, when it dries quickly. With care it will last many seasons. Further protection I find unnecessary, but, in case of very bad weather, the front and sides could easily be covered with old sacking, or something of that sort. It should be borne in mind that, after all, only a few hours of really bad weather are generally experienced during the Chrysanthemum season, and, therefore, the most temporary protection is enough, if at hand when the time comes. An extension of this plan is to roof-in a recess made by the projecting wall of the kitchen on one side, and that of the next house on the other. This roof being a fixture, I put it higher, so as to see under it comfortably. The recess being paved, the Chrysanthemums are potted.

My favourite sorts are:—*Incurved:* Mrs. Rundle (white), Mrs. Dixon (golden yellow), George Glenny (primrose), John Salter (terra-cotta, tipped gold), Prince Alfred (deep pink), Golden Queen (straw). *Japanese:* Elaine (snowy white), Bouquet fait (pink), Soleil Levant (clear yellow), Triomphe du Nord ("crushed strawberry"), Red Dragon (chestnut). *Reflexed:* Christine (blush), Mrs. Forsyth (ivory white), Dr. Sharpe (rosy violet), Julie Lagravère (deep velvety crimson). *Anemone:* Fleur de Marie (white), Glück (orange yellow). *Pompone:* Cedo Nulli (lilac), Marabout (white, fringed). *Pompone Anemone:* Dick Turpin (intense magenta). These are all rather early bloomers. If late flowers are wanted in addition—and when are they not?—I grow three of the most distinct late sorts, say Ethel, Japanese (white, erect florets); Progne, reflexed (rich amaranth, sweet-scented; and grandiflorum, Japanese (golden yellow, twisted florets); pot them when in bud, like the others, and stand in a north window. In this way I get flowers to cut for the Christmas dinner table. J. F. R., *Southampton.*

Hardiness of Nicotiana affinis.—A note supplementing "P. M. D.'s" remarks on p. 397, may help towards a more definite knowledge of the hardiness of the above. Last year I put out a seedling plant in the spring, and it flowered very well. In the autumn I removed it to plant some bulbs, but next spring—*i.e.*, this year—to my astonishment, two small plants of Nicotiana made their appearance on the spot. Either a ripe pod of seed fell from the old plant and germinated after being there all the winter, or else the plants sprung from a portion of the old roots. In either case, it is clear that it is by no means so tender as first supposed.—T. J. W., *Crouch Hill.*

Roses, Antirrhinums, Border Carnations.—It is a great mistake for amateurs, like "J. D.," to use the imperative mood for everything, and say things "won't do," or "require this, that, and the other," simply because, in their experience, they have only seen one side of a subject. Such assertions often deter people from even trying to grow plants so characterised. "J. D." says "Roses won't do" planted singly amongst other plants. Now, this is ridiculous; if the soil is suitable, Roses, sufficiently good to take prizes, can and will grow so. My standards, whether budded on the Manetti or on tall Briars, are scattered all over the garden, and I cut baskets full every day from June to November. Many are over twenty years old, but show no diminution in bloom. Again, he says, "Antirrhinums require a light soil with plenty of lime in it, and a sunny place." Now the last two words comprise all they *require.* I have grown them seventeen years; bushes three or four feet through, with spikes of bloom two feet long; and my soil is a loamy clay, which, in dry weather, becomes quite hard. The Antirrhinums have, indeed, become quite weeds here, sowing themselves all over the place, from the meadows to the Raspberry-beds, and are only rivalled in fecundity by the Foxgloves and Campanulas. Side by side with these border Carnations produce hundreds of blooms when the ground is so hard that I cannot force a stake into it to tie them up. I agree with "B. C. R." that the soil should be firm round their roots, and have always suspected that the lady who sank up to her ankles in her Carnation bed had in reality plunged her plants in *pots* in a bed of ashes sprinkled with soil! I may add that my experience of Carnation-growing extends over forty years.—A. B. T., *East Anglia.*

A fine Sunflower.—I send you herewith a photograph of a Sunflower which I cut from my garden on the 14th ult. (var. globulosus fistulosus); the picture gives no idea of its remarkable richness and beauty of colour, but it shows the perfect form and something of the depth and fulness of the flower. It was the leading flower of a plant about six feet four inches in height, its diameter is eight inches, and thickness about two and a half inches. In both form and colouring it is extremely fine, and has elicited the admiration of all who have seen it. The unopened florets in the centre are of a rich green, which, in the florets partially opened, merges into a fine yellow, those fully expanded being a beautiful saffron colour paling into a fine yellow at the tips; and the outer rows of florets are of a uniform rich yellow. The inward curve of the florets is marked, and imparts a globose form and appearance of depth which are characteristic of the flower, and, together with the gradations of colour, present a splendid face, which seems in very truth to be all aglow with the glory of the sun itself. The plant is one of several raised from seed.—F. G. Hobson, *Beverley.*

Autumn-sown annuals.—The importance of sowing hardy annuals in the autumn has been insisted on in your paper frequently of late, but I fear the difficulty of getting new seed may prove an obstacle with many. Wishing to give the plan a trial, I bought recently nearly a dozen packets of good hardy sorts from a very respectable seedsman, whose seeds in the spring came up bravely; but, though sown towards the end of last month in a good open place, carefully, on a well-prepared bed, and covered lightly with fine soil, none have made their appearance, except Virginian Stocks and Candytuft. This I can only ascribe to the seeds, being last year's, having lost their vitality, as the weather has been favourable for early germination. Some seeds of my own saving, from this year's flowers, sown just a few days before, are doing well. The seedsman told me that he could not supply this year's seeds till next spring; and a gardener, to whom I applied for some of his own saving, has not yet let me have them, so that I fear they will be too late.—D.

Wintering bedding Calceolarias in the open air.—It might be of advantage to some of your readers to know that cuttings of these plants can be struck and preserved through ordinary winters without glass accommodation. A bed with some light soil should be prepared under a south wall, and the cuttings inserted. Last fall, besides the cuttings that I put in a cold frame, by way of experiment I put some in a box under a south wall. I also inserted some in the open ground, where they would be swept by the north and east winds. Each lot eventually rooted. Those in the cold frame first, next those in the box (which I covered over with a board once or twice when I expected a frost), and lastly (which was not before spring) those in the open ground. Those in the cold frame were not so robust as the others. The Calceolaria will stand several degrees of frost. We put ours out early that they might have time to get established before the dry summer weather. A few days previous to the setting-in of the cold freezing winds of March, 1883, I planted some Calceolaria cuttings in a border under the west wall of the house. We had a large number of Wall-flowers cut off by these winds, but these cuttings did not succumb. Each year we leave out all our old Calceolaria plants that have not gone off during the dry weather, and we have lost none from frost since the cold winter of 1880. These remarks apply to the south of England.—L. C. K., *Isle of Wight.*

The Jasmine Nightshade (Solanum jasminoides) is a very beautiful climber for a cool house; indeed, in the mildest parts of the kingdom it does well on open walls. In order to see it in perfection, it must have plenty of root-room, and where this is accorded it there are few more beautiful plants in cultivation. In this locality it does well as an open wall plant, and out of doors it keeps far cleaner than under glass, where it is liable to insect pests unless well attended to with water at the root and with copious syringing overhead. As a covering for a porch or verandah it is singularly well adapted, for if the main shoots are placed in the position it is desired to cover and the rest allowed to grow naturally, it will in autumn be a complete mass of lovely delicate blossoms. It strikes freely from young side shoots taken off with a heel and inserted round the edge of small pots in fine sandy soil. If intended for planting out, the young plants should be grown on in pots until they are at least two feet high, and well hardened off by full exposure to the open air for some time before the planting-out occurs.—Gosport.

Yellow Carnation.—Would "S. V. B.," Knaresborough, kindly say if her plant of the above is of her own raising? There was a very old yellow Carnation in 1846, at Government House, Portsmouth, that flowered freely and produced "grass"; but I cannot get it now.—A. B. T., *East Anglia.*

—— Would "S. V. B." tell me where I could procure the Yellow Carnation, and what its name is?—W. S. W.

THE LARGE PINK STONECROP (SEDUM SPECTABILE).

This Stonecrop is a most useful plant for flower-garden decoration; it flowers late in the season, when most summer-blooming plants are losing their lustre, and before it comes into flower, its glaucous foliage gives a pleasant relief to any high-coloured plant that may be in conjunction with it. Its fine heads of rosy purple flowers expand about the beginning of August, and it remains for two months, and sometimes longer, in stately perfection. It is particularly effective when placed in centres of beds or in patches by itself, and, like others of its class, it withstands heat, cold, or wet. Some years ago I saw it in magnificent order at Hampton Court, where it was principally planted under and around the large, spreading, dense Yew trees in the flower-garden. In this situation, as in the unshaded beds, the fine heads of flower, some of them a foot across, were fully developed, high in colour, and perfect in every way. Few plants will grow, and fewer still will flower, in such shaded places, and as this Stonecrop does both well it should be largely cultivated in such situations. It is often grown on rockwork or elevated mounds, but as it grows from one to two feet high, it is best suited for the lower flats and cavities, where the whole plant can be seen to advantage. It likes a rich soil, but thrives in almost any compost. It is not necessary to move it annually; the stock may be easily increased by dividing the old crowns. Cultivated in pots for late summer or autumn decoration of the greenhouse, or wherever hardy plants in pots may be needed, this variety has no equal among Sedums or succulents generally. In an eight-inch pot it will produce from six to twelve spikes, and these, when furnished with their large heads, form a collective mass of bloom three feet and four feet in circumference. J. M.

Fruiting of Lily of Valley.—It is not often that fruit is seen on this Lily, but I picked two spikes to-day. One had two fruits and the other three, the colour being bright vermilion red; there was a sharp point attached to each. I did not find any seeds in either of the berries. I had an idea that the fruit was black in colour, but it is so seldom seen that one is liable to forget. The plants that produced the fruit were imported from Germany about five years ago.—J. C. C.

Late Pansies.—I see that A. Milner writes, on p. 413, about Pansies sown in March and blooming now. I have numbers of plants in bloom now (Sept. 24) which were sown in May and have been blooming finely for weeks. I enclose a few specimens.—Windermere. *** *The blooms are very good and rich in colour.*—Ed.

REPLIES.

14562.—**Ampelopsis Veitchii.**—This may require a nail or two when first planted, but afterwards takes care of itself, and grows very neatly. Once started, it grows pretty fast. I planted one in a London garden in the spring of 1882, and it is now at the top of an eight-foot walk, and the growth is about six feet wide. My opposite neighbour has it growing on her house from the area up to the first-floor windows. Any garden soil would suit it; it does not root very deep. I don't know whether there is any better sort.—L. D.

14544.—**Gladioli from seed.**—Make a hot-bed of fermenting manure or manure and leaves. Place the frame over it, and when the first violent heat has subsided, sow the seeds in six or seven-inch pots, thinly, about the first week in April. Place the pots over the manure; but they ought to be plunged in cocoa-nut fibre refuse or any similar material. In two weeks the plants will appear, when air must be admitted rather freely as the plants increase in growth. The frame may be removed from them, or they from the frame, early in June. Plunge the pots out of doors, and carefully water them until October; dry them off then, and, when the leaves decay, shake the small roots out, and wrap them up in paper for the winter. Plant them out about the end of February or early in March; they will flower well during the ensuing summer and autumn.—J. D. E.

—— You do not require either a greenhouse or cold frame to raise Gladiolus bulbs from seed. Early in April sow the seed on a warm border where the soil is rich and fine as well as deep; make some drills one inch deep and about nine inches apart. Sow the seed thinly, and cover with fine soil. After the 1st of May the soil must be watered as it gets dry, for the seed will not vegetate very quickly in a dry soil. About the middle of June the seedlings will begin to appear. The surface must be kept quite moist, by gentle waterings, all the summer, and the ground must be kept free from weeds. About the middle of November the little bulbs may be lifted and the leaves cut off. The best way for you to keep them through the winter is to lay them in seed-pans or wood boxes, one layer of bulbs thick, all over the bottom, and then cover them with a layer of dry earth or sand. If you have a cellar or an outhouse, the pans may be kept safely in either place, any way they must be kept cool without being exposed to frost. Early in the following March plant out the bulbs, nine inches apart, in a good, deep, and rich soil, and give them plenty of water in dry weather. If you treat them kindly the first year, some of them will flower the second, and all should flower the third, season.—J. C. C.

14482.—**Hardy Columbines.**—I have grown the first six varieties named on the list for several years, and have not lost a plant through frost. But I do not attempt to keep my principal stock after the third year; they are thrown away, as every year I raise a lot of plants from seeds. In a well-drained border in a position in the full sun they will stand out all winter, but a soil that retains moisture if not well drained is fatal to them. All the varieties of A. cærulea are nevertheless excellent pot

The Large Pink Stonecrop (Sedum spectabile).

plants. We had nothing in our garden last May that interested visitors so much as a collection of these Columbines grown in pots; the plants were grown in an open border the summer previous, and potted in October, and kept in a cold frame until they came into flower.—J. C. C.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XI.

Mignonette.—I take it for granted that every one who loves flowers would wish to extend the season in which the fragrance of Mignonette may be enjoyed, and I am sure that were it more generally known how easy it is to have it in bloom in winter, few windows would be without it. It is merely a matter of sowing some seed at the proper time, and sheltering the plants from cold and damp, and Mignonette but little inferior to that grown in the summer season may be had in winter. Put a good-sized crock in the bottom of a four and a-half inch pot, with a pinch of soot therein to keep worms out, fill the pot with good fine soil to within half an inch of the rim, make the surface firm and water moderately. Sow the seed thinly and place in a shady position till it germinates, after which time the young plants should get all the air and sun that they can. The last week in August and the first week in September form the seasons for sowing for winter bloom, and it is as well to sow two or three pots at intervals, as the character of the autumn will determine the time of the plants coming into flower. When very fine the August sowings are apt to come into flower by the beginning of the winter, and when rather under the average in this respect, as regards warmth, the later sowings do not come into flower till the new year is well advanced. Five plants will be enough to each pot, and when they are four inches or so in height, four slender stakes should be inserted round the pot, and a piece of fine raffia passed from one to the other, which will keep the growing shoots in place. From the time they begin to grow freely, attend well to the watering, for if they suffer from want of moisture at the root, the lower leaves are sure to turn yellow, and Mignonette loses half its beauty when not well clothed with healthy foliage to the rim of the pot. At the same time, some care is needful not to make the soil sour by watering when unnecessary. A cool room is the place for Mignonette in winter, as it dislikes warmth and much confinement. An enemy which attacks Mignonette, and soon ruins good plants if left alone, is a green caterpillar, so much the colour of the foliage that a sharp eye is required to detect it. If not discovered, one will almost destroy a pot of Mignonette in a single night. When the plants are housed it is quite small, and only comes to full size during the winter, and, concealing itself on the undersides or the leaves, it is not seen unless sought for there.

Arum Lilies are often called the Queen of window plants—a title they may well lay claim to owing to their graceful growth, ease of culture, and the matchless purity of the noble-looking, trumpet-shaped flowers. If attended to in the matter of cleanliness, they do well in a constantly-heated room—indeed, they enjoy the warmth. They get there and come into bloom at an earlier date than when kept in cool quarters. A fault, however, often committed is that of keeping them in a living room all the year through, for although they enjoy a little artificial heat during the winter time, they like a cool, moist atmosphere when making their growth. Those who possess a garden, however small, will find but little difficulty in accommodating them, and they will even do in a back-yard where but little sun comes. Whoever desires to have good blooms of the Arum Lily must bear in mind that they can only come through the medium of strong, healthy foliage—spindly stems and weakly leaves can never produce good blooms. To obtain a strong growth, the plants should be attended to as soon as they go out of bloom; it is of no use waiting till the summer is half over before looking to them. There are three ways of growing Callas, any one of which may be adopted, according to the fancy or convenience of the grower. A method, much followed, consists in turning the plants quite out of the old soil and planting them out in well-enriched earth in a cool position, giving them an abundance of water in hot weather, and repotting the first week in September; or they may be replaced in the pots, in generous compost, and be grown along without further attention. The easiest method consists in not disturbing them at all, but just giving them plenty of liquid manure when growing; and those to whom this way may seem preferable may be assured that they may obtain very good results. For, as long as the plants get what they need to induce free growth, it does not much matter how the nourishment is applied. The finest plants I ever saw were grown on year after year without change of size, being top-dressed with rotten manure when they began to grow. I must, however, repeat that constant attention in watering forms a most important item in Arum Lily culture. The plant is an aquatic, it grows well when planted out in a tank or vessel of water of some kind, and it is therefore evident that, more than most plants grown in windows, it is likely to feel any deficiency of moisture at the roots. The compost should be loam with some leaf-mould, and a little decomposed manure. If the plants are grown for the summer in the open air be careful that they are not caught by frost before they are taken in, as they are extremely susceptible to injury in this way. The only great foe to the Arum Lily is green fly, which, if allowed to remain, quite spoils the purity of the blooms. It lurks, in the first place, in the folds of the young leaves, which must be dusted with tobacco powder as soon as one insect is seen.—Byfleet.

A SELECTION OF ORNAMENTAL HARDY HERBACEOUS PLANTS.

We are frequently asked by readers for lists of hardy and other plants, and we therefore offer no excuse for reprinting from The Garden the following list, which contains what we regard as the best of the true herbaceous and evergreen herbaceous plants. The particulars as to height, colour, and the situations and soil in which they thrive best will be found useful. No one can desire less than ourselves to limit the variety of plants of this sort grown, but a great deal depends upon whether a successful beginning is made in this way, and the following is a choice selection of plants upon which growers can depend, and which can be successfully grown in most districts. It should be borne in mind that, restricted as this selection is, there are whole classes of very important plants not included in it—for example, hardy bulbs, alpine and rock plants, and, lastly, biennial plants and plants which, like the Carnation and some of the Double Rockets, require annual division or multiplication for successful culture.

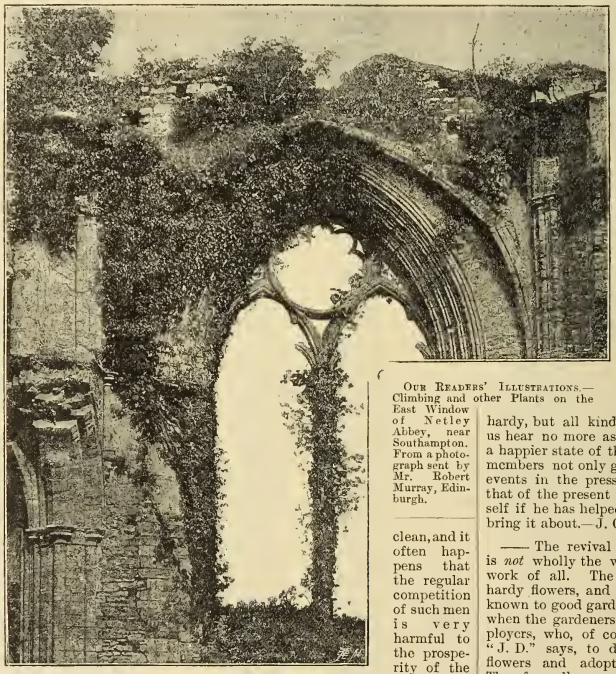
Name.	Colour.	Height.	Flowering-time.	Remarks.
Achillea Ptarmica fl.-pl.	white	3 ft.	*summer*	borders, beds for cutting
Eupatorium	yellow	3—4 ft.	*summer*	borders, groups of the finer species
Millefolium roseum	rose	2—3 ft.	*summer*	borders or fringes of shrubbery
Aconitum Napellus	purple	4—6 ft.	*summer and autumn*	never in vegetable gardens
bicolor	purple and white	4—6 ft.	*summer and autumn*	" " shrubberies and rough places
japonicum	purple	3—4 ft.	*autumn*	" " groups, borders, & naturalised
autumnale	purple	3—4 ft.	*autumn*	" "
Alstrœmeria aurantiaca	yellow	3 ft.	*autumn*	borders, shrubberies, and naturalised
Anchusa italica	blue	4—5 ft.	*summer*	borders and margins of shrubberies
Anemone japonica	rosy-red	3 ft.	*autumn*	borders and shrubberies
Honorine Joubert	white	3—4 ft.	*autumn*	borders, shrubberies, and naturalised
Pulsatilla	purple	6—10 in.	*spring*	borders, banks, and rocks
coronaria, many vars.	various	6—10 in.	*spring and summer*	borders and bulb beds
alpina	white		*early summer*	borders, groups, and rougher parts of rockery
fulgens	brilliant scarlet	6—9 in.	*early summer*	borders
sylvestris	white	9—15 in.	*early summer*	borders, margins of shrubberies, &c., and rocks
Anthericum Liliastrum & var.	white	1½—2 ft.	*summer*	borders
Aquilegia vulgaris and vars.	various	2 ft.	*spring and summer*	borders and in long Grass
chrysantha	yellow	2—3 ft.	*summer*	borders and beds, groups
Armeria cephalotes and vars.	deep rose	1—1½ ft.	*summer*	borders, edgings
grandiflora	deep rose	1—1½ ft.	*summer*	" "
Aster longifolius formosus	rose	2 ft.	*autumn*	borders, shrubberies, and groups
Amellus bessarabicus	dark purple	2 ft.	*autumn*	borders and naturalised
lævis	dark purple	3—5 ft.	*autumn*	" "
Novæ-Angliæ pulchellus	dark purple	3—5 ft.	*autumn*	" "
turbinellus	deep mauve	3—5 ft.	*autumn*	" "
versicolor	various shades purple	4—6 ft.	*autumn*	" "
Baptisia australis	dark purple	3—5 ft.	*summer*	borders and margins of shrubberies
Betonica grandiflora	reddish purple	1—2 ft.	*summer*	" " "
Caltha palustris fl.-pl.	yellow	9—15 in.	*spring*	borders, waterside, and bog garden
Campanula Van Houttei	dark purple	1—1½ ft.	*summer*	borders in good soil
nobilis and vars.	red and white	1—1½ ft.	*summer*	borders and naturalised
celtidifolia	blue	2—3 ft.	*summer*	" "
glomerata speciosa	rich deep purple	1—1½ ft.	*summer*	" "
urticæfolia fl.-pl. alba	white	1—2 ft.	*summer*	" "
carpatica and vars.	blue, mauve, white	9—12 in.	*summer*	borders and rock garden
grandis	pale violet blue	1½—2 ft.	*summer*	borders and naturalised
Hosti	blue	9 in.—1 ft.	*summer*	borders and rock garden
persicifolia and vars.	white	1½—3 ft.	*summer*	borders and naturalised
sarmatica	pale mauve	2—3 ft.	*summer*	" "
Cardamine pratensis fl.-pl.	mauve	9—12 in.	*spring*	borders, open glades, and wild garden
Centranthus ruber and vars.	deep red to pink	1½—2 ft.	*summer and autumn*	walls, rocky places, borders: sea-side plant
Coreopsis lanceolata	yellow	1½—2 ft.	*summer*	borders, margins, shrubberies
tenuifolia	yellow	12—15 in.	*summer*	borders in light rich soil
Coronilla iberica	yellow	6—9 in.	*spring and summer*	rock gardens and margins of borders
varia	rose	1 ft.	*summer*	naturalised, banks, borders, and rocky places
Corydalis nobilis	yellow	9 in.—1 ft.	*spring*	borders, in light rich soil
Delphinium in var.	chiefly purple and blue	2—10 ft.	*summer and autumn*	borders, groups, beds, shrubberies, & naturalised
Dielytra formosa	reddish-purple	9 in.—1 ft.	*spring and summer*	borders, in rich light soil, and naturalised
spectabilis	rosy-crimson	1—1½ ft.	*spring and summer*	borders, in rich warm soil, and naturalised
Dodecatheon Meadia and vars.	deep rose	9 in.—1 ft.	*early summer*	borders and rock garden
Jaffreyanum	purplish-rose	12—15 in.	*early summer*	" "
Echinacea purpurea	reddish-purple	3—4 ft.	*latter part of summer*	borders and margins of shrubbery
angustifolia	reddish-purple	3—4 ft.	*latter part of summer*	margins of shrubbery
Echinops Ritro	purple	3—5 ft.	*summer*	" "
ruthenicus	purplish-blue	3—5 ft.	*summer*	" "
Epilobium angustifolium & var.	deep rose and white	4—6 ft.	*summer*	woods, shrubberies, &c.
sericeum	deep rose	2—4 ft.	*summer*	borders
Epimedium macranthum	yellow	9—15 in.	*spring*	on margins of choice shrubs & American plants
Erigeron speciosum	purple	9—15 in.	*summer*	borders
Eryngium alpinum	deep blue	1½—3 ft.	*summer*	borders and beds, margins of shrubberies
amethystinum	azure blue	1½—3 ft.	*summer*	" " "
Bourgati	light blue	1½—2½ ft.	*summer*	" " "
Funkia Sieboldi	pale lilac	1—1½ ft.	*summer*	peat beds and margins of American shrub beds
japonica	bluish	1—2 ft.	*summer*	" " "
subcordata grandiflora	white	1—2 ft.	*summer*	borders and margins
Gaillardia aristata	red and yellow	1—3 ft.	*summer*	borders, rather tender in cold & damp localities
grandiflora	red and yellow	1—3 ft.	*summer*	"
Galega officinalis and var. alba	pink or white	3—4 ft.	*summer*	naturalised in shrubberies or copses & borders
Gentiana asclepiadea and vars.	deep purple or white	9—15 in.	*summer*	borders, and naturalised in copses or woods
acaulis	blue	4—6 ft.	*spring and summer*	borders and wild garden
Geranium armenum	violet-purple	3—4 ft.	*summer*	borders, edgings, and rock garden
ibericum	purple	2—3 ft.	*summer*	" " "
sanguineum and vars.	purplish-crimson	1—2 ft.	*summer*	borders and edgings
Geum coccineum fl.-pl.	brilliant scarlet	1—1½ ft.	*spring and summer*	" "
Gypsophila paniculata	white	1½—3 ft.	*summer*	borders and banks
Helenium autumnale grandiceps and pumilum	yellow	5—8 ft.	*late summer & autumn*	shrubberies, or for naturalisation in woods
Helianthus multiflorus fl.-pl.	yellow	2—3 ft.	*summer and autumn*	margins of shrubberies and rough borders
rigidus	yellow	1½—3 ft.	*autumn*	" " "

Name.	Colour.	Height.	Flowering-time.	Remarks.
Helleborus niger and others	white and pinkish	1—2 ft.	*autumn and winter*	grassy banks, borders
orientalis and vars.	purple and white	1—2 ft.	*autumn*	beds of evergreen herbs
colchicus	deep purple	1—2 ft.	*autumn and spring*	" "
Hemerocallis disticha fl.-pl.	reddish-yellow	1—2 ft.	*summer*	borders, margins of shrubberies
flava	yellow	1—2 ft.	*summer*	" " "
fulva	coppery-red	1—2 ft.	*summer*	" " "
graminea	yellow	1—2 ft.	*summer*	borders and rocky banks
Iberis sempervirens and vars.	white	1—1½ ft.	*summer and autumn*	borders, banks, edgings, and rough rockwork
Garrexiana	white	9—15 in.	*summer and autumn*	" " "
correæfolia	white	9—15 in.		" " "
Iris(rhizomatous kinds in variety)	various	1—3 ft.	*summer*	beds, borders, groups, grassy places
Kniphofia (Tritoma) Uvaria	orange-scarlet	2—4 ft.	*autumn*	groups, beds, borders on the Grass
Macowani	orange-scarlet	1—1½ ft.	*summer*	warm borders
Lathyrus grandiflorus splendens	deep rose	4—6 ft.	*summer*	trellis-work, walls, climbing over low shrubs
latifolius and white var.	deep rose	4—6 ft.	*summer*	" " "
Sibthorpi	deep rose	4—6 ft.	*summer*	" " "
Liatris spicata	purple	2—4 ft.	*late in summer*	borders and in peat beds
pycnostachya	purple	3—5 ft.	*late in summer*	" "
Linaria dalmatica	yellow	2—4 ft.	*summer*	borders
Linum perenne and vars.	blue	1—1½ ft.	*summer*	"
narbonnense	light blue	1—1½ ft.	*summer*	warm borders
flavum	yellow	9—12 in.	*summer*	hardy in many districts, on banks and rocks
arboreum	yellow	1—1½ ft.	*early summer*	borders and fringes of shrubberies
Lupinus polyphyllus and vars.	purple and white	3—5 ft.	*summer*	wild garden and borders
Lychnis vespertina fl.-pl. alba.	white	2—3 ft.	*summer*	borders
Viscaria splendens fl.-pl.	deep rose	9—12 in.	*summer*	borders and rocky banks
chalcedonica fl.-pl.	orange-red	1½—2 ft.	*summer*	borders
Lythrum Salicaria splendens	reddish purple	3—6 ft.	*summer*	moist borders and waterside
Malva moschata alba	white	1—1½ ft.	*summer*	borders and fringes, shrubberies, woods
Monarda didyma	crimson	2—3 ft.	*summer and autumn*	sandy woods and shrubberies, borders
fistulosa and vars.	various	2½—4 ft.	*summer and autumn*	" " "
Œnothera missouriensis	pale yellow	6—12 in.	*summer and autumn*	borders, banks
fruticosa	yellow	1½—3 ft.	*summer*	borders
speciosa	white	9 in.—2 ft.	*summer*	"
riparia	yellow	1—1½ ft.	*summer*	"
Youngi	yellow	1½—2½ ft.	*summer*	"
Orobus canescens	blue and yellow	9—15 in.	*spring*	borders and fringes of shrubberies
aurantius	orange-yellow	1½—2 ft.	*summer*	" " "
cyaneus	blue and purple	9—15 in.	*spring*	" " "
flaccidus	blue and purple	9—15 in.	*spring*	" " "
lathyroides	" "	1—1½ ft.	*summer*	" " "
vernus and vars.	blue and purple	9—15 in.	*spring*	" " "
Papaver orientale and vars.	brilliant scarlet	3 ft.	*early summer*	margin of shrubbery, groups, borders
Pæonia anemonæflora and vars.	various	1½—3 ft.	*early summer*	single specimens and groups isolated on lawns,
officinalis, many double vars.	various	1½—3 ft.	*early summer*	shrubberies, borders, mixed masses
tenuifolia and vars.	dark red	1—1½ ft.	*early summer*	
Pentstemon procerus	purple	6—9 in.	*summer*	borders and rock gardens
barbatus Torreyi	scarlet	3—8 ft.	*summer*	borders
Phlomis Herba-venti	purplish-violet	1—2 ft.	*summer*	wild garden and borders
Russelliana	yellow	2—5 ft.	*summer*	" "
Phlox ovata	deep rose	1 ft.	*summer*	borders and rock garden
glaberrima	rose	9 in.—1 ft.	*summer*	" "
canadensis	fine rose	9 in.—1 ft.	*summer*	" "
paniculata and vars.	various	2—4 ft.	*summer*	borders and beds
divaricata	porcelain blue	9—15 in.	*summer*	borders and rock garden
Potentilla hybrida fl.-pl. vars.	various	1—1½ ft.	*summer and autumn*	borders and beds
Plumbago Larpentæ	blue and violet	9—15 in.	*autumn*	borders and banks
Pyrethrum serotinum	white	4—6 ft.	*autumn*	margin of shrubberies, rough borders
roseum and many vars.	various	1—4 ft.	*summer and autumn*	beds and borders
Rudbeckia Newmanni	yellow	2—3½ ft.	*summer and autumn*	borders, margin of shrubberies
Ranunculus acris fl.-pl.	yellow	9 in.—2 ft.	*summer and autumn*	borders
aconitifolius fl.-pl.	white	9 in.—1½ ft.	*early summer*	rich light borders
amplexicaulis	yellow	6—12 in.	*spring*	" "
Saxifraga granulata fl.-pl.	white	9—12 in.	*spring*	edgings, borders, and rock gardens
(Megasea) ligulata and vars.	pink (various shades)	1—1½ ft.	*spring*	as a carpet under trees, beds of evergreen
crassifolia	pink (various shades)	1—1½ ft.	*spring*	herbs, borders, and banks
cordifolia and other vars.	pink (various shades)	1—1½ ft.	*spring*	" " " "
Scabiosa caucasica	pale blue	1½—3 ft.	*summer*	borders, and for naturalisation
Scutellaria alpina and vars.	purple and yellow	9—12 in.	*summer*	borders and rocky places
Sedum spectabile	deep pink	1—1½ ft.	*autumn*	borders, groups, and beds, & for naturalisation
Senecio pulcher	magenta	1½—3 ft.	*autumn*	warm borders
Spiræa palmata	crimson	1½—3 ft.	*summer*	fringes of peaty beds, and for naturalisation
Aruncus (good vars.)	white	2—4 ft.	*summer*	borders, isolated on Grass, groups
Filipendula fl.-pl.	white	1½—2½ ft.	*summer*	borders
venusta	crimson	1½—3 ft.	*summer*	peat beds and moist borders
Statice latifolia	purple	1½—2½ ft.	*summer*	borders, groups, or singly
Symphytum bohemicum	reddish-purple	2—3 ft.	*spring and summer*	wild garden and fringes of shrubbery
caucasicum	deep blue	1½—2 ft.	*spring and summer*	" "
Tradescantia virginica vars.	deep purple or white	1—2 ft.	*summer*	borders
Trollius asiaticus	yellow	1½—2 ft.	*early summer*	borders, groups, and wild garden
Fortunei	orange	1½—2 ft.	*early summer*	" " "
europæus and vars.	yellow	1½—2 ft.	*early summer*	" " "
Verbascum phlomoides	yellow	7—9 ft.	*summer*	beds and groups, with the finer hardy plants,
Chaixi	yellow	6—9 ft.	*summer*	margin of shrubberies and backs of borders
Veronica austriaca	blue purple	1—1½ ft.	*summer*	borders
candida	deep purple	1—1½ ft.	*summer*	"
corymbosa	deep purple	1—1½ ft.	*summer*	"
longifolia subsessilis	deep purple	1½—3 ft.	*summer*	"

OUR READERS' ILLUSTRATIONS.

CLIMBING AND OTHER PLANTS ON THE EAST WINDOW OF NETLEY ABBEY.

We this week put before our readers the first of the illustrations to which prizes were awarded in our second competition. It represents the east window of the ruined church of Netley Abbey, near Southampton, and shows well the graceful manner in which Nature, when left to herself, clothes the bare work of man, and, unfortunately, brings about its decay. Ivy garlands the window, and from every crevice some little plant springs out, and does its share in the work of destruction, while, at the same time, it adds to the picturesque aspect of the spot. Netley Abbey—as Mr. Murray, of 7, Hope-terrace, Edinburgh, to whom we are indebted for the photograph, writes—"was founded in the reign of Henry III., dedicated to the Virgin, and occupied by Cistercian monks from the neighbouring monastery of Beaulieu, in the New Forest. Netley also commands a fine situation on the Southampton Water; and the remains of extensive orchards, fish-ponds, and vaulted kitchens seem to suggest a tolerably pleasant life for the old monks. These ruins derive a peculiar charm from the growth of numerous creeping and trailing plants which festoon the crumbling masonry on all sides."



Our Readers' Illustrations.—Climbing and other Plants on the East Window of Netley Abbey, near Southampton. From a photograph sent by Mr. Robert Murray, Edinburgh.

THE "AMATEUR" QUESTION.

14555.—I beg to offer the following reply to your querist "L." in last week's Gardening. Why should men who work in large gardens be excluded from competing in the Amateurs' Class in Horticultural Exhibitions, so long as they grow the stuff themselves, and in the gardens attached to the cottages they live in? It is only for the love of the flower that they cultivate it, and they are, in my opinion, quite entitled to compete in the Amateurs' Class. I don't think it would be fair to confine the men to the Gardeners' Class, where they could only compete for about one-third of the things, unless they are allowed to get the stuff where they can. "L." says nothing about how the stuff is to be got. I may give an account of how the amateur question has been settled here this season. We will take, for example, three of the local shows in this district. One at C——, one at W——, and one at H——. There is also in this district a large garden, in which two men are employed besides the head-gardener. The two men under the head-gardener have gardens attached to the cottages they live in, in which they cultivate flowers—for the love of the flowers—and compete at all three shows. At H—— they are allowed to compete in the Amateurs' Class. At W—— one of them is allowed to compete in the Cottagers' Class. And at C—— they competed in the Amateurs' Class this year, but it has been decided that they are to do so no longer. The committee say there is a rule in the list which excludes them from the Amateurs' Class. This is as follows:—"Rule 5. More than one competitor will not be allowed to bring forward the same kind of article out of one garden to compete for the same prize; and none will be allowed to compete as a cottager out of an amateur's garden, nor as an amateur or cottager out of a gardener's garden." Now, there is no vegetable list in the Gardeners' Class. There are in it cut-flowers, pot-plants, and fruits. You can see what chance men, though they work in a large garden, have in the Gardeners' Class.—Dutch Hoe.

—— According to the rules of country flower-shows, a man working in a garden in subordinate position and occupying a house out of it is considered neither as an amateur nor a professional gardener; he is simply a cottager cultivating his plot of ground in his spare hours, and using in a general way the produce for himself. Men of this description are allowed to compete with ordinary labourers, a fact which is often productive of considerable dissatisfaction, as, independent of the greater knowledge which a man continually working in a garden must possess over farm-labourers, mechanics, and others, he is naturally supposed to enjoy facilities for obtaining kinds of fruit and vegetables which do not come in the way of cottagers generally. With better varieties and superior knowledge the garden labourer often sweeps the prize-boards pretty clean, and it often happens that the regular competition of such men is very harmful to the prosperity of the show, as others not enjoying the same facilities do not care to compete. I know of an instance where a man in the employ of a market grower takes the majority of the first prizes, greatly to the dissatisfaction of other competitors, for in such cases there is always a suspicion that a proportion of what is shown has not been grown by the exhibitor.—J. Cornhill.

GARDENERS AND HARDY FLOWERS.

At page 398 "J. D." makes some sweeping charges against professional gardeners, and as readers of Gardening may infer from his remarks that gardeners have been the main opponents of hardy flowers, I will briefly reply. In the first place, let it be clearly understood what is an amateur. My idea of an amateur gardener is that of any one that follows gardening as an amusement, but not as a source of revenue; and, of course, professional gardeners, whether they be in private or public gardens, or nurseries, follow the calling as a means of gaining a livelihood. Now there are many people who like to be called amateurs who really are market-gardeners, for the practice of selling the produce of gardens is general throughout the kingdom, and a real amateur gardener is a rarity in many places. But even if we only take professional gardeners as meaning those who have served a regular term of apprenticeship, and passed through all the grades of journeyman, foreman, head-gardener, &c., in various parts of the kingdom, as I have done myself; and consider as amateurs all the rest that follow the delightful occupation of gardening—does "J. D." really mean to contend that the former have done nothing during the last twenty years to aid the revival of hardy-flower culture? Why, I need only refer readers to the back numbers of Gardening, or the earlier issues of the *Garden*, to prove that the editor has found no little support from professional gardeners in his endeavours to bring about what is little short of a revolution in all branches of horticulture and floriculture. Does "J. D." really contend that such men as Mr. Ingram, the well-known superintendent of Belvoir, who has, probably, the finest collection of hardy plants in the kingdom, have done nothing to help the revival? However enthusiastic an amateur may be, he has not half the opportunities that professional gardeners have of gaining a store of knowledge; and as to the idea of amateurs experimenting, and then publishing their experiments for the benefit of their fellow-men, I fear our progress would have been very slow if we had waited for amateur guidance. No, "J. D.," the days of exclusiveness are over in gardening, as in other things; the barriers that divided class from class are broken down, and gardeners, both professional and amateur, are only too pleased to aid one another in advancing not only the culture of hardy, but all kinds of flowers or fruits. Let us hear no more as to who have brought about a happier state of things, for any one who remembers not only gardening, but the record of events in the press of twenty years ago and that of the present day, may congratulate himself if he has helped in the slightest degree to bring it about.—J. Groom, *Hants.*

—— The revival of hardy plant cultivation is *not* wholly the work of amateurs, but the work of all. The old gardens were full of hardy flowers, and all were thoroughly well known to good gardeners. Then came the time when the gardeners were obliged by their employers, who, of course, "ruled the roost," as "J. D." says, to do away with their hardy flowers and adopt bedding plants wholly. Therefore all our young gardeners have been reared on that nourishment alone.—R. M.

*** *We do not desire a discussion about amateurs and gardeners, and we shall publish no more letters on this subject. However useful and necessary distinctions of classes may be in other lines of work, they are certainly not in this. Every line that will help people as to matters of fact and cultivation is useful, but such discussions as this are of no value.*—Ed.

Good old Apples.—What is the good of raising new kinds of Apples and praising them when people take no notice of the old kinds? It is the rarest thing, in England, to meet with good specimens of the Irish Peach Apple, which is a very old kind, and always seems to us peculiarly delicious in its flavour.

A very sweet Apple.—The Rev. T. C. Hose, Norfolk, sends us an Apple from a seedling tree which has borne this year for the first time. He states that "the feature about the fruit seems to be that it contains an unusual amount of saccharine matter. A pie made of the fruit is sweeter without sugar than an ordinary Apple-pie with sugar!" It is a very sweet Apple, and has also a very delicate flavour.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

14707.—**When to move Peach-trees.**—"Subscriber" will be obliged if any correspondents will tell him the best time to move Peach-trees.

14708.—**Oil for heating greenhouse.**—Will any one who uses an oil lamp for heating purposes kindly tell me what oil is best to use?—R. S. V. P.

14709.—**Exhibition Gooseberries.** — Will any fruit grower kindly tell me what are the most suitable Gooseberries for exhibition purposes—say three of each colour?—Novice.

14710.—**Orange-tree.**—Please tell me if it is now time for Orange-tree (in fruit and flower) to be placed under glass?—Plinea. *** *Yes; it is now time for it to be taken indoors.*—Ed.

14711.—**Gravel lawn-tennis-court.**—Will some reader with practical experience kindly furnish some hints as to the best time and manner for making a gravel lawn tennis-court?—E. L. H.

14712.—**Best time to move Rose cuttings.**—Will any Rose grower kindly say when is the best time to move last year's Rose cuttings; also three years' old on own roots?—Subscriber.

14713.—**Chips from horses' hoofs.**—Will any experienced readers kindly tell me if chips from horses' hoofs are of any use as manure for Grape-vines; and, if so, how to use them?—A Learner.

14714.—**Paradise Quince and Mahaleb** Stocks.—Would Paradise Quince and Mahaleb Stocks planted in the autumn be fit for grafting the following spring? *** *Yes; they would.*—Ed.

14715.—**Charcoal and Nitrate of Soda.**—Will some able friend kindly describe the action of the above on plants such as Geraniums and Fuchsias and tell me how they should be used?—Triangle.

14716.—**Treatment of Caladium.** — I have a Caladium, but it does not seem to be thriving. Will some correspondent kindly tell me the nature of the plant, and the treatment it requires?—Gertrude.

14717.—**Best hardy Fuchsias for outdoor cultivation.**—Will J. C. C., or any grower of Fuchsias, tell me the names of the six best suited for outdoor cultivation in pots; I have not a greenhouse.—J. J.

14718.—**Making a Vine border.**—I should be glad of a few hints on how to make a vine border. The place where the border is to be has been an old Grass-plot, and the soil is a stiffish clay.—J. D., *Carlow.*

14719.—**Pinks and Carnations.**—Is it too late to take pipings of the former, and layerings or cuttings of the latter?—N. C. Davenport. *** *It is fully late; but you may try, with some chance of success.*—Ed.

14720.—**Stage for Chinese Primulas.**—Would a wooden bench with a surfacing of Cocoa-fibre be a suitable stage for Primulas, or would it there be any danger of the fibre retaining too much moisture about the plants?—J. D., *Carlow.*

14721.—**Late Strawberry.**—Will any fruit-grower tell me what new kind of Strawberry—late-bearing—would be the best to get? We are well supplied with early kinds.—A. H. F. *** *Send your other questions on separate pieces of paper.*—Ed.

14722.—**Fruit for low wall.**—I have a wall around my garden four feet high; I should like to grow some Plum and Pear-trees up it. Will "J. D. E.," Mr. Groom, or any other readers tell me the best sorts to grow on so low a wall?—Young Gardener, *Luton.*

14723.—**Fruit for south-western wall.**—I have a clay wall six feet high, shaded up to ten o'clock by a large Beech tree growing at end of the wall on higher ground; wall faces S.W. Can I grow the Peaches with any success? If not, what fruit is best?—W. J. C., *Suffolk.*

14724.—**Exhibition Dahlias.**—Will any one who has been a judge, or a successful exhibitor, at a horticultural show, tell me what should constitute a good exhibition Dahlia? What are the qualities to which a judge attaches importance?—Young Dahlia Grower.

14725.—**Dwarf Evergreen plants.**—Will "J. D." kindly give a list of the dwarf Evergreen plants that he would recommend, to form the "rich carpet of flowers in spring," and the "velvet band of greys, greens, and russets for the rest of the year," mentioned in his article on p. 302?—Sphinx.

14726.—**Irises.**—I divided some Irises, that have stood two years in the same place, a few days ago, and of those I planted in good lightish soil, three-quarters have died.—Taraxacum. *** *They may have lost their leaves, but in all probability the roots are still alive. You will find that Irises are not so readily killed, unless they are grossly ill-treated.*—Ed.

14727.—**Utilising Melon and Cucumber-pits.**—As I have considerable space in the shape of Melon and Cucumber-pits, now almost empty, I am desirous of knowing how to utilise them for the best during the winter. I have plenty of heat at command, and would be glad to learn how I might fill them at this season with useful stuff.—S. G. B.

14728.—**Hardiness of Tigridias.**—Are Tigridias hardy enough to be grown on light soil in Berwickshire?—Taraxacum. *** *We should say not, considering that they cannot be grown successfully out of doors in the neighbourhood of London. Your Tigridias will be all the better lifted over the winter, after the foliage has decayed, or nearly decayed, and planted out in the spring.*—Ed.

14729.—**Planting a flower-bed.** — Facing my sitting-room window, and about four feet distant from it, I have a flower-bed of nine feet by five. Would some kind reader tell me what to plant so that it may have a nice appearance during the winter as well as flowers in summer? Have a fairly open back, S.E. aspect; town in Bedfordshire: time is rather limited.—Ignoramus.

14730.—**A barren Fig-tree.**—We have a Fig-tree over which we have built every year for the year. Previously it always bore well, but this summer the first crop dropped off before ripening; the second, now on, does not promise to come to maturity, and is covered with rust. Can any reader advise as to treatment and quantity of water required, also if pruning be necessary?—E. T.

14731.—**Best general manure.**—Will any gardeners, speaking from experience, tell me what is the best kind of manure for garden purposes generally? I myself believe in the contents of the pig stye as the best possible where a strong dressing is required; but a friend tells me that pig manure is comparatively valueless, and that the only kind of any use is that from the stable.—R. Wigram.

14732.—**How to recognise Watercress.**—I will feel obliged if any one will kindly give me, as fully as he can, details as to how to distinguish true Watercress (green-leaved particularly) from other plants like it, some of which are poisonous. Has the Watercress a white flower? At what season is it best to gather that naturally grown?—H. L. B. L. B. *** *Yes; the Watercress has a white flower.*—Ed.

14733.—**Mould on Grapes.**—Would any experienced Grape-grower kindly tell me the reason of my Grapes moulding? My vinery stands full west, gets the sun all day; the vine is Black Hamburgh. I grow all sorts of flowers and Ferns in the house. They went on all right up to the 14th of September, with the exception of here and there a berry not colouring well. I give air at all favourable occasions.—W. S.

14734.—**Rabbits and gardens.**—Will any one kindly name some good bedding plants, annuals, &c., that rabbits will not touch? Also mention weight of wire-netting necessary to keep them out of pleasure-ground, and whether part of the netting should be put under ground?—Lady. *** *We think people are far too tolerant of the rabbit nuisance. Perhaps some correspondents who have had to deal with it will help the inquirer.*—Ed.

14735.—**Heating greenhouse.**—Will any reader kindly inform me what length of four-inch hot-water-pipe would be required to heat a greenhouse twenty-four feet by twelve, five feet six inches to eaves, and nine feet six inches to ridge? The house will be divided in the centre, one portion to be used as a stove, with a temperature of from seventy to eighty degrees, and the other half as an intermediate house, with a temperature of from fifty to sixty degrees.—Halifax.

14736.—**Making a Fern case.**—I am about to make a Fern case, thirty inches long, fifteen inches wide, and about seventeen inches deep, with tray five inches deep for soil, to plant Ferns into, and am thinking of putting a small fountain in centre to play over Ferns and Moss. Will any grower kindly tell me if this will answer, and the best Ferns and Moss to get?—A. B. C. *** *You will find in recent numbers of* Gardening *several notes on the subject of Fern cases.*—Ed.

14737.—**Tubers not blooming.**—I have grown several this summer, some in single pots, others two and three in a pot: they have all done apparently well, but none have bloomed yet. When the buds appear about to expand, and after showing colour, the flower appears to mould away. They have been well watered always. Can any grower suggest the cause of failure.—J. *** "*J." does not state in what position he grows the plants, and on this almost everything depends.*—Ed.

14738.—**Vermin in garden.**—My garden is infested with "Leather Jackets," who are now destroying a bed of very choice Canterbury Bells. I find at least a dozen plants gone every morning. Will any reader tell me how they can be trapped or otherwise got rid of? Of what insect are they the grub? I have found and killed a great many by disturbing the ground with a trowel, but the cry is, "Still they come."—Scarlet Town. *** *They are the grub of the "Daddy Longlegs."*—Ed.

14739.—**Tulips for spring flowering.**—What time should the bulbs be planted? I wish to have them in a border where at present there are Pelargoniums which I do not wish to remove till October.—H. S. *** *You must wait until you remove the Pelargoniums, as you cannot prepare the bed until they are out of it. Then well dry up the border, and if the soil is poor, give a slight dressing of leaf-mould, or a little manure, not too strong. Plant in October—the sooner the better.*—Ed.

14740.—**Removing Rhododendron seeds.**—I should very much like to know whether it is desirable or not to remove the seeds of Rhododendron plants? If so, at what season of the year ought this to be done? I have many thousands of these plants, and am in doubt whether nature ought to be left to do her work or to be assisted by removing the seeds annually. I am inclined to think this process may stimulate the plants unduly, therefore I venture to ask for the opinion of growers of these shrubs. S. L., *Birkenhead.*

14741.—**Pomegranate.**—I enclose a spray of Pomegranate which I picked from a plant that is trained on a south-east wall outside. We have a plant taken from the same planted against the back wall of a cool vinery. It has been planted four years, and has grown freely, and is looking quite healthy, but it has flowered only once, and then had but two blooms on, while the one outside has plenty. I should like to know if it could be made to bloom inside as well as out, and any information about it would greatly oblige.—E. J. S., *Norwich.*

14742. — **Orange-tree.**—I have a large standard Orange-tree in a twelve or fifteen-inch pot; it grows pretty well, but does not flower. It is in a house facing east, kept at fifty degrees in winter, and has plenty of air at other times. It has been attacked very severely with scale, but is being kept pretty clean now, and has been so all summer. I am afraid it is not in proper soil. If the tree can be properly grown with such heat as we have I should like it repotted. Will "J. D. E." or any other reader kindly tell me the compost and time for the operation?—J.

14743.—**Mignonette eaten by caterpillars.**—I have followed out advice given in Gardening in growing specimen plants this summer, and have a few large plants in bloom. One was quite free from filth two days ago, but I find to-day about a score of caterpillars all over the plant; every leaf is eaten, and the plant presents a most forlorn aspect. Is it subject to these creatures, and what is the best preventive and remedy? J. X. *** *Mignonette is sometimes eaten down to the pot by caterpillars, who will attack it if they are in the neighbourhood.*—Ed.

14744.—**Plant for grave.**—Will you or any of your readers be kind enough to tell me what would be the best thing to plant on a grave—something that would always look nice without much attention, as I am living a considerable distance from burial-ground?—Grave, *Plaistow.* *** *We would suggest perfectly hardy Alpine or trailing plants, such as the small Periwinkle, the white Arabis, and the evergreen Candytuft, with a few Snowdrops scattered here and there. But you must be governed to some extent by the soil and surroundings, and it would be well for you to see what grows best in the neighbourhood.*—Ed.

14745.—**The cold greenhouse.**—Now that those who possess only the cool greenhouse are thinking how best to reserve their plants from the cold damp days that are approachiug, a few hints as to time of shutting up on fine days, and whether air can wisely be given on wet ones, would be very gratefully received. Also if all shading from creepers in or outside of a house ought now to be cut away and removed. I refer to a greenhouse with no heat at all, not even a lamp or oil-stove. "Lincolnshire Rector," who answered a letter of mine in Gardening some months ago, will perhaps kindly give some advice to those of your readers who, like myself, are interested in this subject.—A Vicar's Wife.

14746.—**A mistake with Dahlias.**—How can I be sure to have Dahlias in my garden? Last year I bought small plants which were to flower the same year; but, though I planted them at once and kept them watered, only a few lived and none flowered. This year I had about three dozen tubers, all in apparently good condition. I put them in about the middle of April, and only one has appeared above the ground. I have just now (Sept. 1) dug one up, and find it to all appearance exactly as it was when I put it in the ground. My soil is very dry and sandy, but my neighbours grow Dahlias.—Sphinx. *** *Perhaps you have not observed that gardeners usually put out Dahlias as healthy young plants later than the date you mention for planting.*—Ed.

14747.—**Carnations in winter.**—Is there any way of protecting Carnations from damp in winter in a London garden where they get no sun till March? I have one plant which has survived four or five winters and flowered well; but they mostly die off either the first or second winter after planting. I had some good ones this summer, which I should like to keep if possible. If I must lift them and pot them now, should they be cut back, and what soil would they want? Also, should the pots be put in a greenhouse unheated except during hard frost, or would they do better standing in the open air outside a south window?—L. D. *** *We fear you can do nothing to keep them, but perhaps some of our amateur readers have dealt with a similar case, and will give you the benefit of their experience.*—Ed.

14748.—**Layingout herbaceous border.**—Would "J. D." kindly advise "A Beginner" how to lay out an eight-foot border in a sunny Devonshire garden, so as to insure a continuity of bloom from next February or March to the following October (when "A Beginner" will be leaving the place), and also what flowers should be chosen, and how they should be sown or planted to insure a good scheme of colour? What should be sown at this season, and what are the best evergreen dwarf plants for bordering? How should edging of upright stones, advised in Gardening, be managed? "A Beginner" has only a front plot about sixty or seventy feet long, with borders and one bed in the middle. She loves all the sweet old-fashioned flowers, Cornflowers, Sweet Sultan, Sweet Pea, Lupine, Columbine, &c. She has already planted Forget-me-not and Wallflower.

14749.—**Christmas Rose in the open air.**—I should be glad to be told how to treat a Christmas Rose at the present season, for it to bloom this winter. Does it want any particular sort of soil, and is it advisable to cover with a bell-glass? If so, how soon? The plant is in the open ground.—Subscriber. *** *Christmas Roses in the open ground, if healthy plants, will flower in any way: some bloom even before Christmas, particularly the large kinds introduced of recent years. In warm parts of genial districts, and on grassy or sheltered banks, we like them best unprotected by a glass; but in ordinary gardens, where they are often planted with nothing but naked earth around them, the protection of a large bell-glass, or cloche, or hand-light, is an advantage. Hitherto, unfortunately, there has been but little attention given to placing such things in positions where they will grow and flower happily.*—Ed.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14750.—**Moving Peach-trees** (*E. B.*).—You may move them any time in October.

14751.—**Tea-leaves as mulching** (*H. S.*).—Yes, you can use tea-leaves as a mulch.

14752.—**Dianthus Heddewigii** (*S. Devon*).—The Dianthus will flower again next year.

14753.—**Moving Rose cuttings** (*E. B.*).—Move the Rose cuttings in October or November.

14754.—**Planting Clematis** (*S. Devon*).—The present is the best time for planting Clematis in your district.

14755.—**Cutting "common" hedge** (*C. W. E.*).—You must tell us what the hedge is, and then we will try to advise you.

14756.—**Pruning Plum and Pear trees** (*Enquirer*).—You can prune them any time after the leaves have fallen.

14757.—**Propagating Turk's-cap Lily** (*Taraxacum*).—This is propagated by separation of the young bulbs from the old ones.

14758.—**Lapagerias** (*H. M. F.*).—Lapagerias must have peat, but they do not want much heat. L. rosea is cheaper than L. alba because it is more plentiful.

14759.—"**Baltet's Art of Grafting**" (*W. B.*).—The price of this work is 3s., and the publishers are Messrs. Lockwood & Co., Stationers'-hall-court, E.C.

14760.—**Star of Bethlehem not flowering** (*Moravienses*).—Your plant did not flower because it was not big enough. It will probably do so in time.

14761.—**Plants "breaking"** (*North London*).—What is meant by the phrase "plants beginning to break" is plants beginning to shoot out or to start into growth.

14762.—**Fruit on wall seven feet high** (*Cardross*).—Certainly, a wall seven feet high will, if proper varieties are chosen, be suitable for growing Plums and Pears on.

14763.—**The blue-flowered Tropæolum** (*C. W. Rex*).—"Byflest's" article on the culture of T. azureum appeared in the number for July 12 of last year, page 210.

14764.—**Wintering Echeveria and Salvia patens** (*S. Devon*).—In your locality we should say that the plants might remain in the open air, especially if the winter resembles the last.

14765.—**Carnations not flowering** (*Mrs. R.*).—We fear that we cannot tell you why your carnations did not flower, as you did not give us any information upon which to base an opinion.

14766.—**Barren Strawberries** (*M. S.*)—Strawberries like liberal treatment, and layering early is the way to secure fine vigorous plants—it does not matter whether the suckers are the first or fourth.

14767.—**Coloured sheets of edible and poisonous fungi** (*S. B.*).—The coloured sheets published in this country are those by Mr. Worthington G. Smith. We think Messrs. Chatto & Windus are the present publishers.

14768.—**Self-sown Pansies** (*S. Devon*).—Self-sown Pansies produce flowers quite as good as those from cuttings, and they are, perhaps, even the more vigorous of the two. There is also a chance of getting a good variety of colour.

14769.—**Planting Ivy** (*C. W. E.*).—The present is a good time to take cuttings of Ivy. They may be planted where they are wanted to grow if the soil is suitable. (You have sent us three questions on one slip; kindly read our rules.)

14770.—**Growing double Violets** (*James, Worcester*).—You cannot get double-flowered varieties from single varieties, and you cannot raise them from seed. You must procure plants of a double variety, and raise from cuttings.

14771.—**Treatment of Grape-vine** (*A. Mitchell*).—Cut the vine back to the point where the lowermost shoot springs, and if the vine has good roots it will next year push out strong shoots. It is of no use having shoots only at the top.

14772.—**Peaches and Nectarines for cool-house** (*R. A.*).—Royal George and Elruge Nectarine. The Royal George is one of the best Peaches in cultivation. Plant in October, or whenever you can get them; the earlier the better.

14773.—**Planting Anemone japonica alba** (*L. D.*).—Your garden, you say, is cold and damp, and gets no sun from October to March. Under the circumstances, the best time to plant this Anemone would be in spring. Buy good-sized plants.

14774.—**Planting Bulbs** (*N. C.*)—The Crocuses, Snowdrops, and Narcissi should be planted now without delay; the Ranunculi and Anemones may be buried in dry sand, in a cool, dry place, during the winter, and be planted on a dry day in March.

14775.—**Pond "sludge" for lawn** (*Miss Brook*).—The value of an application of the sludge to the lawn would depend on circumstances. If the lawn is in an impoverished state, a mixture of sludge and dry earth would be useful as a surface-layer.

14776.—**Planting Anemones** (*An Old Subscriber*).—We have planted Anemones extensively in October, and never saw any reason to regret the practice. Ordinary Anemones may be taken up at the same time or at any time after their leaves have decayed.

14777.—**Liquid manure for Chrysanthemums** (*Beginner*).—Liquid manure, like all other high stimulants, should be carefully used; but in the case of Chrysanthemums, which are gross feeders, you may, at this time of the year, apply it, in a weak state, every day.

14778.—**Lilium dalmaticum not growing** (*Otto W. P.*).—The cause of the bulb not growing is probably weakness, brought about by its being kept an excessive time out of the soil—as most bulbs bought at auctions are. Probably the bulb will develop some shoots next year.

14779.—**Anemone fulgens in a London street** (*L. D.*).—You could grow this Anemone in a large box in a London street. Put in the plants either now or early in spring—the latter preferably. You ought to be able to get good tubers from any good house. (Please read our rules.)

14780.—**Sowing Sweet Peas in autumn** (*N. C., Devonport*).—Undoubtedly you will get the best results by sowing Sweet Peas in autumn. You will get plants which will in early summer produce a good crop of bloom, and if you also sow seeds at the usual time in spring you may have a succession of bloom after the autumn-sown plants are over.

14781.—**Plumbago capensis not flowering** (*Enquirer*).—We cannot see that you have failed with your plants. They simply made vigorous growth instead of flowering. No doubt the vigour they have gained this season will induce them to develop a good crop of bloom next year.

14782.—**Distinction between Erica and Epacris** (*C. A. B.*).—Your question was answered on page 20. Erica has the parts of its flowers in sets of four—thus, four petals and four stamens; while Epacris has its parts in fives. The leaves of the latter, too, are always rigid and pointed.

14783.—**Creeper for cool-house** (*H. M. F.*).—Lapageria roses would do, and you could have nothing prettier. Rhodochiton volubile is also a pretty climber; or you may have Clematis indivisa, a beautiful evergreen with white flowers; Plumbago capensis, blue; or Solanum Jasminoides, white.

14784.—**Planting bulbs** (*Mrs. R.*).—Colchicum autumnale should be planted in July or August; the present time is its flowering season. The bulbs remain in the soil all the winter and produce foliage. Lilium tigrinum and L. candidum should be planted now or within the next few weeks.

14785.—**Mildewed Grapes** (*S. M. W.*).—Your case is indeed a bad one, and advice, to be of use, should be given by some one who has the vine and the vinery. Cannot you call in a practical man to assist you? Perhaps the note on "Late Grapes" in this week's issue may suggest a reason for your failure.

14786.—**When to manure a garden** (*D. E. W.*).—The time would, in this case, depend on the manure. If it is not very much decayed, you had better let it remain through the winter; but if it is well decayed, dig it in before you crop. The soil will be improved in any case if dug up and laid open during the winter.

14787.—**Unhealthy Apple-tree** (*Mrs. R.*).—The defect in the Apples is caused by the bad health of the tree. If the soil is poor, top-dress with good soil and manure (if you consider that the tree is worth it), and prune it well during the coming year. It is a good-flavoured Apple, and evidently worth growing.

14788.—**Gardening book** (*One in a Fog*).—The book you want is the "English Flower Garden," which contains over twelve hundred and eighty illustrations, and gives instructions as to the cultivation of out-door plants. It is published by Mr. J. Murray, Albemarle-street, and the price is 15s. See the advertisement in last week's GARDENING.

14789.—**Azalea mollis leaves changing colour** (*J.*).—Your Azalea mollis is simply fulfilling its duties. It is a deciduous or summer-leafing kind, and the leaves naturally turn a bright colour and fall in autumn. It is, indeed, one of the chief charms of the plant, that its leaves become of such beautiful colours and almost equal the flowers themselves.

14790.—**Wintering Pelargoniums and Heliotropes** (*N. C., Devonport*).—If you have a greenhouse, the thing is simple enough. Take up and pot your Pelargoniums and Heliotropes. No doubt most of the plants will lose a good many of their leaves, which should be picked off as they decay. In the spring they will start into vigorous growth, and may be used for bedding-out next year.

14791.—**Fruit trees with other plants in winter** (*W. B.*).—As a rule, fruit trees will be best with plants that merely require the frost kept out of the house during winter, such as many greenhouse plants in a state of rest, and also such things as Pelargoniums. Of course, if you force your fruit, you will then be able to grow in the same house things that enjoy a higher temperature than the kinds we mention.

14792.—**Vine not fruiting** (*E. C. B.*).—Your Vine is fourteen years old and has never fruited, and now that you are building a glasshouse around it you ask if it is worth keeping. We should say, certainly not; you had better buy some good vigorous Vine of a suitable variety—say, Buckland's Sweetwater or Foster's Seedling for white, and Black Hamburgh for black. You may expect a creditable crop provided you plant them well at the outset.

14793.—**Tall perennial Phloxes** (*Mrs. R.*).—It is evident that your phloxes are thriving well—that is, if they produce flower-heads proportionate to the length of the stem—five feet. Most people desire to see tall phloxes, as they generally produce the best flowers. There are, however, some shorter varieties which you can procure, and some reader will, perhaps, supply you with their names. In all probability, also, your plants will become dwarfed as they exhaust the soil.

14794.—**Chrysanthemum shows** (*Anglo*).—The South Kensington show of Chrysanthemums and fruit is fixed for October 27. The following dates are also fixed: November 11, Basingstoke, Kingston, and Surbiton; 12th, Bury; 13th and 14th, Exeter, Huddersfield, Sheffield; 17th and 18th, Lincoln, Manchester; 19th and 20th, Hull and East Riding. The date for the Temple exhibition has not yet been announced. The time of admission of the public varies at different shows.

14795.—**Insects on Pear-tree** (*S. Toms*).—The insects you send are the same as those mentioned in my reply to "Mrs. H.," No. 14626, namely, the Pear slug worm, the grubs of the Pear Saw Fly (Eriocampa adumbrata).—G. S. S.

14796.—**Grape-vine seedlings** (*A. Darby*).—They must now be allowed to remain dormant during the winter. When the leaves fall off, cut them back, leaving three or four eyes near the base. When they start to grow in the spring, pot them on into larger pots, and train up one rod only from each, treating them subsequently like other vines. They will produce fruit the third season.—J. D. E.

14797.—**Glazing panes without putty** (*H. P.*).—It is not a good plan to glaze without putty altogether. The best way is to bed the glass in putty, but do not use any outside. Fix the glass in its place with small brads driven into the sash bars at the top and bottom of each square, and finish off with three coats of good paint. It does not matter whether the frames are old or new, this is the best way to glaze them.—J. D. E.

14798.—**Lady-birds and Daddy-longlegs** (*T. B. Moody*).—Neither lady-birds nor daddy-longlegs are destructive insects to plants. The former are most beneficent insects, as their grubs destroy great numbers of green-fly. The daddy-longlegs, though quite harmless in itself, is the parent of those very destructive grubs known as leather-jackets, which feed on the roots of various plants, and injure them very much.—G. S. S.

14799.—**Propagating Carnations** (*W. Pussey*).—Border Carnations should be propagated by layering in July and August. It is too late to propagate them in that way now, but cuttings may be tried. I would take the smaller cuttings in preference to thick, succulent ones. Put them under a close bell-glass for a few weeks, and in a cold frame. After that plunge the pots in a gentle hot-bed. They will root there. But the season is past for propagating Carnations to make really good, strong-flowering plants for next year.—J. D. E.

14800.—**Duke of Buccleuch Vine not fruiting** (*Enquirer*).—This variety of grape vine does not succeed well in all cases. We tried it in a late and early house when it was first sent out; it grew freely enough, but was very unfruitful. It was ultimately cut out to make room for Black Hamburgh. If it does not give satisfaction after a young rod has been trained up, and the side branches have been cut back to three or four eyes at pruning time, nothing more can be done for it. If by manuring round the roots it could be induced to grow with greater vigour, it might bear fruit. The wood should be well ripened by exposure to the sun.—J. D. E.

14801.—**Plum trees from cuttings** (*H. F. C.*).—There are four ways of propagating Plum trees—viz., by seeds, as some kinds, such as the Greengage and Damsons, come true, or nearly so, from seeds; by budding and grafting; and, lastly, by suckers. The Bullace and a few other kinds are propagated by the last mode. We have never heard of Plum trees being propagated from cuttings, but are not prepared to say that certain kinds may not be propagated in that way. If so, we would take the strongest young wood with a heel attached; cut as much from the top as will leave the cutting a foot or fifteen inches long. Plant them six inches deep firmly in the ground in November. That is the way that all fruit trees propagated from cuttings are treated.—J. D. E.

14802.—**Beetles in frames** (*M. J. C.*).—The insect attacking your plants is a foreign species of cockroach; all insects of this kind are very difficult to get rid of. Try Chase's beetle poison, sold in bulls in a tin box; they contain phosphorus. Sink gallipots partly filled with beer and sugar, or honey and water; the insects, on trying to reach the contents, will fall in and be unable to escape. Lay baits of oatmeal on small pieces of broken glass, slate, &c., two or three nights in succession, and then mix arsenic with it; fill up with cement any cracks which harbour them. If a light will attract them, as it does many night-flying insects, a lamp might be placed on a sheet of freshly-tarred tin or iron; the insects on striking the glass would fall on to and be caught on the tar.—G. S. S.

14803.—**Vine, Marechal Niel Rose, and Passion Flower in greenhouse** (*H. W.*).—In a greenhouse fifteen feet by ten feet, there is not room to train all the above to the rafters, and also to grow plants underneath them. The Vine-rods, having been cut back to half the length of the rafters, would produce one leading growth, which would be trained up to the top of the house. The laterals should be cut back to a good bud, and the leading growth may be left about four feet long. If the growths are well developed, plenty of bunches will be produced next year. One Maréchal Niel Rose or one Vine would soon fill up such a house. If all are retained, their growth must be much restricted. It is always better to grow one thing well, than to try too many, and fail with everything.—J. D. E.

14804.—**Fruit trees not bearing** (*Amateur*).—The trees were planted three years ago, in soil of poor quality, but it was abundantly manured. The results were such as might have been expected—the trees grow nothing but leaves. They must be lifted again in November, without injuring the roots much—they need not be pulled out of the hole. As the soil is of poor quality, it would be a good plan to put half a barrow-load of good loam over the roots, before filling in the ordinary soil. Early in January, all superfluous young wood must be cut out, and very little ought to be cut off from what remains. Lifting the trees will check their growth for next year, and cause them to produce plenty of fruit buds, which, in their turn, will, weather permitting, produce fruit in 1887. Of course, if there are no fruit buds on the trees now, they will not produce Apples, Pears, Plums, or Cherries next year.—J. D. E.

14805.—**Wintering plants** (*D.*).—Amongst the ordinary bedding plants that can be wintered in cold frames, there are none that can be depended upon to stand through severe winters, except the Calceolarias. Lobelias and Verbenas now in the ground, would certainly not live through the winter if lifted and stored in a frame. The best way to keep Lobelias through the winter is to sow the seed as soon as it is ripe; usually this is about the end of August. The plants to be pricked out as soon as they are ready. In that state they keep best, and make capital plants by bedding-out time. Verbenas may be propagated by cuttings put in at once. The old plants of Verbenas keep dying off through the winter. Questions ought not to be vagues, as this one is. Readers who require information about certain plants should put a direct question, and it would then be easy to give a direct answer. Those who have frames, but no heated houses, could utilise them for a better purpose than in trying to winter bedding plants in them. These may live through mild winters, but cannot be depended upon.—J. D. E.

TO CORRESPONDENTS.

Bermondsey.—Thanks for your note, but correspondents should clearly understand that we cannot make use of articles written on both sides of the paper.——*J. McPherson.*—Your letter is an advertisement.——*Robin.*—Your question was answered in our issue of Sept. 19th. See No. 14591.——*Sportsman.*—We should be glad to assist you, but we cannot give any opinion as to the quality of the goods offered by advertisers.——*A. Booty.*—Send us a better specimen, and state the treatment that you have followed.——*W. H. B., Stow.*—We think it would hardly pay you to send them to Covent Garden, and you had better try to dispose of them in a local market.——*Cardross.*—Send us the question as to the Fern-case again, and state plainly what it is you want to know. Your question is not at all clear.——*E. Glasgow.*—What is the powder to which you refer, and where is it to be obtained?

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communications respecting plants or fruits sent to name should always accompany the parcel.*

Names of plants.—*W. X.*—1, Coelogyne cristata; 2, specimen insufficient; 3, Agathæa cælestis; 4, Alyssum saxatile.——*A. Darby.*—Leycesteria formosa; try rooted offshoots severed at the base of the parent plant.——*C. L. York.*—1, Hypericum prolificum; 2, Spiræa callosa alba; 3, S. vaccinifolia.——*N. S.*—Helianthus giganteus (yellow); Alonsoa incisa (red); other is apparently Eccremocarpus scaber.——*Ruth.*—1, Solanum Dulcamara; 2,

Chelone obliqua; 3, Erigeron speciosum; 4, Colutea arborescens.——*W. P. G. E.*—Diplacus glutinosus.——*G. S.*—Epidendrum fragrans.——*A. E. Preston.*—Hibiscus syriacus (otherwise called Althæa frutex).——*Toby.*—Rhus Cotinus (Wig tree).——*J. H. M.*—1, Nephrodium Filix-mas; 2, N. spinulosum; 3, Stachys alpina; 4, Crepis pulchra.——*C. Boetker.*—1, Gentiana campestris; 2, Lysimachia Nummularia (Creeping Jenny).——*E. S. P.*—Chrysanthemum Burridgeanum, a variety of C. tricolor.——*Westminster.*—If your plant has not already been named, it is because we have not received it.——*W. H.*—1, Angelica sylvestris; 2, Matricaria inodora; 3, Crepis tectora; 4, probably C. pulchra (bad specimen).——*Kingstown.*—1, Leptosiphon luteus.—D. D.——*D. Bogue.* Impatiens glandulifera.——*Blackpool.*—Sedum spectabile.——*S. F.*—Polygonum cuspidatum.——*J. Brodie-Innes.* Ornithogalum pyramidatum.——*Rounds.*—Lilium speciosum.——*Ferndc.*—1, Common Chicory (Cichorium Intybus); 2, Specimen insufficient, but seems to be an Asplenium.——*Amoteur (Swansea).*—Kalosanthes coccinea.——*Mrs. R.*—Vallota purpurea.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of Fruit.—*G. F. T.*—Pears: 1, Fondante d'Automne; 2, Beurré Hardy. Apple: Autumn Pearmain. Plum too crushed.——*M. J. C.*—French Crab.——*H. T. P.*—Urbaniste.——*Superintendent, Desford.*—Echlinville Seedling.——*H. Johnson.*—Pyramid Pears: 1, Fondante d'Automne; 2, Beurré Diel; Standard, 3, Beurré d'Amanlis.——*C. R.*—Beurré Clairgeau.——*J. Beddow.*—Apple: Cellini. Pear: Passe Colmar. Plums: Pond's Seedling; 2, Reine d'Octobre.

Catalogue received.—*Flower Bulbs and Roots*, E. J. Jarman, Chard.

Smithfield market, Evesham.—List of prices realised Sept. 25, 1885:—Beans (kidney), 1s. 9d. to 2s. 6d. per pot (40 lb.); Cabbages (pickling), 5d. to 7d. per dozen; Carrots, 1½d. per dozen bunches; Cauliflowers, 10d. to 2s. per dozen; Celery, 1s. 2d. per dozen; Cucumbers, 8d. to 1s. 1d. per dozen; Onions, 3s. to 4s. per cwt.; Potatoes, 2s. 6d. to 3s. 6d. per pot (80 lb.); Sage, 2½d. per dozen; Turnips, 1s. 3d. per basket; Vegetable Marrows, 8d. to 1s. 3d. per dozen; Apples, 1s. 6d. to 6s. per pot (64 lb.); Blackberries, 2d. per lb.; Damsons, 11s. to 12s. 6d. per pot (72 lb.); Peaches, 1s. per dozen; Pears, 1s. 6d. to 7s. per pot (72 lb.); Plums, 12s. to 13s. per pot (72 lb.).

Bees.—In the "Seasonable Notes," published last week, the phrase "show hives," near the bottom of the second paragraph, should be "straw hives."

Our list of gardening terms.—We shall be glad if correspondents who find that any gardening term, of the meaning of which they are not certain, is not included in the list recently issued in GARDENING, will write to us. We will then, in a supplementary list, supply the definitions sought for.

Lamp for heating small greenhouse.—In answer to "Considerate Lilia Quoad Crescunt" (page 404), and with reference to Query 14345 (page 377), the patent stove in question contains water, which, when heated by lamps underneath, throws off a warm damp vapour, and requires, therefore, no evaporating pan. I have never any trouble or failure, and can strongly recommend it to "Considerate Lilia," also to 14551 ("Nibs"), and 14553 (B. Radmond, *Poplar*).—R. R. BEST.

14540.—**Protective coating for frame.**—Nothing will preserve your frame better than good paint. Give it a coat once a year, but take care to have the wood dry before laying on the paint. If you do not have to place your frame on a hotbed you can use tar instead of paint, but if you use tar the heat from the hotbed will cause injurious fumes to rise from it which may be hurtful to plants growing in the frame. I have tried both tar and paint, but prefer the latter.—J. C. C.

14476.—**A legal question.**—If "C. A. P." has not agreed with his landlord to deliver up, at the end of his term, all fixtures and improvements created and made by him during his tenancy, he can erect a greenhouse in such a way as will entitle him to remove it on leaving his house. A greenhouse is not in general removable by a tenant, as if it be fixed in or fastened to the soil—no matter how it be done—it will become the property of the landlord. This can be avoided by placing the structure, without actually annexing it, upon a foundation of brickwork or other substance; or, if the lower part consist of wood, by letting it rest upon the ground; but in this latter case none of the parts must be put into or fastened to the ground, otherwise the landlord's right to it at the expiration of the tenancy, in the absence of any agreement between the tenant and himself, will be unquestionable. Even as a tenant's fixture it must be removed during the tenancy or on quitting the house. The law is that any structure fixed or attached to the freehold or soil, so as to become parcel of it, belongs to the freeholder or landlord; but so long as it is not let into or united to the land, or to some substance previously connected with the land, it remains a tenant's fixture.—LAWYER "Y."

A TROPICAL FINE-FOLIAGED PLANT.

THIS Anthurium is a type of some very fine-foliaged plants, which probably only those who have hothouses can indulge in, and so we do not say much in its favour as a plant for our readers generally. Still they are very handsome plants, and acceptable to those who care for beauty of form, and they are very easily grown where there is plenty of heat and moisture. The finest collection we have ever seen was in the botanic collection at Schonbrunn, in Austria. There, trained to dead branches and stems of trees, their effect was charming.

Marvel of Peru.—"J. D." states, on page 398, in a reply to a question about the Marvel of Peru, that the roots of that plant are "very poisonous." Just now my plants are in charming bloom, and, having no heat to raise young plants from seed next spring, I intended to keep the "ungainly" roots through the winter. Would "J. D." kindly say what are the poisonous properties to which he alludes? On referring to worthy old Gerard, I see that he states (from another person's experience), "two drams of the roote thereof taken inwardly doth very notably purge waterish humours." Parkinson in neither of his books says anything of the poisonous properties. Can "J. D." give any further information?—J. E. S.

A tropical fine-foliaged plant (Anthurium Miquelianum).

14537.—**Green tree frogs.**—Perhaps they do not like tobacco-smoke, but it, at any rate, does them no material harm.—J. D. E.

14550.—**A tenant's question.**—My experience may be of service in this case. When I took this place the garden was full of standard Roses budded by the former tenant; I came into possession in June, and, in consideration of my permitting them to remain in the ground till the following November, he offered to give me half of them, to which I agreed. As my landlord is a lawyer, there can be no doubt that their removal was legal. I am sure no compensation could be claimed except by a nurseryman.—A. B. T., *East Anglia.*

—— Has "P. J." agreed with his landlord that he shall have the right to remove the standard Rose-trees on leaving his premises, as, if not, he will have no right to take them away with him, and, of course, will have no claim against the landlord for compensation? On the contrary, if "P. J." removes them, his landlord may bring an action against him for damages. A tenant desiring to remove articles of this kind should try to arrange with the landlord before entering on a tenancy for permission to do so. This can generally be done without any difficulty.—LAWYER "Y."

THE COMING WEEK'S WORK.

Extract from a Garden Diary, October 5 to October 10.

Getting pits and frames ready for Endive and Lettuce. Lifting Beetroot and storing it away in dry mould in an open shed. Looking over all Cauliflowers, and doubling down leaves where heads are formed, to preserve them from frost, and removing all those fit for use to a cool shed, heeling them in in dry soil. Covering up Endive and Lettuce with inverted flower-pots, to blanch. Potting Pelargoniums from flower borders; also a batch of Hyacinths, plunging the latter two inches or three inches deep in coal-ashes in cold pits; potting herbaceous Calceolarias and a small batch of late Cinerarias. Transplanting a large border of early Heartwell Marrow Cabbage. Potting Lobelias and Tom Thumb and Flower of Spring Pelargoniums. Getting Chrysanthemums under cover. Weeding and thinning out autumn-sown Carrots. Hoeing amongst all the autumn-planted Cabbages. Sowing Mustard and Cress in shallow boxes placed in heat for succession. Potting Centaureas and Carnations. Looking over Pelargonium cuttings, and removing all dead leaves and weeds.

Earthing-up late Celery when the soil is dry and in workable condition. Lifting Peach and Nectarine trees, and root-pruning them when required, to check rank growth and bring them into a bearing condition. Clearing out all water-spouts and drains before the rainy season sets in. Potting Pelargonium cuttings which have been struck in a frame. Planting a border of spring-flowering plants, consisting of Wallflowers, Silene pendula compacta, Forget-me-nots, red and white Daisies, &c. Gathering all Scarlet Runners that are of usable size, and putting their stalks in water to keep them fresh until required for use. Erecting staging over Strawberries in pots, on which to place spare lights to throw off heavy rains and protect the plants from frost. Looking over seed Potatoes, and placing them on their ends in shallow boxes to sprout.

Work in the Town Garden.

EARLY in October it will be necessary to get the whole stock of Chrysanthemums safely housed, so lose no time in getting their quarters ready to receive the plants, for after the end of September any day may bring a change to wintry weather, and it is advisable to have everything in readiness, so that the plants may be got under cover at an hour's notice. Should nice bright weather, with comparatively warm sunshine, or what is known as "Indian summer," prevail until the middle, or even the end of October, as frequently occurs, without doubt the Chrysanthemums will be benefited by remaining in the open air as long as this lasts; but if cold and wet weather, or even a dull and heavy, or foggy state of the atmosphere—to say nothing of either frost or snow—should set in, the plants ought to have protection. A light airy greenhouse, with free ventilation both at the top and sides, is the most suitable place in which to bloom the plants, but in some cases this is not available, and a makeshift of some kind must be resorted to. In a warm, sunny corner, or under a south wall, a light framework may be erected, and with some light transparent calico stretched on thin wooden frames to place over the plants, and the same arrangement, or some boards, or even sacks, tacked along the front, will afford a sufficient protection; or a few spare glazed lights or sashes for the roof will give even better results, if they are at hand. I have also seen

A very inexpensive house, suitable for Chrysanthemums, or any similar objects not requiring much heat, put up very quickly by a handy man somewhat as follows:—Drive in, at intervals of four or five feet, round the sides of the proposed house, posts about five feet long, formed of three-inch-square quartering (if tarred or charred these will last longer), allowing for a door at one end. Then, having got the tops of these posts true and level all round, spike on (or, preferably, cut tenons and mortises), a plate of four inches by three inches, or even four-inch by three-inch quartering. Now, prepare a ridge-plank, the full length of

the house, and six inches by one inch or one-and-a-half inches in section,—a common flooring-board will do capitally—and a pair of rafters, three inches by two inches, for each end, and at every four or five feet between. Let a flooring-board (six inches by one inch) into the lower ends of these rafters all along each side, with the lower edge projecting about two inches over the plate, and the face flush with the outside of the rafters; this will take the lower edges of the glass better than any other arrangement. Now get some pieces of one-and-a-quarter-inch angle-iron, the length of the house, and let them into the rafters (crossing these) at distances of about eighteen inches, screwing them firmly down by means of holes drilled through the iron wherever it crosses a rafter. Have the necessary quantity of glass (which should be straight and stout, twenty-one ounces or picked sixteen ounces) cut to a length of nearly the distance from outside to outside of any two of the angle irons, and about a foot wide (by the way, I forgot to say that the angle-irons should be let in with the angles inwards and upwards). Now you only want two strong zinc clips cut for each piece of glass, about three inches long by one inch wide, and bent into a kind of S shape, or rather pot-hook form, with the upper hook or bend open, to hang over the upper edge of the angle-iron, and the lower bend close, so as to fit or clip the lower edge of the glass tightly; the bottom edges of the lowest row of panes rest on the plank over the plate, and are held up by a few large-headed tacks, or zinc clips nailed on. The whole of the glass can be put in a fair-sized house by a handy man in a day, and if the edges are cut straight and true, and are butted up closely together, they will admit no drop of wet, and very little air. The ends are put in with light bars and glass in the usual way, and with two or three ventilators and a door all will be complete except the sides, which can be filled up with match-boards or felt. Boards are best, of course, and the upper one should be hinged along its upper edge, so as to admit plenty of air when necessary. Anyone with the least idea of construction will grasp the plan at once, and find no difficulty in carrying it out. The materials for a house of this kind, twenty feet long by twelve feet wide, may be purchased for very little over £5, if you go about it the right way. If there is a good high south wall available, a lean-to is still more easily constructed, and gives greater head room.

Having got the plants inside, arrange them carefully according to height and colour, allowing as much room as possible to each plant, so that air may circulate freely. Now the main thing is to afford as much ventilation as possible whenever at all safe to give it, for the cooler and airier the house is the longer the buds will be in swelling, and the finer and later will the blooms be. Thin out the buds where necessary, and remove all superfluous growth, which will generally break out abundantly when the plants are brought inside. Feed liberally with any stimulating preparation, never let the plants want for moisture for five minutes, and keep a sharp look-out for earwigs, caterpillars, and other insects.

Salvias are extremely useful for mixing with Chrysanthemums as cut flowers; but, unfortunately, these do not seem to flourish in town gardens—at least, I have never been able to grow them anything like satisfactorily except in quite the outer suburbs. They are very liable to red spider, which soon cripples the growth, in a dry atmosphere; but liberal cultivation, with slight shade from burning sunshine in summer, will go far to counteract this. They may be grown during the summer either in pots or planted out, and lifted about the present time, and if a vigorous healthy growth is induced, they can scarcely fail to bloom well.

The Scarborough Lily (Vallota purpurea) is just now a striking object in the greenhouse or conservatory; this handsome bulbous plant may be grown quite successfully anywhere, the chief points being to keep the plants growing on freely in any good, sound, sandy soil, with a moderate amount of warmth and abundance of water at all times when not actually at rest. This Lily should not be much disturbed at the root, being very impatient of too frequent shifts, and always being more healthy and floriferous when thoroughly root-bound. If healthy plants do not show for bloom by the end of August, withhold water for a time, and this will generally prove effectual. B. C. R.

Glasshouses.

All stove plants that, after completing their summer's growth, are for a time completely at rest, should now receive treatment that will assist the ripening of the wood, by giving less water. The Medinillas require treating in this way, as, if kept in a brisk stove-heat, and the soil continuously moist, they never get the growth sufficiently matured to bloom freely; from this time until the days again begin to lengthen no more water should be given than will keep the leaves from flagging—if these plants are allowed to remain for any length of time so dry as to cause the foliage to droop, they will be injured. This applies to the different kinds of Medinilla, including M. magnifica, M. amabilis, M. speciosa, and M. Sieboldiana. The plants should also be stood through the resting season at the coolest end of the house, with as much air as the nature of the other occupants will bear.

Clerodendron Balfourii.—This handsome climber is so accommodating in the time during which it can be had in bloom, as also in its ability to flower in either a small or a large state, that it is well to have a sufficient number of plants to give a succession. For ordinary decorative use or the production of cut flowers they need not be large; examples in eight or ten inch pots will afford a considerable quantity of flower. Those that bloomed early in the spring will now have made growth enough, and should be dried off gradually by withholding water until the leaves flag, in which condition allow them to remain for two or three days. Then give a little water, but not so much as was needful while the plants were growing. When the leaves again droop, let them remain as before for some days, when again give a little water, repeating these alternate conditions, which will cause the foliage to dry off gradually, after which let the soil remain quite dry until the time for again starting the plants into growth comes round. I have found that this Clerodendron dislikes keeping so cold in the winter as many things, as if in too low a temperature the roots are liable to perish. The warmth of an intermediate plant-house suits it while at rest.

Anthurium Scherzerianum.—There are few plants in which so much difference exists in the size, and general character of the flowers, as in this showy Aroid. An inferior variety requires as much room and attention as a good one—consequently it is well for those who are commencing its cultivation to endeavour to get a good form. This Anthurium is apt to get out of condition at the roots, the effects of which are only seen by the production of leaves and flowers much smaller than they would be if all the roots were alive and healthy. The present is a good time for potting this plant, as if grown in an intermediate temperature which answers best for it, it will make the most growth during autumn and winter. The quantity of water which the plant requires soon reduces the soil to a soapy, adhesive state, in which condition the roots perish; however satisfactory the top growth may appear to be, the soil should be renewed once every year or two. The best course to follow in repotting is to get as much of the soil away as can be removed by hand without injuring the roots, and then to wash the remainder completely off by a free use of the syringe. The material in which this Anthurium succeeds best is a mixture of chopped Sphagnum and good fibrous Orchid peat, with a good sprinkling of sand and some crocks or charcoal. So managed, the plant will go on for an indefinite time in a healthy condition, increasing in size and producing flowers much larger than are forthcoming under the treatment that it is often subjected to.

Aphelandras.—The winter-blooming kinds of Aphelandra should be kept in a moderately warm temperature through the later months of the year, for although they do not require so high a temperature as some things, they will not flower well if allowed to remain where there is insufficient warmth to keep them moving. Where they have been at all affected with insects, such as thrips and mealy-bugs, the leaves ought to be carefully sponged, for as these insects will not now increase so fast, it will be well to make an attempt to free the plants from them.

Crotons.—There are few plants more subject to the attacks of red spider and the mischievous little yellow thrip than the different varieties of Croton—especially the long, narrow-leaved kinds; and unless the plants are kept clear of these pests it is useless to expect to have them in good order. The thin condition in which these plants are so often seen when they get large, with not more than half the foliage that they should have, is usually brought about by the presence of these insects, which cause the leaves to fall off prematurely. Plants that have been affected in this way should now be thoroughly washed with insecticide, laying them down over a trough or some vessel that will catch the liquid, repeating the washing three or four times at intervals of a week or ten days. Where Crotons are kept in a warm stove they continue growing slowly all through the winter. Any plants that have got thin and bare of foliage, and that can be so accommodated as to temperature, may have their shoots shortened back, as by treating them so now, in place of deferring it until spring, they will make some progress in growth during the winter, whereby so much time will be saved. The kinds of Croton now in cultivation are so numerous that many cultivators scarcely know which to select. Among the narrow, long-leaved sorts, C. Warrenii, C. Johannis, C. majesticus, and C. Weismannii stand in the front rank; while of the larger-leaved varieties C. Queen Victoria, C. Sunset, C. Disraeli, and C. Thompsonii may be relied on as equally desirable.

Eucharis amazonica.—Those who happen to have a good stock of this most useful flowering plant can, by a little management, have almost a continual succession of its snowy-white flowers. By subjection to alternate periods of growth and rest, the plants can be induced to flower oftener than by the ordinary process of keeping them in a growing state all through the spring and summer, and resting in the winter. But although when managed in this way this Eucharis can be induced to give as many as three crops of flowers in a year, still, it may be better to be content with two bloomings; and on no account should the resting process be brought about by standing the plants in a low temperature. A slight reduction in the heat, and a semi-dry condition of the roots by withholding water until the leaves show signs of drooping, and then giving as much as (but no more than) will keep the soil from getting quite dry, is the right way to proceed. After the plants have been subjected to this treatment for a month or six weeks, give a good soaking to the roots, and place them where they will have the benefit of a brisk heat; they will then soon push up their flowers, after which they should be treated so as to keep them on growing for a sufficient length of time to admit of second resting and flowering periods. This will be found a safer course than attempting to flower the plants too often, through which, and the mistake of subjecting them to a low temperature, many who have had a healthy stock have suffered the disappointment of seeing it reduced to a worthless condition.

Fern-House.—In a collection of Ferns, some or other of the kinds will always be making growth, and require, so far as practicable, to be assisted in the development of the fronds by a close, moderately moist atmosphere. But at this season of the year, when most of the kinds have completed their growth, and it is desirable to discourage their further progress, they should be exposed to the full influence of light. Where the glass has been smeared with any of the various materials used to give shade, it should at once be washed, giving more air, and keeping the atmosphere drier. These measures will help to harden up the growth, and to some extent impart more endurance to the fronds; although with Ferns, as with other plants, the only way to secure the maximum amount of solidity is by treating the plants through the spring and summer in a way that will give substance and strength to the growth whilst it is in the course of formation. All subsequent measures taken with a like intent can never be more than partially effective. Plants of Adiantum cunea-

tum, A. gracillimum, and A. formosum—the three best kinds for using in a cut state—that were hard cut during the summer, and have been treated so as to make a second growth, should, whilst being kept in an intermediate temperature, be exposed to all the light that can be given them, with enough air to give strength and substance to the fronds, without which they are liable to shrivel when used in bouquets, button-holes, or in any way where their endurance will be put to the test. So much dependent are the Ferns in question, in their ability to stand in a cut state, on the way they are grown, that where the treatment has been right they will often outlast the flowers with which they are associated, in place of flagging in a few hours, as they usually do when grown under shade in a moist atmosphere.

THOMAS BAINES.

Flower Garden.

General work.—Notes should be taken of all such plants and arrangements as have been approved of during the bedding season. Edgings should have their final clipping for the season, and if the walks are now well cleared of weeds, they will entail no further trouble in that respect till spring. Still keep beds and borders in neat condition by repeatedly picking them over, and when all hope of further effectiveness is ended for this year, let them be at once re-occupied with plants to stand the winter, or, in the case of herbaceous plants, clear away the unsightly stems, mulch the borders with Cocoa fibre, and fill up vacancies by planting out from the seed-beds such biennials as Canterbury Bells, Sweet Williams, Wallflowers, Snapdragons, and spring-flowering bulbs, such as Hyacinths, Narcissi, and Tulips. Old blossoms of Roses should be kept picked off, the beds freed from weeds, and standards secured to stakes. The ties of all that were budded this season ought now to be removed, and all Brier shoots and suckers rubbed off. Secure all bedding plants that have been propagated in the open border by potting them up and placing them in frames; also mark, by tying on them pieces of matting or labels, all Dahlias and other plants that are to be saved.—W.

Fruit.

HARDY FRUIT.—Gather Apples and Pears on dry days, as they become fit for removal. Choice Pears that are to be kept for a long time should be handled with the greatest care, and none but those which are sound and of full size should be placed on the shelves where they are intended to remain until fit for use. Wall trees of all kinds, commencing with Apricots, early kinds of Peaches, and Nectarines that are growing too rank, will, if disturbed with care now, fruit abundantly next year, and the fruit will attain its full size and quality, as the roots will have time to take a hold of the fresh soil before the leaves fall and the earth loses the warmth so essential to the formation of fresh rootlets. Root-pruning does not mean a general cutting away of all the roots which extend beyond a certain line, and then filling the trench in again. The proper way is to open out a trench at the extremity of the principal roots, and then with steel forks to work inwards until a goodly number of the strongest roots have been traced to within a reasonable distance below the surface of the border. These will then require slightly cutting back with a sharp knife, and the work of re-laying in fresh loam, which must be made very firm by ramming, will follow as the trench is filled in again. If the old compost is really good, a small quantity of fresh loam will suffice, and the addition of manure, as a mulching only, will complete the operation.

NEW ORCHARDS.—Where the formation of new orchards is contemplated, thorough draining must precede all other operations. Trenching as deep as the soil will allow will then follow, and the time of planting will be regulated by the soil. Free, friable loams may be planted at once; but cold, heavy soils often require turning over a second time, and full exposure to the action of frost, before they are fit for the reception of the trees. Soils of this description may be greatly improved by the addition of burnt earth or garden refuse, road-scrapings, or old lime rubble, and in some cases it may be necessary to crop with Potatoes or other vegetables for a year before the trees are permanently planted.—R.

Vegetables.

IF French Beans are not already sown, get them in at once. I have a houseful sown in boxes three feet long and eleven inches broad. Canadian Wonder we always sow for an autumn and early spring supply, but Osborn's for mid-winter is preferable in more ways than one. Do not forget to see that slugs are not eating the young Lettuce and Cabbage plants. We are now cutting Bracken for winter covering; when cut green the fronds keep intact. We find this invaluable for covering all kinds of Broccoli, Celery, and Mushrooms; in fact, we cover everything up that is likely to suffer—even Lettuce and Endive. It is light and clean, and in most places it can be had in any quantity.—S.

TREES ON MARGIN OF LAKE.

THE illustration here given will serve to show, perhaps better than any words could, how pleasant a part in garden scenery a small lake can be made to fill. The graceful appearance of the weeping and columnar trees—Lombardy and other Poplars, and the Weeping Willow—that fringe the margin, and the absence of stiffness, are in pleasing contrast with the formal ugliness which in so many instances seems to be inseparable from the presence of water in gardens. We would counsel everybody to plant in all such cases the large yellow Osier which is so beautiful in winter; for example, it would have a much better effect than the small-headed trees to the right in the picture. They are pleasing in summer and autumn, but when the cold rains and showers of winter and spring alternate with sunshine, the effect is beautiful.

Weeping and erect-growing trees on margin of a small lake.

14629.—**Obtaining cloches.**—Cloches may be obtained wholesale and retail from E. Breffit & Co., Aire and Calder Glass Works, 83, Upper Thames-street, London.—C. W. D.

14459.—**Compost for Plants.**—Fibrous loam forms the basis of soils used for the generality of flowering plants, with it being mixed leaf soil or rotted manure in varying proportions, according to the nature of the plants. A safe compost for the soft-wooded things commonly grown in greenhouses is three parts loam and one part leaf soil, with a little white sand. Peat is used for the generality of Ferns, for many Palms, and warm-house plants, either alone or in mixture with loam. When loam is of a heavy nature, more leaf soil should be used, as otherwise it becomes too close after a time for the tender roots of many things to root in.—J. C. B.

ROSES.

RESUSCITATING OLD ROSES.

THERE are few better methods of resuscitating old plants of Roses than that of replanting them in fresh soil early in the autumn. October and November are the best months in the whole year for these operations. If they can be removed into fresh, sweet, maiden soil, so much the better; but if not, the ground may be heavily manured, trenched to a depth of a yard, carefully mixing the manure and the soil together as thoroughly as possible. In planting the Roses, care should be taken to vary the place of the plants as much as possible. In trenching the old Rose-beds and borders, great care must be taken to pick out and remove every bit of root, as few things seem more distasteful to Roses than their own roots. Of course, too, in lifting the Roses all the best roots must be preserved intact, and every root likely to develop into a sucker should be cut close back to the root-stock. Others may be shortened, the whole being cut off sharp and clean. Another point towards ensuring success is to keep the Roses out of the ground as short a time as possible. In replanting on the same ground it is a good plan to make a bold, wide opening at one end and turn the whole soil over, replanting the Roses in the process. Where the plants are transferred to new quarters the latter should be prepared first, so that the plants may be planted as soon as lifted. Only those conversant with the rapid rooting of Roses in the early autumn can be impressed with the vital importance of immediate replanting. Root disturbance is one of the most powerful stimulants, and the formation of new roots and the process of re-formation begin at once. Thus it comes to pass that the laying in of Rose-plants by the heels involves a loss of force as well as of time. Hence probably it is that roots are less speedily formed after a second disturbance than after the first, and so on after each successive disturbance. Immediate planting after lifting is one of the surest means of ensuring success, and Roses thus treated and planted with skill and sufficient care will flower as well the next season as if they had not been moved. Fresh soil should be given to the Roses if possible. The new and fine sorts seem to become soil-sick much sooner than the older varieties; in fact, the cry of Rose-sick soils is a comparatively modern one. The old Roses used to grow and flower on the same spots in perpetuity. The modern varieties seem to exhaust or become soil-sick on the best soils in two or three years, and this in cases where the best soils and the highest culture have been

provided. This is one of the greatest mysteries and most trying difficulties to modern rosarians. The problem may be stated thus:—A vigorous start, magnificent blooms, gradual deterioration, little growth, disease, insect attacks, death—all crowded into the narrow limits of three or four years. At the first signs of deterioration lift and replant the Roses, and they may be kept in perfection for another term of two, three, or more years. Some Peach-growers adopt most successfully the same course with their trees, and it is certain that frequent liftings and replantings, as well as skilful culture and liberal feeding, are essential to the production of perfect Roses in perpetuity. D. T. F.

REPLIES.

14561.—**Roses in Lancashire.**—If you have to compete only with others who reside in the same county as yourself, I see no reason whatever why you should not become a successful exhibitor, as your soil can be made very suitable for Roses with a very little outlay. It will require to be trenched up two feet deep, and if it is a little too heavy, mix a little lime rubble and rotten turves chopped to pieces with it, and plenty of manure as the work of trenching goes on, so as to incorporate these ingredients well with the staple. The varieties of Roses you mention are not the hardiest; but, in a sheltered garden, and under kindly treatment, they will succeed. Have you counted the cost of exhibiting Roses? For it is a costly business when entered upon with spirit, even in the most favourable gardens; and it requires both skill and incessant attention to obtain good results. If you want to show only twelve varieties at a time you will require to grow at least six plants of eighteen or twenty-four sorts to make sure of getting sufficient flowers in good condition on a given date.—J. C. C.

THE KITCHEN GARDEN.

Martin's President Cauliflower.—After giving this sort a good trial, I am now enabled to give my opinion respecting its merits. Among the varieties I am growing are Best of All, Snowball, Early Erfurt, Veitch's Giant, Walcheren, and the one in question. I have a large quarter of Cauliflowers planted, and early in September I carefully searched for the best; this I found in Martin's President, which, taking into consideration the dry weather we had experienced, was certainly an admirable production, being close and well protected by the foliage, and perfectly white; in fact, I look upon this Cauliflower in such seasons as that we have just gone through as a gardener's friend.—R. Gilbert, *Burghley.*

REPLIES.

14539.—**Exposed garden.**—Peas, Strawberries, and Asparagus would succeed in a garden sloping to east and north, but they would be considerably later than if the garden sloped in the opposite direction.—J. D. E.

14566.—**An "Amateur's Mushroom bed."**—"A. J. B." should not press down the hay on his mushroom bed, but put it on lightly, as it equalises the temperature. Mushrooms are generally supposed to do better in the dark; imitate their natural growth as much as possible. If they are grown in winter care must be taken that the place does not become too cold.—H. S., *Nuneaton.*

FRUIT.

14532.—**White Currants.**—White Dutch is the best for dessert or any other purpose.—J. D. E.

14547.—**Best Apples for Hereford.**—The best culinary apples are Hawthornden, Cellini, Cox's Pomona, Emperor Alexander, Alfriston, Bess Pool, Dumelow's Seedling, Blenheim Orange, Lemon Pippin, Wyken Pippin, and Yorkshire Greening. Dessert Apples: Cox's Orange Pippin, Golden Winter Pearmain, Court Pendu Plat, Golden Harvey, Cockle Pippin, and Nonpareil.—J. C. C.

—— Dessert: Devonshire Quarrenden, Mr. Gladstone, American Mother, Blenheim Orange, Cox's Orange, Melon, Ribston, Court Pendu Plat, Nonpareil, and Northern Spy. Kitchen: Duchess of Oldenburgh, Keswick Codlin, Lord Suffield, Cellini, Echlinville, New Hawthornden, Beauty of Kent, Wellington, Prince Albert, and Norfolk Beaufin. The quicker return will be secured by planting trees on Paradise stock, six feet apart. If intended for the next generation as well, plant trees on Crab, thirty feet apart.—Will Tayler.

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ANTIRRHINUM, fine boldly-striped flowers of large size, grand for effect.
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DIANTHUS, Eastern Queen, Crimson Belle, and tri-coloured varieties, large and beautiful, grand for cutting.
FORGET-ME-NOTS, the beautiful blue dissitiflora, the finest of all.
GYSOPHILA, pure white, very fine for cutting.
HONESTY, long Phlox-like spikes, very useful.
GOLDEN HAWKWEED, yields a great profusion of flowers, useful for cutting.
HAWKWEED, pure white, rose, and yellow, fine for borders and cutting.
IBERIS SEMPERVIRENS, presents a mass of pure white flowers, not unlike miniature snow wreaths.
LINUM PERENNE, graceful and free-flowering.
LUPINES (perennial), all colours, spikes 2 feet long.
MIMULUS, finely spotted.
ŒNOTHERA (Evening Primrose), Lamarckiana macrocarpa, taraxacifolia, and other splendid varieties.
POLEMONIUMS, blue and white, sweet scented.
PHLOX, finest varieties, invaluable for borders.
PENTSTEMONS, choicest colours, long spikes of large flowers, splendid.
PINKS, fimbriata alba, fine, sweet-scented, pure white.
PANSY, very choice fancy.
QUEEN STOCKS, finest double.
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FRUIT.

PLANTING FRUIT TREES.

The best time for planting fruit trees or bushes of any kind is directly the leaves drop, for, if done before the ground gets chilled by frosts, the roots get partially established, and the trees start into growth in spring as if they had not been moved at all. Soil intended for fruit trees should be trenched two spits deep, and, if this has not been done, no time should be lost in getting the work completed, so that it may have the benefit of the autumnal rains and be in a moist, friable condition. If the planting is to be done in plantations already formed but from which worthless trees have been removed, it is a very good plan to excavate a good depth of soil, and leave the holes open for some weeks so as to get the soil thoroughly saturated by rain, for it is surprising how dry the soil is under trees of any size even after what we call a very wet period. The application of manure to fruit trees used to be set down as the forerunner of all kinds of evils, but there is not the slightest doubt that our orchards are far more frequently spoilt by starvation than by overfeeding. It is not in their young days, however, that fruit trees require highly-stimulating food, as soil that is in fairly good condition will make wood-growth quite strong enough the first few years; but, as soon as the crops begin to tax the energy of the tree, a constant supply of food must be given to the surface roots, or some kind of disease is sure to attack the trees, as weakly trees, like individuals, fall victims to attacks from which robust ones escape.

Selecting the varieties is a most important matter, for there is such a host of good sorts in catalogues, all having some claim to merit, that those who have not had the opportunity of seeing them in actual growth have a difficulty in deciding; but the following selection includes the cream of the most reliable sorts in cultivation:—*Apples for dessert:* Irish Peach, Red Quarrenden, Summer Golden Pippin, Worcester Pearmain, King of Pippins, Ribston Pippin, Cox's Orange Pippin, Melon Apple, Scarlet Nonpareil, Wyken Pippin, Golden Knob, Court Pendu Plat. *Apples for kitchen:* Keswick Codlin, Early Julien, Lord Suffield, Stone's or Loddington, Stirling Castle, New Hawthornden, Blenheim Orange, Warner's King, Wellington, Dutch Mignonne, Northern Greening, and Alfriston. *Apricots:* Moorpark and Breda. *Cherries:* May Duke, Adams' Crown Heart, Bigarreau, Black Eagle, Late Duke, and Morello. *Currants* (Red): Raby Castle, Red Scotch; (White) Dutch Transparent; (Black) Naples, Baldwin, Lee's Prolific. *Figs:* Brown Turkey, Brunswick. *Gooseberries* (Red): Warrington, Rifleman, Lancashire Lad, Crown Bob, Industry; (White) Velvet White, Whitesmith; (Green) Greengage, Gascoigne; (Yellow) Yellow Rough, Pitmaston Orange. *Nectarines:* Albert Victor, Lord Napier, Elruge. *Peaches:* Hale's Early, Grosse Mignonne, Noblesse, Walburton Admirable, Salway. *Filberts:* Kentish and Red Skinned. *Cob-nuts:* Kentish Cob, Cosford. *Pears* (Early): Jargonelle, Souvenir du Congrès, Williams' Bon Chrétien, Beurré d'Amanlis, Louise Bonne de Jersey, Madame Treyve, Doyenné Boussoch; (Mid-season): Marie Louise, Doyenné du Comice, Beurré Diel, British Queen, Winter Nelis; (Late): Josephine de Malines, Prince of Wales, Beurré Rance, Passe Crassane, Easter Beurré; (Stewing): Catillac, Bellissime d'Hiver, *Plums:* Rivers' Early Prolific, New Orleans, Victoria, Greengage, Kirke's, Jefferson's, Pond's Seedling, Belle de Septembre, Grand Duke, Wyedale. *Damson:* Farleigh Prolific, round or sweet. *Bullace:* Shepherd's. *Raspberries:* Prince of Wales, Carter's Prolific. *Strawberries:* Vicomtesse Héricart de Thury, Sir J. Paxton, President, Sir C. Napier, Keen's Seedling, Doctor Hogg, Trollope's Victoria. *Vines for Cool Houses:* Black Hambro', Foster's Seedling, Royal Muscadine. *Vines for Foreing:* Muscat of Alexandria, Gros Colman, Lady Downes Seedling, Alicante. *Vines for Open Walls:* Black Cluster, Sweetwater.

After planting is completed, stake or secure firmly to prevent wind-waving, which strains the roots; then cover the soil, as far as the roots extend, with a mulching of partly-decayed manure, for it helps to retain the warmth of the soil and to keep it in a uniform state of moisture. Do not prune at all at the time of planting, for the little that freshly-planted trees require is best left until the buds begin to swell in spring.

James Groom, *Gosport.*

Late Grapes.—During the autumn we generally hear many complaints of Grapes keeping badly, for the atmosphere is generally over-charged with moisture, and in vineries where Grapes are hanging in a partially ripe condition great losses occur from mouldy berries, unless more than ordinary precautions are taken to keep the atmosphere dry, by means of gentle fire-heat, and buoyant, by means of ample ventilation. One of the most frequent errors among amateur gardeners is that of not giving air early enough in the morning; no matter whether the sun rises at six a.m. or two hours later, the ventilators must be opened before its rays strike the house, or the berries will be covered with condensed moisture, which, getting between the berries, causes them to decay; and it is far safer to leave air on both night and day, than to shut up closely and not open the ventilators soon enough. Another most fruitful source of injury to late crops of Grapes is the practice of having pot plants in vineries, for it is just when the Grapes are ripe that the house should be cleared of everything that tends to impart moisture to the atmosphere, and where pot plants are there must be more or less of artificial watering. We have our vineries full of all sorts of plants during the growing season, without any apparent injury to the crop; but where ripe Grapes are hanging after September, we contrive to clear out every plant that requires any artificial supplies of water, and by keeping a slight warmth in the pipes and a gentle circulation of air we rarely get any loss of berries from mouldiness or any other cause.—J. Groom, *Gosport.*

Sex of Strawberry Plants.—"J. D. E." (p. 310) says: "Strawberries are not unisexual; every flower is perfect in itself." Not quite. In saying they are not unisexual he is right. But all the flowers are *not* perfect. Many kinds are non-staminate. That is, they all have the rudiments of stamens, but some have no anthers, and no kind of culture will produce them. Hence, with us, Strawberries are classed as pistillates and staminates, to distinguish those which require a staminate variety to fertilise the flowers. "J. C. C." says: "The flowers of Strawberry plants are sometimes destitute of anthers." Such as are destitute of them always remain so, and always fail to produce a crop, just as he states about the variety, Princess of Wales. The whole subject was the cause of long discussion in our journals a few years ago; but, after a while, it was uniformly conceded that those varieties devoid of anthers would never produce any fruit unless planted near a staminate kind.—C. M. H., *Ameriea.*

Barren Strawberries.—I wish to draw the attention of "A. B. T., East Anglia," to the following, that the second or third young plants on a Strawberry-runner are generally barren; therefore it is always wiser to take the first, next the parent plant, and of course from one that has borne fruit.—E. M. M. *** *Naturally enough the first sucker is the strongest; but, apart from the question of strength, there is no reason why the others should not be as good. Those who do not require a large supply of plants should cut off the runner after layering the first plant, into which additional strength will then be thrown.*—Ed.

Gooseberries.—In answer to one or two inquiries as to the best sorts of Gooseberries for stocking a garden with, I may say that my experience is, that if anything of a crop is required, you must avoid "prize" Gooseberries and fancy novelties, as under ordinary cultivation they only produce a few fine berries. My experience coincides with the opinion expressed recently by Mr. E. Hobday, who gives the preference to Warrington Reds and Whitesmiths, which I am about substituting for some high-priced fancy kinds, thus losing several years. Mr. Hobday also mentions a few other old sorts.—W. W.

A few hints to fruit growers.—Landowners sometimes make the mistake of doing all their planting of fruit trees in a single season, supposing that no further care is necessary for long years to come. A part of these trees come into bearing in a few years, but vacancies are found in the succession for supply; some improvement is suggested in the selection, and years must elapse before these vacancies, made by omission or by occasional dead trees, can be supplied by bearing trees. The man who does not feel interest enough in fruit culture to make yearly or frequent additions to his assortment, and to inform himself relative to the best sorts, will never have anything better than an imperfect supply.—*County Gentleman.*

A fine bunch of Grapes.—"W. M. F." sends us a photo. of a fine bunch of Grapes—Black Hamburgh—which took the first prize in the Amateurs' Section in the Glasgow and West of Scotland Horticultural Show. The bunch is nicely modelled, and measures, from the uppermost to the lowest berries, over twelve inches.

REPLIES.

14636.—**Fruit for Yorkshire.**—The following I have growing on heavy magnesian limestone soil, and are selected from a large collection. "T. F." may rely on them as hardy and free-cropping varieties that will give a good succession. Cornish Gilliflower I have had no experience with in this county, but am inclined to think it would not succeed satisfactorily. Kitchen Apples:—Keswick Codlin, Echlinville Seedling, Dumelow's Seedling or Normanton

Wonder, Warner's King, Stirling Castle, Northern Greening, Lane's Prince Albert. Dessert Apples: — Blenheim Pippin, Cox's Orange Pippin, King of the Pippins, Ribston Pippin, Irish Peach. Pears:—Jargonelle, Williams' Bon Chrétien, Marie Louise, Louise Bonne of Jersey, Beurré Diel, Glou Morceau, Easter Beurré. Plums: — Victoria, Diamond, Orleans, Red Magnum Bonum, Crittenden Damson.—G. S., *South Yorkshire.*

—— Apples: Six dessert are Irish Peach, Thorle, Ribston Pippin, Wormsley Pippin, Adams' Pearmain, and Sykehouse Russet; six kitchen: Carlisle Codlin, Lord Suffield, Cellini, Tower of Glamis, Bedfordshire Foundling, Yorkshire Greening. Six dessert Pears: Jargonelle, Williams' Bon Chrétien, Hessle, Louise Bonne of Jersey, Thompson's, and Knight's Monarch. Plums: Early Orleans, Gisborne's, Prince of Wales, Victoria, Pond's Seedling. The Cornish Gilliflower is a shy bearer, but an excellent dessert Apple.—J. D. E.

14637.—**Renovating orchard.**—The most effectual way to do this is by grubbing the old worn-out trees up entirely. After this is done, trench the ground eighteen inches or two feet deep, adding a good dressing of manure if the ground is exhausted. Plant the young trees in November, and in doing so put half a barrow-load—or, better, a whole one—of good loam round the roots of each. If it can conveniently be done, I would next season retrench the ground to the same depth, and replant the trees again during the process, placing some more fresh loam round the roots. I have treated an old worn-out orchard in that way, and the trees succeeded splendidly. Although the old trees were eaten up with canker, we had none on the young trees during a period of nearly twenty years, with one or two trifling exceptions, which were cured by lifting and replanting the trees in fresh loam.—J. D. E.

14574.—**Grapes shanking.**—As you do not say how old your Vines are, it is not easy to answer your question. Assuming that they are not too old, I should advise you to lift the roots and remake the border with fresh soil; you should do half of the Vines this season and the remainder next. As you say they have an unrestricted root-run, you ought to lift all the roots in the space of ten feet from the stems, and the present is a good time to do it if all the Grapes are cut and you can shut up the house close and shade it in bright weather. In replacing the roots, see that they are fairly distributed in the new soil; none should be deeper than one foot, and none nearer the surface than four inches.—J. C. C.

INDOOR PLANTS.

A SUCCESSION OF FLOWERS IN WINTER.

It may be necessary sometimes to have a quantity of bulbous plants all in flower at one time for a certain purpose, but as a rule a continued supply over as long a period as possible is a matter of greater importance. Some pot their whole stock of bulbs when received in September, and think that by forcing some and retarding others a succession may be maintained as long almost as desired. This may be done, but bulbs will keep on growing even in a cool place, and by attempting to retard too much, a glut is in the end the result. In our case, and in that of many others, the flowering season of Dutch bulbs commences with Roman Hyacinths early in November, and is continued by others of various descriptions until the end of May. Some may think this might be done easily if only one had the requisite quantity, but quantity is only of secondary importance; the secret, if there be one, lies in the management. Should the annual supply of bulbs be reduced by half or one-third, the flowering season need not be shortened thereby; on the contrary, the whole of it should be made to sustain the loss by having a lesser quantity at all times. The best method of keeping up a succession during the whole time is to divide the bulbs into at least three portions, and pot them at intervals of a month or six weeks. The first cannot be potted too early for forcing, as the more gradually this work is performed the better the results. Roman Hyacinths are received early, and if potted in August may be had in flower early in November, a season when they are most welcome. Their season need not be limited to one particular display, as if some bulbs are retained and potted at the same time as the later varieties, they will flower equally well later on. It requires rather severe and careful forcing to obtain good Hyacinths of the coloured varieties by Christmas, although it is tolerably easy to get them ten days later. Paper-white and double Roman Narcissi flower very early, and are most useful, especially the first-named. All other varieties of Polyanthus Narcissus are well suited for pot culture to flower in spring.

The first portion of the general collection of bulbs should be potted, if practicable, in September, the second at the end of October, and the third and last in the beginning of December. A rich soil should be used, as, although a great deal depends on the quality of the bulbs, a by no means small share of success must be attributed to cultivation. The pots are best filled lightly, rather full; the bulbs then selected should each be pressed in singly by the hand. This is more important than many suppose, as all the bulbs will be found much more firmly placed in position at the base than would be the case if placed on firmer soil at first and covered afterwards. When potted, all should be set outside, watered, and covered with about six inches of rather fine ashes. This quantity should be increased in winter to exclude frost; the young shoots when growing are very tender and much injured by being frozen. The ashes are necessary at first as a weight to prevent the bulbs rising out of the soil when forming roots. As soon as the latter take a good hold they will be no longer required for that purpose. No one should attempt introducing any bulbs into heat until the pots are well filled with roots. When removed from the ashes inverted pots should be placed over them in a cool house for a few days, and positions in higher temperatures should be given very gradually. When the flower-stems start into growth the plants will bear more heat than before that stage is reached. Many are impatient in regard to this, and place bulbs in too high a temperature at first, with the result that the foliage grows and the flowers often do not, but instead either damp or wither away. Crocuses and Snowdrops will not bear the least forcing in heat, but they will bloom a little earlier in a cold frame than outside. Good potfuls are very pretty when in flower, but their season is very short, as the flowers soon fade. Various methods are adopted for preparing Hyacinths and Tulips for early forcing. Some place them in boxes or pans thickly and pot up as fast as any are in flower. When three or more are placed together in a pot it is seldom that all open together in winter, and as such severely-forced bulbs are of little value afterwards, the box plan has some advantages to recommend it. The later ones are best placed in the pots in which they are to flower, and five-inch and six-inch sizes are the most suitable. Hyacinths not much forced will produce useful flowers for cutting a second season indoors, but Tulips are not worth the trouble. Both of these, with others, may be used for planting ouside after they have flowered in spring.

Many bulbs besides those already mentioned should be added if possible by those who require them for conservatory decoration. The beautiful white variety of Gladiolus Colvillei named The Bride is easily grown if potted now and kept quite cool all the winter in a frame. The flowers of G. Colvillei itself are also very attractive and well worth attention. Narcissus Bulbocodium is well adapted for cultivation in pots or pans, and is not half enough used in that way. Although the bulbs are not large, each will generally throw up four or five flowers, and as about this number of bulbs may be grown well in a five-inch pot, the effect produced may be easily imagined. These are also best kept quite cool. Others requiring similar treatment, and well deserving it, are single and double Jonquils, Scilla sibirica, Iris reticulata, and Milla uniflora. To these may be added Ixias and Sparaxis, either in named varieties or in separate mixtures, which, combined with Dutch bulbs, make a fine display. J. G. K.

Large specimens of Lilium auratum.—The notes on the two large specimens of Lilium auratum (page 411) are extremely interesting, and chiefly so as showing the results of different systems of management. No. 1 has been repotted without the ball of earth being disturbed; while No. 2 has had the soil and offsets removed at every potting. No. 2 has been in its owner's hands six years as against the eighteen years of No. 1, and yet is six inches taller, and nearly the same circumference. In the matter of blooms it certainly falls 173 short; but the 140 flowering bulbs which have been taken from it account for at least quadruple that number of flowers. On the whole, therefore, the system of culture accorded to No. 2 seems to have been attended by the better results; and, I think, very naturally so, as, providing the bulb is in no way injured when repotted, it will start with greater vigour in thoroughly fresh compost than in soil from which a portion, at least, of the nutriment has been already extracted. It would be instructive to know, for the sake of further comparison, the number of stems thrown up by No. 2, and the size of the pot it occupies; also the compost used for both specimens. The notes, at all events, show that every possessor of a bulb of Lilium auratum has before him the possibility of attaining similar success, and that by more methods than one.—Wraith, *S. Devon.*

REPLIES.

14633.—**Raising Calceolarias and Petunias from cuttings.**—These will form roots in a cold frame. The Calceolarias may remain there all the winter, but the Petunias should be wintered in a house from which frost is excluded. Petunias may be grown from seeds sown early in the year; they flower finely the following season. —J. D. E.

14630.—**Raising Lobelias from seed.**—We have not yet sown our seeds, but will do so at once. It is best to sow as soon as ripe, either at the end of August or early in September. The seeds are very small, and should be sown in seed-pans, pots or boxes. The seeds will vegetate freely out of doors. Indeed, we sometimes trust to self-sown plants which come up abundantly where the plants are growing. It is better, of course, to place the pots or pans containing the seeds in a frame.—J. D. E.

—— I have known some few gardeners make it a practice to sow Lobelia seed in the autumn, when they have no heated house to devote to it in the spring, and they have found it to answer very well. Unless you have a greenhouse, it will be of no use for you to adopt the same plan, as you would not be able to keep the young plants through the winter; but if you can give it such accommodation, you may sow the seed at once. Prepare a large seed-pan, and fill it with fine sandy soil, and then sow the seed thinly, and cover it with a little silver sand. You must be very careful in watering the soil all the winter, and not allow it to get too wet, or the plants will damp off.—J. C. C.

—— The best way of doing this is to sow in November in a cool greenhouse, and the seed will germinate very well at some time before the beginning of the new year. Lobelia seed differs from that of tender plants generally in germinating at a uniformly low temperature, and it is therefore a mistake to sow, as is so often done, in heat in spring. Plants raised in warmth and grown along in it have not that sturdiness and vigour of habit which distinguishes such as come along very slowly, without more artificial warmth than is necessary to preserve them from frost. Sow the seed thinly, and place a piece of glass on the pan till the plants come through, and in March they may be pricked out into pans or boxes, or put into small pots.—J. C. B.

14645.—**Heated room for wintering tender plants.**—I have kept Geraniums, both cuttings and old plants, in a small room with a large skylight looking west (no other window) no fire or heat of any kind in the room, all through the winter. The pots stood on a large tray, and were watered once a week, and the dead leaves picked off. I kept some Arum Lilies in the same room till they flowered, giving them, of course, more water. I found all the plants, when they came to be bedded out, in a much better condition than those that had been wintered in a frame with oil lamps.—M. N., *Oxford.*

THE CREEPING MYRTLE, OR BOSTON VINE.

This plant (Myrsiphyllum asparagoides) is allied to the common garden Asparagus. It is a native of the Cape of Good Hope, and therefore is almost hardy in this country, and it is one of the best plants for growing in an unheated house, while it will also thrive well — perhaps too vigorously — in one that is heated.

As may be seen from the illustration, it is a twiner, and, being a rapid grower, it entwines itself around a pillar or festoons a rafter in a season or two. Graceful as it is when seen in a greenhouse, its chief use is to furnish delicate cut sprays for association with plants in vases, and it is able to furnish some of these sprays at any time of the year. Its foliage, resembling that of the Myrtle, has won for it the name of the Creeping Myrtle or Myrtle-leaf; some years ago it used to be a favourite object of culture of the florists of Boston, who supplied the New York market with plants of it on a large scale, and hence it was called by some the Boston Vine. The foliage is a fresh lovely green, and during summer the plant bears a multitude of tiny white flowers which are followed by globular berries, and the flowering and fruiting stages are both beautiful phases of the plant.

Its delicacy and beauty especially adapt it for use in rooms, and it does not mind a dry atmosphere, as so many other plants do. It is, undoubtedly, not half well known enough, and even nurserymen do not grow it in sufficiently large numbers to be able to sell it as cheaply as it should be sold. It is, above all, an amateur's plant; it is of easy culture, only requiring a good loamy soil, and it may be grown either in a pot or planted out. Being an evergreen it may be planted at any time of the year.

The Creeping Myrtle (Myrsiphyllum asparagoides).

GARDENS OF LIGHT AND SHADE.*

GROUPING.

A little knowledge and some good taste displayed in the grouping of trees and shrubs are indispensable to the grace and beauty of a leafy garden. Just as some people are able to make cut flowers go farther and appear to so much greater advantage than other people, so in the arrangement of a garden the possession of good taste is all-important to prevent ugliness and waste. A few common trees and plants arranged by one gifted with this qualification will avail more than a wealth of choicer varieties "put in" by row and measurement as they first come to hand.

In planting and grouping we need to remember Cowper's pleasant teaching when he says:—

"Here also grateful mixture of well-match'd
And sorted hues, each giving each relief
And by well-sorted beauty shining more,
Is needful. Strength may wield the ponderous spade,
May turn the clod and wheel the compost home;
But elegance, chief grace the garden shows
And most attractive, is the fair result
Of thought, the creature of a polished mind."
"*The Task*," Book III.

A group of trees and plants is a most desirable object when space allows of it. It is best that the group should not be too dense, but rather that it should be graceful, and, in a measure, transparent, permitting the play of sunlight among the leaves, and presenting us with the charming combination of green foliage and blue sky which in Nature produces the most beautiful of all effects.

To this end, the central and tallest trees of the group should be of thin and feathery habit, easily stirred by the summer air. The Acacia, the Common Birch, with its pendulous variety, and the Pendulous Willow are among the best which can be obtained for the purpose. Among more expensive trees, the deciduous Cypress is a beautiful subject for grouping, the only objection to it being that it is particularly stiff and inelegant when bare of leaves. The chief aim should be to introduce contrasts and harmonies of foliage. The central group may be of Silver and Pendulous Birches, Pines, White Poplars, and Acacias, flanked by Laburnums, Flowering Currants, Scarlet Thorns, Variegated Elder, Acer Negundo, Privets, Brooms, Weigela rosea, and some of the Spiræas; while, for outer garniture, take Aucubas, Rhododendrons, Variegated Box, Mahonias, and Euonymus. Evergreen trees may be grouped alone, with a result of great beauty. Spruce Firs, the Weymouth Pine, and Pinus Cembra may form the centre or background, with Hemlock Spruce (Abies canadensis), Phillyrea, Thujas, and Yews, green and golden; next with Aucubas, Box, and diminutive shrubs in the foreground. But if deciduous trees be altogether excluded, we lose the exquisite contrasts at springtime, when the sombre foliage of the Firs is relieved by the emerald and topaz of the boughs waking from their winter sleep.

A simple group, composed of three Silver Birches and three Cupressus Lawsoniana, surrounded by half-a-dozen dwarf Box trees, has been found effective. The total cost of such a group would be about ten shillings. In the spring-time the spaces between the shrubs are filled with Hyacinths and Narcissi, and in the summer with Cannas, Aralias, Chilian Beet, and other plants of striking foliage.

ROCKERIES.

An ordinary rockery is an outrage, and, when viewing it, we recall the lines in which Cowper fitly rebukes the scene:—

". . . where Industry misspent,
But proud of his uncouth, ill-chosen task
Has made a heaven on earth; with suns and moons
Of close-rammed stones has charged the encumbered soil,
And fairly laid the zodiac in the dust."

We have known gardens where flint-stones, broken earthenware, lustres from fractured chimney ornaments, sea shells, spar, and even gingerbeer bottles and brown teapots have formed the incongruous items of huge erections dignified by the name of grottoes or rockeries, and which naturally bore considerable resemblance to unsifted dust-heaps.

On the other hand, numerous pleasing effects may be obtained from rockeries designed with judgment. An ordinary rockery should be begun by piling up a few cartloads of garden mould in an irregular mound. A load of gasworks or brickfield burrs—the former are the most effective—should be then disposed tastefully about it, in imitation of natural rock, and when the earth has had time to settle, suitable shrubs and plants may be placed as taste recommends. It should be remembered that the rockery is not to be expected to supply the chief beauty in itself, but to afford means for the display of beauty in leaf and flower. When this is borne in mind, a rockery may prove of much service. Besides affording opportunities for the cultivation of curious and beautiful Alpine plants, many ordinary flowers will show to advantage upon its steep and broken sides.

LIST OF VARIOUS FLOWERING PLANTS.

To ensure a succession of blossoms from February to November, and, in mild winters, almost throughout the year:—

Name.	Colour.	Duration.	Time of Flowering.	Time to Plant.
Snowdrops...	White	Perenn.	Feb., Mar.	Sept. to Nov
Crocuses ...	Various	,,	,,	,,
Scillas	Blue	,,	,,	,,
Hyacinths .	Various	,,	Mar., April	,,
Narcissi.....	Mostly white & yellow	,,	Mar., April, May	,,
Anemones ...	Various	,,	,,	,,
Primroses ...	Pale yellw	,,	,,	,,
Ranunculi ...	Yellow & white	,,	,,	,,
Periwinkles.	Blue	,,	May, June	Oct. to Mar.
Foxgloves ...	Pink & white	Biennial	,,	,,
Iris	Various	Perenn.	May, June, July	Oct. to Dec.
Wallflowers	Brown, yellow, & striped	Biennial	April, May, and all the year round at times	Oct. to Feb.
Campanulas	Light blue	Perenn.	June	Oct. to Mar.
Primulas...	Purple	,,	May	,,
Delphinium.	Various shades of blue	,,	May, June	,,
Fuchsias ...	Crimson	,,	June, July	,,
Sweet Williams...	Various	Biennial	,,	Sow seed in May, plant out in autm
Antirrhinum	,,	,,	June to Oct.	,,
Carnations...	,,	Perenn.	July	Spring
Pinks	,,	,,	Juue	,,
Gladioli	,,	,,	June, July, Aug.	February
Columbines	,,	,,	May, June	Spring
Polyanthus .	,,	,,	April, May	Oct. to Mar.
Liliums (of kinds) ...	,,	,,	May to Sept.	Oct. to Feb.
Pyrethrums	,,	,,	April to Sept	Oct. to Aprl
Pansies	,,	,,	May to Sept.	,,
Alyssums ...	White	,,	May	,,
Geum (coccineum)...	Crimson	,,	June, July	,,
Perennial Sunflower.	Yellow	,,	July, Aug.	,,
Mimulus ...	,,	,,	June, July, Aug.	,,
Pæonies.....	Various	,,	May, June*	,,
Phloxes	,,	,,	July, Aug., Sept.	,,
Lychnis	Scarlet	,,	July	,,
Pentstem'ns	Various	,,	July, Aug., Sept.	,,
Hollyhocks .	,,	,,	,,	Oct. to Aprl or may be raised from seed.
Dahlias	,,	,,	July, Aug., Sept., Oct.†	May
Michaelmas Daisies ...	Lavender	,,	Sept., Oct.	
Chrysanthemums	Various	,,	Oct., Nov.	Spring
Pompones...	,,	,,	,,	,,

Geraniums, Lobelias, Calceolarias, and other "bedding-out" plants may be disposed informally about the borders in May, and will be seen to far better advantage in company than when planted formally and alone.

ANNUALS.

The rage for "annuals" is distinct and individual. Not a few people are found who,

* See previous articles, No. 330 and *ante*.

* May not bloom the first year.
† Tubers require to be lifted after first frost.

having limited their gardening operations to sowing the contents of a number of ill-selected packets of seeds, take to wondering that the result is not more gratifying and substantial. In general, the sowing of annuals may rank with that horticultural weakness of childhood —the raising of mustard and cress. The pleasure of sowing is exquisite, the speedy germination—"coming up," we ought to say—is delightful, but, alas! the harvest is fleeting. A day's inopportune rain, a passing indisposition, or twenty-four hours' forgetfulness of our hobby, and the crop has already become bloated and unlovely. In the same way, many annuals bloom unawares, or, it may be, they blaze forth for a week, and are seen no more except as unsightly litter. Undoubtedly, the question is one for individual taste, but for small suburban gardens, where birds and slugs abound, and the neighbours' cats have right of way, the list of annuals — so tremendous in its entirety — may well be limited.

Having said this much, it is the more grateful to pay tribute to the exceeding beauty of a certain few plants of the class, and to add that the following will well repay cultivation in every garden which is reached by a sufficiency of sunshine. They are especially selected on account of their long duration in blossom, and of the absence of that flimsiness which distinguishes so many annuals:—

Name.	Duration of blooming period.	Cultivation.
Zinnias	July to Oct.	Sow in pans in March, protect from frost, and plant out during third week in May; or, to save trouble, buy seedlings of any good nurseryman, and plant where they are to bloom.
Asters	Aug., Sept.	" "
Chrysanthemums	July to Oct.	" " or may be sown in open ground.
Helichrysum (Everlasting)	"	" " or may be sown in open ground.
Stocks (Ten-week).....	June, July	Sow in pans in Feb. and March, and plant out in April, or sow in open border.
Phlox Drummondi	July to Sept.	Sow in open border in April.
Sweet Peas ...	June, July	Sow in open ground, at fortnightly intervals, during March and April.
Mignonette ...	June to Oct.	" "
Nasturtiums (Dwarf and Climbing)	July to Sept.	Sow in open ground in March and April.
Larkspurs	July, Aug.	" "
Canary Creeper	July, Aug., Sept.	" " or in pans, and plant out.

To this list may be added, by those who have space for more, Calliopsis, French and African Marigolds, Poppies, and Sunflowers. The Marigolds and Calliopsis flower freely and long; the Poppies are fleeting, but particularly brilliant while they last.

ARRANGEMENT OF A FLOWER BORDER.

The following may be suggested as an arrangement for a central flower border, such as is not uncommon in gardens of oblong shape and no great width. It supposes an open border fourteen feet in width; length anything beyond twenty feet. The border is divided into a centre, and right and left wings, the latter being subdivided into three sections each, and an edging. Where there is a hedge or wall, the tallest plants should be, of course, placed next it; and in that case the "outer," "intermediate," and "inner" sections of, say, the right wing will be omitted, or, if the space be sufficient, double sections may be introduced into the remaining wing. "Bedding-out" plants may be added at discretion.

Right wing.—*Edging*—Silver Grass, Thrift, Alyssum, "Sheep's Ear," Variegated Thyme, Musk—not planted separately, in one long straight line, but mingled tastefully. *Outer.*—Crocus, Snowdrop, Primulas, Pinks, Carnations, Pansies, Mimulus, Polyanthus, Hyacinths, Narcissi, Tulips. Annuals: Dwarf Nasturtiums, Asters, Phlox Drummondi. *Intermediate.*—Campanulas, Sweet Williams, Antirrhinums, Gladioli, Iris, Columbines, Geums, Wallflowers. Annuals: Zinnias, Summer Chrysanthemums, Stocks, Larkspurs, Mignonette. *Inner.*—Liliums, Delphiniums, Phloxes, Foxgloves, Chrysanthemums, Cannas, Pyrethrums, Pentstemons, Marguerites, Lychnis, Fuchsias. *Annuals:* Helichrysum, Sweet Peas.

Centre.—It will add to the solidity of the border to have a few dwarf evergreen plants here; Irish Yews, Rosemary, Lavenders, Euonymus, Box, with strong clumps of Hollyhocks, Pæonies, Perennial Sunflowers, and Dahlias.

Left wing. *Inner.*—Repeat as above. *Intermediate.*—Repeat as above. *Outer.*—Repeat as above. *Edging.*—Repeat as above.

A FEW WORDS ABOUT LISTS.

A comprehensive list or catalogue of trees and plants is a very formidable thing, and to many it would be at once confusing and useless. Yet the attempt to present a selection is not without its difficulties, for much must be left to individual taste, and something must be surrendered even to prejudice.

It is to be doubted if any tree or plant grown under suitable conditions is devoid of beauty. A great deal depends upon the position in which it is placed, and the company it has about it. A Black Poplar standing alone in a neglected plot of ground is a deplorable object. Even a Lombardy Poplar possesses little beauty if grown singly. But among other trees, both may take their places not only without offence, but with advantage to those contrasts of form and foliage upon which leafy gardens depend so much for their charm and interest.

But, while opinions will differ as to the value of the following lists, and some readers, primed with more or less knowledge, will set about to discover what they will be pleased to consider faults of omission and commission, the writer can only plead that, inasmuch as he has possessed or closely observed specimens of every plant recommended, he is able to say of the following lines that they contain nothing but plants which have been proved to thrive under conditions similar to those treated of throughout these articles. In this respect the lists are in keeping with the views and plans, already published in Gardening. They exhibit selections of trees and plants actually growing and prospering in the atmosphere and amid the surroundings of suburban gardens, with no other advantage than that which comes of careful disposition and arrangement. Short as the lists may appear to those acquainted with ponderous botanical encyclopædias, or even with the seductive catalogues of nurserymen, they provide for much variety of foliage, a garden of flowers during three-quarters of the year, a harvest of familiar fruits, and, what is not a little important, they suggest only reasonable demands upon the pocket.

List of sixteen inexpensive ornamental deciduous trees.—Mountain Ash, Pendulous Birch, Silver Birch, Acacia (Pseudacacia), Acacia rosea, Laburnum, Lombardy Poplar, Abele Poplar, European Lime, Chestnuts, Sweet Almond, Purple Beech, Deciduous Cypress (Taxodium distichum), Bird Cherry, Catalpa syringæfolia, Flowering Ash. *List of thirteen evergreen trees.*—Spruce Fir, Weymouth Pine, Cedrus Deodara, Arbutus Unædo, Thujopsis borealis, Blue Spruce, Wellingtonia, Evergreen Oak, Pinus Pinaster, Pinus austriaca, Cypress (Cupressus Goveniana), Picea Balsamea, Picea nobilis. *List of eighteen evergreen shrubs.*—Thujas (of kinds), Portugal Laurel, Laurustinus, common Laurel, Hemlock Spruce (Abies canadensis), Cupressus Lawsoniana, Rhododendrons, Yews (of kinds), Hollies (of kinds), Box (of kinds), Euonymus, Phillyrea, Mahonias (Beallii and aquifolia), Sweet Bay, Aucuba japonica, Berberis Darwinii, Irish Yew (fastigiata), Cryptomeria elegans. *List of eighteen deciduous shrubs.*—Lilacs, Guelder Rose, Variegated Elder, Golden Elder, Privet, Oval-leaved (may be almost classed among the Evergreens), Privet (common), Flowering Currants (of kinds), Scarlet Thorn, Syringa (Philadelphus), Barberry, Weigela rosea, Broom, Spiræa bella, Spiræa prunifolia fl-pl. Sweetbriar, Berberis (purple-leaved), Logwood. *List of perennial climbers for walls, trellis, and trees.* — For walls: Magnolia grandiflora, Euonymus (flavescens), Pyracantha, Wistaria, Jasmines, Ivies, Pyrus japonica, Ampelopsis Veitchii, Vines, Cotoneaster, Roses (of kinds). For trellis and trees: Vines, Clematis Jackmanii, C. rubella, C. Standishii, C. lanuginosa, small sweet-scented Clematis, Passion Flower, Honeysuckles, Cobæa scandens (roots need to be protected in winter), Virginian Creeper, Japanese Honeysuckle, Roses.

List of trees and shrubs especially suitable for small gardens.—Evergreen: Phillyrea, Box, Mahonias, Laurustinus, Spruce Fir, Hemlock Spruce, Yews, Euonymus, Thuja, Rhododendrons, Lavender, Rosemary, Irish Yew. Deciduous: Acacia, Silver Birch, Pendulous Birch, Almond, Golden Elder, Oval-leaved Privet, common Privet, Broom, Spiræas, Sweet Briar, Azaleas, Cotoneaster, Southernwood. *List of eight hardy Roses.*—Gloire de Dijon (faun yellow), Edouard Morren (red), John Hopper (rosy crimson), Mrs. Fisher Holmes (deep crimson), Marie Baumann (red), Coquette des Blanches (white), Lord Clyde (rich crimson), La France (pale peach, with rosy centre). *List of shrubs and plants suited for growing under taller trees and in shady places.*—Snowberry, common Privet, Laurels, Mahonia aquifolia, Box, Brambles, Ivies.

List of hardy flowering plants suitable for shrubberies and shady places.—Anemones, Primroses, Periwinkles, Ranunculus, Forget-me-not, Violets, Harebells, Lilies of the Valley, Scillas, Narcissi.

BULBOUS FLOWERING PLANTS.

These plants well deserve a special mention, for to none is the flower-garden more indebted for embellishment. Many examples of this group combine in a rare degree beauty of form, delicacy of colour, and sweetest fragrance. Beginning with the lowly Snowdrop in February, followed by the brilliant Crocus and Daffodil in March, these in their turn succeeded by the Hyacinth, the Jonquil, the Tulip, the Polyanthus Narcissus, and most beautiful of all the N. poeticus in April and May, we find the long procession continued through the summer and well into autumn by the Ixia, the Iris, the Gladiolus, and the Lilium. They range through all gradations of size and colour, and are remarkable alike for flowers of purest white, as for blossoms the most gorgeous and magnificent which deck our garden borders.

A modest collection is shown in the following list. All the sorts named will flower freely in the open ground, and, if ordinary care be used in digging, the plants will reappear year after year. The Gladiolus will require lifting. This should be done in October, and the bulbs may be replanted in February. Of the others, some are apt to deteriorate after a two or three years' flowering, and require renewal. A good plan is to grow the fresh plants in the more conspicuous places, and, after they have flowered, to transfer them to the shrubberies and side-borders. The Liliums, however, are best left undisturbed;—Snowdrops; Crocus (of kinds); Scillas (for shrubberies); old double Daffodil; Narcissus biflorus; N. odorus fl.-pl.; N. polyanthus (of kinds); N. poeticus; Jonquils; Tulips: Molière, Duc de Brabant, Rosa Mundi, Rex Rubrorum, Titian, Parrot; Hyacinths (of kinds); Gladiolus Colvillei; G. C. alba; G. brenchleyensis; G. gandavensis; Iris (of kinds); Lilium auratum; L. longiflorum; L. lancifolium speciosum (of kinds); L. tigrinum (of kinds); L. umbellatum.

LIST OF FRUIT TREES.

Apples.—Blenheim Orange (dessert), Ribston Pippin (d.), Lord Suffield (cooking), Golden Pippin (d.), Hawthornden (c.), Keswick Codlin (c.), Devonshire Quarrenden (d.), Wellington Pippin (d. and c.).

Pears. — Williams' Bon Chrétien, Autumn Bergamot, Marie Louise (good for wall).

Plums. — Victoria (red), Orleans (purple), Royal Hâtive (for wall, purple), Gisborne's (yellow), Greengage.

Currants. — Red Champagne, Red Dutch, White Dutch, Lee's Prolific (black), Black Neapolitan.

Gooseberries. — Greengage, Crown Bob, Red Warrington, Smuggler.

Strawberries. — British Queen, Dr. Hogg, Keen's Seedling.

Raspberries.—Fastolf, Antwerp White, October Red.

Grapes. — Buckland's Sweetwater, Black Hambro'.

Damson.—Crittenden's.

Nuts.—Cosford, Red Filbert, Kentish Cob.

A GARDEN OF FLOWERS FOR A SHILLING.

A truth, which is constantly forced upon thinkers, is how greatly mankind, in a search after less valuable acquisitions, neglects certain gifts of Providence whose use would serve to embellish the surroundings of mean and sordid lives, and would awaken a new sensation of pleasure in hearts where now pleasure is rarely felt. Much has been lately written about improving the homes of the poor, and all practical writers have recognised the great—the initial—difficulty, how to arouse in the subject a wish for better things. The surroundings of dirt and squalor have become so natural, and the dislike to cold water so deep, that reformers need all their enthusiasm to save them from despair of helping those who will make no sort of effort to help themselves. Although these papers are not addressed to the very poor, some readers may well apply to themselves the lesson which reflection will draw from this—a digression only in appearance. Where a piece of ground is attached to a house, that piece of ground is part and parcel of the home. The tidiness which stops short at the door-step and garden-porch is deficient in catholicity. It differs only in degree from the cleansing which is limited to the parlour and best bedroom, and no good housewife should be content with it. Neither is it a valid excuse that "the children won't let anything grow," but rather an indictment of parental incapacity or neglect. The moral and educational value of a garden is but poorly realised. A very small plot of ground may become a source of knowledge and observation, and may be made a means of inculcating in children the virtues of self-restraint and obedience in a way none can appreciate but those who have tried the experiment. There are few people who do not love flowers; with children the love is instinctive, and though it must be admitted that, left to themselves, they are apt to show their affection for a blossom by plucking it, a very little trouble will not only ensure abstention on their part, but will transform them into vigilant custodians of both flowers and fruit. An explanation more to the purpose is that, "we really cannot afford to spend money upon the garden," and, although, throughout these articles, slender means have been kept steadily in view, and there is no suggestion of extravagance any where, yet it is not to be denied there are many to whom even a moderate outlay for trees and shrubs would prove too great a strain upon incomes already attenuated to the utmost.

It is to such that this additional note is addressed. And if we can show them that, by a little healthful amateur labour and an outlay in money of a single shilling a measure of perennial beauty may be secured to small plots of ground now desolate and void, excuse on the score of expense cannot be any longer reasonably urged, and any doubt as to the practicability of what follows is set at rest by the statement that nothing is recommended but what has been already carried out with success.

The purchases are to be as follow:—Of mixed Wallflower seed, two pennyworth; of mixed Antirrhinum seed, ditto; of mixed Sweet William seed, ditto; of Summer Chrysanthemum seed, ditto; of mixed Dwarf Nasturtiums, ditto; of Golden Feather (Pyrethrum A.), ditto.

During the first or second week in February, sow the Summer Chrysanthemum seed, Nasturtiums, and Golden Feather in light earth, contained in pans or shallow boxes. Keep in moderately warm place, the earth to be slightly moistened from time to time; and, as the spring advances, move the boxes into cooler quarters in order to harden the plants and prevent too quick growth.

During the latter part of March sow the Wallflower, Antirrhinum, and Sweet William seed, thinly in drills, or broadcast upon a sunny piece of ground, neatly dug and raked. Sprinkle with water from a rose and cover with a few bushes. Towards the end of May, the gardenborders having been well dug and the clods broken, plant out the Wallflowers in clumps or curving lines at intervals of fifteen inches between plant and plant. Where the border is backed by a wall or fence, the Wallflowers should be put in the rearmost positions, fifteen inches from it; where the border is an open one, surrounded by gravel or turf, the Wallflowers should be grouped in the centre.

Additional plants may be disposed tastefully in advance of the others to prevent absolute formality. In the intervals between the advanced Wallflowers, a single Antirrhinum root or three of Sweet William or of Nasturtiums may be planted, and slightly in rear of the two latter put a Summer Chrysanthemum. The latter grows about two feet in height. The outer edging should be formed of clumps or lines of Golden Feather, the minute plants of the latter being placed four or eight inches apart, according to taste and the extent of ground to be covered. Showery weather should be chosen for planting, and water should be put to the roots to prevent the plants from flagging. When these operations have been completed, the garden, viewed from the windows, will appear to have gained little unless in the tidiness of neatly-dug borders. But be not too impatient. By the middle of July, the Antirrhinums, Summer Chrysanthemums, and Nasturtiums will be in full bloom; here and there, too, a Sweet William may have sent up a flower stem, the Wallflowers, which will now be much improved by cutting back, will have attained to respectable proportions, and the tiny golden dots in the foreground will have become compact and shapely rosettes.

During August, September, and October, the Antirrhinums and Summer Chrysanthemums will blossom, the former affording many varieties of colour, and the latter lighting up the borders with their beautiful pale blossoms. The Golden Feather will have developed into thick masses of leafage, and will be all the thicker and better if it has been trimmed back from time to time and kept from flowering. The wall-flowers have grown into miniature shrubs, and unless severe frost ensue they will remain throughout the winter clothed in Lincoln green. If the weather prove mild, a plant here and there will begin to flower in November and continue throughout the winter. The Nasturtiums and Summer Chrysanthemums will wither in the first sharp frost and must be removed. Under the leaves of the former the ground will be covered with fallen seed, which may be dried and preserved for the next spring sowing. In April, the whole army of Wallflowers will come into bloom, and the garden will be redolent of sweetest odours, and bright with every shade of colour, from pale yellow to sienna, and from sienna to dark brown, with here and there a plant clothed in crimson and purple. This display will continue till the early part of June, when the plants should be cut well back. By that time the Sweet Williams of the previous year's planting will show in masses of colours—white and pink and crimson, with all kinds of delicate variations—scarcely two plants flowering alike. Another month, and the Antirrhinums, Summer Chrysanthemums, and Nasturtiums will be in full bloom—among the first, some of last year's plants, but the two latter, being annuals, must be renewed by sowing every spring.

Thus the circle of the year will be completed, and, it may be predicted, with satisfaction to any one who will try the experiment. Anything more sweet than a garden of Wallflowers at bloom-time it is difficult to imagine. The variety of shades in yellows and browns is astonishing, and if the pocket be deep enough to allow of the addition of Narcissus and Narcissus Polyanthus, some splendid harmonies of colouring may be obtained; but, given a few hundred Wallflowers and taste in their disposition, a garden need never be bare of beauty. Besides their recommendation of evergreen foliage, among a larger number some will be in bloom any month of the year, and in a garden of Wallflowers, a bunch of blossoms at Christmas is very commonly obtainable. A few of the handsomest Wallflowers and Antirrhinums should be allowed to ripen their seeds for sowing the following spring. The plants are always at their best during their first year, and the former are less liable to be cut off by frost when young. The Golden Feather should be renewed by sowing, while the old plants may be raised, divided, and the fragments replanted during the last week in March or thereabouts. A single fibre of root appears sufficient to ensure growth.

B. B. R.

THE KITCHEN GARDEN.

Gathering crops when ripe.—There is scarcely a cottage-garden in which one does not see wastefulness in neglect to gather things before they grow too old for use. We feel sure that people do not know how much they lose by not cutting things when they are ripe for cutting, whether they want them for their own consumption or not. Lines of hard Peas, great hard Vegetable Marrows, and Cucumbers ripening seed may be seen everywhere, with the consequent result that the young fruits which ought to keep up a successional supply cease to grow. It would often pay to gather and give them away, if they are not wanted for home consumption. Take, for example, a bank of Vegetable Marrows. If a few of them are allowed to get big and full of seeds, the little ones get hard and cease to grow; but cut all when they reach the proper age for use, and the plant is enabled to devote all its strength to the production of the young ones, which are rapidly forced forward in a perfectly tender condition for the pot. The fact is self-evident, almost, but it is lost sight of nearly everywhere.

The Onion and Carrot maggots.—Having read in GARDENING (No. 341) a letter on the Onion maggot, I venture to send you my experience in the matter. For years I had been unable to grow Carrots in my garden, even when the bed had been limed before the seed was sown; the Carrots were all destroyed by maggots. Through a gentleman from Scotland, I heard of the simple remedy of sowing Onions and Carrots in close proximity, the maggot of the one having such a deadly hatred of the other, that, if near, they would fight till they had mutually exterminated each other. On trying the plan of sowing the seed in alternate rows, I have now good-sized Carrots perfectly sound, also good sound Onions. It would be interesting to know if others found this plan answer.—C. A. B., *Cumberland.* *** *"C. A. B.'s" plan of insuring immunity to his Carrots and Onions from the attacks of maggots is quite new to me. It may answer; but if it does, it cannot be from the cause he mentions, but more probably from the Carrot-fly disliking the scent of the Onions, and* vice versâ. *However, I do not think this plan will be found to succeed. Probably "C. A. B.'s" Carrots and Onions would be just as free from grub if sown apart from one another. The idea of maggots fighting* à la *Kilkenny cats is very amusing; one would not naturally imagine that any feelings of animosity would ever ruffle the placid breast of a plump maggot surrounded by food. What a blessing it would be to gardeners if all maggots could be endowed with this combative spirit!—G. S. S.*

Mercury.—Some time ago I saw that some one asked in GARDENING ILLUSTRATED where Mercury seed could be obtained. Having a bed I let it go to seed, and have gathered it in good condition, and I shall be pleased to send any subscriber a packet on receipt of a stamped addressed envelope.—I. PLOWRIGHT, 69, *High-street, Grantham.*

REPLIES.

14673.—**Growing Mushrooms in meadows.**—The school-boy is not told how to dibble in his Mushroom spawn. The way my boy does it is to dig out a hole large enough to hold a bushel of horse-droppings. He treads this in firm; lays three or four pieces of spawn on the top; places the turf, which has been cut three inches thick, over it; beats the turf down again; and gathers the Mushrooms in due course.—J. D. E.

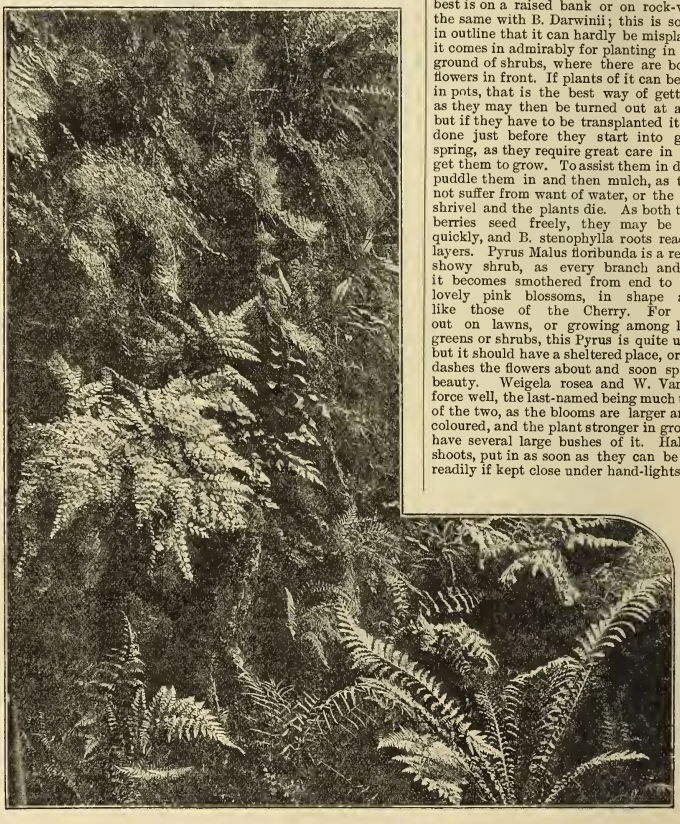
14732.—**How to distinguish Watercress.**—The Watercress belongs to the order of plants called *Cruciferæ*, on account of the petals of flowers being arranged in a cross shape, and may be distinguished from any plant having poisonous properties by its solid, succulent stems, its pinnate leaves, having the leaflets roundish, slightly lobed, or waved at the edges, and the terminal leaflet of each leaf larger and broader than the others. The flowers are white, and may be seen from June to August. The plant which is most often mistaken for it is the Marshwort (called by country people Fool's Watercress), belongs to another order of plants, the *Umbelliferæ*, and has hollow stems, which the leaf-stalks sheath; the leaflets are pointed, and have serrated edges, the terminal one not usually differing in size or shape from the others. The flowers are very small and greenish white, appearing in July and August. Watercress may be gathered during the greater part of the year.—J. WOOD, *Reading.*

OUR READERS' ILLUSTRATIONS.

Naturally planted Ferneries.

We are happy to see that in small greenhouses people are beginning to take greater advantage of the system of planting out Ferns, instead of growing them in pots on stages, which, however useful they may be for growing individual specimens, are in most cases ugly. Lately we have had sent us several photographs representing rocky ferneries under glass, with the plants growing vigorously in quite a natural way. One of these we reproduce here. The illustration shows Ferns growing in all their native luxuriance, and there is no reason why any one having a small glass-house should not have something of the same sort. All that is required is a little knowledge of the subjects to plant, so that those that require dissimilar treatment should not be put together. Hardy Ferns, for instance, should not be placed with those that require heat, otherwise it is evident the hardy ones will grow weakly, or, if the temperature is kept low, the others will not succeed. Hardy Ferns and greenhouse Ferns do well together, and in the cut a great variety of exotic Ferns is shown. Maiden-hair Ferns, such as Adiantum hispidulum, are prominent; so is Nephrolepis exaltata, one of the best Ferns for planting out on rocky walls. Then there is a Fern that accommodates itself to the greenhouse as well as to the stove—Pteris longifolia. The large Fern in the front is a native of South America, called Blechnum corcovadense, and intermixed with these are some of the innumerable hardy Ferns, varieties chiefly of the Male and Lady Ferns (Athyrium Filix-mas and A. Filix-fœmina). Other capital Ferns for the purpose are the common Maiden-hair, the Cretian Pteris (P. cretica), P. serrulata, P. umbrosa, P. tremula, and Platyloma rotundifolia.

The choice of the material with which to build these rocky ferneries is of the first consideration. We think the material of which the one here shown is built is cork: this we do not consider good at all. It soon rots, and then the growth of several years is in a measure spoilt—in fact, the fernery has to be rebuilt again in a few years. Nothing is better than rock; all the better if it is a porous stone, such as tufa, although the price of this is prohibitive to many. We have seen some really picturesque ferneries made out of rough brick burrs, particularly after these have been exposed to the outside air for some years, have become saturated with moisture, and have lost that ugly raw appearance which they at first possessed. Their surface is then ready to nurture the roots of Ferns, and also affords a suitable foothold for the myriads of Fern seedlings which invariably crop up in ferneries, and which add so much to the natural beauty of this arrangement. In town gardens, where a plentiful supply of water is laid on, little rills trickling over a rocky fernery may be introduced with great advantage and without much trouble, and if it can be made to fall so as to cause a spray it will be all the better for the Ferns, particularly those that require a deal of moisture about them, such as the Killarney Fern, which may be grown admirably in a cosy nook, where it receives an almost continual spray. We look forward to the time when stages will be abandoned in very small houses, and plants will be grown in a natural way planted out on natural-looking mounds. Ferns particularly require this treatment. Of course, there are plants, such as Pelargoniums, Cinerarias, and Calceolarias, that cannot be planted out successfully so as to produce a good crop of flowers; these can be grown in an outside frame and introduced into the conservatory according to their season, and arranged in a group on the floor, with their pots hidden. It is, for instance, very nice in early spring to have groups of bulbous plants—Hyacinths, Narcissi, and the like; these may be followed by Azaleas and other forced shrubs, and, in fact, there is no season of the year at which a spot set apart in these conservatories for groups of plants grown in pots could not be kept attractive. The photograph here reproduced was sent by Dr. Chas. Good, Ashchurch-terrace, Shepherd's-bush, N.



Our Readers' Illustrations:—Ferns planted out in greenhouse. From photograph sent by Dr. Chas. Good, Shepherd's-bush.

TREES AND SHRUBS.

SPRING-FLOWERING SHRUBS.

The most striking amongst these until recently has been the Cydonia japonica, which, if it were a stove-plant, would be thought a great treasure and extensively cultivated; but, being hardy, is seldom seen. And yet what a brilliant display it makes against the wall of a house—especially if built with stone or light bricks, and then its big, deep, scarlet blossoms produce a striking effect. Where it does best is in light, dry, sandy soil, in a hot, sunny position, as there it makes short-jointed, hard, well-ripened shoots, that become crowded with bloom. As the habit of this Cydonia is naturally drooping and trailing, it is well adapted for rockwork or elevated situations, as then it can droop over and grow as it likes. The way to increase it is to put in cuttings in autumn, made of the young wood, and inserted in sandy soil under a hand-light, where, if kept close, they will strike in the spring. Plants may also be obtained by layering any of the shoots that grow near the ground, which only need burying in order to get them to root. Berberis Darwinii and B. stenophylla are both so good, that one hardly knows which to admire the more; the latter is very graceful in habit, and when covered with bloom looks all aglow when the sun is upon it. The position in which to see plants of this kind best is on a raised bank or on rock-work, and the same with B. Darwinii; this is so graceful in outline that it can hardly be misplaced, and it comes in admirably for planting in the foreground of shrubs, where there are borders for flowers in front. If plants of it can be obtained in pots, that is the best way of getting them, as they may then be turned out at any time; but if they have to be transplanted it must be done just before they start into growth in spring, as they require great care in lifting to get them to grow. To assist them in doing this, puddle them in and then mulch, as they must not suffer from want of water, or the bark will shrivel and the plants die. As both these Barberries seed freely, they may be increased quickly, and B. stenophylla roots readily form layers. Pyrus Malus floribunda is a remarkably showy shrub, as every branch and twig of it becomes smothered from end to end with lovely pink blossoms, in shape and size like those of the Cherry. For standing out on lawns, or growing among low Evergreens or shrubs, this Pyrus is quite unrivalled, but it should have a sheltered place, or the wind dashes the flowers about and soon spoils their beauty. Weigela rosea and W. Van Houttei force well, the last-named being much the better of the two, as the blooms are larger and deeper coloured, and the plant stronger in growth. We have several large bushes of it. Half-ripened shoots, put in as soon as they can be got, root readily if kept close under hand-lights, and the same with cuttings made from young wood in the autumn. Magnolia conspicua has been perfectly lovely this year, the spring having just suited it: the blossoms opened in all their purity, without stain or blemish from the weather, which often interferes with them and tarnishes their petals. For cutting just before they burst, I know of nothing so valuable as the flowers of this Magnolia, which are not only large and exquisite in form, as well as snowy white, but deliciously fragrant. As the plants come so early into bloom, they should be planted in very sheltered places, a wall facing the south, or the same position backed by close Evergreens, being the best. S. D.

Heating small greenhouse.—Will "Amateur," Peckham (p. 413), kindly say where he bought his oil-stove?—S. B.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR OF GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

14806.—**Salvia splendens.**—Will any readers kindly give me a few simple directions how to cultivate Salvia splendens?—SUBSCRIBER.

14807.—**Roses for Wandsworth.**—Will any grower kindly tell me what Roses are most likely to do well in this district?—A NOVICE.

14808.—**Grass turf.**—Will any one tell me when this should be laid? How must the ground be prepared? Where is the turf generally obtained?—NOVICE.

14809.—**Roses in pots.**—Will "J. C. C." or any other grower of Roses kindly give me a few simple directions respecting their culture in pots?—PUZZLED.

14810.—**Grafting stocks.**—Ought Paradise, Quince, and Mahaleb stocks to be grafted the first or second year after planting? Would any fruit-grower tell me?—A. W.

14811.—**Mice among Oats.**—Would any of your readers kindly inform me as to the best method of keeping mice out of stacked oats, which I do not intend to thresh until next spring.—A YOUNG FARMER.

14812.—**A cool greenhouse.**—Will any readers kindly tell me what should be the average temperature of the ordinary cool greenhouse, fitted for the accommodation of a general collection of plants?—R. HARRISON.

14813.—**Climbers in greenhouse.**—Will some one kindly advise me as to the best time to cut down climbers in greenhouse, as they now begin to look too much? Those in question are Maréchal Niel Roses, two Clematis, and a Tacsonia.—C. S.

14814.—**Double Begonias.**—After reading "B. C. R.'s" very interesting article on the Double Begonia in p. 405, I should like to ask how I could grow them satisfactorily in a lean-to greenhouse eleven feet by six, that gets the sun all day?—H. H., *Leytonstone.*

14815.—**Fruit-trees for N.N.W. wall.**—Will any fruit-growing readers kindly say what fruit-trees can be advantageously grown against a wall having N.N.W. aspect? The soil is clay, but I have a good border six feet wide by one and a half feet deep.—H. M. Q., *Gloucester.*

14816.—**Prickly Comfrey.**—I am about to have a small part of my kitchen garden laid down with Prickly Comfrey, as I keep a cow and am short of grass. Will any one kindly give me information regarding planting, treatment required, and best way of using it?—M. T. PARKER, *Bristol.*

14817.—**Creepers for exposed position.**—My house is in an elevated and exposed position. I wish to cone down the colour of the bricks by growing some evergreen creepers. Will some one tell me the best for the following aspects, clay soil—S.W., N.E., S.E., N.W.?—H. M. Q., *Gloucester.*

14818.—**Sawdust manure for Mushroom-beds.**—Will any one who has gained experience in Mushroom culture tell me whether sawdust manure from well-fed horses is suitable for the purpose; and, if so, does it require any different preparation from that of ordinary straw manure?—ADVICE.

14819.—**Mountain Ash berries.**—I shall be obliged if any one will tell me by what means the berries of the Mountain Ash can be preserved unwrinkled and fresh-looking for decoration through the winter months. What preparation (if any) is used, and is it now too late to gather them?—BARNSLEY.

14820.—**Vines.**—Would any readers be so kind as give me some advice about my Vines? In spring I planted two black Hamburghs outside my greenhouse, bringing the cane into the house up through a trench of earth and sand. I find now that roots have sprung out from the stalk into the sand and earth in the trench. Should these roots be cut off?—W., *Macduff.*

14821.—**Stocking greenhouse.**—I have just erected a small greenhouse (ten by seven). Will any of your readers advise me what to stock it with inexpensively and effectively, and the best kind of Grape-vine to have? Should the vine be planted outside and trained inside the house, or planted inside? I shall keep it heated. Aspect of house is south-east.—BEGINNER.

14822.—**A question of law—Trees overhanging garden.**—My back garden is overhung by the branches of a neighbour's trees ten or twelve feet, and, of course, being much shaded, we cannot get much to grow under them. Can I cut the branches back to the party-wall, nine inches wide, half of which belongs to each? They are not fruit-trees, and are in a London garden.—LANDLORD.

14823.—**Landlord and tenant.**—Will some of those readers who so kindly answered Queries 14476 and 14450 tell me whether, in giving up a garden which I have entirely planted, I must, according to law, leave everything in the garden? or can I move Raspberry canes, Gooseberry trees, flower roots, &c.? There is a fine young Apricot just come into bearing nailed to a wall; can I remove that?—E. S.

14824.—**Making a Fern-case.**—I should like to ask a few questions about the making of a Fern-case. 1. Should it be air-tight? 2. Should the Ferns be watered? If so, how often? 3. Should there be a false bottom in the case? If so, will a lead one do? 4. Is it necessary that the soil should be drained? I shall be greatly obliged if any readers will answer these questions in GARDENING.—S. WALPOLE, *Bradford.*

14825.—**Stocking greenhouses.**—I have two greenhouses, with heating apparatus—one twenty-five feet by twelve feet, and the other twelve feet by ten feet. The larger one is a lean-to and the smaller a span-roof. I am anxious to have a good supply of flowers during the winter, and should be grateful for hints. Would it be best to keep Roses and bedding-plants in the smaller one, or would it be best to use it for forcing?—PUZZLED.

14826.—**Peat-litter manure.**—I should be much obliged to any readers who have experience of manure from stables where "Peat-litter" is used instead of straw, if they will inform me (1) if ordinary hotbeds can be made of this manure, and an equal quantity of tree-leaves or grass mixed with it; (2) manure would supply the place of straw? (2) If this manure, used for mulching Strawberries or digging into vegetable ground, has any injurious effect?—Q.

14827.—**Brugmansia suaveolens.**—Will some one kindly tell me how to propagate the White Peruvian Trumpet flower? I have a specimen in my small greenhouse now with eighty blossoms on it, and in the middle of July there were over fifty. Therefore I can vouch for the correct account of it in GARDENING, page 411. "B." does not tell us how to propagate the plant. Mine is old, and is cut in very much every year and never put out of doors.—ANNETTE, *Warwickshire.*

14828.—**Treatment of Solanum Capsicastrum.**—I have some plants of this Nightshade that have been in the garden all the summer, two in pots and one planted out in clayey soil. I have watered them when I thought they needed it, and besides that I have not done anything, not knowing what treatment is needed. There is still bloom on the trees, but no berries have formed, the bloom always falling off. I shall be greatly obliged if any reader will give me information upon the treatment required.—S. C.

14829.—**Failure with Cucumbers.**—I shall be very much obliged if any vegetable-grower will tell me how I have failed in growing Cucumbers. They have been grown in a good soil of loam and leaf mould. There is a tank under the bed with four three-inch pipes in it; bottom heat about eighty degrees; top heat about sixty degrees at night, eighty degrees in the day; liberal supply of tepid water; syringed once a day. The Cucumbers are tough eating, and few swell, but curl up and turn yellow at the tip.—CUCUMIS, *Ipswich.*

14830.—**Gaillardias, Anchusas, &c.**—Will Gaillardias, Anchusa italica, Gypsophila paniculata, Rudbeckia Newmannii, and Pancratium illyricum live through the winter in a garden near London? Can they be propagated by cuttings, or is it best to treat them as annuals?—J. J. *** *The Gaillardias, Anchusas, and Pancratiums may be classed as tender plants that require protection during winter unless the season is exceptionally mild. The Rudbeckia and Gypsophila are both perfectly hardy. The Gaillardia and the Anchusa are apt to die off during the winter, and it is always well to be provided with duplicate plants. Propagate by division; the Anchusa from seed.*—ED.

14831.—**Grapes.**—I had a good crop of White Muscat Grapes on two vines. As they were quite ripe, I discontinued the fires, and kept both front and top sashes open a few inches. One morning I noticed that the berries were covered on the upper side with small brownish-purple epots. In a few days the skin got tender, and they began to decay. Will any vine-grower kindly tell me the reason of this? On one or two nights there was a thick fog, and, as I live in the suburbs of Manchester, it is possible that with the fog was mingled sulphurous or other chemical vapour. I may mention, as a curious fact, that, although I had some mealy bug on my Black Hamburghs and Lady Downes, the Muscat were never attacked by it.—J. S. D.

14832.—**Heating greenhouse.**—Would any reader of GARDENING kindly assist me as under? I have built in my back-yard a lean-to greenhouse, which is seventeen feet along one side by eleven feet along the other side, these two measurements being at right angles to each other. It contains about 150 square feet of glass on the roof. In it I have placed 100 pots, consisting of Geraniums, Fuchsias, and various other plants. As I am a complete amateur in flowers, this being my first attempt, I wish to know if it is necessary for me to have a heating apparatus in it during winter. If so, what is the best, cheapest, and handiest to have? Also, what temperature should be kept up? I get the sun from morning to night in summer.—PERPLEXED.

14833.—**Treatment of Camellias.**—I have two Camellias in pots, one white and one pink. Last winter they bloomed about February, in dwelling-house, in a south window, after which I put them in a hothouse kept at about seventy degrees, and during the summer they have been in a cool greenhouse. The pink one is now coming into flower, and in a few days will have two blooms open, finer than any it had last year. They are in seven-inch pots, and the pink one has twenty-seven buds on it, the white one nearly forty. Will any experienced reader of GARDENING advise me as to the best mode of treatment—if it will be advisable to thin some of the buds off, and how often I may give them weak liquid manure with safety?—AMATEUR, *Derby.*

14834.—**Amaryllis not flowering.**—Can any one tell me why my Amaryllises do not flower? I have had two fine roots (Ingwersen's and longiflora alba) for upwards of three years. They have fine foliage, but not the sign of a flower. I was told last autumn to dry them off entirely, which I did. In April I potted them in a compost of top spit silver sand (our soil is exceedingly heavy), rotten stable manure, and a little peat. I disturbed the roots but little, placing them in rather a larger pot. I took off all side-shoots, leaving only the centre one. I plunged the pots in a mild Cucumber frame; the result has been vigorous growth, the pots are covered with the leaves, some of them on formosissima a yard long, but no sign of a flower.—AMATEUR, *Cambs.*

14835.—**Fern-case.**—I have just constructed a rectangular fern-case, twenty-four inches by eighteen inches by eighteen inches, and placed it in a sitting-room window facing north-east. The case is filled with our common ferns, Polystichum angulare, Lastrea Filix-mas, Scolopendrium vulgare, and a few sprays of Wood Ivy, which have been planted in good soil of about eight inches in depth, with ample drainage. The top of the case is movable, and is tilted up during the day to admit air. Any moisture collected on the glass is rubbed off each morning. Would some reader kindly say if I have proceeded rightly so far, and what remedies to adopt should the ferns show any symptoms of damping off. Any hints will be most acceptable.—R. A. D.

14836.—**Salvia buds dropping.**—I have been greatly disappointed this summer owing to the bloom buds of both a red Salvia and S. patens (blue) dropping off just as they were showing colour. I attributed it to the long-continued drought. They made wonderful growth, and had frequent and copious applications of water applied to the roots, as well as overhead. The plants were also mulched in order to keep the roots cool and moist, yet this treatment did not prevent the buds dropping. I then hoped that the recent rains would cure the defect; but as yet I am unable to say whether they have benefited in that particular respect. They are grown in good loam and plenty of old, rotten manure. Have any other readers who have grown these plants experienced the same disappointment?—W. J. W., *Peckham Rye.*

14837.—**Suitability of large room for sheltering Chrysanthemums.**—Will "J. C. C." (who answered "Sydenham" in your issue of the 5th inst.), or any other Chrysanthemum grower, be good enough to give me a little advice? I, unfortunately, also have no glass-house; but I have two empty rooms, both very lofty. One is seven yards square, having two large windows facing west; the other, with two large windows facing south, is about nine yards square. All the windows have top and bottom sashes. Into one of these rooms I propose to place my Chrysanthemums when the proper time arrives for housing them, and I am anxious to learn if shelter of this kind would be likely to suit or injure my plants, and also which of the two is the better room for the purpose mentioned. I may add that the light to both rooms is very good, and that I reside quite close to the eastern side of Hyde Park.—CHRYSOS.

14838.—**Cactus Dahlia.**—I have been much perplexed by the behaviour of a Cactus Dahlia this summer. The plant is from a ground root that flowered well last year. This year, when started into growth, two cuttings were taken off the main root, and have done well in the flower garden. The main root was planted in a very rich and deeply dug portion of the kitchen garden, with fifteen single Dahlias intended for the supply of cut blooms. Each plant was three feet six inches from its neighbour. The Cactus Dahlia is now a bush five feet high, and four feet through, but its first flowers were produced only ten days ago (although the single Dahlias have been in full bloom for two months or more), and were small, open-eyed, and badly coloured. The plant flags in any strong sun or blustering wind. I have twice during the season put a mulching of rotten manure and leaf mould round its roots, and it has been well watered with liquid manure and rain water through the dry season. The failure of this plant cannot be owing to constitutional weakness, as the offsets do not flag, and are flowering well; and if it is the culture that is in fault, it at all events seems to have answered well in the case of the fifteen singles in the same bed, which are pictures of health and floriferousness. I should be much obliged to anyone who could suggest a reason and a remedy.—WRAITH, *S. Devon.*

14839.—**Orchards.**—The valuable information given by "J. D. E.," page 413, nearly fits my case. Will he kindly answer the following? I have taken an old orchard on lease for fourteen years. It has been much neglected for seven or eight years. It contains Apple, Pear, Plum, and Cherry-trees, and Gooseberry and Currant bushes. Some of these trees are old, some dead, some eight or nine years old, and others of varying ages, ten to twenty years. Soil, ten to fifteen inches black loam lying upon three to five feet yellow loamy clay, with a little sand in some places; under all chalk. S.E. of England. Now, in planting young trees should I trench, thus burying the top soil, or bastard trench, keeping the black soil on the top, or merely dig to twelve inches or so, only bringing to the top a little of the yellow clay? Should the Apples be grafted upon the Crab, Paradise, or Doucin stocks for dwarfing? And where can the two-year-old trees ready-grafted be bought for ninepence or less each? The prices in the nursery catalogues range from one to four guineas the dozen, selection to be left to the nurseryman! Would the dwarfing stock trees require much root-pruning to keep them fruitful, planted in trenched ground only eight feet apart? Some middle-aged standard Plum-trees bloomed well, but only set about six Plums each, and these were maggotty. Should they be thinned out at the top, or will manure, applied to the roots, restore them to fruitfulness? The ground has been starved for years, the fruit sold off, and no manure applied. The young Plum-trees had a very heavy crop of fruit.—N. WOOD.

14840.—**Pruning pyramid Apple-trees.**—We amateurs are no doubt the *bêtes-noires* of GARDENING, we must appear so helpless to those well skilled in the profession. A regular gardener, however, can scarcely imagine the interest we take in our small allotments, containing, perhaps, a couple of dozen fruit-trees, which was about the number I put in last year, some of my neighbours, with no further knowledge than myself, having done the same. We now spend hours, our gardening books in one hand and a sharp pruning-knife in the other, and wonder what should be done as regards pruning our pyramid Suffields, Cellinis, Betty Geesons, Oldenburghs, and Potts' Seedlings, the result of our deliberations being that we do nothing beside our gardening until we have obtained the advice of GARDENING, and there are doubtless hundreds of amateurs in the same benighted condition at the present time. Our trees cost 2s. 6d. to 3s. 6d. each, generally, though some procured in the immediate neighbourhood for 1s. each have, on the whole, done better than their more expensive neighbours. The trees have now put forth a few tufts of leaves on a small twig, about from three to six inches long, at the ends of the branches, where cut by the nurseryman before sending the trees out, not one, I think, having seen cut a fresh branch. What we wish to know is, Are we to cut those little sprouts? If not, no pruning at all seems requisite this year; but we fear that cannot be right. Perhaps we ought to have done something in the summer; which thought fills us with apprehension, fearing we have lost all chance of fruit for the coming season. Having never tasted such delicious Apples as some we have gathered to-day from our own trees, we are naturally desirous of having an increased nnmber next year. To show that we are not alto-

gether unsuccessful, I may mention that my left-hand neighbour carried off the first prize for Apples lately in competition with the professionals, whilst my right-hand neighbour received the second prize in the amateurs' department. Their success was, doubtless, mainly owing to the judicious pruning of the nurseryman, and what we wish to know is, how can we best follow in their steps, so as to have a seasonable supply of fruit? Will Mr. Groom, Mr. Douglas, or any other good fruit-growers come forward and help us in our difficulty, bearing in mind that the directions for amateurs cannot be too plain and simple?—W. W., *Staffordshire.*

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14841.—**Transplanting Araucaria** (*O. W. E.*).—Yes; you can transplant it now.

14842.—**Planting Cabbages** (*Enquirer*).—You may plant all kinds of winter greens now.

14843.—**Planting Roses** (*A Novice*).—Plant now, and give them a rich loamy soil, with plenty of manure.

14844.—**Yellow grass on lawn** (*Pongo*).—You will probably get a nice green under surface in course of time.

14845.—**Book on gardening** (*W. F.*)—Hobday's "Cottage Gardening" is a cheap book, and will probably suit you.

14846.—**Tree leaves for hot beds** (*Q*).—The leaves should be left in a heap in the open air until they are required for use.

14847.—**Parasite on Cytisus** (*J. Paterson*).—The parasite is probably one of the Dodders. Could you not send us a specimen?

14848.—**Rose amateurs' guide** (*J. Smith*).—Any bookseller will procure this for you. It is published by Messrs. Longman & Co., and the price is 4s.

14849.—**Pruning fruit-trees** (*Enquirer*).—You can prune them any time, after the leaves fall, up to February. Of course, you should not do the work in severe frosty weather.

14850.—**Planting Heather** (*C. W. E.*).—We should clear the ground of coarse vegetation, and put in young plants whenever they could be obtained during the coming months.

14851.—**Planting Ferns under shade of trees** (*C. W. E.*).—Clear the ground, give proper soil, and put in the plants whenever you can get them, from the present date till early spring.

14852.—**Planting bulbs** (*R. Harrison*).—Most of the common greenhouse bulbs may be planted now. You will find several articles on the subject in past numbers of Gardening, and some this week.

14853.—**Obtaining Hedera maculata** (*K. C. H.*).—This Ivy is not uncommon, and your nurseryman, if he does not keep it, should be able to get it for you. The present is the best time for planting.

14854.—**Seedling Briars** (*Lancashire Lad*).—Nurserymen do not usually advertise Manetti or Seedling Briars, but we dare say that you can be supplied with what you want at any Rose nursery.

14855.—**Marechal Niel Rose** (*Puzzled*).—You can plant the Rose outside the greenhouse, but you should take care to protect the portions of the stem outside by means of haybands. The temperature you mention would suit it.

14856.—**Sucker on outdoor Vine** (*A. Witchell*).—It can in no way injure the Vine, and if the original stem does not do well, the young sucker may be trained up in its place; or it may be taken to form a second stem, if you want it.

14857.—**Red and purple Laburnum** (*Enquirer*).—This plant is known as Cytisus Adami; sometimes red, purple, and yellow flowers are produced. Its origin is disputed, but the curious combination of colours is probably due to grafting.

14858.—**Temperature of cold greenhouse** (*J. H. H.*).—Generally speaking, such a house should be perfectly secure from frost in hard weather and at night; and with this reservation it should be left at the ordinary indoor temperature in our climate.

14859.—**Heating boiler with gas** (*P. J. A.*).—As the boiler only is to be heated by gas, and this can be done without letting the flame into the structure at all, you need certainly entertain no fear as to injuring the plants. Many small greenhouses are now heated by gas alone.

14860.—**Procuring Lathyrus latifolius albus** (*K. C. H., Argyllshire*).—If you try in some of the chief nurseries in Scotland, particularly those in Edinburgh, you will certainly be able to procure the plant. It would be invidious to mention the name of any one particular house.

14861.—**Substance for pots to stand upon** (*L. Harrison*).—Cinders, sand, Cocoa fibre, and gravel are used; but in winter in a cool greenhouse, with our moist climate, most people would dispense with all of these things as holding more moisture than they want. Something depends upon what you grow.

14862.—**Planting Clematis** (*Clematis*).—You can plant it any time in autumn, winter, or early spring, when the weather is suitable. C. Jackmanni, or any of the forms that come near it, will suit you. Give them good soil, such as occurs in the Wandsworth district, and we have no doubt you will have a good result in due time.

14863.—**Moving Raspberries** (*J. Hurst*).—They may be moved any time during the present or coming months. Raspberries are not very particular, but do best, as far as our experience goes, in rather moist and rich loamy soil; we have, however, seen them in splendid health on the Bagshot sand. Still, there is no doubt that in many soils they make poor growth.

14864.—**Cutting down climbers in greenhouse** (*Worcestershire Amateur*).—It is not usual to prune greenhouse Climbers before November or December. Then the rule is to prune the climbers in, and give the house a general cleaning. The climbers, unless they are very dense, will not materially affect the plants growing beneath at this time of the year.

14865.—**Pansies and their culture** (*A New Subscriber*).—Yes; there have been very many articles on the Pansy and its culture in Gardening Illustrated. A glance at the index to any of the volumes will show you how numerous have been the references to this popular flower. You will find directions as to cultivation and also a list of the best sorts in No. 296, and you need have no difficulty in procuring the plants from any good nursery.

14866.—**Growing Polyanthus Narcissus a second year** (*Worcestershire Amateur*).—Yes, you may pot them, and you will probably get almost as fine bloom as you did last year; but, as these Narcissi are so cheap, why put yourself to the trouble and run the risk of having a failure? The better way would be to plant the bulbs out in the border after you have forced them one year. You may then get a good crop of flowers after the pot plants are over.

14867.—**Eggs on Plum-skin** (*R. T. Bord*).—The eggs on the plum-skin are the eggs of the Vapourer moth (Orgyia antiqua), a very common insect, whose caterpillars feed on the foliage of various plants, and are particularly partial to fruit-trees and roses.—G. H.

14868.—**Treatment of Fuchsias and other plants** (*J. McCartey*).—See page 412 for the compost for greenhouse plants. August, or early in September, is a good time to take cuttings of Fuchsias, Geraniums, and Petunias; it is almost too late now, as no better accommodation exists than a window. It is not too late for Calceolarias. October is a good month in which to plant them. Use the same soil as for old plants, with the addition of a liberal proportion of sand. When sheep's droppings are used to make manure water, the liquid must be greatly diluted. Roman Hyacinths would grow and flower in the window; but the pots should be plunged out of doors until the bulbs start to grow; and they should also be placed on the sill outside in fine weather. All hardy plants must have plenty of air and light.—J. D. E.

14869.—**Parasites infesting Apple-trees** (*Miss Lowder*).—The most troublesome parasite is American blight (Aphis lanigera). It attacks the trees root and branch, and will in time kill them. The first inception of this pest is a white cottony substance attached to a crevice in the bark; this is the covering of small reddish insects furnished with a proboscis with which they extract their food from the tree. Many remedies have been suggested to destroy them. We think the best is to take a bottle of paraffin, and, with a small brush, touch the insects with the substance. It destroys the foliage, so that it is best not to apply it where it is not needed. The caterpillar of the Goat Moth (Cossus ligniperda) is very destructive; it bores into the main stem of young trees, causing decay. We have seen them as long and thick as a man's finger; they live two years in the larva state, and all that time they are working mischief by boring long passages in the wood. They can be killed by thrusting a flexible wire up the holes. The Apple Saw-fly (Tenthredo testudinea) is very injurious. In May it deposits its eggs in the blossoms, and the larvæ feed upon the interior of the fruit, which drops off long before it is ripe. The best way to destroy the pest is to gather the fruit as it falls, and destroy it. The caterpillar would eat its way out of the fruit, and form a cocoon in the ground, where it hybernates. The Codlin Moth (Carpocapsa pomonana) is the most injurious of all, we think; it also deposits its eggs on the young fruit in May. The small whitish grub eats its way into the Apple, and, in less than a month, it leaves the fruit and spins a cocoon on the stem of the tree. We look over the trees and gather the Apples, as the best way to get rid of it. The Apples have to be destroyed. Canker and mildew are both troublesome to the cultivator on some soils. There are also certain caterpillars which eat the leaves, such as the larvæ of the Lackey Moth, which lives in colonies, and is exceedingly voracious; they can best be destroyed by hand picking.—J. D. E.

TO CORRESPONDENTS.

A. Osborne.—There was no enclosure in your letter.——*Brownswood.*—Thanks. Could you not send us a written description of your method?——*A. W.*—The next fruit show at the Inventions Exhibition will take place on October 13.——*J. J.*—We cannot name the Plum from description—send us specimens.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communications respecting plants or fruits sent to name should always accompany the parcel.*

Names of plants.—*J. B. B.*—Fuchsia gracilis.——*F. T. Miles.*—Dahlia Zimapani—or, more correctly, Cosmos atropurpureus, as it is not a true Dahlia. It is not rare, but is certainly worth keeping, being so distinct from all single Dahlias.——*T. G.*—1, Nepeta Mussini; 2, Veronica speciosa; 3, V. imperialis.——*G. F. H.*—Pulicaria dysenterica (Fleabane).——*A Reader.*—Common garden Asparagus.——*T. G. T. L.*—1, Appears to be Rubus nutkanus; 2, Francoa sonchifolia.——*Mrs. E. Wyld.*—Aria latifolia.——*J. Renwick.*—Statice latifolia (every nurseryman should be able to supply this).——*E. N. Harefield.*—Euphorbia Lathyris; Salvia Horminum (*blue*).——*Lynn.*—Certainly not an Aristolochia; appears to be a Smilax.——*J. Hickin.*—Aspidium falcatum.——*W. S. Smith.*—1, Selaginella Willdenovi; 2, Adiantum Edgeworthi; 3, Platyloma rotundifolium; 4, Aspidium aculeatum.——*Subscriber.*—Seems to be the Macartney Rose; is certainly not the Japanese Ramanas Rose.——*W. T. O.*—Funkia lancifolia.——*Enquirer.*—1, Hibiscus syriacus; 2, Polygonum vaccinifolium; 3, next week.——*Mrs. H.*—1, Apparently Pentstemon confertus; 2, Betonica stricta; 3, Sedum reflexum; 4, S. Aizoon.——*J. G. Kirsten.*—Appears to be Pyrola rotundifolia.——*J. P. G.*—Tritonia aurea, a common plant in gardens; other next week.——*J. P. Lancashire.*—1, Cape Gooseberry (Physalis edulis); 2, Japanese Windflower (Anemone japonica).——*J. W.*—Polystichum aculeatum.——*George Fyfe.*—1, Onoclea sensibilis; 2, Polystichum angulare congestum (?); 3, Polystichum angulare lineare; 4, Polystichum aculeatum lobatum (number 2 is represented by only a barren pinna, but there is little doubt as to its identity, it being such a very distinct form of Polystichum angulare).——*F. D. Deare.*—Quercus rubra.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of Fruit.—*Ramhalo.*—1, Kerry Pippin; 2, send better specimen; 3, next week; 4, Duchess of Oldenburgh.——*Valentine Cluse.*—Hessle.——*J. D. A.*—Beurré d'Amanlis.——*G. L.*—Duchess of Oldeuburgh.——*R. Davis.*—2, Lord Suffield; 3, Gold Noble. Others next week.——*Nine Years' Subscriber.*—1, Duchess of Oldenburgh; 2, King of the Pippins; 3, Early Julien; 4, Summer Thorle.——*J. C.*—1, 3, Brabant Bellefleur; 4, Emilie d'Heyst; 5, Braddick's Nonpareil.——*A. H.*—1, Kerry Pippin; 2, Nonsuch; Pear, Hessle; Plums much decayed, probably Corse's Dictator.——*C. G. J.*—1, Blenheim Orange; 2, Yorkshire Beauty; 3, Rymer; 4, King of the Pippins.——*Sanguinea.*—1, Beurré d'Amanlis; 2, not known; 3, Seckle.——*E. H. F.*—1, Easter Beurré; 2, Louise Bonne of Jersey; 3, Beurré Diel; 4, Ne Plus Meuris. Others next week.

Catalogues received.—*Dutch and Cape Bulbs.*—Ant Roozen, *Holland* (Mertens & Co., 3, Cross-lane, St. Mary-at-Hill, London, E.C.——*Show Gooseberry-trees.*—John Bottomley, Copy Nook, Greetland, near Halifax.——*General Catalogue.*—Lambert & Reiter, Baumschulen-Besitzer, Trier.——*Dutch Bulbs and other Flower Roots.*—Carter, Page, & Co., 53, London-wall, E.C.——*Tuberous Begonias.*—Morley & Co., Rosedale Exotic Nursery, Preston.

ROSES.

REPLIES.

14638.—**Rose-buds dropping off.**—Your treatment must be at fault somewhere, for it is not usual for Nephetos to behave in the way you describe. It is probably too dry at the root, or else you keep the house too much shut up, and the air which surrounds it too damp. It would have been better had you given a few particulars as to the treatment it has received.—J. C. C.

14639.—**Roses for town greenhouse.**—You do not say whether you intend to grow the roses you name in pots or with their roots in a border. All the roses you name flower well in pots when skilfully treated, but it is doubtful if an amateur would succeed with them. I should advise you to grow Tea varieties instead, especially if they are to be grown in pots. The following will be a good selection for you:—William Allen Richardson, Catherine Mermet, Marie Van Houtte, Madame Lambard, and Perle de Lyons.—J. C. C.

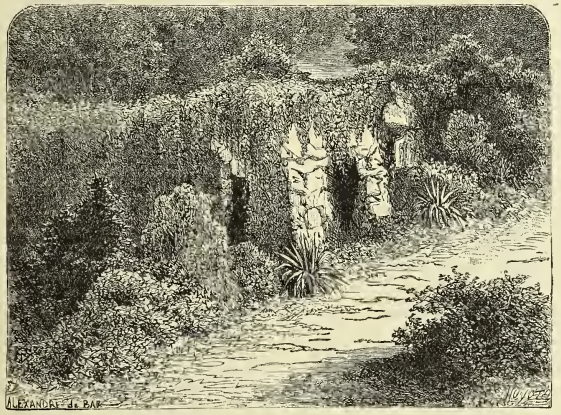
14628.—**Roses for Yorkshire.**—The following Roses I have selected from a large collection grown by me for several years in Yorkshire; all are doing well on their own roots as well as on the brier, and the majority are good autumn-flowering varieties:—Alfred Colomb, A. K. Williams, Annie Laxton, Annie Wood, Auguste Rigotard, Boule de Neige, Baroness Rothschild, Beauty of Waltham, Boildeau, Camille Bernardin, Captain Christy, Charles Lefebvre, Cheshunt Hybrid, Comtesse d'Oxford, Comtesse de Serenye, Dr. Andry, Duchesse de Vallombrosa, Duc de Rohan, Duke of Connaught, Dupuy Jamain, Duke of Wellington, Edouard Morren, Etienne Levet, Fisher Holmes, François Michelon, General Jacqueminot, Hippolyte Jamain, John Hopper, La Duchesse de Morny, La France, Louis Van Houtte, Madame Lacharme, Madame Victor Verdier, Marie Baumann, Marie Rady, Marie Finger, Miss Hassard, Marquise de Castellane, Maurice Bernardin, Monsieur Boncenne, Monsieur E. Y. Teas, Monsieur Noman, Paul Neron, Pierre Notting, Prince Camille de Rohan, Sénateur Vaisse, Star of Waltham, Sultan of Zanzibar, Victor Verdier, Xavier Olibo.—G. S., *South Yorkshire.*

Improved flower-pots.—Seeing the above in your last number, I beg to suggest that square pots be tried, say three or four inches square and three or four inches deep, and also others six inches long, one or two inches wide, and three inches deep—these more especially for cuttings. The first-named will be found of value in not being so quickly turned over or blown down, and they can be stored away better than the usual pots.—John Tringle.

Smithfield market, Evesham.—List of prices realised Oct. 2, 1885:—Beans (kidney), 3s. 9d. to 4s. 6d. per pot (40 lb.); Cauliflowers, 1s. to 1s. 9d. per dozen; Onions, 3s. to 4s. 9d. per cwt.; Potatoes, 1s. 6d. to 3s. 3d. per pot; Sage, 9d. to 1s. per pot; Vegetable Marrows, 4d. to 1s. per dozen; Apples, 1s. 9d. to 4s. 6d. per pot (64 lb.); Damsons, 14s. 6d. to 16s. per pot (72 lb.); Grapes, 2d. per lb.; Pears, 1s. 3d. to 5s. per pot (72 lb.); Plums, 10s. to 14s. 6d. per pot.

ROCK WALLS CURTAINED WITH IVY AND VIRGINIAN CREEPER.

This illustration is an actual representation of a very successful attempt to cover with verdure the high walls of a quarry by the use of bold shrubs and trailing plants, which was done in the most effective and picturesque manner, a flake of the rock being exposed only here and there. We remember seeing, with great pleasure, in such a position, the fine bloom of the Forsythias, untrained and allowed to grow and flower in their own way. It is, of course, seldom that the amateur gardener has opportunities of doing such work, but the possessor of the smallest garden may take a lesson from the illustration, and our own observation is that in many small gardens dead walls and other surfaces are often left in a hideous state when they might be very prettily graced with hardy climbing and other plants. For not only may we use with advantage a number of plants that ramble or climb only, but a number of flowering shrubs that do not climb naturally are in various parts of England better off for the protection of a wall, and, their natural height usually equalling that of a wall, they can easily be induced to cover such surfaces; in fact, the choice is very wide, and beautiful plants of a high order may be selected for such positions. As regards evergreens, if we had the beautiful forms of green Ivy alone we should be rich.



Rock walls curtained with Ivy and Virginian Creeper, with Yuccas and rock shrubs in foreground.

14419.—**Name of Narcissus wanted.**—In answer to "W. B. Hartland, Cork" (p. 398), I beg to say that the Narcissus I inquired about was a *double* incomparabilis—a large white flower with bright orange-scarlet centre. By a misprint in my question I am made to say I grew it in Surrey; whereas I simply saw it in Surrey, when passing through the charming village of Liphook. It so exactly corresponds with the N. incomparabilis albus fl. pl. aurantius, of Barr, and the incomparabilis aurantius fl. pl., of Ware, as well as with the Orange Phœnix of Sutton (all of which I grow), with the exception of the outer petals being pure white instead of pale sulphur, that I incline to think it may be partly a matter of soil, the warm, light soil of Surrey being peculiarly adapted for all kinds of Narcissi, while here, in Wiltshire, I can only just keep the tender sorts alive, such as odorus and the Jonquils, and their colour is generally rather pale. I know a garden in Surrey where the soil is of a very sandy nature, where the lovely double Yellow Jonquil increases like a weed, and is of a brilliant yellow. I should like to assure "J. D.," who also kindly answered my question, that I quite agree with him that it is better to order plants by their correct names, the difficulty in my case being that the plants did not correspond to their names or descriptions entirely.—S. E. C.

HOUSEHOLD.

TRUE OATMEAL PORRIDGE.

Will you allow me space for a few remarks suggested by a paragraph on "True Oatmeal Porridge," on page 379. In comparing Scotch and Irish Oatmeal, it ought to be understood that the quality of the meal depends in the first place on the character of the Oats. Oatmeal may be equally well manufactured in any country. I have seen American and New Zealand meal with which no Scotch or Irish could compare in appearance; but the quality was greatly inferior, being tough and flavourless. The soil and climate of Scotland are particularly favourable to the growth of this crop, and no country can produce Oats which, when manufactured, possess the same strength and flavour. Why do the English prefer Oatmeal "perfectly free from dust, like a sample of some beautiful seed?" No Scotch man or Scotch woman would use such meal for any purpose, except for feeding poultry. It puzzles north country people to understand why you insist on having such a cut, and I daresay it would puzzle Englishmen to give any rational excuse for the preference. In this rough Oatmeal, free from the finer cut portions of the grain, you have a comparatively indigestible food, and, owing to the absence of the fine much of the natural flavour is lost, while from the same cause it is quite unsuitable for making Scotch cakes. Those I have seen in various parts of England, especially in London, are only fit for dogs, and I question if a Scotch dog would eat them. So much water is necessary to make this meal into dough, that after the cake is exposed to the fire it is turned out as hard as a brick, and as tasteless. Why not use medium cut meal, with the fine left in it, such as is used all over Scotland? It would be found much more palatable and wholesome. As to Oatmeal flour, I know that thousands of sacks of it are sent annually from Scotland to England, perfectly pure and free from all adulteration. You may not get it as it comes from the manufacturers, and the reason is not difficult to discover. English people consider that unless it is *white*, like Wheaten flour, it is of inferior quality. This is an entire mistake, but the demand must be met. There are two ways of doing this. It may be bleached in drying the grain by the use of sulphurous coal or coke, or it may be mixed with inferior Wheaten or Barley flour. In the latter case it no doubt ceases to be pure Oatmeal, but if people prefer it white they are themselves the cause of the adulteration. The natural colour of Oatmeal is a rich cream, and if it resembles Wheaten flour its purity may fairly be doubted. As to the mode of eating Oatmeal porridge I scarcely venture an opinion. It is so much a matter of taste that every one will prefer his own way. If, however, large cut Oatmeal is left soaking in water overnight (as it sometimes is) boiled for an hour, and eaten with sugar and a crust of bread, I do not doubt its irritating qualities.—A Scotch Farmer.

*** *There is not the slightest doubt that meal perfectly pure is delicious in a medium state, but that does not controvert the fact that the large Irish Oatmeal is excellent when boiled a long time, and its value is shown by its use in some of the finest hydropathic establishments in England, such as Matlock. Oatmeal is pure in the large, medium, or fine state, no doubt, and some enjoy the large because it is evidently unadulterated.*—Ed.

QUESTIONS.

14870.—**Use for unripe Grapes.**—I have a large crop of Grapes in my garden, but they are not likely to ripen. Can any one suggest any use to which they could be put?—E. D., *Brixton*.

14871.—**How to make Elderberry wine.**—Will some reader kindly give me a good recipe for making this wine?—W. J. C.

14872.—**How to make Grape wine.**—Will any reader of Gardening kindly answer this query. Should the Grapes be green or ripe?—W. J. C.

14873.—**Blackberry jelly.**—Will someone kindly give me a good recipe for making Blackberry jelly?—M. S.

14874.—**Rosemary hair-wash.**—"A Reader" will feel obliged to "A. B. T., East Anglia," if she will give the exact proportion of each ingredient for making the above-named hair-wash. The recipe is mentioned in Gardening, page 380.—E. A. M.

REPLIES.

14528.—**Preserving Pears for winter use.**—I can from personal experience, commend the following:—To three pounds of Pears, one and threequarter pounds of loaf-sugar, two glasses of port wine, a few cloves, lemon-peel, stew gently for three hours; put into jars, and, when cold, put a brandy paper over them, and tie close up. The Pears should be first peeled and cut into halves. An Old Subscriber.

14698.—**To preserve Green Peas.**—Take some scrupulously clean and sound bottles, and nearly fill them with freshly-shelled Green Peas. Stop the bottles with good new corks, and take care to leave a small space between the Peas and corks. Then fit the corks down securely with wire. Place the bottles in a boiler of fresh cold water, with a twist of hay between each, so as to prevent them from touching each other. Cover with a lid, place the boiler over the fire, and let the water boil for one hour. Remove the boiler from the fire, and let the bottles remain in the water until it is quite cold. Then cover the corks well with resin so as to exclude all air, and store in a cool place. *Another Way.*—Procure some tin boxes with lids to fit them. Fill each box with freshly-gathered and shelled Green Peas. To every quart of Peas allow one tablespoonful of salt and one gill of cold spring water. Place the lids on the boxes and get them soldered down, and then put them into a pot of boiling water. Allow the water to boil very fast for one hour, and let the boxes cool in the water. When the boxes are quite cold ascertain if any of them leak, and should they do so have them soldered again on the part that leaks. Store these in a very cool atmosphere.—Annie M. Griggs.

14697.—**Cooking Kohl Rabi.**—This vegetable may be cooked without first being pared, but before going to table the outsides must be taken off carefully (in the same way as with Turnips); then they should be moderately, and only moderately, pressed, and either rubbed over with butter or covered with white sauce. By this mode of procedure elegant young Kohl Rabi make a delicious dish, as they have much more flavour than when pared before cooking. The usual way is to pare them and then divide them into four parts; but this is not a good plan, as it is part of the washing-out system so prevalent in English cooking. If you pare them, according to custom, do not follow the usual mode of dividing them, but cook them whole; and if they are smallish and pretty, it will be well to serve them whole, taking care to press them very little, or you will be likely to press out all the flavour. Young Kohl Rabi require only about twenty minutes' fast boiling in water containing the usual proportions of salt; but old ones will take from half an hour to one hour or more. It is easy to know when they are done by simply trying them with a fork. Mashed Kohl Rabi are much in request, and form a nice accommodation to mutton or pork. Boil in the usual way; then, having drained them, press them with a wooden

presser or the back of a plate, but with care, so as not to press them very dry. Beat them with a wooden-spoon through a colander, and put them into a pot with butter, white pepper, and a little salt; if cream is at hand use a little. Make them very hot, and serve, nicely heaped up on a dish. Young Kohl Rabi may be beaten up with a fork in a hot vegetable dish, and a little butter beaten up with them, and, if done quickly, they will still be hot enough to send to table, and the trouble is much less.—YOUNG AMATEUR, *Basingstoke.*

BEES.

SEASONABLE NOTES.

THE work of the apiary being nearly at an end for another season, the present will be found a convenient time to brew mead, prepare wax, and make honey vinegar. The merits of mead as a wholesome and pleasant beverage are at present but little known.

MEAD is made in the following manner:—After the honey has been run from the combs, the latter should be steeped in cold water to clear the honey from the wax When the liquor is strong enough to float an egg (the wax having been previously removed) it is boiled for about an hour, and then put into a brewing tub to ferment. It is then stirred occasionally to promote fermentation. In a few days, it is put into casks, and when fermentation has nearly finished it is bunged down, leaving a peg hole, which may soon be closed. Another way is to pour five gallons of boiling water upon twenty pounds of honey, then boil, and remove the scum as it rises, then add an ounce of hops, and boil for ten minutes more, and put the liquor into a tub to cool. When reduced to about seventy-five degrees Fahrenheit, a little yeast is added, smeared on a piece of toasted bread. It should stand in a warm room and be stirred occasionally, and when it carries a head be put into casks. It is greatly improved if it be left a year before bottling.

WAX EXTRACTING.—All the waste and trouble incidental to the various old-fashioned processes of preparing wax are avoided by the use of the wax extractor. It consists of an outer tin cylinder, very much resembling an ordinary potato steamer, having a tin dish inside provided with a spout. Between the dish and the outer cylinder the bottom is pierced to admit steam. A basket of perforated zinc fits over the tin dish. This basket is filled with old comb, and the whole placed over a saucepan about half filled with water, and put on the fire. The steam passes through the perforations in the bottom, melting every particle of wax, which oozes through the perforated zinc basket into the dish and out of the spout into a basin or other receptacle, which should have the sides oiled, and contain about two inches of hot water, which keeps the wax from adhering. The wax thus obtained is of a beautiful colour, and free from all impurities. If an extractor be not used, put the combs into a clean saucepan, with as much soft water as may be necessary to prevent the wax burning. Place the saucepan over a slow fire, stirring occasionally until the wax is melted, then strain through a fine canvas bag into a tub of cold water, and laying the bag upon a piece of smooth board, of such a length that one end will rest at the bottom of the tub, compress the bag of hot wax with a wooden roller; the wax will ooze through and run down the board into the cold water, and set in thin flakes upon its surface. When all is finished, collect the wax from the surface of the water, put it again into a clean saucepan with a little water, and melt very carefully over a slow fire, and take off the skum as it rises. When sufficiently melted, pour it into wetted moulds, and let it cool slowly to prevent cracking. Another way is to put the combs into a copper, and press them into as small a compass as possible. Then cover a wooden hoop, the diameter of the copper, with cheese-cloth, which place over the combs, and keep down by weights or sticks wedged up against the ceiling. The copper being filled up with water and brought to boiling point, the wax separates from the refuse, and rises through the cheese-cloth to the top of the water. When cold it can be taken off in a solid mass.

HONEY VINEGAR.—Strong vinegar of most excellent quality may be made from honey. To two pounds of honey put one gallon of boiling water; well mix, and, in a large open vessel, expose to the greatest heat of the sun, covering with muslin to keep out insects. This liquid becomes acid in about six weeks, changing to vinegar of superior quality. The broken combs, after the honey has been drained from them, may be used for this purpose if put into as much water as will float them and well washed. This, however, must be boiled and skimmed before being set out in the sun and air.

S. S. G., *Boxworth.*

14875.—**Colour of Honey** (*Enquirer*).—There is a great variety in the colour of honey, according to the particular flower from which it is gathered. Thus, honey gathered from White Clover is of light straw colour; that from fruit blossoms of a beautiful orange colour; from Heather of a dark reddish-brown hue; from Sainfoin, yellow; from Beans, brown; and from Plum-blossoms, clear amber. The honey you describe as being "nearly black or brown-black," but of excellent flavour, is doubtless Heather-honey. Honeydew, the product of various species of aphis, and in times of scarcity of honey gathered by bees and stored in quantity, is also of a very dark colour, but is most disagreeable to the palate, and of strong odour. I am unable to say from what flower your "bright pink" honey was obtained. Perhaps some other bee-keeper can enlighten us on the subject. Rhododendrons and Azaleas are said to yield honey of a crimson or reddish-brown colour, which is poisonous, and acts as a narcotic.—S. S. G., *Boxworth.*

POULTRY.

14876.—**Red lice in chicken-house.**—Can any correspondent inform me how red lice can be got rid of from a chicken-house? Do they seriously injure the health of the fowls, or cause them to lose their feathers?—A. C.

Lice in nests.—The nests are the pest houses in which are bred the lice. Always keep in them tobacco stems or refuse, which will prevent the lice from infesting them.—F. G.

How to prevent disease in fowls.—On old farms, where the hens have had the run of the farmyard for years, there is gradually accumulated a certain amount of decomposed matter from the droppings, which is not distinguishable from the dirt with which it is mixed. This condition is the cause of gapes in chicks and cholera in adults, as has been repeatedly proved by those who have tried the experiment of feeding chicks on board floors, by which means the gapes are avoided. We do not allude to yards in which fowls are confined, but the farmyards, in which they are supposed to have plenty of room. Gapes and cholera are more prevalent in farmyards than in the small yards used for confining fowls, for the reason that the small yards are frequently cleaned and turned up with the spade. If the farmyards could be occasionally scraped over, and then thoroughly sprinkled with a solution of chloride of lime or copperas, it would do much to prevent disease. What is better is to mix an ounce of sulphuric acid with a bucket of water, and sprinkle the yards, but it is not as easily handled as the chloride of lime or copperas water. A pound of chloride of lime to ten buckets of water, or a pound of copperas to four buckets of water, will answer the purpose.—G. F.

Curing feathers.—Place them in a bag, steam them thoroughly, and then expose them to the sun in a wire-netting box, until well dried. If they are fumigated with sulphur, it will be an advantage.—F. G.

REPLIES.

14699.—**Poultry feeding.**—"Engineer" should reverse the order of his poultry-feeding, giving the corn at night and the soft food in the morning. During the long nights, if fowls have only soft food before going to roost, the animal heat is not as well kept up as it would be with food less quickly digested; and in the morning they require the quickly-digested food. Eggs are generally scarce at this time of year, as hens are moulting. Early-hatched pullets ought to be beginning to lay. Scraps of meat, or pepper or beer mixed with the soft food, might be of use. Spratt's poultry food (crushed dog biscuit) is warming and stimulating, and fowls are fond of it. Indian corn is also a favourite food.—L. D.

—— Having kept poultry for 20 years, my experience may be of some service to "Engineer," who rather reverses the order of things by giving his fowls hard food in the morning and soft at night. Let him try a breakfast at, say, 7 a.m., of two-thirds boiled scraps (such as Cabbage, waste Potato and Potato-peel, Turnips, &c.) well blended with one-third Barley meal, care being taken that there is only just sufficient moisture to hold the ingredients together; season with a small quantity of pepper and salt, and let it be given warm. As cold weather comes on, let a bullock's lights, &c., be obtained from the butcher, and boiled and chopped, and a portion be mixed with the breakfast. At about 11 a.m., a meal of grain may be given, and so again just before roosting-time. The total amount of food per head for full-grown fowls per diem, ought not to exceed three and a-half ounces. Let all Cabbage-stumps and such like garden refuse be thrown into the run, as well as a good supply of gravel or chalk or lime, or broken-up old mortar, not forgetting that most important item, a good heap of sifted ashes, renewed about once a week. Let all houses be kept thoroughly clean, and whitewashed at least once a month. If "Engineer's" poultry don't lay in less than a fortnight after this treatment has commenced, let him—eat them!—A COUNTRY PARSON.

—— I am afraid "Engineer" is keeping far too many fowls considering that the field is only used for a part of the day. A score of hens would be a large stock for a run of the size mentioned. With regard to the quantity of food required, it may be taken as a safe guide to give the fowls as much as they will run after and eat with a relish, and no more. The soft food should be given in the morning, and the hard grain at night.—DOULTING.

OUTDOOR PLANTS.

Carnations.—I send you a few blooms of Carnations for your inspection. These are comparatively small compared with what they have been, but are still (Sept. 25) blooming freely in the open ground from the beginning of August, and in a poor soil. They are all raised here from seed, therefore much thicker together than they would have been had I expected they would have turned out so many good ones. These sent you, and many others which I have, I consider are good kinds, and such as I have not previously seen anywhere.—R. W. P., *Chesterfield.* *** *The striped Carnations are very pretty and varied. We should like to see more attention paid to the Painted Lady class, and to fine, vigorous, hardy selfs.*—ED.

Planting-out Chrysanthemums.—In reply to "Novice" (p. 367), I beg to state that the Chrysanthemums recommended to be planted out are lifted carefully with roots entire and potted just as the blossoms begin to expand, and any one giving this system a trial will be sure to give up the all-year-round pot plan; for, unless very large pots are used, the plants get root-bound long before flowering time, and then the leaves drop off, leaving long, bare branches, by no means ornamental; and I have no hesitation in saying that for supplying cut flowers or general decorative pot plants the planting-out system is the one to adopt. I do not refer to exhibition blooms, for the production of these has nothing in common with general gardening; but my idea was a large plant in a small pot, for a Chrysanthemum in an eight or ten-inch pot, such as usually produce two or three large blooms for exhibition, will, if left to flower naturally, produce at least 100 blooms. I may mention that most of our Chrysanthemums are planted out, and we lift the sorts in succession as they form flower-heads, thrusting steel forks down deep all round, and lifting the plant up carefully to get all the root possible; then the soil is carefully shaken out, and the roots dropped into a pot just large enough to hold them, with a little very fine soil well worked amongst them. Set them in a shaded place, and syringe frequently until the foliage will bear full exposure to sunlight, and hardly a leaf will drop.—J. G. H.

THE BLUE HIMALAYAN POPPY.

This beautiful little flower (Meconopsis Wallichi) is perfectly hardy and well worth cultivating. Its flowers, which are pale blue in colour, appear in summer, and, though the individual blooms do not last long, a succession is kept up for some time. Those who find it difficult to obtain plants may be interested to learn that it is easily raised from seed sown in the spring; indeed, it is biennial in character, and the only way to secure a good stock is by annual sowings. The following is the most successful mode of cultivating it:—A piece of ground is prepared by digging in good loam and well rotted stable-manure, a two-light frame is placed over it, and seedling plants are put in about March. As soon as the plants are fairly established, the sashes are removed (unless the weather is frosty), and throughout the summer the plants are well supplied with water. During the following season in April or May they will have become large plants, often two feet to three feet in diameter, and are then removed to where they are wanted to flower. This may be done without checking them much, as they form such a large quantity of fibrous roots that usually a good ball of soil may be had with them. They are thus grown on as quickly as possible, treated as biennials. They do not all flower, however, during the second year; many are three or four years before flowering. After flowering they all die. S.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, October 12 to October 17.

Putting in Calceolaria cuttings. Tying up Lettuces and covering up Endive to blanch; getting manure and leaves together for making hot-beds, and sowing Mustard and Cress. Gathering the last of the Tomatoes, and hanging them up in glasshouses to ripen; potting Echeverias, and also Pelargonium. Thinning Mignonette in pots; looking over Cauliflowers, and turning down leaves where required to protect the heads from frost; hoeing among all late-planted Cabbage, Endive, and Lettuce, and stacking away Carrots and Beetroot. Looking over the cuttings of bedding plants, and removing dead leaves; earthing up Celery when the soil is in workable condition.

Cutting back the heads of Yews, Laurels, and other shrubs where beginning to overhang each other; putting in cuttings of Pentstemons and Antirrhinums. Clearing off flower-borders and getting them ready for spring-flowering plants; filling up all pits and frames as they become empty with Lettuces and Endive, and making Mushroom bed; gathering last of Vegetable Marrows and clearing away the plants. Planting spring-flowering plants, viz., red and yellow Wallflowers, red and white Daisies, Iberis, Myosotis, Alyssum saxatile, Pansies, Nemophilas, Saponarias, and Silenes; potting Hyacinths, Narcissi, and Tulips; getting cuttings of some of the tenderest plants into warm quarters.

Work in the Town Garden.

Hyacinths. — As the cold weather appears to be setting in early, get everything housed as soon as possible, affording, however, plenty of air, when it is not actually freezing outside, and no more fire heat than is necessary to dry up damp and keep the temperature up to about forty degrees. Look over the Hyacinths, especially the Romans, and others of the first potted batch of bulbs. Any that have well filled their pots with roots, and are making a fair start into growth, had better be taken out, cleaned, and brought into the house. Do not place them in full light at once, or the sudden change may injure the blanched tops, but put them under the stage, or anywhere in a subdued light, for three or four days first. Remember that it is no use attempting to force the ordinary Dutch Hyacinths early, in a town garden, however well-rooted and forward they may be, for they will only go blind; all that can be done is just to keep them moving, on a light shelf, in temperature of forty-five degrees, till the New Year, when a very slight rise will start them off, and the longer and more slowly they have been growing the finer will the spikes come. The Roman Hyacinths (white) are very different, and any potfuls that are well rooted and starting into growth now will be in bloom in November, if afforded a heat of fifty-five degrees to sixty degrees, or by Christmas if just placed in a fairly warm greenhouse—say forty-five degrees to fifty-five degrees. Nothing can then be sweeter or prettier than nice potfuls of these charming flowers, and with plenty of Primulas of various colours, a few bits of scarlet Geranium, and some late Chrysanthemums, no town greenhouse may be without flowers at Christmas.

Pompon Chrysanthemums may now be taken up and potted for the decoration of window boxes, balconies, and general indoor use. If cuttings of these are struck in March, April, or May, according to the size of plants required, planted out eighteen inches or so apart in any open piece of fairly rich ground, and kept judiciously stopped, they will lift very well just when coming into bloom, or before the buds burst, and form nice bushy little plants with a minimum of trouble. I do not say that such plants grown altogether in pots are not the best in the end, for, after lifting, they often lose many of the lower leaves; but the constant labour of keeping such small pots properly watered is great, and then they must be fed, and the pots should be kept plunged—

Blue Himalayan Poppy (Meconopsis Wallichi).

in short, it is rather a difficult matter to grow good dwarf, bushy Chrysanthemums in pots throughout. Some of the best kinds for this latter method are the pretty little Illustration, Madame Desgrange, and for larger plants—Mrs. Cullingford; these, or any other suitable varieties, should be potted early in rich, strong loam, made very firm; when once fairly in growth they should be grown on outside, plunged in a bed of ashes, cocoa-nut fibre, or spent Hops, supplied abundantly with weak liquid stable manure, or sewage, and soot-water, and finished up with sulphate of ammonia, bringing them under glass to expand their blooms. Grown in this way, and done well, they make splendid plants, especially such as Madame Desgrange, and the pure white dwarf variety La Vierge. But the planting out and lifting system is quite good enough for ordinary purposes—that is, as far as regards free blooming purposes, though for the large-flowered kinds, except a few vigorous Japanese, I have not found it answer; the blooms, particularly of choice incurved varieties, almost invariably coming distorted on plants that have been lifted. To give them the best chance the plants should be well watered (if at all dry) the day before being lifted, and taken up with as much earth on the roots as possible, potted firmly, with moderate drainage, again watered, and kept shaded for some days afterwards, with plentiful sprinkling overhead on bright days. A few Veronicas, which may be grown in almost precisely the same way, either in pots or planted out and lifted, make a very nice variety, and associate well with dwarf Chrysanthemums. The Veronicas may be very successfully cultivated in town gardens, and, being evergreen, or nearly so, and able to withstand the cold of most winters with a little protection, are very desirable in every way. The flowers of these are very pretty just now. It is unfortunate that Solanums do not "berry" well in town air, as they give such a bright effect from now until Christmas; but, except in quite outer suburbs, they are not worth attempting. B. C. R.

Glasshouses.

Bertolonias. — These pretty little plants deserve a place wherever there is a warm stove; but to grow them well they must have a brisk temperature. They are often grown under bell-glasses, but when so treated the shoots and leaves are weak and soft in texture.

Shrubby Clerodendrons. — Young plants of C. fallax or C. Kæmpferi that have been raised from seed, or from cuttings put in to strike in the summer, should now be moved into four or five-inch pots, according to the size and strength they have attained. Good turfy loam, well enriched with rotten manure and some sand added, will grow them well. They should be kept through the autumn in the warmest house available, standing them well up to the light, the object being to keep them gently moving, without so much excitement as would result in weakly growth. Young plants of these Clerodendrons look best when grown to a single stem; consequently the points of the shoots should not be stopped. Plants of C. fragrans that have done flowering should have their tops removed.

Eranthemums.—Plants of the useful winter-flowering varieties should now be kept at the warmest end of the stove, and if their pots are full of roots they should have weak manure water once a week. The more light these and all other winter-blooming plants receive, the more substance the flowers will have, which will contribute much to their usefulness, especially when required for cutting. The pretty E. pulchellum does not last long even when seen in the best condition, but where it gets plenty of light its enduring properties when cut are increased.

Plumbago rosea. — This is another plant that is proverbial for the short duration of the individual flowers, but when kept with its top close up to the roof during the time that precedes the formation of its flowers, with a little air admitted daily, its blooming is much more satisfactory.

Camellias, when in a good healthy state, without being too vigorous, usually set many more flower-buds than they can bring to maturity, the result being that many, after having taxed the energies of the plants considerably, fall off. Consequently it is better when they are too numerous, to thin them. This should be done at once. Where, as now generally practised, the flowers are gathered without any wood attached, the plants are able to support a greater head of bloom than where a portion of shoot is cut with them. Yet even under such condition two or three buds are enough to leave to each shoot. At the time when the buds are thinned the whole of the plants should be well cleaned, sponging the leaves so as to remove any dirt that may adhere to them. Where the plants are much affected with brown scale the foliage soon gets foul, and requires frequent washing, without which the plants have an unsightly appearance, and the leaves lose their vitality sooner than they should. If white scale exists, it is more difficult to deal with from the fact of its attaching

itself to the wood, leaves, and flower-buds so firmly, that it is difficult to remove it. A brush is the best implement to employ for the removal of this pest; but it must be used with care, or the leaves will be disfigured. The present is not a good season to disturb the roots of Camellias; still, if any plants are noticed in which the water stands for any time on the surface before making its way through the soil, it is a sign that the drainage is clogged up—a condition which oftener occurs with Camellias than most plants, through the action of worms. In such cases they should be turned out of the pots and the drainage made good, returning them with no more disturbance of the roots than is unavoidable.

Azaleas.—Few things are so liable to the attacks of thrips as Azaleas, and if these insects are allowed to get ahead on the plants, the leaves are reduced to a sickly state, and the plants do not flower as they should. The thrips may be killed by fumigation, or by dipping in and syringing with Tobacco-water. Many growers resort to the former remedy, but, in the case of plants that flowered late, and have made their growth late in the autumn, the leaves are frequently not in a condition to bear, without injury, an application of the smoke strong enough to destroy the insects; and where the mature insects are killed by fumigation, the eggs, which are usually deposited thickly on the leaves, escape unaffected, and are ready to come to life in spring, or, with plants that are forced, as soon as they are put in heat. Therefore, it is much the best to give all plants that have been affected a thorough washing with moderately strong tobacco-water, to which has been added a little Gishurst, or washing soda. The liquid should be allowed to dry on the foliage, not washing it off with clean water, as sometimes practised. This will generally be sufficient to kill both the mature insects and the eggs; but in the case of plants that have been much affected, it will be well to wash them a second time in the course of ten days or a fortnight. Where persistent action is taken to keep a stock of Azaleas free from these insects, much less labour is necessary than where they are allowed to get to a head.

Callas.—Where these have been planted out with a view to their being taken up, if not already done no time should be lost in getting them into pots; these need not be larger than requisite to admit the roots without undue compression. At the same time the plants should be taken up with a fair amount of soil attached. Ordinary turfy loam with some sand added will answer well for them. As soon as the plants are potted, they should be watered and stood in a pit, or cool house, with air daily.

Pelargoniums.—Plants of the large-flowered and fancy varieties of Pelargonium that bloomed early and were cut down, and subsequently repotted, will by this time have filled the soil sufficiently with roots to require moving into the pots in which they are to flower. The soil used should be a mixture of good turfy loam and rotten manure, such as advised for potting them in at the time they were shaken out. This section of the Pelargonium family does not require so much root room as many things; eight-inch pots are big enough for large specimens. In potting, again ram the soil so as to make it quite solid; do not give water for a week or so after. The strongest shoots should be tied out horizontally, bringing them down to the rims of the pots; by this means the weaker growths left in an upright position will be benefited. Amongst the most useful of all Pelargoniums are the now numerous varieties that force well in winter; these are of a dwarf, compact-growing habit, and have a natural disposition to flower freely. If they are not already in the pots in which they are intended to bloom, they should at once be moved to them. Their treatment for a time ought to be in all respects similar to that given to the show and fancy kinds. Let them have all the light possible by standing them well up to the glass in a light, airy house. The whole stock should be examined to see that they are quite free from aphides; if these parasites are present, although they do not increase so fast in winter, they will quickly injure the leaves. As soon as discovered they ought to be destroyed by fumigation, repeating the operation in a week or ten days. Zonal Pelargoniums intended to flower, with the aid of a little warmth, through the winter, should be accommodated with a dry, light house, giving air in the daytime, with a little on at night as well, when there does not appear to be danger of frost. Care must be taken that the soil is kept rather drier than it was earlier in the season, for, although not so impatient of being a little over-moist at the roots as the show or fancy kinds, they require to be drier than when more growth is progressing.

Thomas Baines.

Flower Garden.

General work.—We are now pulling up all the dark-foliaged tender plants, and in their places are planting Ericas, small shrubs, and Ajugas, and in some instances laying down plots of Sedum that have been grown in a reserve garden for the purpose, and which, being moved with a spade and with soil adhering to them, never feel the removal, and are at once effective. The principle is also applicable to choice plants that it is desired to save from injury by frost. Let these be removed now, and fill in with the most suitable plants at command. Keep the edgings of the beds neatly trimmed, and bad flowers and foliage daily removed; by these means, should sharp frost not intervene, a creditable display of flowers may be had till quite the end of the month. Calceolaria cuttings should now be got in. A frame is the best for striking them in, and the soil should be two-thirds light loam and the other third leaf soil. The cuttings, which should be two and a-half inches apart, should be well fastened in the soil, and for the first fortnight shaded from sunshine. Pansies and Violas should be treated in exactly the same way.

S.

Fruit.

Orchard Houses.—The orchard-house season is now nearly over, and the present month should be devoted to the correction of drainage, potting on, reducing, or top-dressing; and as next year's success depends upon the way in which these matters are carried out, it may not be amiss to again direct attention to the importance of using clean, dry pots and drainage; dry, sound loam of a calcareous nature, with a liberal admixture of crushed bones, charred refuse, or old lime rubble. These should be thoroughly incorporated and kept under cover for some time before being used; and as firm potting is imperative, the shift should always be large enough to admit of the use of a fair-sized potting stick for ramming the compost as the work proceeds. Another important point which must not be overlooked is the watering or soaking of the balls of the trees before they are turned out, otherwise it matters little how well every part of the work may be performed, neglect of this will lead to disappointment and failure. When all the trees have been overhauled, select a dry, airy, but sheltered situation in the open air, place each tree upon two bricks, and leave the pots exposed to the influence of sun and air for a time. On the approach of bad weather fill in between the pots with dry Fern-leaves or Cocoa-nut fibre to protect the tender roots, which soon begin to work through to the sides of the pots, from frost, and to prevent the latter from being burst or cracked by expansion of the soil. It is hardly necessary to say all pruning should be performed as soon as the fruit is gathered, and the protection of the buds from birds by means of fishing-nets must not be neglected.

Vines.—Late houses that were started early and helped forward with fire-heat will now be finishing crops of ripe, well-coloured fruit, which may be expected to hang and winter better than Grapes that still require fire-heat, and, the wood and foliage being well-ripened, all lateral growths may be shortened back to prevent crowding, and those which emanate from the base of the pruning buds on old Vines cut quite away to plump them up before the foliage falls. As days and nights get colder, gradually reduce the temperature to a minimum of fifty degrees, with a rise of, say, ten degrees on fine days, and ventilate freely to secure a circulation of air when external conditions are favourable, but keep the ground ventilators closed when the weather is wet and the atmosphere is heavily charged with moisture. The above remarks apply to black Grapes; but Muscats, where quite ripe, will keep well under similar treatment. Houses in which Hamburghs and other thin-skinned kinds are hanging must be kept dry and cool, not by throwing all the ventilators open every day, but by keeping them closed in wet weather, and by dispensing with fire-heat as much as possible consistent with the maintenance of a temperature which does not strike cold to the body when the house is entered. Look over the bunches at least twice a week, and remove every faulty berry before it has time to taint its neighbour. Discontinue all sweeping and raking, as dust soon disfigures the fruit, and draw a tarpaulin over the external borders from this time until all the Grapes are cut. If former directions have been attended to, all the necessary preliminaries will have been completed in the early house, and the Vines will be ready for starting. If fermenting material is used for external borders, it should not be applied until the bulbs are on the move, but some light covering may be placed over the roots to protect them from cold, chilling rains.

M.

Vegetables.

All late Potatoes should now be lifted as soon as possible; if they could be put into sheds, properly sorted, before finally clamping them for the winter, all the better; if not, put them into clamps at once—three and a half feet wide will be sufficient. Give them first a good covering of straw, and then another of earth; but that most objectionable plan of leaving chimneys must be avoided. They only let in the wet, and do harm instead of good. Make another sowing of Spinach; keep well cultivated early spring Cabbage and Lettuce quarters; hoeing one row and walking in the other leaves the whole piece smart and trim. French Beans must be earthed and rodded as they make progress, and another batch sown. Mustard and Cress must be sown in small boxes, and a regular supply kept up. Get late Celery well earthed up, and any Broccoli or Walcheren Cauliflower not wanted may be lifted and put in a dry shed. It will keep there well tied up by the heels, or it may be laid in among soil, the roots well covered up.

G.

Lawn sand for Plantains.—I gather that many of the readers of Gardening find no use for lawn sand. I have used it for quite ten years, and with excellent effect. My tennis-lawn is one of the most perfect in the neighbourhood, with scarcely a weed on it. But then I follow the directions given for its use. I select hot, bright days for using, and not damp or cloudy weather. My lawn at one time was covered with Plantains, but now not one is to be seen. When asked "How do you get your lawn into such good order?" my invariable reply is, "By using lawn sand.'—W. Rawlins Capel, *Bickenhill Vicarage.*

14640 and 14708.—**Heating greenhouses.**—I can thoroughly recommend the "Loughborough Boiler" as one that can be depended upon. I have a greenhouse, nine feet square, heated with one of these boilers, and it answers admirably, keeping all frost out; and it will last twelve hours or longer without attention. I have had mine to keep in twenty-four hours; but the pipes were only milk-warm, the fire being very low, only having a few red cinders at bottom of boiler. It requires starting every twelve hours. Mine is a Loughborough boiler. I use oil, coke, and bank up with slack and the refuse from kitchen fire. The size of boiler is No. 1.—J. S., *Chester.*

—I tried Ritchie's "Lux Calor" gas or oil stoves, and have every reason to be perfectly satisfied with them. No flue is required, and the system eliminates all products of combustion injurious to plants.—J. G. S.

14642.—**Mower for uneven ground.**—In answer to "R. B.'s" query, allow me to state that I have tried several different mowers for cutting grass on uneven ground, but always failed to get them to do so, until I got one of the Coventry Mowers. I have cut a rough field (which had never been rolled, and the grass six inches long) with it. Mine is a thirteen-inch machine, and in cutting the grass so long as that, of course I required a little help. With the grass two or three inches long, a man can work it easily. Nettlefold & Sons are the makers.—Young Gardener.

GARDENING ILLUSTRATED.

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HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XII.

Hyacinths, Tulips, and Narcissi.—The time for potting these being at hand, it will be advisable to say a few words respecting their treatment before proceeding further in the enumeration of plants most suitable for window culture. To get a good strong bloom at a tolerably early period of the year they should be potted up by the latter end of October. Many imagine that February is quite early enough to buy bulbs; but, independent of the fact that when potted so late they have scarcely time to fill the pots with roots before they come into bloom, and if there is much delay in purchasing, the buyer is apt to get inferior samples, the best ones being naturally picked out by the earliest customers. If only wanted to bloom in April there is no absolute necessity to pot before December, but in all cases it is better to induce root action as soon as possible. Even now hardy spring flowering bulbs are beginning to throw out fresh roots in their permanent quarters in the open, which sufficiently indicates the wisdom of potting those intended to flower at an even earlier date before winter arrives. The compost should be free, and of a generous nature, especially for Hyacinths, which are greedy feeders. Two parts good loam and one part thoroughly rotted manure suits them well. In potting Hyacinths the bulbs should be just covered over, but Tulips and Narcissi are better for having them buried deeper in the soil. When the bulbs are of moderate size, four and a half pots will be large enough; but to do a vigorous example justice, it should have a receptacle an inch larger. Tulips may be put three together in four and a half pots, which will accommodate them well if they get manure water when growing freely. I always think that Tulips flower better when rather restricted for root run, getting the pots well filled with active fibres, and keeping them supplied with food. I do not know of anything more charming than well-grown potfuls of such kinds as Rex Rubrorum, La Candeur, and Yellow Tournesol. They are so graceful of growth, and the foliage, when thoroughly healthy and vigorous, has a delightfully fresh appearance. What are called Polyanthus Narcissi—that is, having the flowers arranged in terminal clusters—have hitherto been most largely grown in pots, but some of the trumpet section which in form resemble the common Lent Lily are coming rapidly into favour for culture indoors. The very charming Horsefield is extensively forced by some of the London market growers, and I strongly recommend readers of GARDENING to grow this handsome Daffodil in their windows. Put three bulbs in a four and a-half-pot, let them come on gradually, with attention to watering and air-giving, and you will have something delightful to look at for a month or more, for thus long do the blooms last in beauty when screened from hot sun and parching winds. There are also some lovely white-flowered trumpet Daffodils which are quite as worthy of loving care, and a place where stormy winds and pelting showers cannot assail them, as so many tender flowers which obtain cosy quarters and heedful attention in the dwelling or under a glass roof. Such are cernuus and moschatus, and others too numerous to mention here, and which are so distinct in their own chaste beauty as to charm all who can admire flowers which unite purity of tint with grace of form, the latter characteristic being possessed in a high degree by all the trumpet Daffodils. Last spring I had some pots of cernuus, which stood among other flowers, and which were at once singled out and admired by all who came into the house when they were in bloom. Unlike some bulbous flowers, Narcissi do not deteriorate when grown in pots; that is, if properly cared for when done flowering, until the foliage dies off—so that with them the first expense is the last, and not only so, but they increase, and the offsets may be taken off, grown on, given to a friend, or disposed of in any way that may seem right. In the course of three seasons, even by pot culture, three good Daffodils will become a score, and to the window gardener, the thriving increase of any plant grown is a source of genuine pleasure. In potting bulbs take care that your compost is neither wet nor dry, but just nicely moist, make it tolerably firm, and give a gentle watering to settle it in its place.

One great point in the pot culture of bulbous flowers is to encourage the quick formation of roots, so that before growth fairly commences they are in sufficient quantity to cause a vigorous development of the foliage. Root production is found to be most favoured when the pots containing the bulbs are stored away under a sufficient thickness of earth, ashes, or something similar to guard them against the direct action of the atmosphere, so that the soil neither dries out nor becomes very wet. It is in this condition that roots issue from the bulbs most readily, and fill the compost allotted to them most quickly. This method of treating the bulbs after potting is, however, not absolutely necessary. They will make roots very well if attended to in the ordinary way of pot plants, watering when dry. Some little care in watering is necessary until growth is being fairly made, and then the soil should never become quite dry, for all bulbous flowers, when in full growth, like plenty of water at the roots, and from the time that the flower spikes show, they should get frequent waterings with clear liquid manure, which will impart a fresher tint to the foliage, and will have a corresponding favourable effect on the flowers. Hyacinths especially need good feeding, as they are of a grosser nature than most other bulbous plants, making stronger and more abundant roots. When the flower-stems are four inches or so in height a neat stake should be fixed to each one so that they can be tied up as they advance in growth. In doing this, make the tie moderately fast to the stake, and loop the tying material round the flower-stem, so that, as this elongates, it can be slipped up to keep pace with the growth of the plant. If the flower-stem is tightly tied, it causes a crippled growth. The culture of Hyacinths in glasses being simple and pretty generally understood, I need only remark that the principal points to bear in mind in connection therewith are that the water must not quite touch the bulbs, and that, until they are fairly rooted, they are best in a dark place; but they must not make top growth there, or they will sustain a loss of vital power, which even with the best position afterwards they are not likely to regain.

Ixias.—These are charming little Cape bulbs, very easily grown, and, although old inhabitants of our gardens, are at the present time but little known to window gardeners. The uncommon and varied tints and curious colour combinations to be found among them are such as to surprise and delight all who see them for the first time in bloom. They are cheap, and I cannot offer better counsel to readers of GARDENING, who may be in search of something out of the common way, than the advice to invest in a dozen good bulbs, in mixed colours, and put them altogether in a five-inch pot. They bloom in April and May, and, when they open their variously-tinted petals, one could almost imagine them to be some gaudy coloured exotic insects basking in the sunshine. Being dwarf of habit they are well fitted for window culture; and to see them at their best they should, as above mentioned, be grown some dozen bulbs together, for they are neither coarse-rooted nor coarse-growing things, and therefore may be grown rather thickly. The present is the right time for potting them, for it should be understood that they naturally start into growth in October, continuing to grow slowly through the winter when sheltered, so that if potting is deferred until spring, they cannot, of course, bloom so strongly as when they are committed to the soil in autumn. Ixias grow in their native haunts on elevated plains, where they get a large amount of pure air, so that they are sure to suffer much if kept for any time in a warm, confined atmosphere. The right place for them through the winter is in a room where fire is only made now and then, and where they get plenty of air on mild days. They demand no care to keep them from frost, for in the southern counties of England they rarely suffer injury when grown in the open air, so that to see them in perfection all that is necessary is to screen them from those rapid severe climatic changes which injure the constitution of many things not easily affected by cold alone. After blooming, do not neglect to water when dry, and until the foliage dies off, when the pots may be laid down on their sides until the time comes round to re-pot them. Sparaxis and Babianas are nearly allied to Ixias, and require identical treatment; and as none of them possess that tenderness of constitution which renders the preservation of so many favourite window plants a matter of some little difficulty, they ought to find favour with those who would like to see all their windows filled with floral life of some kind.

Other bulbous flowers.—There are many hardy bulbs which may be satisfactorily treated as window plants. One of these is Triteleia uniflora, a pretty little spring flower, with narrow foliage and white star-shaped leaves tinged with lilac. When from twelve to twenty bulbs are put together they form, when in bloom, a very pleasing display. The foliage naturally curves downwards, so that it completely drapes the side of the pot, thereby much enhancing the appearance of the plants. Few bulbous flowers are more attractive than this Triteleia when well grown. Crocuses look well in pots, and there are some fine round kinds which are well worthy of some continual care. When grown in shelter the blooms last longer in a good condition than in the open air where they are liable to get injured by heavy rains. Snowdrops, coming so early in the year, are welcome, and those who live in towns and have no means of enjoying them

in the open air should grow a pot or two of them in their windows. Both the common single and double are charming, and those who like to invest in the larger flowered and less known kinds, Imperati and Elwesi, will not regret the outlay. The little Scilla sibirica, or Siberian Squill, is a delightful little blue flower, and we must not omit the charming Snow Glory, very much in the same way of the Squill, which created quite a sensation a year or two ago. These two lovely little blue flowers come very early, and the continual care they demand is next to nothing. Half-a-dozen bulbs are required to make a good potful, unless smaller pots than four and a-half ones are used. Purity of tint is well represented by Gladiolus The Bride, and this, as well as any of the early flowering kinds, such as cardinalis, insignis, formosissimus, &c., will be found satisfactory things to grow both in windows and in cold greenhouses. Allium neapolitanum and Scilla campanulata alba are other good white flowers, both in high favour at the present time as market flowers, and we must not forget that very charming family the Fritillarias or Snakes'-heads, with their graceful drooping flowers. I cannot too strongly urge window-gardeners to try some of the above-mentioned hardy bulbs; they will find in them much real pleasure for a minimum of labour and expense. By these means every window in the house may be filled with something cheerful during the spring and long summer months.

BYFLEET.

REPLIES.

14281.—**Growing Ferns outside bowls.**—The best soil for Ferns is a mixture of loam, peat, and sand; but how it is to be applied outside bowls filled with water, I cannot conceive.—J. D. E.

14363.—**Cut flowers.**—The reason they fade much quicker in some rooms than they do in others is that some are more light and draughty than others. Some are on the shady side of the house and others are exposed to the sun. The flowers will fade quickest on the sunny side, especially if the air blows freely through the rooms. Cut flowers keep longest in a cellar, where it is cool and moist, and the nearer rooms approach to this so much longer will the flowers keep good.—J. D. E.

14375.—**A Window Conservatory.**—As it is so far advanced in the year, you had better wait until next spring before stocking your window, and for the best plants you are referred to the series of articles on "Window Gardening" now appearing in GARDENING. Bulbs may, however, be potted now, and a good show had in spring. Hyacinths, Tulips, and Narcissi are especially suitable for window culture, and in this number you will find their treatment fully explained.—J. C. B.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, October 19 to October 24.

Planting bulbs in flower beds, Brier stocks for budding, and Box for edgings; removing Centaureas, from flower-garden and plunging them in a cold frame. Potting Lilium speciosum (lancifolium) album and rubrum in peat and sand, late Stocks for winter flowering, and Echeverias from borders. Taking up Endive and putting it where it can be protected; nailing Currants and Gooseberries on walls. Putting Chrysanthemums into conservatory and all Strawberries in pots under cover. Gathering all Scarlet Runners that are fit for use; taking up Carrots and Beetroot: thinning some of the inside shoots from nut trees; hoeing among young Strawberry plants; cleaning Asparagus beds. Sowing Nemophila and Saponaria in pots; planting standard Roses, Hollies, Wallflowers, Silenes, and Tulips; also planting Lettuces under the protection of a hedge.

Potting Forget-me-nots for flowering in pots; planting Feverfew, also Aubrietias, Arabis, Alyssum, and Pansies in beds; examining the roots of Cherry-trees and giving them some new soil. Getting all Pelargoniums from frames, &c., into house; placing old roots of Salvia patens in boxes, and putting them under stage in back pit for cutting in spring. Sending in Raspberries, also Marie Louise Pears, and gathering Josephine de Malines and Glou Morceau; top-dressing Peach house border with half a bag of bones, short manure, and loam. Potting layered Carnations, also Lily of the Valley for forcing. Taking up Bath Cos Lettuces and putting them under protection; protecting Cauliflower heads by tying the leaves over them. Beginning to nail Morello Cherries; putting straw round Violet frames; top-dressing early Vines with good loam, bones, sand, and horse-droppings; turning manure for Seakale forcing; gathering Easter Beurré Pears. Planting Nemophila, Limnanthes, and Silene in flower-beds; manuring Roses and earthing-up Celery.

Work in the Town Garden.

CHRYSANTHEMUMS.—Many of the earlier kinds of Chrysanthemums are now beginning to expand, both in and out of doors; indeed, such varieties as James Salter, Lady Selborne, Elaine, and a few others, especially if they were potted early, the buds taken in good time, and well thinned, will probably be fully out. When the blooms begin to show colour, gradually cease giving any stimulant, and, when about half expanded, discontinue it altogether, using only pure water subsequently, which will greatly tend to prolong the beauty of the flowers. On the bright warm days that are so often experienced during this month, open every ventilator to its fullest extent; and it will be advisable to slightly shade any forward plants, if only by placing a sheet of thin paper over it, for one day of bright sunshine will open a partly-expanded bloom more than a week of dull weather, and shorten its existence proportionately. As a rule, Chrysanthemums flower earlier in a town garden than in the country, and we want to prolong their beauty as much as possible.

BULBS.—The planting of various Dutch bulbs should be done as soon as possible now, or not later than the early part of next month. Many defer this operation until much too late, often not thinking of it until near Christmas, with the consequence of poor, weak and irregular blooms as a result. When planted early, while the ground is to some extent still warm, Hyacinths and other bulbs root out strongly and begin feeding before the tops start at all, and at the right time come up strong and healthy, and not only bloom much better the first, but in subsequent seasons, whether lifted annually or left in the ground; whereas, if planted late, they are often considerably advanced in growth already when put in, but without roots, and the cold and often frozen soil still further retards their formation. Yellow Crocuses are very often destroyed by sparrows directly they come into bloom in town gardens, so that they should be sparingly planted unless their feathered enemies can be kept away; the purple and white varieties they do not seem to interfere with. Primulas coming into bloom should be frequently fed with some weak stimulant, which will strengthen the plants and prolong the season of bloom. B. C. R.

Glasshouses.

POINSETTIAS.—The longer these plants can be had in flower the more useful they will be found. The ordinary way of treating them is to keep the stock collectively in a stove temperature, by which means the heads of crimson bracts grow to a larger size than where the plants are subjected to less heat, and in this manner the flowering is also accelerated and is proportionately sooner over. A better course is to keep the strongest portion of the stock warm, and to select some of the smaller plants and stand them for some weeks where the night temperature will be about fifty-five degrees: so treated they will make slower progress, coming into flower when the early lot are over. Under such conditions, the floral bracts will not be nearly so large, but they will be found more useful for cutting. When these and other tender stove plants are thus kept in a somewhat lower temperature than they like, care must be taken that no more water is given them than is necessary to keep the leaves from flagging. Neither must the plants be placed in a draughty position. Old examples that were headed down in the spring, and have been since grown on with less heat than those that were raised from cuttings struck in spring, and which have been kept all along in a brisk temperature, are suitable for retarding.

BEGONIAS FOR WINTER FLOWERING.—Since the tuberous-rooted varieties of Begonia have come so much into favour, the fibrous-rooted section of winter bloomers have been neglected. Yet there are few, if any, plants that so well repay the little attention they require. These Begonias will do with less heat than some of the plants usually grown for winter flowering, and in this way are better adapted for those who may not have a house at command where more than an intermediate temperature can be maintained; most of the kinds of this section of the family will succeed when so managed, but, as the amount of flowers they bear is generally in proportion with the growth made, it follows that the yield will be less than where they can be accommodated with more warmth. Many of the varieties of tuberous Begonias will keep on blooming through the later part of the year, if placed in a little warmth—say, fifty degrees in the night; so treated, their flowers will stand better when cut than if more heat is given them.

BOUVARDIAS that have been planted out in pits or frames during the summer, and were, a short time since, moved into pots, will now have got established. All the stock of these plants will be better for being kept a little close; such as are furnished with bloom-buds, and required to come in at once, will produce finer flowers if given a genial heat. Where the plants are weak it is advisable to keep them cooler, as when in such condition there is nothing gained by exciting them much.

ROSES.—At no season of the year are these flowers prized so much as after they have ceased to appear out-of-doors. Where there is a house (not necessarily a large one) that can be devoted to them in winter a continuous supply can be kept up without difficulty; but to accomplish this the Tea varieties must be used. Their natural disposition is to be always growing more or less, providing they get enough warmth to enable them to do so. Their habit of flowering is such that every bit of moderately-strong shoot they make is furnished with bloom-buds that open freely if a night temperature a little higher than that of a warm greenhouse, with a proportionate rise in the daytime, can be given them. Pot plants of these Tea varieties that had their roots seen to some time back, more room given to such as required it, and new soil to the remainder, will now be in a condition for flowering through the last months of the year. If they have been stood out-of-doors, and are in a vigorous condition, they will most likely be furnished with buds that will open in a greenhouse; but the flowers will not be equal to those that are produced with more warmth, such as already named. All pot Roses that have been stood out for the summer and are not already taken in should at once be got under cover where they will have plenty of light, and be protected from frost and drenching rain, either of which affects the roots in a way that interferes with their flowering.

SOLANUMS.—Where the berry-bearing Solanums are required to have their fruit fully coloured early, they are as well grown altogether in pots; but successional plants, wanted to keep their berries fresh until spring, give less trouble if planted out. Where grown in this way, and moved into pots during last month, they will now have commenced to root freely into the new soil, and should have more air given them. These Solanums are water-loving subjects, and even at this season, when, in common with other things, they are making little top growth, they must not be allowed to get so dry as many plants require to be. If, after being housed, they push much shoot-growth, this should be pinched out, as if left to go on it tends to hide the berries, and also causes them to fall off sooner than they otherwise would. These, and other things subject to the attacks of aphides, should be examined frequently for some time after being taken indoors, and when found at all affected they ought to be at once either dipped in tobacco-water or fumigated. The former method is preferable where only a few plants are affected; but whatever means are resorted to should be followed up until the insects are completely destroyed, otherwise they will spread to everything in the house that is agreeable food for them. THOMAS BAINES.

Flower Garden.

HERBACEOUS BORDERS.—The mixed borders are at present the centre of interest as regards the flower garden, where Pyrethrum uliginosum, many varieties of Asters, Japanese Anemones, Stocks and Sweet Peas are still flowering. Stakes should be placed to tall growers, and vacant spots filled up by the division of plants that have done flowering, or the planting in

their stead of bulbs and annuals for spring flowering.

Rockery and hardy Fernery. — The present is the time to plant among the Ferns in the bare and most conspicuous spots spring flowering bulbs, the most appropriate kinds being Snowdrops, wild Hyacinths, and Daffodils, all of which flower before the new fronds make much growth, as also do Primroses, Cowslips, and the wild wood Anemones. By means of these simple flowers charming effects can be produced without the least interference with or detriment to the Ferns. Keep the rockery free from weeds; only those who know plants well should be trusted to weed here, otherwise plants may be pulled up instead of weeds. Most kinds may now be propagated readily by division, and the slips at once planted in the places intended for them; a bit of light vegetable soil will aid the rooting process, and they must be guarded from slugs by sooting or dusting them over with dry wood ashes, and from being pulled up by birds by pressing them firmly into the soil. A good edging plant for walks in the rockery garden is Sedum glaueum, planted edging-tile fashion — that is, on a slightly-raised and rounded ledge, and about four inches in width.

General Work.—See that the propagation of everything required is attended to, and house all plants that would be injured by frost. Cuttings of variegated Thyme, Gnaphalium lanatum, Violas, and Calceolarias should at once be put in; cold pits do best for all these, also for the half-hardy varieties of Echeverias, Kleinias, and Sempervivums. Mow the lawn and cut grass verges and edgings of walks the last time for the season, and keep down worm casts by frequent rolling with a wooden roller. J. M.

Vegetables.

Cucumbers.—If any of the pits usually devoted to the growth of winter or spring fruit are still occupied with Melons, lose no time in getting these removed, as Melons after this late period are of little value, and the loss of a fortnight in getting weak Cucumbers started often affects them until after the turn of the year. Having so often directed attention to the importance of cleanliness, it is hardly again necessary to remind the young beginner that a pure atmosphere cannot be maintained where it is neglected; and without this and an abundance of light, also secured by keeping the glass clean, it is useless to expect good fruit from Christmas up to the end of March. If the pot system is adopted let the pots be well drained, and fill them quite up to the level of the rim with light, rich, turfy loam and leaf-mould. Turn the plants out before they get pot-bound, otherwise they will have spider before they lose their seed leaves. Give plenty of moisture, but avoid scalding steam, and maintain a bottom heat of eighty-five degrees to ninety degrees until they get well established, when eighty degrees will suffice for the winter. When winter culture is not thoroughly understood, the planting-out system should be adopted, provided a good bottom-heat can be maintained in the chamber beneath the soil, and the plants are not so closely crowded together as is often the case where pots are used. Under either system their food, be it solid or liquid, must always be supplied at a temperature equal to that of the house. Insect enemies of all kinds must have no quarter, and mildew must be prevented from entering by good culture and light cropping in an efficiently-heated and perfectly-ventilated house. G.

14412.—**Gnats in dwelling-house.**—Try bruised Walnut leaves; I have known both flies and gnats driven out by these.—E. Hobday.

14952.—**The Gingseng tree.**—Try Ker, Charlotte-st., Liverpool, or any other good Liverpool seed houses. If they have not seeds in stock, if they are to be obtained in this country and they like to take the trouble, they can get them.—E. Hobday.

14369. — **Regulating temperature of greenhouse and fernery.**—In summer, or during hot weather, the greenhouse should be shaded with a blind that can be taken off or rolled up when the sun is off the house. On cold nights the blind will be of great use again in checking radiation. This, with a paraffin lamp, should keep greenhouse plants safe. Leaving the window of the sitting-room open, if it is connected with the greenhouse, should, except on severe nights, be sufficient. — E. Hobday.

TREES AND SHRUBS.

THE WEEPING BIRCH.

We have lately noticed how some trees have suffered in the very hot weather, especially in the London parks, and it is a pleasure to see the way in which the Birch adds to its tiny shoots in the fiercest heat, and always looks as fresh as in May. The White Birch (Betula alba) is, either in leaf or leafless, a handsome and graceful tree, and it is no less remarkable for its lightness and elegance than for its hardiness. It stands in no need of protection from other trees in any stage of its growth, and lives on the bleak mountain side and other exposed situations, from which even the sturdy Oak would shrink. It is a fast-growing, and rather short-lived, tree, in favourable situations sometimes attaining a height of eighty feet, but generally not exceeding thirty feet or forty feet. It may not be out of place to mention a number of the purposes to which the wood and bark of the tree are applied. Bread of Birch-bark from Lapland, made as long ago as 1857 shows one of the very many uses to which Birch bark is or may be put. Shoes made of strips of bark, used by the peasants of Northern Sweden when at work in their distant meadow swamp; neat baskets in which they sell wild Raspberries; and a specimen of the well-known Alp horn from Switzerland, by no means exhaust the enumeration of articles illustrating Birch bark at Kew. It is a valuable tanning agent, and an oil obtained from it is largely used in the preparation of Russian leather; indeed, it is to this oil that the peculiar fragrance of that article is due. Formerly the Highlanders used the outer layers for lighting purposes, and, before the invention of paper, the inner ones for writing upon. The sap is convertible into wine, vinegar, and spirit; when fresh it forms an agreeable beverage, and an intoxicating liquor when fermented. The wood is esteemed for light turnery work, and is at the present time largely employed in the manufacture of spools or cotton-reels. G. N.

A Weeping White Birch.

The Sweet-scented Laburnum. — During the coming planting season this fine form of the common Laburnum should not be forgotten. Probably many are not aware that there is a variety of Laburnum (Cytisus Laburnum fragrans) with very sweet-scented flowers. Good varieties of ever-popular trees like the Laburnum are doubly valuable, as we know they are sure to thrive with us.—J. O.

The Monkey Puzzle.—In Gardening (p. 425), I notice a short account of the growth and cultivation of Araucaria imbricata in this country, and would like to add a few lines on the subject. During a recent visit to the Isle of Wight, my attention was directed to a splendid specimen bearing fruit, quite a curiosity, and growing at Steephill Castle, Ventnor, the seat of Mrs. Hambrough. The tree is planted in a somewhat sheltered grove, and when I saw it, about a month ago, contained over a dozen cones. It is fully forty feet high, and originally had upon it some forty cones. These cones were cut off by the gardener and carefully tied up, so as to prevent their falling to pieces, and sent

by the kindness of the agent, to several botanical societies. The cones are twice the size of ordinary Cocoa-nuts, and present a rather imposing sight as the spectator stands beneath this fine conifer. I am not sure if this blossoming is unique in England; but I may safely say that few have ever before seen so fine a specimen, and it will well repay a visit. The grounds of the Castle are not thrown open to the public; but, as the family were not in residence, I had no difficulty in gaining admission. I purchased a large mounted photograph, showing the cones very clearly, and only regret that those interested are unable to see it.—ROBERT KING-WALKER, M.A. *** *The fruiting of the Monkey Puzzle is by no means an uncommon occurrence in this country, and a specimen at Kew very rarely fails to produce a crop of cones yearly. The tree described by Mr. King-Walker is, however, we believe, a very fine one.*—ED.

Double-blossomed Cherry.—Not many deciduous flowering-trees are more beautiful than this, and it is so hardy that no weather injures it. It will grow, too, in any kind of soil or situation. The purity of its white flowers is, moreover, not the least of its merits. They are much liked in a cut state, even for button holes. It is most effective when grown as a standard, on stems about five feet in height; it also looks well in the shrubbery border in the form of a bush.—J. C.

REPLIES.

14376.—**Hardy Evergreens.**—In addition to the shrubs named, Tree Box answers well; so also does the common Holly. Varieties of Privet (Ligustrum) are amongst the best subjects for a draughty place. The flowering Currant, Ribes sanguineum—it is not evergreen—and Arbutus Unedo, the Strawberry-tree, may also be tried.—J. D. E.

14740.—**Removing Rhododendron seeds.**—You do not say whether your Rhododendrons are the common ponticum, or the better forms of hybrids: if the latter, they are certainly benefited by having the seeds removed, but the common ponticum is generally left alone. —J. C. C.

—— Break the clusters of seed-pods off with the fingers carefully, as soon as the flowers fade. It requires some care, as the young growths will be starting at that time, immediately under the flower trusses, and they are easily broken off with the pods.—J. D. E.

Cactus Dahlia, Mrs. Hawkins—Mr. John Green, Thorpe, Norwich, sends us a wreath of a very fine new yellow Cactus Dahlia, Mrs. Hawkins.

14420.—**Heating a greenhouse.**—A very small coil of pipe inside the stove would give heat enough, and would, I have no doubt, work in a satisfactory manner. Pipes one inch in diameter might form the coil, but when inside the house let them expand into two inches, or even three inches. The cistern or tank, into which the pipes are taken, will form not only a supply, but also an expansion cistern. If you prefer it, the coil of pipe, which will virtually be a boiler, may be set in a common furnace, like any other boiler, without the stove.—E. HOBDAY.

14734.—**Rabbits and gardens.**—For nearly twenty years I have conducted a large garden, where rabbits abound in all directions, yet I feel that any list of plants I could furnish would be misleading, for what they do not eat, or bite off and leave on the ground, they will scratch out of the ground with their feet. We have to protect every flower-bed or choice tree with galvanised wire netting, one and a half mesh, and three feet high, and they will even jump over that height sometimes. The wire need not be buried in the ground if it is closely pegged down to it.—J. C. C.

To preserve fungi.—The following recipe for preserving fungi was used by a late celebrated botanist:—Two ounces of sul. copper or blue vitriol, reduce to powder and pour upon it a pint of boiling water; when cold, add half a pint of spirits of wine, cork it well and call it the "pickle." To eight pints of water add one and a half pint of spirits of wine, and call it the "liquor." Be provided with a number of wide-mouthed bottles of different sizes, all well fitted with corks. The fungi should be left on the table as long as possible to allow any moisture to evaporate; they should then be placed in the pickle for three hours; then place them in the bottles intended for their reception and pour in the liquor. Be careful to cork them well.—C. F. DAVIS, *Leatherhead.*

OUTDOOR PLANTS.

Hardy plants.—It is a great mistake to imagine that hardy plants will live on from year to year without any cultivation. In a state of nature plants appear to do so, but in reality they do not; they are fed by the continual decay of their own leaves, and of those of the plants they are growing amongst; and not only that, but they are continually changing their stations by travelling at the root, or by sowing seed, the old plants dying out. Some bulbous plants produce their new bulbs at the side of the old; others produce their new bulbs or tubes above the old ones, that being a provision of nature for preventing their being buried by frequent additions to the soil from above; others produce their new bulbs beneath the old ones—a provision for the soil above them being washed away. In many cases it is necessary in a border to keep plants confined to one position. The best way to do that is to prepare the ground thoroughly in the first instance, and then top-dress when required, until the plants show signs of deterioration, when division and replanting in fresh soil become necessary.—J. D.

Weeds overrunning herbaceous border.—I should be very glad of advice on the following subject. I have a mixed herbaceous border, one hundred yards long by about three yards wide, backed by shrubbery. It was made about three years ago, and is of fine rich loam, plenty of manure dug in at first, and a thick layer of manure and leaf-mould over all every winter. It has had no digging whatever, but has been hand-picked constantly. The shrubbery behind is dug and hoed occasionally. Now comes my difficulty. The weeds, chiefly Couch Grass and Ground Elder, have increased to such a degree that nothing short of digging the whole border up would get rid of them; and as the plants are close together, and the seedlings are immovable, to say nothing of those still lying dormant after this hot summer, to dig it up would destroy hundreds of small things, besides risk to bulbs, tubers, &c. Then I should mention that I have already more than enough work in a large garden and grounds for the men employed, and to dig up and thoroughly clean a border of this size and replant carefully every plant would be a severe additional labour. The Couch Grass runs so much that unless every thick patch of plants is taken up and picked to pieces and the grass pulled out, it only increases more; for as one plant is cleared the pieces left grow away faster underground. The ground Elder is as great a plague, as each little morsel roots unless completely destroyed, which is almost impossible. My "long border" is known and admired by all my friends, but I fear will soon cease to be so unless some readers of GARDENING can suggest a remedy. This seems to me to be the great objection to the advice so often repeated as to non-digging of herbaceous borders, and is doubtless the reason that we read very different advice in the old books on gardening—of the date when "bedding out" was unknown and herbaceous plants (of the present revival of which we are justly proud) were in their glory, being the mainstay and chief attraction of every garden. I quote the following from "Every Man his own Gardener," date 1791:—"This is now (October) a proper time to begin to dig the borders and clumps, &c., in this garden, which is not only the most effectual method to destroy the weeds, but the ground will then be ready to receive plants of any sort, and it will appear fresh and neat during the winter season."—S. E. C., *Wilts.*

The White Musk Mallow (Malva moschata alba) is one of the prettiest plants in flower about this time. It is a pure white variety of one of our British plants that is found growing abundantly in some localities by the roadsides in dry gravelly soil. The white variety is more attractive in every respect, and forms a branching, pyramidal bush, composed of numerous branching stems about two feet high, clothed with dark green deeply-divided foliage, and it bears abundance of pure white flowers from one inch to one and a half inch in diameter. It is a hardy perennial, and will grow in almost any soil or situation; but a hot, dry place suits it best. The whole plant is slightly Musk-scented, and from this it derives its specific name.—A. P.

Begonias in the open-air.—I have in my garden at Ventnor, under a south wall, a border of tuberous Begonias, principally scarlet. The plants are very strong, and are now full of bloom. The tubers were planted in 1884, and left in the ground without any protection whatever during the winter, and they are much more vigorous than those planted last spring. It may be interesting to some of your readers to know this. They will again be left undisturbed and unprotected.—M. W. M.

Hardy yellow Carnation.—I regret that I cannot, in compliance with request (p. 428), state the pedigree of my yellow Carnation. A friend gave me one cutting in 1882, and from this I have raised about a dozen plants; some of these I have made into cuttings, so that I hope to have a nice stock another year. The original plant this autumn has been covered with blooms of a good size, pure colour, and without any tendency to split; of course, the young plants produce the largest flowers. The soil is clay; the cuttings have all been rooted in the open air without any protection whatever, so that I can assure the readers of GARDENING ILLUSTRATED that there is such a thing as a hardy yellow self, though for ten years I tried in vain to get one. I am not alone in my opinion, as a nurseryman, an exhibitor of Carnations, gave me two cuttings of his choicest varieties for every one of mine I cared to exchange. My friend is unable to give the name, and seems to have lost all trace of the plant.—S. V. B., *Knaresborough.*

Pansies and Hollyhocks.—Having seen your remarks respecting Pansies raised from seed sown last March, I send you some specimen blooms of some that I raised from seed in early spring this year. I also forward some Hollyhocks grown from seed, August, 1884; are the latter good enough to show?—F. B., *Colchester.* *** *The Pansies are good in colour. The individual flowers of the Hollyhocks are good enough for exhibition, but if spikes are mentioned in the schedule, the merit of an individual bloom does not count for much.*—ED.

The Crimson Flag (Schizostylis coccinea) is one of the few really hardy plants that produce brilliant coloured flower-spikes out of doors during the short dark days of early winter; it is therefore especially valuable for cutting, as in the whole of the Chrysanthemum tribe the range of colour does not as yet produce anything so bright as this. It is quite hardy in this part of the kingdom, but when fully exposed to alternate frosts and rains, the blossoms soon get soiled and weather-beaten; we, therefore, apply some temporary protection in the shape of movable glass lights, under which the spikes open in perfect condition; in fact, the same treatment that suits the Christmas Rose does equally well for this, except that, while Helleborus niger does best in old-established clumps, the Schizostylis brings the finest blooms when frequently transplanted, as it increases rapidly, and the small bulbs rob the larger ones of their food.—J. G., *Hants.*

Hardiness of the night-flowering Tobacco-plant.—Many may like to know that in June, 1884, we planted out a clump of Nicotiana affinis in rich, deep soil, with a good deal of leaf-mould added, under the shade of a purple Beech, in a line with common white Lilies, and behind choice Pæonies. Last year, from June till severe frosts, it was covered with spikes of its lovely blooms, two and three feet high, springing from splendid fresh-green foliage, and scenting the air, after four o'clock, most exquisitely. We intended to protect the roots, but neglected to do so, and so by chance have proved their perfect hardiness in this part of England; for, though in a low, damp, and very full border, the plants have all reappeared, they began flowering in June, and are now very lovely, with bloom spikes almost as fine as last year's, notwithstanding the summer baking, which has done sad damage among many hardy subjects. We lie very low, near a river, and are much troubled by damp and early and late frosts. Our soil is rich, but very heavy. We can grow the hardy Plumbago splendidly.—F. E. G., *Marston, Dorsetshire.*

Bell-flowered Borage, or Borago laxiflora (p. 417).—Is it not a mistake to recommend this horrid weed for rockwork? It is stated that it may not be a suitable "garden plant"; then why put it on rockwork? I protest against the doctrine that is so often taught of placing such things on rockwork, which costs much more money and labour than borders in

the making. It is surely a folly to place rubbish-heap material on rockwork, when there is not, in all or any of our garden departments, a richer and more lovely class of flowers than alpines, or so-called rock plants, from which to select. I do not deny that this Borage has a pretty flower; but, seen growing in connection with its almost thistle-like leaves and ugly stems sprawling three or four feet, the flowers have no effect, and there is absolutely nothing to commend the plant. Besides, it seeds so freely as to fill the land with its kind. Cut, the flowers are nice, and so are those of many hedge and ditch plants. This should only be grown in a wild garden.—J. Wood, *Woodville, Kirkstall.*

Salvia farinacea.—There is a delicate beauty about this autumn Salvia which makes it desirable. It is not showy, but the upper parts of its slender stems are covered with a white mealy substance, on which the purple flowers are thickly set. It is a Mexican species, not absolutely hardy, but one which succeeds well in the open border in the south.—M.

Sedum Sieboldi as a bee flower.—One of the most striking objects amongst autumn flowers has been a large mass of this rosy-flowered Stonecrop, the huge heads of which when fully expanded form one dense mass of bloom, of which bees and most kinds of winged insects seem unusually fond. I should think, therefore, that owners of gardens who go in for bee-keeping might with advantage plant this Sedum in quantity in close proximity to their hives. Honey-supplying flowers are at this date getting limited, and I may remark, for the benefit of those who have not tried this useful plant, that it will grow freely in the driest and poorest soil. I have some growing amongst rockwork in which the soil is very limited; nevertheless, even during the late long-protracted drought, when other plants could scarcely be kept alive, great clumps of this Sedum seemed to enjoy the heat, the heads of bloom being finer and higher-coloured this season than usual. There is no difficulty whatever in its cultivation; small pieces of it put in at this date develop into large clumps by next year, and in no way does it show itself to such advantage as in single isolated clumps. In mixed borders it is useful for filling up the spaces between the earlier-flowering Lilies, Larkspurs, Phloxes, and other herbaceous plants, to which it affords a good succession.—J. G. H.

Camellias on north walls are a decided success on the south coast, for, although hardy enough to stand as open bushes, they well repay the shelter of a wall, and I find that a north one suits them admirably. They begin to flower in the open air about Christmas; they keep in bloom at least three months, and I find that even sharp frost does not injure the bloom nearly so much on a north wall as on aspects where the sun's rays reach them. Anyone having a space to fill on a northern aspect will do well to give the Camellia a trial.—J. G.

The large-flowered Hibiscus.—H. grandiflorus is a tall perennial, ranging from four feet to eight feet high, having slender stems furnished with large heart-shaped, downy leaves, and carrying on the upper parts numerous large showy flowers of a delicate rose-pink colour. Some which we have lately seen measure fully five inches across, and, there being several on each stem, the plant is extremely showy. It is very floriferous, as many as sixty flowers opening at one time. They do not last much more than a day, but, as they are rapidly succeeded by others, there is a continuous show. It likes a warm soil, and requires hot weather to bring it to perfection.—S.

Marvel of Peru.—I am sorry I cannot give "J. E. S." (p. 435) any information as to the poisonous properties of Marvel of Peru. Many plants which are medicinal in minute quantities are poisonous if taken in larger quantities. With regard to keeping the plants through a second winter, all depends on the shape of the roots. Where these have been kept in one mass there can be no more difficulty in storing them than in storing Beetroot, Carrots, or Dahlias. My plants were grown in pots in a sunny greenhouse the first year, and were about the size of the roots offered for sale in the spring. For those who have no glass, that would perhaps be the best way of growing them. Grow them in pots from seed the first year, keep the roots safe from frost all winter, and plant in the open ground the second year. At the end of the second year the roots of my plants were so very much branched that a square yard of ground would scarcely contain each root when divested of its small fibres, and, being very brittle and so easily raised from seed, it was not worth while trying to save them. I tried cutting one or two, but decay set in, beginning at the cut parts.—J. D.

REPLIES.

14374.—**Laying out garden.**—The wall would do excellently for Roses, especially Teas and Noisettes. As "G. N. S." is fond of Roses and Carnations, these may predominate, including Picotees and Pinks. There might be a few standard Roses along the back of the border, but in most places dwarf Roses give the most satisfaction. Besides the plants already named, a few good herbaceous Phloxes, Pentstemons, Pyrethrums, and Pansies should be grown, and a few choice Lilies. For autumn, Japanese anemones (white and red) are very effective, and near the front, for spring blooming, plant Snowdrops, Crocus, Daffodils, and Scillas, and a few roots of Violets. The border should be well planted, but not too crowded, or the plants will steal each other's light. I should keep the border as it is, without any division.—E. Hobday.

14398.—**Growing Gentianella from seeds.**—Certainly this plant can be grown from seeds. They are very small, and should be sown as soon as ripe in the summer, or they may be sown in spring, in pans of fine soil. The best way to propagate it is by dividing the plants. Raising it from seeds is a slow and uncertain process.—J. D. E.

14413.—**Parsley Fern.**—Try it on the north side of a rockery, shaded by a wall or fence. Find an elevated, sheltered pocket for it.—E. Hobday.

14567.—**Growing tender plants without glass.**—"Neophyte" will not be able to keep his Geraniums in a dark cellar. He is just one of those whose circumstances render it inadvisable to grow anything which requires keeping under glass. With Ten-week Stocks, Phlox Drummondii, and Portulacas, raised in a sunny window in spring, helped by a few purchased tender plants, he can have as brilliant beds as with Geraniums and similar plants. Those who have no greenhouse must give up tender plants, and will suffer no loss, but rather be great gainers by doing so.—J. D.

14630.—**Raising Lobelia from seed.**—"Novice" cannot do better than sow the seed at once, for having no heat available he must give his plants plenty of time; in fact, I find autumn-sown plants that are wintered in cold frames far preferable to those hurried on in heated structures. The best plan is to sow the seed in pans, or boxes, and set them in a frame, keeping the soil moist until the young plants appear, by which time very little water will be required, as the short damp days of winter will be upon us. Ventilate on mild days, but shut up closely and cover securely at the first sign of frost, and keep the covering on until the temperature rises again above the freezing-point. By February the seedlings will be fit for pricking off in boxes or frames, and if kept closely pinched they will make nice busby plants.—J. G., *Hants.*

14632.—**Virginian Creeper.**—"Ignoramus" asks what kind of Virginian Creeper assumes the brilliant tint in autumn, for which this plant is so much prized. Well, I have found that both the strong-growing old-fashioned variety and the newer Ampelopsis Veitchii assume the most fiery tints if planted in full sunshine, and both die off with scarcely any autumn colouring if planted in the shade; it is simply a matter of situation being favourable or unfavourable, for the hotter the summer the brighter are the autumnal tints; but the small-leaved Ampelopsis Veitchii has the great advantage of being self-supporting, as it clings to a wall as closely as the Ivy, while the old variety must be nailed or fastened in some way, and, being a rampant grower, it needs a deal of attention to keep it in order.—J. Groom.

14643.—**Tropæolum tuberosum.**—To flower this well one or two facts should be borne in mind. It is a somewhat late bloomer, loves dryness and sunshine, and in very severe winters may be damaged by frosts unless planted with needful care. Many fail to flower it because they set it in soil too rich or positions rather shady; but most fail because, believing it to be tender, it is not set until the March frosts are over, when the plant, even under the best conditions otherwise, has scarcely time to develop its abundance of rich flowers. Those who have the dry tubers to begin with should start them in pits about December, and keep them in cold frames covered with oak leaves, and set them out in spring, when the plants will probably be a foot high. The gain here is obvious. The soil should be mixed with half its quantity of lime and other stone rubble, formed in a hillock two feet across, and nine inches above the common level. This secures dryness, and a temperature some few degrees higher, and in it the tubers can be left out all the winter, or at least so many of them as are needful to form a good specimen—say four—which will allow of perhaps three times that number being removed annually. The position cannot be too dry and sunny—a south wall, a bank, or well-exposed rockwork will do. If kept moist and shaded the only crop will be thick stems and leaves.—J. Wood, *Kirkstall.*

—— Plant next year in very poor soil (mixed with sand or brick rubbish); but, anyhow, starve them, but not in moisture.—J. G. K., *Southborough.*

14634.—**Russian and Neapolitan Violets.**—Violets of the Neapolitan type should be planted at once in cold frames. They prefer light, open soil, and should be planted as near the glass as possible. Air should be admitted on all favourable occasions by tilting the sashes sideways, thus causing a good circulation of air throughout the frame. Keep them moist at the roots, and keep down red spider by syringing occasionally on fine mornings. The Russian Violets prefer a heavier soil, but the same treatment when planted-out in frames; here, planted at the base of the garden walls, they flower freely throughout the winter.—G. S., *South Yorkshire.*

14717.—**Best hardy Fuchsias for outdoor cultivation.**—Six very good varieties for outdoor cultivation, in pots, are:—Fleur Rouge (sepals scarlet, corolla violet), a very free-blooming variety; Avalanche (sepals carmine, corolla dark violet, double); Mr. King (sepals coral red, corolla deep purple), a very good variety; Mrs. Marshall (sepals white, corolla scarlet), a very free-blooming variety; Mrs. Rundell (sepals orange, corolla bright orange), a very free-blooming, and also a splendid winter-blooming variety; Rose of Castile (sepals white, corolla rosy purple), an old but very useful variety for all purposes. The above are also good varieties for planting out.—W. E. Boyce, *Holloway.*

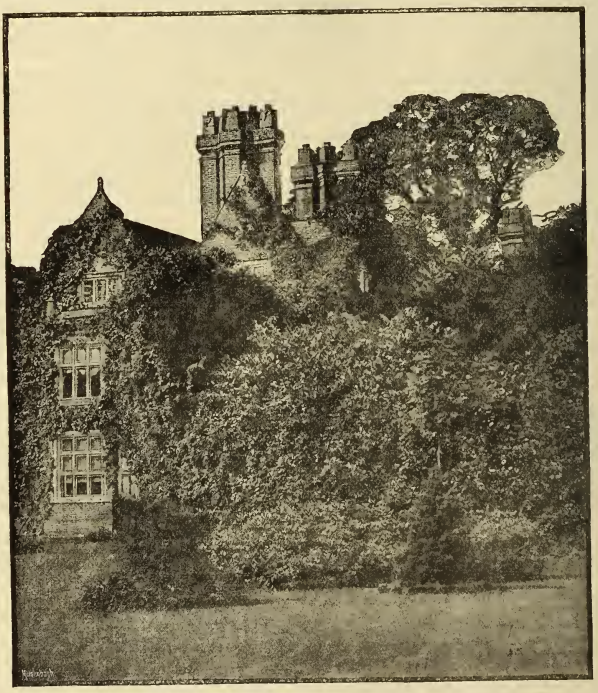
—— The best hardy Fuchsias with red flowers are globosa, Riccartoni, longiflora, and Carolina; the best white are Souvenir de Chiswick and Venus de Medici.—J. C. C.

14724.—**Exhibition Dahlias.**—A model for an exhibition Dahlia can be found on the living plant. A "Young Dahlia-grower" should carefully examine a good bloom of the new variety, Mrs. Gladstone. The flower is perfectly round, high in the centre, and the petals very regularly arranged. The petals are neither too large nor too small. When the petals are too large, the flowers are said to be coarse; if too small, they are objected to. A low centre is a serious fault, but it is not so serious as a cross centre.—J. D. E.

14746.—**A mistake with Dahlias.**—Your mistake with your small plants was in not potting them when you received them, and keeping them close in a frame till well growing again. These tender things, raised as they are in heat, could not possibly stand such a change without an intermediate hardening off. I always do this, if only for a week, and never lose a plant. Again, tubers will lie in the ground as you say yours did, unless a piece of old stem is attached to the tuber, the bud from which the plant springs being at the top of the tuber close to the stem. A tuber broken off below this keeps alive, but does not grow. I expect, however, a strong heat would cause it to form buds on its surface. I always put my tubers, stem attached, straight into the ground towards the end of May, and they grow without any check. I should not do so if I had them from a nursery, however, but start in heat first.—J. R. N.

THE SURROUNDINGS OF COUNTRY HOUSES.

NOTHING looks so snug and home-like as an old English country-house embowered in foliage, like that represented in the accompanying illustration. Such examples as this are, however, unfortunately comparatively rare; some people seem afraid to have trees too near their dwellings, and foliage on their walls. The aversion to Ivy on a house is doubtless due to the impression that it causes dampness in winter; and this it certainly does in some localities if both it and the tree and shrub surroundings are too dense. The tree growth, especially, should be so arranged as not to obscure sunlight, and, if deciduous trees are employed, little fear need be entertained on the score of dampness. No one would think of completely smothering a house in trees, except in very exposed places, where they serve as a break to the wind, and by no means should the southerly aspect be planted out. The house here shown lies at the bottom of a valley near a large lake, and the tree growth is mostly confined to the north and east sides. There are some fine old Elms—rather unsafe trees, by the way, near buildings—and these break the sky-line of the building in a most artistic manner. The shrub-growth about the house is rather dense, too, and affords an effectual break to biting east winds. The building is completely enveloped in creepers, which reach even the very chimney-pots. As regards the desirability of having Ivy-clothed walls, the evidence for and against seems pretty well balanced; but there can be no question that greenery of any sort adds largely to the charms of a house whether in town or country.



An Old English House and Garden.

HEATING A MELON-PIT.

I SHALL be glad to receive information as to the best plan of building and heating a Melon-pit. It is to be a lean-to or a three-quarter span one, and in length about twenty feet or thereabouts, breadth six feet. I should like to know the exact height of front and back walls, ventilators, &c., and if it should be heated by hot-water pipes. I have any amount of tree-leaves at command, but manure is limited. I am a successful grower of Melons under frames, and that is the reason that my employer wants to go in for a pit. I find no more trouble in growing Melons than I do in growing Cucumbers, and they are, as my employer states, "of most delicious flavour"; but I attribute all my success to having the mowing of about half-an-acre of a lawn as a lining to be used when required.—ENQUIRER.

*** The most successful and economical Melon-pits that have come under my notice were constructed of brickwork in the usual way—at least as regards the upper part—but with a perforated false bottom, upon which the plants were set out, and beneath this a close chamber, to which access was gained by means of strong wooden doors, and which was wholly or partially filled with fermenting materials, the heat and genial steam rising through the perforation into the upper chamber, and thus ensuring a proper degree of warmth and moisture to its inmates. The first cost of such an arrangement is undeniably somewhat great, but a pit so constructed is wonderfully efficient, and has this advantage—a considerable one where fermenting materials are not abundant—viz., that a small quantity of stable-manure, leaves, or tan goes a long way and lasts a long time. Half a load of manure in such a pit will give more, and better, heat than two loads in or round the usual hot-bed frame; it can be removed and renewed whenever necessary without disturbing anything, and it can be used with hardly any previous turnings, the only thing to guard against being the material overheating itself and becoming burnt.

Where first expense is not a very great object, I should strongly advise constructing a pit for Melons on this plan. Take the soil out the size of the proposed pit (sixteen or twenty feet by six feet, for a four or five-light frame is a very good size) to a depth of about two and a half feet, excavating as well, however, if the ground is level, a further space along one side, either front or back, of about four feet wide, to enable the manure to be put into the chamber through the doors. It will be as well, though not really necessary, to make a hard floor by putting down a little rough concrete, then bring the brickwork—ordinary nine-inch work—up to about three feet high, allowing for, or building in, a sufficient number of strong sliding doors and frames along the side from which the pit is to be supplied. Now insert, across the pit, a number of lengths of T-iron, at sufficient distances apart to take what are known as "kiln-tiles," which are full of holes, and will make the best of all bottoms. Continue the brickwork up to about eighteen inches above this false bottom in front, and two feet, or rather more, at the back. Put in the tiles (the T-iron should, of course, be inverted to hold them), run a row of three-inch piping all round *above* them, to furnish top-heat when required, fix your frames and sashes, and the job is done. Plant the Melons on mounds of soil over some turf sods, turned grass-side down upon the tiles, and if at any time a quantity of rank manure has to be used, you have only to cover all the surface over with turf, or a thin layer of tan or leaves, to prevent any harm from accruing to the plants. Shut up tight in a place like this, the fermenting materials, of whatever kind, will give off all the heat possible, and none will be lost, for neither wind nor rain can wash or blow it away. If manure, &c., be at all likely to run short, it would be well to put in three or four rows of four-inch pipes just beneath the false bottom, to furnish warmth when the other source failed. The heat should only be turned into the three-inch pipes when really necessary, and these should not be allowed to get very hot at any time, as they act directly on the foliage, and the Melon is so liable to red spider that great caution must be exercised, and the more indirectly and gently the necessary warmth is supplied, the better.

A quantity of highly-heated piping, fully exposed in a house or pit, is almost certain to induce insects of several kinds in the case of any plants liable to their attacks, such as Melons, Cucumbers, Gloxinias, and so forth, and if this occurs in the early stages of growth, good-bye to all chances of a good crop of fruit or batch of plants. Therefore, for all such subjects you should, as far as possible, bury your pipes, cover them over out of sight, if only just under the stage, so that the warmth may be diffused before reaching the plants. The best pits I have ever had (that is, heated solely by pipes) had no top-heat whatever, only a well-heated chamber beneath, containing abundance of pipes, completely covered in with galvanised iron or slates, resting on suitable bearers, with a thin layer of Cocoa-nut fibre on this, always kept moist. This, being always warm, keeps the temperature up, and burnt or over-dry air is impossible. B. C. R.

Broken flower-pots.—I take it for granted that most of your readers will have suffered greatly from breakage in flower-pots. It may, therefore, be of importance and interest to some of the more economical of them to know the way in which I have reduced my own loss to a minimum. I take Portland cement and mix it up to the consistence of putty, and after joining the different pieces together, I put on a thin patch of the cement inside all along the crack, either with a small trowel or a table-knife. The cement takes firm hold at once, and the broken part almost immediately becomes the strongest and most enduring part of the pot. The cement can be had from any builder for a mere trifle, and any left over, if kept in an air-tight vessel, can be used at any time when necessary.—J. M. D.

Borax for cockroaches.—In reply to "H. Edmonds" (p. 377), about borax and cockroaches, I may say that I have never known it to fail. It must be powdered, and thrown *dry* where the pests congregate—say, the fireplace, and round the skirting-boards—and left for a couple of nights, and, if they are not then gone, repeat the dose. I do not think it kills them, they simply disappear. I have just been reading of borax being used for the same purpose, and with good effect, in America.—STOUT.

—— "E. Glasgow" writes:—"I have proved that both borax and plaster-of-paris, mixed with sugar, are utterly useless in the destruction of cockroaches."

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

14877.—**Best six Begonias.**—Would some growers of tuberous Begonias kindly give the name of the six best for competition?—P. R.

14878.—**Self-acting fountains.**—Would any one please inform me, through Gardening, where I can buy a good self-acting fountain?—H. N.

14879.—**Worms on lawns.**—Will any one kindly tell me how to prevent worms from spoiling a lawn, or how to remedy the mischief they do?—Lacune.

14880.—**Ferns for competition.**—Would some reader kindly mention the names of the six best British, and greenhouse or stove Ferns for competition?—P. R.

14881.—**Filberts and Cob-nuts.**—Will any one kindly inform me how to preserve Filberts and Cob-nuts, so as to keep them fresh till Christmas, and oblige?—E. B., *Hants.*

14882.—**Propagating Mulberry-tree.**—Will some of the readers of Gardening kindly inform me how to propagate a Mulberry-tree, and the best time?—Mulberry.

14883.—**Hardy Primroses.**—Will anyone kindly give me instructions how to raise these from seeds? When should I sow, and how long should I have to wait for bloom?—Novice.

14884.—**Protecting bulbs from mice.**—Will any bulb-grower tell me whether paraffin oil can be used for bulbs to prevent mice eating them? If not, what course can I adopt?—H. S.

14885.—**Keeping Filberts.**—Will some reader kindly tell me the best way to keep Filberts, as I have a good lot and should like to keep some for a time in good condition?—A. C., *Bedford.*

14886.—**Cyclamen.**—I have some young Cyclamen. Will Mr. Cornhill, or any other reader, tell me how they should be treated to bloom well next year? I have plenty of glass.—A. M. R., *Eastbourne.*

14887.—**Geraniums for exhibition.**—Will some successful Geranium-grower tell me how to manage my plants that they may be able to compete at shows next year? I have plenty of glass.—A. M. R.

14888.—**Mushroom pests.**—At the end of an interesting article on "Mushroom Growing in Paris," a correspondent mentioned several mushroom pests. Will he kindly say how they are to be combated?—Tyro.

14889.—**Growing Violets in frame.**—Will any reader kindly inform me how to grow Violets in a frame, in order to have them in bloom during the winter months, and at what time of the year they should be propagated?—A. J. W.

14890.—**Culture of the Dove-flower.**—Will anybody who has successfully grown this orchid (Peristeria) kindly give me a few simple instructions how to grow it, the temperature required, &c., and also tell me when it blooms?—Erin.

14891.—**Prize Pansies.**—Would any reader of the Gardening Illustrated, to assist a novice, give a list of the names of a few of the best show and fancy Pansies that have taken prizes in Scotland this last show season?—A Young Fancier.

14892.—**Cutting Grass on lawns.**—I have a large lawn, sown this year. Should I cut close now or leave Grass long? At present it is, say, six inches.—O. W. E., *Stirlingshire.* *** *You should have cut it long ago, and you had better do so now.*—Ed.

14893.—**Roses.**—Where can I get Roses of the alba class mentioned on p. 303 of Gardening? I cannot find Maiden's Blush, nor La Seduisante, nor any of the names there mentioned in the catalogues that I have examined. I much wish to procure them.—Rex.

14894.—**Alpine plants in pots.**—I wish to have spring flowering Alpine plants for pot culture, and, being ignorant of this class of plants, I should be glad if some grower would name, say, half-a-dozen or so of the best Alpines for exhibition purposes.—Nemo.

14895.—**Utilising frame.**—I have just come into possession of a frame. It has brick sides, lean-to, not heated. Will any reader tell me how I can best use it now? Is it of any use with a soil bottom? or do I require manure, &c., for the bottom?—Ignoramus.

14896.—**Heating small greenhouse.**—I have a small greenhouse measuring about eight feet by six feet, which I use for Ferns; can any one advise me as to the best way of heating it, so as to keep the temperature between sixty-five and seventy degrees?—L. E. H.

14897.—**Pansies.**—How shall I save my Pansies through the winter? It is very bleak in winter where I live, and a neighbour tells me he lost all his last winter. How shall I prevent mine from perishing by frost and cutting winds? Soil light, rather sandy; south aspect; high ground.—Lover of Pansies, *Staffordshire.*

14898.—**Gas boiler.**—I have a small greenhouse, with fifteen feet of two-inch hot-water pipe fixed, and would like to heat it by a gas boiler. Will some one kindly tell me of a good cheap boiler (gas), capable of heating the above amount of piping? I am supplied by gas from off a thirty-inch main, so have a good pressure.—Smith.

14899.—**Rhododendrons.**—I have a large clump of hybrids which have grown rather straggly. I do not wish to cut them back. Is there any flowering evergreen dwarf shrub which I might plant among them?—C. W. E., *Stirlingshire.* *** *Barberries, the Shallon shrub (Gaultheria Shallon), and some of the Heaths will succeed in such a position.*

14900.—**Plants for greenhouse.**—I have a small lean-to glasshouse, about twelve feet by nine feet, and eleven feet at back, heated with hot water. I want to keep only choice plants of moderate size. Will J. Groom, J. Cornhill, or any other correspondent, kindly tell me the names of such plants, so that I may have some in flower at all times, more especially in the dull months?—W. C.

14901.—**Wintering Antirrhinums, Picotees, and Pansies.**—I have some young seedlings of Antirrhinums, Picotees, and Pansies, with from four to eight leaves on them, planted in boxes and pots. I should feel greatly obliged if some reader would tell me how to keep them through the winter: out in the open garden, or in a cold frame? I have no greenhouse.—Northwould, *Lincolnshire.*

14902.—**Campanula fragilis.**—Should a plant of this, that flowered well this summer, be repotted this autumn, or left till spring? Will it live through the winter in south greenhouse, unheated except in hard frost? What soil and treatment does it require?—L. D. *** *Leave it now in the pot that it occupies and repot if necessary in spring. It will live through the winter in such a house as you describe.*—Ed.

14903.—**Tomatoes not fruiting.**—I should be glad to ascertain the reason why my Tomatoes do not fruit. I have grown a round smooth kind in pots, in a greenhouse without heat. The plants are strong and healthy, with plenty of flowers. These leave no fruit behind them. Some planted out of doors against a wall with lights over them have done better but not well. Are some kinds worse fruiters than others?—Tomato, *Lancashire.*

14904.—**Night-flowering Tobacco plant.**—I have two plants of Nicotiana affinis, which looked promising and had several buds on, but they came to nothing. The plants look healthy, and the flowering stalks are still green and branching out below. What should I do with them? Should I cut off the long stem, and make cuttings of the side branches, leaving the old plant for next year? If so, will the cuttings require bottom heat to start them?—L. D.

14905.—**Vines.**—I have five Vines in my house, and only one has borne fruit in quantity; the others very poor. Last year the other four canes were fruitful, but not in such quantity or quality as No. 5 cane this year. Now, No. 4 cane has a strong, straight new shoot: should I cut down the old cane and encourage the young wood, or should I prune down to the second eye and leave the old thick wood? The Grapes are black—I think Hambro'.—Youngster, *London.*

14906.—**Hydrangeas not flowering.**—I have several Hydrangeas in pots, some old plants, and some struck in the autumn of 1884, but I have had no flowers on any of them this last two years. Some are in thirty-two pots, and some are in forty-eight pots. They are potted in good loam, silver sand, and a little very rotten cow manure. They make plenty of wood and fine foliage. I should be very much obliged if any readers of Gardening could give me any information as to the cause of their not flowering, and what to do with them to get them to flower in 1886.—H. P. L. S., *Croydon.*

14907.—**Utilising a border.**—I have just had a long border trenched over two feet, and enriched with quite three or four barrows-loads of sediment to each yard from an old house-drain of quite a century back. It is five feet wide, under a low three-foot wall, facing south. In this I mean to plant pyramid Pears, Apples, and Plums, but want to utilise both wall and border for other things that will not interfere with them. Will some kind friend advise an amateur what to put in, and how to make the most of the border? Quantity is not any object; I want to expend my time on quality only.—J. C.

14908.—**Anemones and Ranunculuses.**—Last autumn I planted in one bed single Anemones and in another Ranunculuses. After they had done flowering I left them both in the beds, and in one I planted Asters and in the other Stocks. Both Anemones and Ranunculuses are up out of the ground some inches. Will you kindly tell me what is best to do with them now, and if the bulbs should have been taken up after flowering?—W. C. *** *They should have been taken up after flowering, but leave them as they are now, and if the weather threatens to be severe put a little protective material over them, such as litter or dry Ferns.*—Ed.

14909.—**Building greenhouse.**—Will "B. C. R." or some other correspondent kindly give some further particulars about greenhouse structure? I have two walls looking south and west, twelve feet high, and meeting at a right angle. The west wall is twenty-four, the south twenty-one feet in length. I propose to build a lean-to greenhouse, ten feet in width, on these, and to put a door at the southern extremity, and a heating apparatus outside at the western extremity. What should be the height of the front wall on which the framework is to rest? Of what wood and what size should the rafters and other part of the framework be, and at what interval should the rafters be placed? Where should the ventilators be? Where should the hot-water pipes be put? Should the door be of glass or wood? I should be very glad of a few hints.—Tyro.

14910.—**Plants for rabbit-infested grounds.**—Around all but the south side of a tennis-lawn here there is a border two to three feet wide which we are anxious to fill with something bright and cheerful—for the summer months, at least. It is backed by trees and shrubs, which also surround the lawn on all but the south side, so that the site, as well as the soil, which is goodish loam, is favourable to the growth of almost any of the ordinary decorative bedding plants; but our difficulty is with rabbits, which have full access from surrounding park and plantation, and eat off almost everything. Can any reader supply a short list of some bright, decorative things which are to some extent rabbit-proof, and therefore suitable for such a position? I was thinking of trying scarlet or pink Pelargoniums and Santolina incana for a front row, and if these would be thoroughly proof against our troublesome rodents, the question may be confined to names of a few taller things as a sort of stud plants for the back.—J. L., *Crewkerne.* *** *A somewhat similar question was asked last week, and "J. L." will find a note on the subject in this week's issue. We have no doubt some of our readers will state how they have overcome the difficulty that he has to contend with.*—Ed.

14911.—**A Hard Case.**—Kindly allow me to submit another legal question for the consideration of readers of Gardening. When I entered into possession of my present house and garden the house was quite new, and the now garden then green fields. I took all together on a lease for five years, the owner promising, and offering on his own behalf, to renew me the lease on its termination, should I have a desire to do so. Trusting in his word and honour, I laid out the grounds and walks, planted the flower garden with the best trees, shrubs, &c.; the kitchen garden I also planted with fruit-trees, &c., at my own expense, so that I had made at the end of my lease term a nice place. My landlord now refuses to grant me another lease, although I continue to pay, and am willing to pay, the utmost value of rent. Now he talks about selling the place, and considers himself fully entitled to all the benefit of my outlay, and love's labour, and improvements. I know I cannot disturb the freehold; but I wish some of your competent correspondents to kindly inform me whether I have, or have not, the legal power to cut off above ground-level every fruit-tree and flowering shrub I have bought, paid for, and planted, which is now growing in the garden? I am convinced that the landlord would not allow a penny as compensation to me, although we are, and always have been, the greatest of friends as landlord and tenant. I have never had one penny or other consideration allowed me for anything done or spent, and feel a strong dislike to be taken advantage of in this way, having always been punctual in paying my rent and all demands when due to him.—J. T.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

14912.—**Leggy Crassula** (*Brownswood*).—Yes; your best plan would be to cut back the plant.

14913.—**Book on Orchid culture** (*Erin*).—Mr. B. S. Williams' "Orchid Manual" will meet your wants.

14914.—**Onions for seed** (*New Beginner*).—As you want the Onions to run to seed, it is best to leave them in the ground.

14915.—**Sowing seed of Lantanas** (*Brownswood*).—Sow the seed in March in pots placed in a hot-bed or heated frame.

14916.—**Evergreen climber for decayed trees** (*A Subscriber*).—You can get nothing better than Ivy for the purpose.

14917.—**Marvel of Peru and Indian shot** (*A. H. E.*).—No; Canna indica and Marvel of Peru will not thrive in a gas-lighted room.

14918.—**Wintering Geraniums and Fuchsias in Wardian case** (*A Reader*).—Yes; you must certainly keep frost out if you wish to preserve these plants.

14919.—**Cutting down tall India-rubber plant** (*Henry*).—You had better leave it as it is until the spring, when you will have a better chance of success.

14920.—**Geranium cuttings** (*W. S., Southsea*).—The cuttings will winter well enough in the three-inch pots; you may shift them into large pots about February.

14921.—**Geraniums shrivelling** (*Amateur*).—No doubt the fact that they were, as you mention, kept too dry, explains the bad state of the plants; you should cut them hard back.

14922.—**Raising Echeveria secunda glauca** (*Beginner*).—This is not usually raised from seed, but from suckers. It is not hardy, and is generally planted out in May.

14923.—**Christmas Roses in shaded border** (*Minx*).—Yes; Christmas Roses will flourish there if the border is not densely shaded, and if the soil is deep and tolerably rich.

14924.—**Carnation "sports"** (*W. J. G., Crouch-end*).—It is not unusual in the case of Carnations for flowers of different colours to be produced on one plant. One colour is simply a sport from another.

14925.—**Neglected Monkey Puzzles** (*R. K. P.*).—You may try the effect of a top-dressing; but once these trees get in a bad condition there is really no remedy, and they had better be uprooted.

14926.—**Neglected Filbert-trees** (*F. P.*).—Thin out the branches and cut back some of the more prominent shoots. If you cut them down severely, you will not get much fruit for a year or two.

14927.—**Adiantum concinnum lætum** (*A. C., Bedford*).—This requires a moderately warm house and ordinary potting soil, which consists of the usual mixture of peat, leaf-mould, and a little sand.

14928.—**Making Asparagus-beds** (*A. M. R.*).—Mr. Hobday's article on the culture of Asparagus appeared in our issue of December last, and in the same number you will find another note on the subject.

14929.—**Cure for American blight** (*G. L. W.*).—Scrub the affected parts with paraffin mixed with water at the rate of a wineglassful to the gallon; afterwards put a composition of clay and cow manure over the cankered parts.

14930.—**Maiden-hair Ferns in hall** (*Novice*).—The Ferns had doubtless been coddled in a heated greenhouse, and the sudden change from there to a cold and probably draughty hall is quite sufficient to account for their death.

14931.—**Lilium auratum not flowering** (*W. S., Southsea*).—No doubt, if your bulb, as you say, has plenty of roots, and if it remains plump and healthy-looking, it will send up a shoot next year, and you need have no fear as to its safety.

14932.—**Planting Anemone fulgens and Ranunculus** (*Northumberland*).—You may plant either now or in the spring; but if your locality is cold, and the soil not warm and light, it would be better to plant in February or March.

14933.—**Agathæa cœlestis out of doors in winter** (*Rex*).—It will winter out of doors in the warm southern parts of this country; but, speaking generally, it is not a hardy plant, and must be lifted and protected in a frame or greenhouse.

14934.—**Blood and bone manure** (*L.D.*)—This is very strong food for any but the most vigorous plants, and we should not advise its general use. If your soil is very poor, a dressing of it might be beneficial, but its habitual use would do more harm than good.

14935.—**Raising Ferns from spores** (*J. Auley* and *H. S. H.*).—The present is a good time to collect the spores for the purpose, and they may be gathered whenever the Ferns are ripe. "H. S. H." should read the article on this subject in our issue of Aug. 29.

14936.—**Cuttings of Pyrethrums** (*Mina, Cheltenham*).—Split off little pieces from the tufts that spring from the root, and strike them in sandy soil in pots under a hand-light. The work should have been done earlier, but it is not too late. Pyrethrums are perfectly hardy.

14937.—**Foliage on Strawberry plants** (*A New Beginner*).—If the leaves are perfectly decayed you may remove them, but you had better defer it until the spring. They serve to protect the plants, and the only point on which you would gain by their removal is in neatness.

14938.—**Wintering Auriculas** (*New Beginner, Kilkenny*).—The greatest enemy of the Auricula in your locality is excessive wet; there is no need for fear on the score of their hardiness. We should advise you, if your locality is excessively wet, to protect the plants by a bandlight.

14939.—**Acacia inermis overshadowing house** (*J. H. P.*).—Any tree that too greatly shades a house is, no doubt, hurtful to some extent. As this is a handsome tree, and probably too valuable to be destroyed cannot you prune it heavily on the side nearest the house?

14940.—**Destroying leaves** (*C. W. P.*).—If you want to destroy the leaves, the best way is to burn them and spread the ashes on the ground. The decaying of leaves is a long process, and will take several months, but you can slightly accelerate decomposition by mixing with them some layers of horse-droppings.

14941.—**The Evening Primrose** (*Novice*).—The common Evening Primrose (Œnothera biennis) is perfectly hardy; it may be raised from seeds sown at any time of the year, except winter. If you sow now, some plants may bloom next summer, but as it is a biennial, it really requires a season's growth before it flowers.

14942.—**Nertera depressa** (*C*).—You ought to succeed with this in a house from which frost is excluded, for the plant is almost hardy—in fact in some districts, even in the neighbourhood of London, it succeeds well in the open air. It may be grown to perfection in an unheated house, and probably your failure is due to some error of treatment.

14943.—**Pears cracking** (*Ignoramus*).—The Pear is Van Mons, and its unsatisfactory state is probably due to unsuitable soil and to grafting on the wrong stock. It is most likely grafted on the Quince, but does better on the Pear stock. Try the effect of enriching the soil by a good top-dressing; then, if it does not improve, it would, we think, be best to uproot it.

14944.—**Books of reference** (*Ostler*).—There is no single book that we are acquainted with in which you could get instructions on "all sorts of gardening operations." The following, however, are all good books:—"The English Flower Garden (outdoor)"; Baines' "Greenhouse and Stove Plants (indoor)"; "Scott's Orchardist"; and Thomson's "Fruit Culture Under Glass."

14945.—**Planting Lilies** (*Northumberland*).—Pot your L. auratum and L. speciosum as soon as you receive the bulbs. Keep them rather dry, and plant early in spring when the weather is favourable. Do not break the ball of earth by which the bulbs are surrounded, as by that time several rootlets will no doubt have entered the soil. You have done right in potting L. candidum, L. canadense, and the other Lilies you mention.

14946.—**Woodlice in Mushroom-house** (*S. A. Sharman*).—A correspondent recently sent the following note on this subject to GARDENING:—"I damp the edge of the Mushroom-bed and the floor about three o'clock with a very fine rose, and then go into the house at night with a light and find that all the young ones have come out after the moisture; they can then be killed with ease. This must, however, be done very carefully, or they will run back again into their holes. The work must be repeated night after night, until none are left. This is how I cleared our fernery, which was smothered by them."

14947.—**Irises in the open border** (*Northumberland*).—Iris Kæmpferi is a perfectly hardy plant, and requires a moist situation, such as the edge of a stream or a pond, and will flower well in the open air; in fact, it will not succeed if protected. I. pavonia is not hardy, and requires frame or greenhouse cultivation. I. persica, a very old bulbous Iris, is perfectly hardy, but, as it is one of the earliest flowers of the season, should have some protection, or its delicately-tinted flowers will be spoiled by the weather. Therefore, it is best to protect it by a bandlight or frame, or to grow it in a pot in the greenhouse.

14948.—**Procuring and planting Hop-plants** (*Puffin*).—They are to be obtained in Covent Garden Market, and they should be planted in the spring. They are propagated by dividing the plants at that time.—J. D. E.

14949.—**Roses for exhibition late in November** (*Gringo*).—Do not pick off any more of the buds, and let the plants be taken to the greenhouse at once. Your treatment of them there must be guided quite by the present condition of the buds. If they are likely to open before you want them, let the plants stand in the coolest and most airy part of the house, or give them less air and a little artificial warmth at night and on cold days if their condition warrants it. If you fail, do not be deterred from trying another year; the experience you will gain will be valuable.—J. C. C.

14950.—**Grubs on Pears** (*W. Woodruff*).—The grubs on your Pear leaves are the Pear slug worms, the grubs of the Pear saw-fly (Eriocampa adumbrata). They appear to be unusually abundant this year. Pick the grubs off the leaves, or syringe with one ounce of hellebore powder dissolved in a pail of water. This will kill them if the leaves be thoroughly wetted, as hellebore is very poisonous. This solution should not be used until after the fruit is gathered. Syringing with strong soot and lime water, or soapsuds, has been found very effective, and these mixtures are perfectly harmless. When full-grown, the grubs bury themselves in the earth under the trees, and become chrysalides within a small oval cocoon. In the course of the winter stir up the soil under the trees to the depth of three or four inches. This will expose the cocoons to the weather and the birds, who in cold weather will make short work of them.—G. S. S.

14951.—**Cineraria leaves curling up** (*Young Gardener*).—The treatment the plants have received is quite right, and the potting material such as they would grow well in. The leaves curl up from two causes. One is mildew, an insidious parasite, which sometimes spreads over the leaves before it is observed, and causes them to curl up. It spreads with great rapidity. The remedy for this is dusting the leaves lightly with flowers of sulphur. The plants are sometimes over-shaded, and not placed near enough to the glass; in that case the leaves are not of sufficient substance, and they will curl up when exposed freely to air and sunshine in September. We would rather place the plants on a cool bottom of ashes out of doors in a partially-shaded place than grow them in the greenhouse with a collection of flowering plants of other species and varieties—that is, during the growing period in summer and the early months of autumn.—J. D. E.

TO CORRESPONDENTS.

D. P., Kent.—We do not know what plants you refer to, and, therefore, cannot help you. Send us a piece of each of the plants, and repeat your question. ——*A Subscriber to* GARDENING.—Try Messrs. Backhouse, of York. ——*A. J. Butler.*—We can insert your request only as an advertisement. The Dahlia you send is a fairly good, medium-sized flower.——*Ivanhoe.*—A question on the subject was asked last week. If that does not elicit the information you require, kindly write to us again.——*B. R., Poplar.*—The name of the stove is mentioned on page 377, and you should have no difficulty in getting it through any hardware merchant.——*Subscriber.*—Gillingham's is spoken of. You will find reference to previous notes on the page you mention.——*Oliver Hemingway.*—There is no "Exchange" column in GARDENING.——*Young Gardener.*—You can get very good Mushroom spawn from nurserymen.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Pelargoniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand. Any communications respecting plants or fruits sent to name should always accompany the parcel.*

Names of Plants.—*R. Greening.*—Campanula trachelium.——*E. C.*—1, Arabis albida; 2, Sedum glaucum; 3, Common Pot Marigold.——*J. H. W.*—Blood Lily (Hæmanthus coccineus).——*F. C. A. P.*—1, Clarkia elegans; 2, Snail Clover (Medicago scutellata).——*J. Philip.*—Leycesteria formosa.——*E. N. Y.*—Leaf of a Geranium (not Pelargonium); cannot say which.——*J. Cox.*—1, Adiantum tenerum; 2, A. setulosum.——*Rex.*—Marvel of Peru (Mirabilis Jalapa); some of the varieties change the tints of their flowers.——*E. H.*—1, Phalaris arundinacea variegata; 2, Hesperis matronalis fl.-pl.; 3, Phlox setacea; 4, Cerastium tomentosum.——*J. P. G.*—2, Dianthus deltoides.——*M. D. Bull.*—Fuchsia cordifolia (a greenhouse plant of simple culture). Cornelian Cherry (Cornus mas).——*Mac.*—Next week.——*H. V. F.*—Euonymus europæus (Spindle Tree).——*E. Cowles.*—1, Pteris tremula; 2, Nephrolepis exaltata; 3, Asplenium bulbiferum; 4, Pteris longifolia.——*R. Jackson.*—Hypericum androsemum.——*F. R.*—1, Aster lævis; 2, Aster Novæ-Angliæ pulchellus; 3, appears to be Selaginella Mertensi.——*A Vicar's Wife.*—Send us a better specimen.——*M. M.*—Helianthus giganteus.——*R. H. Wake.*—The "Stinking Polecat" (Phallus impudicus). If you had been treated to the odour that the fungus emitted when your box was opened by us, you would probably have thought it unnecessary to ask whether it is eatable! Phallus is looked upon as an intolerable nuisance, on account of its potent and sickening odour of carrion.——*Puzzled.*—We cannot name the plant from your description. Send us a flower, if you can get one; if not we will try to name it from the leaf.——*Mrs. Lushington.*—Phygelius capensis.——*Leeds.*—1, Berberis Wallichiana; 2, Cupressus Lawsoniana; 3, Pernettya mucronata; 4, Berberis nepalensis.——*C. B.*—Salvia Hoveyi (Mexico).——*Hattie.*—The plant is the Ox-eye Daisy. The joining of two flowers in such a manner is rare—fortunately.——*Newcastle.*—2, Nicholne oblique; 4, Statice latifolia; 6, Solidago canadensis.——*Jock.*—Erythrina Crista-galli.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of Fruit.—*J. Beddow.*—A. Duchesse d'Angoulême; C. Beurré d'Amanlis; D. Comte de Lamy; N. Knight's Monarch.——*J. R. W.*—1, Catlinc; 2, Urbaniste; 3, Knight's Monarch.——*T. R. Chapman.*—1, not recognised; 2, Fearn's Pippin; 3, Echinville Seedling; 4, Cellini.——*B. W. S.*—2, Grange's Pearmain; 3, Blenheim Orange; 5, Hanwell Souring; 6, Alfriston; others not recognised.——*G. G.*—Not known. It is a local cider Apple; probably Morgan's Sweet.——*Ramalho.*—3, (red) Duchess's Favourite.——*T. E. F.*—We cannot name your fruits with certainty. The Apples are miserably small, and no numbers are attached to several. The largest Apple is Wareham Russet; another (very small) one is, we think, Dumelow's Seedling; the Pear is probably Beurré Diel.——*R. Davis.*—1, Harvey's Wiltshire Defiance; 4, Manks Codlin.——*M. W. M.*—Apple not recognised—a fine sort, well worthy of attention.——*D. J.*—1, Sturmer Pippin; 2 Yorkshire Greening; 4, Red Autumn Calville; 6, London Pippin; 7, Court Pendu Plat; others not recognised (latitude too far north).——*G. E. M.*—Apple, Cox's Orange Pippin. Pears: 1, Hessle; 2, Beurré Sterckmans; 3, Passe Colmar.——*J. Propert.*—4, Kerry Pippin; 50, probably Stirling Castle; 52, Minchal Crab.——*South Norfolk.*—2, Sugarloaf Pippin; 3, Manks Codlin; 4, Sturmer Pippin.—*A Subscriber.*—1, Sturmer Pippin; 2, Dumelow's Seedling; 3, Easter Beurré; 4, not recognised.——*W. J. H., Alnwick.*—Apple, Striped Beaufin.——*J. N.*—1, Winter Nelis; 2, Marie Louise; 3, Maréchal de la Cour; 4, Doyenné du Comice; 5, Beurré Hardy.——*H. Atkinson.*—King of the Pippins.——*South Norfolk.*—2, Sugarloaf Pippin; 3, Manks Codlin; 3, Sturmer Pippin.——*J. Sharland.*—Apple, Gloria Mundi; Pear, Beurré Rance.——*E. C.*—1 and 3, Williams' Bon Chrétien; 2, Calebasse Bosc.——*J. H. Woolmer.*—1, Althorpe Crassane; 2, Duchesse d'Angoulême; 3, Swan's Egg; 4, Bergamotte d'Esperen; 5, Belle Julie; 6, Napoleon. Please read our rules.——*T. K. K.*—Pears: 1, not known; 2, Swan's Egg; 3, Apple: Duke Codlin.——*J. Day.*—1, La Duchesse; 2, Yellow Apricot; 3, Belle de Septembre; 5, Reine Claude de Bavay.——*W. Earp.*—1, cannot name; 2, Reine Claude de Bavay Plum; 3, Brown Turkey Fig; 4, Brunswick Fig; 5, Black Ischia Fig.——*W. T., Dunbridge.*—Small yellow, Yellow Ingestre; red, Trumpington.——*M. H.*—1, not recognised—the specimen is a mere abortion; 2, Napoléon; 3, Josephine de Malines; 4, Vicar of Winkfield.——*C. Jones.*—Benrré Hardy.——*R. J. M.*—Bedfordshire Foundling.——Others next week.

Catalogues received.—*Dutch Flower Roots, Alpine Plants, Bulbs, &c., Rose List, and Forest Hardy Ornamental Trees, Conifers, Shrubs, &c.*, from Richard Smith & Co., Worcester.——*Garden Engines, Hose Reels, &c.*—Merryweather & Sons, 63, Long-acre, W.C.

Cause and effect.—"J. D.'s" anecdote (p. 408) of the result of the bacon on the Asters, is, I think, equalled by that of the old woman who buried the cat under the Gooseberry-tree, and the fruit the next year all came *hairy!* In Yorkshire we have a proverb, "A bad carver always blames the knife."—W. S. W.

Newly-painted house.—To clear newly-painted houses of smell, place a vessel full of lighted charcoal in the house, put on it one or two handfuls of Juniper berries, close the doors and windows for twenty-four hours, at the end of which time no unpleasant and sickly smell will be noticed.—H. S. HORNER.

14731.—**Best general manure.**—Speaking from experience, I consider equal parts of cow and stable manure mixed together the best general manure for all kinds of garden crops. Pig-manure is good for all kinds of garden crops too, and answers well for Roses. Those who say it is comparatively valueless cannot have had any experience.—J. D. E.

14576.—**Improving defective greenhouse.**—The fact that your plants dry up, "no matter how often watered," is strange, because with plenty of water at the roots plants are able to enjoy a large amount of sun heat. Is the house ventilated sufficiently? If it is a lean-to against a dwelling, in full exposure to the sun, and there is not ample means for allowing the rarefied air to pass out freely, or if the house is permitted to remain boxed up tight for some hours after the sun is shining on it, the damage is easily accounted for. Small greenhouses, containing comparatively such a small amount of air, soon get heated through, and they therefore require more attention in the matter of ventilation than those of large dimensions. In the first place, a lean-to house should have ventilators both at the top and along the front, and, supposing it to be twenty feet long, three at least would be required at top, three feet long and two feet deep, and, if possible, the whole of the front should open, which then allows of the admission of a volume of air in fine, still weather. Air should always be given at top before the sun can cause a sudden rise of temperature. In sunny but windy weather, such as occurs in spring, enough air will be admitted by the top openings, as one art in plant-culture consists in giving enough fresh air without causing a draught, than which there is nothing more inimical to plants growing under glass. In the case of small greenhouses fronting south, and especially where enclosed by buildings which impede a free circulation of air, a little shade for several hours in hot weather is beneficial—in fact, it is absolutely needful for the bringing on of young seedlings and plants in a young stage of growth, which, if exposed to the full summer sun before they have got good root-hold, are sure to suffer. In any case, a portion of the house should be shaded. A thin coat of whitening, dissolved in milk, makes a good shading, and so does flour and water; and, when but a slight shade is needful, just sprinkling the glass thinly with the syringe will be quite enough.—J. C. B.

Smithfield market, Evesham.—List of prices realised Oct. 16, 1885:—Beans (kidney), 3s. to 4s. 6d. per pot (40 lb.); Cabbages (pickling), 5d. per dozen; Cauliflowers, 6d. to 1s. 6d. per dozen; Onions, 3s. to 3s. 6d. per cwt.; Potatoes (new), 1s. 6d. to 3s. 3d. per pot (60 lb.); Vegetable Marrows, 4d. to 9d. per dozen; Apples, 1s. 6d. to 6s. per pot; Damsons, 13s. to 15s. per pot (72 lb.); Nuts, 5d. per lb.; Pears, 1s. 6d. to 7s. 6d. per pot (72 lb.); Walnuts, 10s. 6d. to 12s. 6d. per bushel (48 lb.).

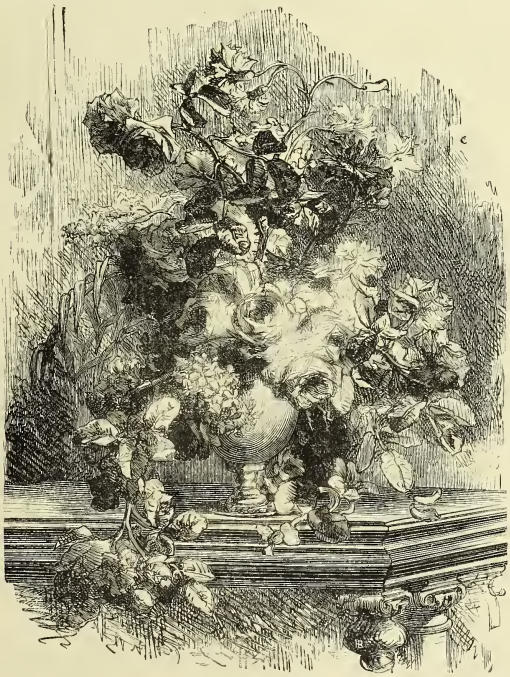
ROSES.

Standard Roses.—Will you please state your opinion of the enclosed Rose, gathered from a standard growing in a border of mixed herbaceous and bedding plants; height of standard stem, twenty-two inches; circumference of head, five feet six inches; no long suckers, but a dense mass of foliage? We had a most severe frost on the 26th, and on Sept. 30 a gale with heavy rain, so the weather has not been very favourable. I only wish to know if you think I have proved that Roses will do as single standards in mixed borders provided the soil suits. I have some twenty other varieties in flower, but, of course, I have sent the best, though there are others almost as fine. The Rose is over six years old, but I forget the exact age.—A. B. T., *East Anglia.* *** *If the bloom you send us is a fair representative of your crop, you have been remarkably successful in your Rose culture.*—Ed.

VASE OF ROSES.

The accompanying illustration is an engraving of a vase of Roses, painted by a French artist, and may serve to suggest what graceful and charming grouping is possible with well-grown clusters of this favourite flower. Almost everyone is fond of floral decoration; but it is not everyone, unfortunately, who is able to make an artistic combination, and hence we frequently see a mass of blossoms which from discord in colour and confused arrangement, offend rather than please the eye. Hence, a glance at the work of good artists would often be of great value, and aid in directing a taste, the cultivation of which adds so much to the brightness of indoor life. W. Y. N.

14483.—**Heating small greenhouse.**—I should advise "F." not to heat his greenhouse with a "flue" for two reasons, viz., the cost of fuel, and the cost of material for a reliable flue.



Vase of Roses by Maisiat.

REPLIES.

14262.—**Cut Roses.**—Clear water without any addition is the best for cut Roses. Make a clean cut, and when the water is renewed, as it ought to be every twenty-four hours, cut another thin slice off the end of the stem; this allows the water to pass more freely up the stem.—J. D. E.

14404.—**Rose plants.**—Roses are mostly budded or grafted; very few are sent out on their own roots. It is a pity the trade does not cultivate more of their stock on their own roots; the suckers from the Briar and Manetti stocks are very troublesome to amateurs. One sometimes sees the Rose quite dead, and the stock being carefully trained in error.—J. D. E.

14712.—**Best time to move Rose-cuttings.**—November is the best month to move all the hardy Roses, whether they have been propagated recently from cuttings or are established plants three years old. Tea Roses ought not to be moved into an exposed position out of doors until the spring.—J. D. E.

——I should advise you not to remove your Rose-cuttings until the middle of November. The three-year-old plants may be moved at the same time.—J. C. C.

14738.—**Vermin in garden.**—Search for the larvæ of the daddy-longlegs with a good lamp at night. The grubs will be found feeding on the plants soon after it is dark.—J. D. E.

I may say that I have tried both paraffin stoves and a flue for a small house, but met with nothing approaching success, as they are both, in my opinion, unsuited to plants. I should advise "F." to get a boiler. I have tried one for several years, and it never failed to do the work in a satisfactory manner. The one I have used is a slow-combustion boiler, and will heat up to fifty feet of four-inch pipe, and will not burn more than two buckets of coke per day, when properly regulated. The first cost would be very little more than a good flue, whilst the result would be far more satisfactory, both in regard to cost of fuel and health of plants. I should fix two lengths of four-inch pipe along the front and end, which would mean about thirty feet.—W. H. B.

14103.—**Disposing of house and garden refuse.**—Soapy water is useful to water all kinds of hardy flowers or vegetables; it acts as a manurial agent, but is not very powerful. Cabbage-leaves and refuse of a similar kind from the house may be thrown on a heap in some out-of-the-way corner; all the refuse from the garden may be placed on the same heap; when it decays, it is termed vegetable mould, and is used as manure.—J. D. E.

FRUIT.

STORING APPLES.

The time for storing Apples away for winter use has now arrived, and many will be debating what is the best course to pursue, for if we go to books relating to fruit we shall find that gathering dry, spreading out in thin layers, or even single rows, with a dry atmosphere—in fact, everything dry—is the old idea of the perfection of an Apple store. Now I have for years past taken an especial interest, not only in the growing, but also in everything relating to this, the most useful of all our cultivated fruits; and, as regards the best mode of storing, I will briefly give my own ideas, not that they are necessarily the best that can be devised, but that they may elicit from others their experience of any improvements in the mode of keeping in good edible condition for the longest possible time so valuable a fruit. My ideas as to the dry-as-dust theory being the best mode of storing were considerably shaken by several years' residence in the midst of the Apple-orchards of Kent, for there, instead of the single layers and dry, airy fruit-room shelves, I found the late keeping varieties stored in large heaps on the floors of barns, hop-kilns, &c., and covered with a good thick coating of straw, so that evaporation was reduced to a minimum, while the moisture constantly arising from the floor kept the fruit as plump and juicy, until it was taken out for use in spring, as on the day it was gathered. The comparison in weight of any given quantity stored in this way, and another lot stored on the orthodox shelf-system would soon convince one which was the better way to retain the juices of the fruit, for whether as a dessert or culinary fruit it is the preservation of the juices that determines the quality when put to the test of use. And in the matter of gathering I well remember how particular old gardeners used to be to have the fruit perfectly dry; but in the large market orchards the work went on uninterrupted by anything except a regular downpour, so that the gatherers could not work, and I am confident that there was less loss from decay in these large heaps put together by no means dry than there would be in an ordinary fruit-room. Yet another lesson was taught by the way the fallen Apples that were left under the trees in the long grass would remain sound and plump, exposed to rains and every change of the weather, except a dry atmosphere, for in our early winter months both the soil and atmosphere are usually overcharged with moisture. Decay of fruit is so much accelerated by heat, that if you can only keep even windfall or bruised fruit in a uniformly low temperature, it will take a long time to decay; but put it in a high temperature, and it will soon go entirely rotten, for ripeness is the first stage of rottenness, and anything that retards ripening will tend to keep the fruit in a sound usable condition. Then as the American Apple trade grew into such enormous proportions, we were led to inquire how they could send their Apples over with so little loss from rotting, for they are generally gathered and packed directly into barrels from the tree, and after their rough Atlantic voyage come out in good condition; and several cases have come under my notice of cottagers who, from having no accommodation for storing their Apples on shelves, have been led to adopt the American plan of putting them into cement-casks, or any kind of receptacle of a similar kind, and storing them one on the other in any shed or outhouse, merely covering with straw to exclude frost. In this way they have realised more than double the price they could get at gathering-time for their crop; and to any one who is now in doubt how to proceed I would say either store them in heaps or put them in boxes or barrels, and cover securely with straw. They are sure to realise remunerative prices about Christmas-time, and in January and February the list of home-grown fruit is at its lowest ebb, and those that have good samples of Wellington, Northern Greening, or any such good cooking Apples, or Sturmer Pippins, or Golden Knobs for dessert, need not look far for customers, as no one would buy the dried Apple chips and other substitutes if real juicy home-grown Apples were procurable at a reasonable price. Thanks

to more genial seasons, we have again a good crop this year; therefore let us make the most of it by storing it, so as to keep the surplus available for late use. The conditions of efficient storing are simple enough—in fact, we have failed from being over-careful to guard the fruit from damp, and have shortened instead of lengthened the Apple season.—J. Groom, *Gosport*.

Show Gooseberries.—Now that the season has arrived for intending Gooseberry-growers to look over their catalogues, I should like to give a few hints to beginners with regard to selecting their stock. Some beginners will buy, say, two dozen bushes, and will have two dozen varieties, and when they come to show at the annual show, they will have about half-a-dozen or more varieties on one dish—some light, some dark, some rough, and some smooth. Now, I think that is a very unwise plan. The best way, when you show a dish of Gooseberries, is to let them be of one variety only, and as equal in size and colour as possible. The best way to get at this is to have about eight varieties, instead of twenty-four—that is, three of each variety, two of each colour. Now I will select what I really think are eight of the best Gooseberries for show purposes. Dan's Mistake, rough, bright red; this I consider the best red grown for show purposes, but rather late. Companion, rough, bright red, which will come in earlier. Leveller, smooth, deep yellow; and Mount Pleasant, rough, orange yellow. Stockwell, smooth, deep green; and Gretna Green, rough, dark green. Careless, smooth, clear white, the best of all whites; and Transparent, creamy white, a little rough. The best time to plant is November. The mode of planting is not to dig a spadeful of soil up, and push the roots in anyhow, and then put the soil back, as I have seen some beginners do, and then, when the first strong wind comes, they are levelled to the ground. The mode I adopt is as follows:—Dig a trench about one foot deep and eighteen inches wide, or wider for large trees, to admit of the roots being spread out; fill the trench about half full of any old vegetable refuse, then place some good turf sods, the green side down, on the top of the refuse. Drive some good stakes at proper distances—I plant my trees, say, two feet six inches apart for young trees, so that I can take up every other when too large—place the trees on the sods, and tie the ball to the stake firmly, so that you have both hands at liberty to spread the roots; cover with about two inches of soil, give a coating of manure, then fill up with soil, and tread firm. If you want large fruit, you must prune the bushes thin, taking all the middle out. When the fruit is fit for anything, you must go over them, and pull all the small and deformed berries, so that the others may be larger. Give a good mulching with short litter in dry weather, and liquid manure will help them wonderfully.—B. B., *Greetland*.

Apple Cox's Orange Pippin.—There can be little doubt that this is the best dessert Apple in cultivation as a mid-season variety, for it has so many good points, viz., it is medium-sized, of handsome appearance, exquisite flavour, and a good cropper, and, being of moderately strong growth, it is well suited to small gardens. Grafted on the Paradise stock, it makes beautiful little bush trees, bearing freely in a very small state, while for espaliers or cordon trees it is well suited, scarcely ever failing to carry a good crop. As a dessert fruit, I should say that during October, November, and December, Cox's Orange Pippin would be pronounced the best Apple in cultivation by at least ninety per cent. of the fruit growers of the kingdom; and any one planting dessert Apples will certainly not have the best if this is excluded from the list.—J. Groom, *Gosport*.

REPLIES.

14279.—**Strawberries falling off.**—The variety Yates' Seedling is unknown to me. Probably this is a characteristic of it. The only feasible explanation is that the young fruit has been caught by a frost, unless the variety is liable to have abortive fruit. Try Keen's Seedling, President, or some variety that can be depended upon. There is no remedy for such a state of things.—J. D. E.

14286. — **Forming garden with fruit-trees.**—The position, a shelving hill-side with a westward inclination, seems suitable, but nothing is said about the depth of soil. Before planting, the soil should be well broken up—indeed, this work should be done at once. Apples: Annie Elizabeth, Blenheim Orange, Cellini, Manks Codlin, Dumelow's Seedling, Early Harvest, Echlinville Seedling, New Hawthornden, Hoary Morning, Irish Peach, Kentish Fillbasket, Loddington Seedling, Lord Suffield, Mr. Gladstone, Northern Spy, Peasgood's Nonsuch, Cockle Pippin, Orange Pippin, Fearn's Pippin, Ribston Pippin, Sykehouse Russet, Waltham Abbey, Warner's King, Worcester Pearmain, and Yorkshire Greening. Pears: Beurré Clairgeau, B. Bosc, B. d'Amanlis, B. Superfin, Bon Chrétien, Doyenné du Comice, Pitmaston, Duchesse d'Angoulême, Fondante d'Automne, Glou Morceau (wall), Jargonelle, Louise Bonne of Jersey, Marie Louise, Ne Plus Meuris, Bergamotte d'Esperen (wall), Easter Beurré, Knight's Monarch, and Conseiller de la Cour. Plums: Greengage, Coe's Golden Drop, Transparent Gage, Kirke's, Pond's Seedling, Goliath, Early Prolific, Diamond, Victoria, and Magnum Bonum. Apricots: Moor Park and Alsace. Peaches for south and east walls: Alexander Noblesse, Barrington, Bellegarde, Condor, Crawford's Early, Dymond, Early Grosse Mignonne, and Walburton Admirable. Nectarine: Lord Napier. Pine-apples: Elruge, Victoria, Violette Hâtive, and Hardwicke Seedling. Cherries: Belle d'Orleans, Bigarreau Napoleon, Black Tartarian, May Duke, Late Duke, Early Purple Gean, Governor Wood, and Morello. Plant when the ground is in good condition—before Christmas. November is a good month; mulch and stake as they need it.—E. Hobday.

14400.—**Mangels in orchard.**—The fact that Mangels require manure may not injure the orchard trees; but unless the natural soil is deep and suitable for the roots, the deep culture suitable for the Mangels may drive the roots of the fruit-trees down too deep, and injury may result therefrom.—E. Hobday.

14411.—**Mulberry-tree shedding fruit before ripe.**—Shedding fruit before ripe seems to point to unripe wood and imperfect fertilisation, or want of nourishment. Is the tree in a shady situation? If so, that would explain the fact of the fruit dropping. A mulching of manure might do it good if the cause cannot be found in my first suggestion.—E. Hobday.

14707.—**When to move Peach-trees.**—Peach-trees do not suffer much by removal. They may be planted any time when dormant, but preferably during fine weather in November.—J. D. E.

—— Early in November is the best time to move Peach-trees.—J. C. C.

14709.—**Exhibition Gooseberries.**—The best red varieties are Conquering Hero of London and Dan's Mistake. Yellow: Broom Girl, Catherina, and Leveller. Green: Shiner, Stockwell, and Thumper. White: Antagonist, Careless, and Hero of the Nile.—J. D. E.

—— Being an exhibitor of Gooseberries for the last fifteen years, I think myself able to tell which are the best varieties for showing. I grow about a hundred varieties of show Gooseberries, and exhibit at seven or eight of the leading horticultural and flower shows in the West Riding of Yorkshire, and have taken fifty-one prizes this year for Gooseberries alone. "Novice" will find the following to be good varieties, from which I have taken a large portion of the prizes:—Red: Companion, Dan's Mistake, Speedwell. Yellow: Leveller, Catherina, Mount Pleasant. Green: Stockwell, Gretna Green, British Oak. White: Careless, Transparent, Faithful.—B. B., *Greetland*.

14718.—**Making a Vine border.**—Dig out all the top soil, including the turfy part, which must be chopped up with it. The sub-soil below the top eighteen inches will be unsuitable. It will be best to dig it out to the depth of eighteen inches more, and dispose of it in some way. The top part, which has been laid aside, should have a few cartloads of turfy loam added to it, if it can be obtained: if not, any good soil will do. To each six cartloads of this add one of decayed stable manure, one of mortar rubbish, and a bushel of crushed bones. Put nine inches of brickbats in the bottom of the border, and over them some turf with the grass side under. If this cannot be had, some stable litter may be used instead—the object is to prevent the clay particles from mixing with the drainage. The bottom of the border ought to be four or six inches deeper at the point furthest removed from the Vines; this will cause the water to filter to that point, and drain-pipes must be laid there, and be furnished with an outfall to carry it off. The compost should be wheeled into the border when it is in a dry state, and in dry weather; tread it in firmly during the operation, and as it will sink a little, it is better to raise it four or six inches above the ground-level of the vinery.—J. D. E.

14721.—**Best late Strawberry.**—Loxford Hall Seedling is the best, but it does not grow freely in some soils. Frogmore Late Pine is the next best to it, and is more vigorous.—J. D. E.

14722.—**Fruit for low wall.**—The best six Pears for the purpose are Jargonelle, Louise Bonne of Jersey, Beurré Diel, Easter Beurré, Doyenné du Comice, and Marie Louise. Plums: Greengage, Jefferson's Victoria, Kirke's, Coe's Golden Drop, and Transparent Gage. They should be planted fifteen feet apart.—J. D. E.

—— In reply to "A Young Gardener,' Luton, allow me to state that I find Currants and Gooseberries good subjects for covering low walls; but if no higher walls are available, the best way to grow Pears or Plums would be to train the trees like ordinary espaliers, taking shoots right and left about nine inches apart. South aspect walls, even when not more than four feet high, will yield the best returns if planted with Tomatoes, and the hardiest kinds of Grapes, such as Sweetwater, succeed well if trained with a main shoot right and left close to the ground, and shoots taken erect to the top of wall at every foot space apart. Morello Cherries are one of the best crops for aspects that do not get direct sunlight. Low walls are by no means so good as higher ones, but the lowest can be utilised for some kind of fruit crop, as the shelter from wind and the radiated sun heat are great aids to maturing both the crop and wood.—J. Groom, *Hants*.

14723.—**Fruit for south-western wall.**—Peaches will succeed well on such a position; a wall facing south-west is next best to one facing south. The six best are: Alexander, Hale's Early, Rivers' Early York, Royal George, Noblesse, and Bellegarde. The best six Nectarines are: Lord Napier, Balgowan, Humboldt, Pine-apple, Violette Hâtive, and Victoria.—J. D. E.

14733.—**Mould on Grapes.**—As all kinds of plants and Ferns are grown in the house, the mould is caused by damp. The atmosphere at this season should be kept dry by warming the heating apparatus by day, and shutting up the house at night. Ventilate as much as possible by day. Cut out all mouldy berries as soon as they are perceived, as decay spreads rapidly.—J. D. E.

—— A damp and confined air is doubtless the cause of your Grapes moulding. Instead of giving air on all favourable occasions, as you say you do, your house ought not to be shut up close all the time there are any Grapes hanging on the vines. There should be a current of air passing through the house night and day; it need not be much—say, two ventilators left open back and front, night and day, unless it is actually freezing. About twice a week light a fire and get the heating medium warm, and keep it so until the middle of the day, when the fire may be let out, and give plenty of air at the same time. The fire heat is for the purpose of drying up damp.—J. C. C.

14800.—**Duke of Buccleuch Vine not fruiting.**—I have grown this Grape ever since Mr. Thompson first sent it out. At first I could do very little good with it upon its own roots. I then grafted it upon the Black Hamburgh stock, and it has fruited splendidly ever since, but it must have a rod encouraged from as near the base of the Vine as you can every year or it will be unfruitful, for if spurred in the usual way it certainly will not fruit. The only fault I find is the cracking of the berries just before they ripen—that I cannot stop. I have tried cutting the footstalks of the bunches half through and boring small holes through them as recommended by Mr. Thompson, but all of no avail. It is a magnificent Grape, has berries larger than, and of a flavour different from, those of any other Grape I know. This year it has cracked very little, owing, perhaps, to the season being so dry.—J. Lodge, *The Vineries, Mill Hill*.

Uses of poultry-manure. — Readers of Gardening often make inquiries as to the uses to which poultry manure may be put. It may be used for almost anything in the way of soft-wooded plants indoors or green crops out of doors. It answers admirably for Vines. It is best used in a dry state; if it is laid up out of doors, it soon becomes a pasty mass. It may be used either new from the fowl-house, or after it has been laid up in a dry place for months. It is as strong as guano, and may be used with the compost of a Vine border in the proportion of a bushel to a large cartload. I have often used it as a surface-dressing to Vine borders with excellent results.—D.

INDOOR PLANTS.

A CURIOUS PLANT.

This very curious plant, Ataccia cristata—one of the most extraordinary that we are acquainted with—is a native of the islands of the Malayan Archipelago. Though by no means new, it is far less commonly seen than it ought to be, considering the ease with which it is propagated, and the anomalous features it presents in regard alike to aspect and to structure. The love and admiration given to flowers, for the sake of their bright colours and their sweet scent, are well deserved, and there can never be too much of either. We must confess, at the same time, that we like to see intellectual interest in what may be termed the vagaries of nature. Nature's ways are very imperfectly comprehended so long as we rest content with Roses and Lilies, Fuchsias and Primulas. The underground portion of the plant now under notice consists of a short and conical root-stock, marked with the scars of former leaves, and here and there throwing up some small gemmæ or tubers, by the removal of which it is readily multiplied. The actual roots consist of a few coarse fibres. From the crown of the root-stock rise three or four handsome and dark green leaves, the petioles several inches in length, the large and elliptic-oblong blade acuminate, entire, and elegantly veined, the veins flowing in parallel curves. In the midst rises a stout scape, like that of a Hyacinth, twelve or eighteen inches in height, quite erect, and bearing on the summit a unilateral and half-pendulous umbel of twelve to twenty brownish-purple flowers, each as large as the top of one's little finger. The petioles supporting these odd flowers are about an inch and a half in length. Intermingled with the floriferous ones, or, perhaps, rather behind, and somewhat laterally, are many more that are abortive, attenuated to a length of at least twelve inches, and hanging down like thin straight hair, a lock upon either side; while, at the back of all, stand up two enormous vertical bracts and two smaller ones, the former resembling the sheaths of the common English Arum, but flattened out and of a cadaverous greenish-purple hue. The whole thing is so weird and gipsy-like, that one almost starts at the supernatural mockery. Had the witches in "Macbeth" wanted a flower apiece on a certain celebrated occasion, and had the plant grown at home instead of ten thousand miles away, this Ataccia, of all the productions of nature, would have suited them best. It is very easily propagated; all that is necessary is to detach one of the gemmæ from the rhizome, and place it in a small pot of light loam and peat, giving plenty of water, and preserving it, at all events while the plant is young, in a close, moist atmosphere. We have seen the Ataccia in many good collections of curiosities, and, no doubt, it is to be had from the leading nurserymen. L. G.

Ataccia cristata.

CULTURE OF DRACÆNAS.

Few ornamental-foliaged plants have attained such universal and lasting popularity as Dracænas. Their graceful growth and, in some instances, hardy, robust nature, fit them admirably for dinner-table and other decorative purposes, as well as for window culture. The green-leaved kinds, congesta and rubra, are especially adapted for this latter purpose, resisting well the adverse influences to which plants are necessarily exposed in such positions. They are very largely grown by the Paris market-gardeners, and are finding greater favour than formerly in this country. They are also suitable for planting out in cool winter gardens, the first-named kind attaining a height of some eight feet, the latter not growing so tall. The greatest favourites are undoubtedly terminalis, Cooperi, and ferrea, the first-named being too well known to need description; of the others, one has graceful arching foliage, strongly marked with red, and the other bears sombre-tinted leaves, which render it valuable for purposes of contrast. Another kind much in favour is cannæfolia, having broad, rather long green leaves, which, gracefully arching, render it very effective. Fragrans is also grown, but to a limited extent. It is a neat-habited green-leaved kind, the foliage being closely set on the stem. For general decorative purposes the above named, although long in culture, are not excelled by any of the newer varieties. They grow freely, are not difficult to propagate, and when grown well in four and a-half-inch pots are just the right size for the many purposes for which plants in small pots are needed. For the adornment of warm houses and the embellishment of groups, some of the large-growing kinds are, of course, more suitable. Good-sized specimens of such kinds as grandis, Baptisti, Bausei, Guilfoylei, imperialis regina are amongst the most effective of fine-leaved plants, but they certainly require to come to fairly large dimensions before they can be properly appreciated.

General treatment.—Over-potting should be carefully guarded against in the case of Dracænas. Like Palms, they will last some time in good condition in the same pots if well attended to in the matter of water, of which when root-bound and in hot weather they require large supplies, and especially if they get from time to time some manurial stimulant. Young plants do best in rather fine peat with abundance of coarse silver-sand in it, and they may be grown continually in peat if good, but many growers prefer good loam for the plain-leaved kinds and a mixture of the two soils for the variegated ones. In all cases good drainage must be given, and sufficient white sand should be used to prevent the soil becoming close and sour before the roots obtain possession of it. A compost that I have used, and which is the favourite one with many Paris market-growers, is the turnings out of hot-beds, which have been turned over many times in the course of two or three years, and which have become rotted down so as to be indistinguishable from mould. In this roots are even more freely made than in peat, and no sand is needful, as it never becomes close; but, of course, a little may be beneficially added. If propagation is done from November to March, the first-named month being a good time for cutting up old leggy plants, the young plants will grow into nice little specimens, well established in two-and-a-half-inch pots by the close of the summer, so that if shifted into four-and-a-half-inch pots the following March they will that year grow into fine decorative material. The atmospheric conditions are easily managed; plenty of moisture in the air there must be, or the foliage does not develop freely, and an arid atmosphere engenders thrips and red spider.

During spring and early summer the temperature should not be less than sixty degrees by night, with from ten degrees to twenty degrees rise by day, according to the weather. In the height of summer in fine weather no fire-heat will be needed; but on the approach of the dull autumn days they must get from fifty degrees to fifty-five degrees, in which temperature they will pass the winter safely. I refer more especially to the variegated forms. The green-leaved ones generally require to be grown quite cool from June onwards, and only demand greenhouse temperature in winter. The only need of heat in their ease is to push them along in their youth, so as to economise time. When they come into four and a half-inch pots they ought to be grown quite cool. This is especially the case with indivisa, which I before omitted to mention, but which, from its extreme robustness and contrast to all other kinds, is very desirable. This kind is impatient of heat, and soon draws up and loses its healthy appearance when kept in warmth. Plants which have attained a good size are best in the open air through the summer; plunged to the rim of the pot in the Grass, they look very well, and enjoy the sunshine and breeze and rain much better than under glass accommodation. For corridors and similar places this is a grand plant. One cultural detail in connection with these plants I would emphasise, and that is the regular syringing of the foliage in hot weather. Not only is the surface to be dewed over, but the water must be got well to the undersides of the leaves, for it is there that enemies congregate, and they cannot endure the frequent bath of clear cold water. In planting out, time and labour saved and luxuriance gained are the results of setting the plants in prepared soil to make their growth. J. C.

MANAGEMENT OF THE COLD GREENHOUSE.

14745.—"A Vicar's Wife" asks for information as to the management of her unheated greenhouse during the approaching winter. The admission of air is a matter of considerable importance to the health of plants, and the best rule is a very old-fashioned one,—study the feelings of your plants as you would your own. If the air is damp and raw, keep it out of your house by all means. If the sun breaks out and a genial warmth ensues, open your windows. It is in respect to this matter of ventilation that I am a great advocate of a small stove of some kind, even in the "unheated" greenhouse. I mean that its use enables you to admit air safely, when without any such adjunct it would be injurious. Suppose three or four successive days of thorough dreary weather. The house feels chilly and the plants look forlorn. I light my little stove for a few hours; the air is put into circulation, and, by the middle of the day, the windows may be opened for an hour with advantage—the stove still burning. Experience convinces me that while we want to avoid any approach to stimulating growth by heat, at the same time we do want something to supplement the deficient action of the sun in unfavourable weather, so as to allow of proper ventilation. Then the husbanding of sun-heat is another important matter. Shut up the windows in good time, so as to store up whatever warmth has been generated. There is no mystery in these details. It is mainly a question of making the place as comfortable as circumstances permit. As to the cutting away of creepers, it should certainly be done as soon as it can without injury to their health. All superfluous growth harbours damp, and shuts out precious sunlight. Before gathering in and arranging the winter stock of plants, the greenhouse should be emptied and well washed out, stages scrubbed, any broken panes mended, &c. I am not sure that my experience will be quite satisfactory to "A Vicar's Wife," because I employ a little artificial heat and she does not; and however little the heat may be, it no doubt does become an important factor in the calculation in the course of a long and unfavourable winter season.

Lincolnshire Rector.

Chrysanthemum Lady Selborne is one of the best we have for early blooming. Its pure white flowers are highly prized in a cut state, and its free blooming habit combined with its earliness make it doubly valuable. Just now it is in good condition, and will continue so for another fortnight, when we shall have plenty of others in bloom to take its place. Cuttings should be struck early in January, either in heat or in a cold frame, as may be thought best. When rooted and commencing to grow, pinch out the points of each and allow three shoots to each plant. These in time will branch into three more, and the nine shoots thus obtained should be carefully tied to stakes; all side shoots should be pinched off, leaving the centre bud to each branch only. Pot in good rich soil, water freely when necessary, and use liquid manure two or three times a week during summer, when the pots in which they are to bloom, which should be nine-inch ones, are full of roots. They should occupy a free, open position out of doors during summer, but as soon as the flower buds show colour, or earlier if required very early, they should be placed in a greenhouse or vinery and given plenty of air, when they will soon produce blooms of snowy whiteness, which will be much appreciated.—E. M.

REPLIES.

14277.—**Plants for indoor rockery.**—Aspidistra lurida variegata, Convolvulus mauritanicus, Coprosma Baueriana variegata, Isolepis gracilis, Phormium tenax variegatum, Richardia æthiopica (Arum Lily), Saxifraga sarmentosa tricolor superba, Yucca filamentosa variegata, Begonia Duchesse de Brabant, B. Madame Van Geert, Mrs. L. Low. All of the above Begonias are of the B. Rex type, but one or two of the flowering species, such as manicata or hydrocotylæfolia, may be tried. Gloxinias may be useful in summer if shade can be given. Acalypha marginata, Asparagus plumosus nanus, Cissus discolor, Cyperus alternifolius, both the green and the variegated, will be useful; also, Panicum variegatum, Tradescantia discolor vittata and Selaginella denticulata.—E. Hobday.

14344.—**Ferns.**—I know of no Ferns that will grow in standing water. Osmunda regalis will grow in a swamp or bog, or by the side of a stream with its roots washed with the water; and the Marsh Fern, Lastrea Thelypteris, will grow under like conditions. The following Ferns may be tried in the cork under the fountain, but the drainage must be perfect:—Adiantum Capillus-veneris, Asplenium bulbiferum, Cyrtomium falcatum, Doodia lunulata caudata, Lomaria lanceolata, Nephrolepis exaltata, Platycerium alcicorne, Platyloma falcata, Pteris cretica albo-lineata, Asplenium marinum, and Selaginella denticulata.—E. Hobday.

14354.—**Tropæolum tricolorum not flowering.**—We have no trouble at all to flower several specimens of this beautiful species annually. It is grown in the greenhouse, and treated as a greenhouse plant entirely. The roots are now quite at rest. The soil in the pots has been allowed to come dry; it will remain so until early spring, when the tubers are shaken out and potted in good loam, a little leaf-mould and manure being added. We use the same compost for it as for Fuchsias, Geraniums, and plants of that kind. The slender growths are trained round a balloon trellis.—J. D. E.

14573.—**Culture of Zonal Geraniums.**—The cause of the failure is, without doubt, improper soil. The loam used for potting should always be from a stack of rotted turf, cut from an old pasture; and this should not be passed through a sieve, but should be put into the pots in lumps, about the size of Walnuts. Leaf-mould and old manure rotted to powder are useful auxiliaries, and sand is often required to lighten the soil, and charcoal to keep it sweet; but loam from rotted turf is by far the most important ingredient, both for potting and for raising seedlings. Ordinary loam is of little or no use, and ordinary garden soil is worse than useless; the soil becomes sour and stagnant, gets covered with mould and Moss, and the plants do badly. Another important matter is always to use new pots for plants.—J. D.

14716.—**Treatment of Caladium.**—The plant should now be encouraged to go to rest, by being allowed to become dry at the roots. When the soil in the pot is quite dry, lay it on its side under the stage in a plant-stove, where the temperature does not fall below fifty-five degrees. Let it remain there until early in March, when it must be placed on the stage in the house, and be watered; as soon as it shows signs of growth, shake the old soil from the roots, and repot in a compost of two parts good turfy loam, and one of peat; add some decayed manure, also sand and bits of charcoal to keep the compost open. Water very sparingly at first until plenty of new roots are formed, when weak manure water may be applied. The Caladium is a hothouse plant; even the dry corms will die during winter in a greenhouse.—J. D. E.

1472.—**Orange-tree not flowering.**—Probably the tree is a seedling, and may not be a free-flowering variety. All the cultivated varieties of Orange-trees are free flowering; they require no special treatment to induce them to flower. Probably the tree may be in unsuitable soil. In that case I would repot it at once, and, as it is in a large pot, it will be better to reduce the ball of roots by picking out a considerable portion of the old exhausted soil with a piece of pointed iron. It may be reduced an inch and a half all round the ball. Pick out all the drainage from the bottom, and a portion of the soil above it. The pot into which the tree has to be planted must be clean and well drained; over the drainage place some fibre from which the finer particles have been shaken out. The potting soil should be turfy, fibrous loam; medium clay-loam is best. Add to it a fourth part decayed stable manure, some charcoal broken up, and a sprinkling of half-inch bones. The tree will do nicely in a temperature of fifty degrees in winter, or in fact in any house above the freezing point; but must be grown in a hothouse temperature, well exposed to the sun, in spring, summer, and autumn—sixty-five degrees is best.—J. D. E.

THE KITCHEN GARDEN.

The White Elephant Potato seems to be especially suited for dry seasons; the drought that has so seriously affected some crops, and even many varieties of Potatoes, has enabled the White Elephant to produce tubers evenly sized and excellent in quality. I have been somewhat sceptical as to the value of this sort as a garden Potato, owing to the varied reports that have been made respecting it. I resolved, however, to try it fairly along with other kinds grown for seed, and it produced the heaviest crop of any I have lifted this season. These American Potatoes are decidedly of better quality in dry soils and seasons than in moist, dripping ones; hence the conflicting accounts that occur as to quality. In this locality the American Rose, Beauty of Hebron, and kindred sorts are excellent cropping, cooking, and eating Potatoes, while in stiff retentive soils they are not so satisfactory.—Hants.

Open-air Mushroom-bed.—In looking through the garden of a most successful amateur lately, I came across a most excellent crop of the finest Mushrooms I have seen for a long time, and will briefly give the details as I received them. In May, a large trench, similar to those made for Celery, is excavated one and a half foot deep, and the bottom is well broken up to insure drainage; this trench is filled with road scrapings, or sweepings composed of horse manure and road grit. This is trodden in as firmly as possible until the trench is nearly full, when about two inches of soil is placed on the top, and beaten down firmly. No spawn or admixture of any kind to encourage Mushroom growth is used, yet the grower assured me that he had never failed to obtain a crop of the finest Mushrooms, which appear in August, and keep on through September, and sometimes the greater part of October. In the case mentioned no covering was employed, and great bunches of Mushrooms were coming up all over the bed, but I have not the least doubt that a good covering of litter would greatly prolong the season of bearing, for, as the nights get cold, and heavy autumnal rains fall copiously, they must be warded off, or the Mushrooms will cease to be produced. I have many times seen good crops of Mushrooms on outside beds made above the level of the soil in ridges, and spawned as indoor beds are; but I never saw such successful results where it was left entirely to the material of which the bed was composed to produce spontaneously a crop of Mushrooms. The owner, however, seemed quite as confident of a crop without spawn as with it, provided he had a good supply of manurial street sweepings to form his bed with.—James Groom, *Gosport.*

REPLIES.

14338.—**Pumpkins turning yellow.**—The probable cause is that the plants are grown in soil of too rich a character. Many people plant on manure-heaps instead of in well-manured garden soil.—E. Hobday.

14359.—**Vegetables for exhibition.**—Lettuce, Cos: Veitch's Superb White; Lettuce Cabbage: Neapolitan; sow twice in June in deep, well-manured land, and mulch. Broad Beans: Leviathan or Aquadulcis; plant end of April, giving plenty of room. Kidney Beans (dwarf): Canadian Wonder, Champion Scarlet Runners; plant middle of May. Red Celery: Carter's Crimson Matchless; White ditto, Wright's Giant; sow in February in heat, grow without check. Vegetable Marrows: Long White; sow in April in gentle heat, plant out end of May. Turnips: Cattell's Silver Ball; sow April and May; use a little artificial manure in drills. Parsnips: Maltese; sow in February. Peas: John Bull, Duke of Albany, Telephone, and House's Marrow; it is best to grow several kinds; sow in May and again early in June. Cabbage: Wheeler's Imperial; sow in March. Rhubarb: Victoria. French Breakfast Radish; sow on a bed of rich soil on the north side of a wall, end of June. The most important thing to attend to during growing season is frequent surface stirring; but the Peas and Beans should be mulched. I have confined my remarks to the vegetables mentioned; but in a collection of vegetables, other things, such as Cauliflowers, Tomatoes, Onions, &c., are valuable. Potatoes: White Round, Porter's Excelsior; Red Round, Vicar of Laleham; Radstock Beauty is a very handsome kind for exhibition; White Kidney, International; Coloured Kidney, Sutton's Prize-taker, and Rose Queen (Hughes's); plant in drills in March, in thoroughly prepared land; work some old turfy compost into the drills with the sets, give plenty of room, and keep the plants to one stem. In setting up the dishes of vegetables, carefully follow the schedule.—E. Hobday.

14362.—**Outdoor Cucumbers going off.**—Except in specially favourable soils and situations, Cucumbers in the open air are always liable to go off in some unaccountable way, especially towards the end of the season. It may be from exhaustion or some cause not easily ascertained.—E. Hobday.

14417.—**Woodlice on Mushroom-bed.**—"E. H. K." must be in a bad case, but there is nothing for it but to persevere with the hot water round the outsides of the bed and trapping the woodlice. When summer comes or the season for clearing out the beds, make a clean sweep, and whitewash the walls of the place. Hunt up a lot of toads and place in the house. Use more moisture in the atmosphere.—E. Hobday.

The Vinegar Plant.—This curious plant belongs to the class called Penicillium glaucum, and is propagated by division. To produce one, take a quarter-of-a-pound of sugar and half-a-pound of treacle; simmer them in three quarts of water till dissolved, then place the mixture in a large vessel, cover it over, and rest it in a warm place. In six or seven weeks you will find floating on the top a tough, fleshy substance—this is the vinegar plant; the mixture will have turned to vinegar, but it will not be of such good quality as when a perfect plant is set upon it first. The plant will propagate rapidly, and by using it as directed any quantity of good and cheap vinegar may be made. It will be of dark colour, but that does not affect its quality. It improves by being bottled and kept some time prior to use. A thin bit of wood should be set upon the mixture for the plant to float upon, but it should be allowed to come in contact with the liquor.—C. F. Davis, *The Grange, Leatherhead.*

Spare plants.—Kind friends with large gardens, please send us some roots to put in our beds, or some nice healthy shoots: Geranium or Fuchsia or Ivy to trail—O, how their arrival we gladly should hail!—Lady Superintendent, *Poor Boys' Home, Abbot's Hill, Ramsgate.*

THE VILLA GARDEN.

(*Continued from page* 427.)

FORCING VEGETABLES.

French Beans.

With adequate means, French Beans may be had all the year round. In winter they must have a light position near the glass in a temperature of sixty to sixty-five degrees at night, with a rise of at least ten degrees in the day, or more in bright weather. They are commonly grown in pots. Any sized pots will do, but I prefer those about eight or nine inches in diameter, filled two-thirds full of turfy loam and manure, two-thirds of the former to one of manure. Place one large crock over the hole at the bottom, and place a bandful of rough turf over it; fill the pot two-thirds full as stated. Press down a little, and plant five beans round near the sides of the pot, and one in the centre, covering about two inches deep. The pots may stand under the stage till the plants show through the soil, then they must be placed near the glass, if they are to do well. The best position I have in winter is a broad shelf at the back of a lean-to forcing-house. There the growth is dwarf and robust, and the blossoms numerous, which all set and produce Beans, the progress being rapid. A light, span-roofed house is also a good position for them. It is not often that a house can be given up to the forcing of Beans; usually they are worked in with Cucumbers or Vines, or in some other mixed arrangement. If a house could be given up to them, I should like to have it arranged as the old-fashioned Pelargonium houses used to be fitted up twenty or thirty years ago.

For succession it is necessary to start a fresh lot every three weeks or so. And it is necessary that all Beans be gathered comparatively young so that the plants may produce to their fullest extent. When the young plants are well above the rim of the pot, earth up with rough rich soil, and place a few small sprays of Hazel or Birch round to give the necessary support. The only enemy to guard against is the red spider, and this is a real danger when Beans are forced in vineries, or with Peaches, Strawberries, or Cucumbers, especially about March. This evil is more easily prevented than cured. Frequent use of the syringe, a genial atmosphere, and a little sulphur on the pipes will generally keep them at bay till the Beans can be had in the pits or elsewhere. As regards their culture in pits, I have grown them successfully in low pits such as are commonly used for Potatoes or Melons. It is entirely a question of temperature. French Beans require rather a higher temperature than Potatoes, and the pits should have some warmth beyond what is supplied by fermenting materials, at least in winter. From February onwards the hotbed system will do very well. Even when a supply of Beans can be had in warm houses, I always think it is advisable to plant the last crop in a pit or frame; these fill up the intervals between the last crop in the forcing-house and the earliest in the open air. They are planted in March, in rows across the pit, two feet apart, the Beans being six inches apart in the row.

Varieties.—The Newington Wonder is an excellent variety for the short days in winter. The pods are small, but the plants bear very freely and continuously. Osborn's Forcing is another good kind, and the Canadian Wonder comes in well when the days lengthen in spring.

The Potato.

Few things are more eagerly sought after than early Potatoes. To be able to dig early in April the sets must be started at the beginning of the new year, and be grown on steadily without check. The selection of the seed and its preparation are important matters, as, like all other things, there is in Potatoes an inherent propensity to productiveness or the reverse, and if the seeds were saved from the productive roots only (especially for forcing) the crops would be much larger. Some Potatoes are much more productive than others, and my own opinion is that the cause of this is constitutional, and therefore, when taking up Potatoes that we intend saving for seed, the best and most productive only should be saved. It is a very easy matter, when digging, when we come to a very productive root to save the best and handsomest for seed. In October, the selected seed should be placed in shallow baskets or trays, crown upwards, in a single layer; the trays or baskets to be placed in some light position, but safe from frost. Under the stage in a cool greenhouse is a good place to start the central crown eye. All others should be cut or rubbed off, as only one stem should be permitted to grow. The first beds should be made up in January, and they should contain enough material to keep up a steady heat till the crop is full grown. Tree leaves should enter largely into the composition of the hotbeds for forcing vegetables. They are both genial and lasting, and the labour required in turning and mixing to prevent over-heating is almost nil. In forcing Potatoes in frames or pits, from ten inches to a foot of light rich soil should be placed on the beds. And when the warmth has penetrated it, the sets may be planted, covering them about three inches deep. Sometimes the sets are helped forward in pots, and in that case the beds need not be made quite so soon. The space under glass is valuable, and must be made the most of; and as each set is limited to one stem, eighteen inches between the rows and ten inches between the sets in the rows will be ample. When the plants are eight inches high, place a ridge of soil between the rows, and in a day or two, when it has become warm, draw it up round the stems of the plants. During the growing season the soil must be kept fairly moist, but when grown on beds of fermenting materials, unless the weather should be bright, they will not require water often. Once a week will be sufficient. It should be given on the mornings of bright days. When the crop is nearly full grown watering should be discontinued, as too much moisture in the soil at that season spoils the flavour and texture of the tubers.

Forcing Potatoes in pots.—It may sometimes happen that there are conveniences for growing Potatoes in a Peach-house or some other light forcing-house, or that a broad shelf near the glass can be spared in a greenhouse for Potatoes. The question of temperature is not so important in the case of Potatoes as it is in that of French Beans for instance. It is true that the Potatoes will be fit for use sooner if grown in a temperature of sixty degrees than if the night temperature does not exceed fifty degrees, but in other respects, if the other conditions are equal, the crop may be as good in the cool house as in the warm one. Ten-inch pots are a good size for Potato culture, and there should be one tuber in the centre of the pot; the drainage being sufficient to insure a rapid clearance of all surplus water. Put one large crock over the hole, and a layer of large pieces two inches thick over it, with a few inches of rough turfy loam on the crocks. Fill the pots half-full of soil, and plant the Potatoes in the centre, covering two inches deep, adding more soil as growth progresses.

Forcing Potatoes without glass.—This is done by creating temporary shelters—it may be low walls of straw, or reed, or turf, with coverings of similar materials to place on at night or to shelter during cold days. The soil is thrown out, and two feet or so of warm manure placed in the trench; on the manure a foot of nice mellow soil is laid, and in this the Potatoes are planted. Warm, sunny borders may be treated in this way, and temporary shelters of any kind used. These shelters may be made of straw or reeds, or glazed calico will last a long time. Mats may be sewn together, and drawn over hoops. These latter I have found useful over south borders with only ordinary culture, and have had Potatoes fit to dig by the middle of May.

Varieties.—We like White Kidneys, and use the old Ashleaf for the first crop, with Myatt's Prolific in succession. E. Hobday.

14751.—**Tea-leaves as mulching.**—I tried these as a mulch last year, using them as they came from the tea-pot, but, as all the plants I put them round were injured rather than benefited by the application, I speedily cleared them all away. One large Jasminum nudiflorum lost every leaf, and only regained them a long time after the removal of the Tea-leaves. If thrown into a heap and allowed to rot, I believe they would make useful leaf-mould for top-dressing; but for other purposes my experience would lead me to do without them.—T. J. W., *Crouch Hill.*

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.

No. XXIII.

(By Annie M. Griggs, Edinburgh School of Cookery.)

MORELLO CHERRIES.

These are generally used for tarts, preserving, pickling, or Cherry brandy, owing to the peculiar acidity which they possess. They ripen much later than the Kentish Cherry, and usually fetch double the price in the market. They are best used just before ripening for the above purposes; when allowed to hang until fully ripe, they are much appreciated at dessert by those whose palate does not object to the combination of a slight bitterness with acidity, and then they are deliciously juicy.

Cherry Brandy.—Select sound fresh Morello Cherries before they are too ripe, wipe each one with a soft cloth, reject any that are too ripe or where the skin is in the least broken, cut the stalk of each Cherry to within half an inch of the fruit, and as each one is prepared, drop it into a wide-mouthed clean glass bottle, adding by degrees to every pound of fruit, four ounces of white sugar candy, or three ounces of lump sugar. Only three parts fill the bottle, and then pour enough good pale brandy to reach to the neck of the bottle. Cork securely, and seal over the top. Do not add more sugar than the given quantity, or, instead of the Cherries expanding and becoming eatable, they will shrivel up and turn quite hard. Also be careful to use the best brandy, for if an inferior quality be used, instead of the Cherries improving the brandy, both will assuredly turn out a failure. When making a quantity, the flavour of each bottle may be varied by the addition of a few cloves with the Cherries in one bottle, a few Peach kernels or bitter Almonds in another, a sprig of Mint or Balm in the next, and so on.

Preserved Cherries.—Take four pounds of Morello Cherries, firm and sound, remove the stalk from each one, and wipe dry with a soft cloth. Then take a large quill, not too pointed, insert it into the stalk end, turn it round and dexterously bring out the stone, this operation needs some little practice in order to bring out the stone cleanly without destroying the shape of the Cherry. Put two pounds of pure sugar with one pint of water into a preserving pan and boil it until, when you lift a spoonful up, it will fall in the form of small drops or balls; then add the cherries, stir until the syrup boils again, and let all boil for two minutes; then turn the whole into a basin, cover and let them remain thus until the next day, when strain the syrup again into the preserving pan with an additional six ounces of sugar; boil and skin thoroughly, add the Cherries; boil again for four minutes, and then pour while hot into clean dry jars; set aside, and when cold cover tightly as you would jam; store in a cool, dry place. These are useful for compotes, tarts, &c., during the winter.

Cherry Beverage.—Crush one pound of fresh Morello Cherries with two pounds of loaf sugar, let them remain thus for two hours, then put them into a preserving pan with one quart of cold water, and stir over the fire until boiling; boil and skim for ten minutes, then strain, and cover. Put by the side of ice to become perfectly cold, then add one large wineglassful of sherry and it is ready to serve. The wine may be omitted when not approved. If the colour is not good, add a few drops of cochineal.

MULBERRIES.

The Mulberry, when fully ripe, possesses an almost black colour, with a deep red juice. It is much appreciated for dessert and is considered wholesome on account of its cooling and slightly aperient properties. The berries should be gathered from the tree as they ripen, and when to be kept or sent any distance should be loosely packed with a layer of Mulberry leaves between each layer of fruit. A very useful beverage may be made from the Mulberry juice.

Mulberry Jelly.—Take four pounds of fresh ripe Mulberries, put them into a preserving pan with a quart of strong spring water. Crush the Mulberries and boil for a quarter of an hour, and then strain through a coarse cloth until clear. Measure the juice, and to every pint

allow half-a-pound of pure sugar. Boil until, when a little of the jelly is poured upon a cold plate, it will solidify. Then pour it into jelly pots, and next day place a round of paper steeped in brandy on the top, and tie some white paper over the jar, and keep the jelly in a dry and cool place.

MULBERRY SYRUP.—Take three pounds of fresh ripe Mulberries. Crush them and put them into a saucepan with the juice of six Lemons, two pints of fresh water, and four pounds of sugar. Let these all boil for twenty minutes, and then strain through a coarse cloth until perfectly clear. When quite cold, add one wineglassful of brandy and bottle in clear bottles, cork carefully and store them in a cool place. Look at the syrup in about a fortnight, and should it then be in the least cloudy, boil it all up again and strain. Wash and dry the bottles before using them a second time. Two tablespoonfuls of this syrup will be found enough for a tumbler of fresh cold water.

MULBERRY VINEGAR.—Crush three pounds of ripe fresh Mulberries in one quart of white wine vinegar. Let these stand for a week, stirring every day. Then strain through a cloth into which lay a sheet of filtering paper before pouring in the vinegar mixture. When this is quite clear add four pounds of sugar, put all into the preserving pan and boil for ten minutes, removing any scum that may rise to the surface; pour into an earthern vessel, and when quite cold bottle and cork tightly. To be used as a cooling drink when mixed with water.

REPLIES.

14873.—**Blackberry jelly.**—If "M. S." is a beginner at preserve-making, the best way is to put weight-for-weight at first, but many put three-quarters of a pound of sugar to every pound of fruit, and have always a good preserve. Respecting the time of boiling, although we always look at the time when it begins to boil, we have no stated time. When we think it looks ready to come off the fire, we put a small quantity on a plate, set it in a cool place, and in a few minutes, if boiled enough, it will have a thin skin over it, and, if properly managed afterwards, will keep for years. Blackberries make one of the most wholesome preserves that can be made; they are gathered in large quantities in our district for the market.—H.

—— Put ten pounds of ripe Blackberries and half-a-pint of water into a covered jar, and put the jar into a gentle oven for four or five hours, or till the fruit is quite soft; then ladle all into a sieve or a basin, and allow the juice to run through without pressing. Weigh the juice, and boil it for three-quarters of an hour in a preserving-pan. Remove the pan from the fire (a gas-stove is the best), and add three-quarters of a pound of white sugar to every pound of juice; when the sugar is all melted, replace the pan on the fire, and boil gently, stirring constantly, till a teaspoonful will set when left to cool on a plate. This should be in half-an-hour. Ladle into jars, and the next day put on brandy papers and tie down. This jelly will be quite firm, and keep for three or four years in a dry place. The Blackberries may be simmered on the fire till soft, but the oven extracts the juice best.—G. M.

—— Bruise and boil the fruit; then strain, add half-a-pound of sugar to one pint of juice, and boil for twenty minutes.—VICCARS COLLYER & CO.

POULTRY.

POULTRY HOUSES.

AMONGST the matters which call for the attention of the poultry-fancier at this season of the year is the state of the fowl-house. He may possess young birds of good laying breeds and strains, and they may be carefully fed, but unless they are comfortably housed as well, the supply of eggs during the winter will be far from satisfactory. It must not be forgotten that for poultry-keeping to be a profitable pursuit there must be plenty of fresh eggs for sale during the cold weather, and this will be an impossibility unless the birds are warmly housed at night. All domesticated animals live under circumstances very different from those with which their fellows in a state of nature have to contend. The hen in a wild state would perhaps lay a nest of eggs during the spring, hatch and rear the chickens, and then rest, so far as egg-production is concerned, until the following year. This is all that can be expected under the circumstances, for the hen has to seek food for herself as well as for her little ones. Such a limited supply of eggs and chickens could not, of course, satisfy the breeder of domestic poultry. Instead of having one sitting of eggs in the spring, when all wild birds are nesting, he requires them at all seasons of the year. It is not enough to have produced—by careful selection and breeding—birds which, under certain conditions, will satisfy him on this point, he must take care that these conditions are forthcoming. Hens of most breeds, when at liberty, unless very old, sitting, or rearing young ones, may be usually relied on to lay, with short periods of rest, from March or April to September, and this no matter what the system of feeding may be, for insects are numerous, and much food may be picked up about the fields. But the reverse holds good during the late autumn and winter months. At the end of September, animal food begins to get scarce, and the nights are often cold. The result is, the egg supply falls off, not to rise again until March comes round, unless there is a good stock of pullets, for very few hens can be depended on to lay until the winter is over, especially if they moult late. In many instances, the pullets, even when hatched in March and April, do not commence to lay nearly so early as they ought, although well fed. This, in my opinion, is too often due to the

Bad state of the fowl-house.—The building, more often than not, is nothing more or less than an outhouse of some kind. No trouble has been taken to keep away draughts, and it is by no means rare to find no doors at all, or badly-fitting ones, through the sides of which the wind rushes continually. In such houses the birds are nearly as cold as they would be roosting in the open air. This state of things the poultry-keeper should guard against, I have no wish to advocate the erection of costly houses, nor any large outlay on existing ones. I am aware that a large number of poultry-keepers do not care to spend much in improving the accommodation for their birds, although the money carefully laid out would yield good interest. But what I do advise is: At once, before winter comes on, and before many of the hens cease laying, go over your fowl-house carefully, fill up all holes through which the wind may enter, and fasten all unnecessary trap-doors. Let there be as few entrances as possible, and if there must be a trap-door at all, let it form part of the larger door. In the absence of a building which will answer the purpose, I advise a lean-to outside the laying and roosting-house, under which the fowls may run during inclement weather. Let the lean-to be spouted, and a board be fixed on edge round the outside of the floor, so as to prevent the rain driving in. The floor should be covered with sand, and in the corner may be placed some dry ashes, &c., for the birds to dust themselves in. Where new houses are to be built, it is well to erect them as an ordinary lean-to against another building, taking care that the situation be the warmest that can be got. If built of brick or stone, the walls will be draught proof, but boards should be laid under the tiles or slates. When the house is built entirely of wood, and the boards are not tongued, the inside should be lined with felt. The wooden roof ought also to be covered with the same material. DOULTING.

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HOUSE & WINDOW GARDENING.

FERN-CASES.

(Answers to Queries 14736, 14824, and 14835.)

WITH the exception of a few of the rare Todeas or Filmy Ferns, such as T. superba, which may be grown successfully under cool treatment, the hardy varieties are certainly the best for case culture; and, being mostly evergreen under glass, should be grown in preference to the tender varieties, such as Adiantum cuneatum, A farleyense, &c., which at this season go off for want of a higher temperature. The British Maiden-hair, however, being hardy, may be grown in a cool case, as also may Lastrea Filix-mas, Polystichum angulare, Scolopendrium vulgare, Asplenium Adiantum-nigrum, Athyrium Filix-fœmina, A. Filix-fœmina cristata, Woodwardia angustifolia, Lomaria alpina, &c. If amateurs would not deluge their Ferns, but give water only when the soil appears to require it, and regulate the quantity according to the season, always using tepid water, no end of difficulties would be avoided. During summer in a partially shaded window once a day will generally suffice, and at the present time about every four or five days, withholding it gradually until winter, when once in a fortnight or at longer intervals is sufficient. But no hard-and-fast rule can be applied, depending as it does purely upon atmospheric conditions. Overhead watering at any season is apt to produce a brown appearance of the fronds. Thus, carefully treated, no false bottom to the case is required, provided a liberal quantity of broken flower-pot be used as drainage, the largest pieces, an inch wide, placed at the bottom, concave side under, and upon these two layers of smaller ones, finishing off with a little charcoal, pea-size. Now come the roughest portions of the soil, and upon that the finer, composed of good nursery fibrous loam, and black or brown fibrous peat in equal parts, with a little white sand. The first and third form a good staple, but Ferns like peat, and this, moreover, keeps the soil sweet and open—a desideratum. All should be well rubbed through the hands. There is no possibility of any of the Ferns named (and specified in one of the above queries) "damping off," though certainly over-watering would produce sour soil, retarding root action, and consequently give rise to a sickly condition of the plants, resulting probably in the sacrifice of the whole batch, tantamount to loss by damping-off. Where something is required for the ground, Mosses and Lycopods are sometimes employed; but it is nothing uncommon to find cases hopelessly choked up with these, to the detriment of the Ferns. These can be grown well under a bell-glass with a single Fern. The cleanest grower for the bottom of the case is Hedera Helix, or Wood Ivy, which forms an agreeable contrast, both as to form and leaf texture. It is, too, an interesting fact that this simple though lovely woodland climber should thrive as it does in gas-lighted rooms. Occasional pruning is necessary. As Ferns will grow in a bottle, which led many years ago to their being found suitable for cases, it is immaterial whether the lid is removed to admit air, the interior containing sufficient for their well-being; neither should the case be "air-tight," nor is the steaming caused by the evaporation of the moisture from the soil injurious, though amateurs often remove this under the impression that it is so. This may be likened to the "drip" in greenhouses, which is inevitable, and, at least, will never hurt Ferns. As to a "fountain," a tank should be elevated some feet above the case, and an outlet for the superfluous water provided, and in face of such a complication we should say a contrivance of this kind would answer on an outdoor rockery, but would be a difficult matter in a sitting-room. The best time to plant is in March, when the roots are at rest, as then the fronds make a vigorous start. If planted when in active growth many die down before becoming established, and never do so well the first season. Spores from the fronds sometimes sow themselves. The seedlings should be taken up when large enough to handle, and will make fair progress the first season. They require to be kept moist and shaded till rooted, and are useful as miniatures in square Japan-ware. In the early months of the year the case requires little care beyond watering; but just now a dying frond will be found here and there. Hence the plants require more attention in looking over for the purpose of removing any decaying fronds the moment they change colour, and none should be allowed to touch the glass. This overlooking will ensure a healthy condition of the rest, which, under the treatment advised, will remain green throughout the dull season until new fronds appear in "gentle spring."

STAMFORD HILL.

Winter window-gardening.—The return of frosty mornings reminds us that we must make preparations for placing all our tender plants under the friendly shelter of a glass roof; and, amongst other things, our window plants, whether in pots or boxes, must be changed for something of a hardier nature, for although from their partially sheltered position they may continue to linger on for some time yet, there is little beauty to be expected from real summer, sun-loving plants after October is come on us, with its rapidly-shortening hours of sunlight. Anything that will give a cheerful, furnished look to our windows is welcomed as an agreeable change, for happily there is plenty of material for both winter and summer, and for the winter season there is nothing to be compared to nice bushy little specimens of numerous evergreens. In this locality the numerous varieties of evergreen Euonymus, both plain-leaved and variegated, are in great request at this time of year, for they have a bright, cheerful look, and withstand the rough gales of wind better than most plants. The common dark green Euonymus japonicus, with its shining foliage, will live for years with its roots in a very small pot or box; then there is the beautifully variegated varieties, such as E. japonicus ovatus aureus, E. japonicus Duc d'Anjou, and the trailing Euonymus radicans variegatus. Very pretty effects can be produced with this family of plants alone. Aucuba japonica and A. japonica mas are excellent pot and box plants, and when the former is well loaded with bright coral berries they are very effective. Box, both plain and variegated, is very hardy and neat-looking, and will stand out anywhere. Escallonia macrantha and E. rubra are very effective, and great favourites on the South coast. Retinosporas are perhaps the most beautiful of all Conifers in a small state for window-gardening; R. obtusa aurea, R. squarrosa, R. pisifera, R. plumosa are all beautiful. Thujas are capital plants for large vases, such as are used on balcony-steps, &c. T. orientalis (Arbor-vitæ), T. Ellwangerii, and T. aurea, with its golden tint, are all good. Cryptomeria elegans is a lovely plant in either large or small state, its dark purplish bronze winter hue being unique. Cupressus Lawsoniana is always acceptable for any kind of decoration, its foliage being almost as graceful as a Fern. Then for surfacing the soil under these, we have the hardy Sedums, or Stonecrops, that defy any kind of weather, and are even more effective in winter than summer; and if we drop in a good sprinkling of the hardiest bulbs—Crocus, Snowdrops, and Tulips—we shall have a combination that will last until the return of more genial weather again enables us to enjoy our floral display. And let me add that the evergreens are by no means transient in their period of usefulness, for good specimens may be kept for years in five or six-inch pots, plunged during summer to minimise the use of water; and, when grown too large for window-gardening, may be utilised for filling up gaps in the shrubberies, and the Conifers as single specimens, on grass.—J. GROOM, *Gosport*.

Late flowers.—In many warm windows at the present time, which during hot weather are not wholly suited to the cultivation of plants, a fair show of late flowers may be had. Fuchsias and Zonal Geraniums, favourites with most window-gardeners, are now yielding a good display, the latter bearing trusses of single flowers two and a half inches across, and these, though inferior in size to summer flowers, are at least acceptable. Both are struck early in April in three-and-a-half-inch pots, the compost used being purchased through GARDENING, and containing good loam and brown fibrous peat, with a little sand. The pots containing this soil are surfaced with a further quantity of sand to assist rooting. When growing they are regulated by removing the leading and one or two of the side shoots, carefully removing all flower-buds as they appear, but allowing them to mature flowers about the last week of September. Air should be given on fine days to keep the plants strong, or a few flowers may fall. The Fuchsias bear about six good-sized blooms, being small plants raised at the time specified from cuttings with not more than two leaves.—STAMFORD HILL.

IS A GREENHOUSE A BUILDING?

IMPORTANT TO AMATEUR GARDENERS.

DEAR SIR,—On Wednesday, September 30, I (Mr. A. Dent, Horticultural Builder, 118, Seldon-road, Croydon) was summoned by Mr. Elkington, District Surveyor of Penge, to appear at Lambeth Police-court, on a charge of erecting a greenhouse, twelve feet by eight feet, in the district of Penge, without having given the notice required under the Building Act. I

contended that this greenhouse was a tenant's fixture, and did not come under the Act, being made portable in every respect, boarded up to sill of sashes, standing on, but not fixed to, another sill or frame at bottom formed of seven-inch by two-and-a-half-inch deal. I was advised to have wheels put on this greenhouse to save being compelled to comply with the Act, which states that all buildings shall have nine-inch brick walls with proper footings and concrete foundations, which, of course, I could not carry out, it being only a tenant's fixture. Accordingly, I had four wheels put on the bottom frame, so that the whole could be moved in one if necessary, or taken apart and stowed away in a shed if required. The result was that Mr. Chance (magistrate) decided that this greenhouse, although not connected with the ground, either by posts driven in or by brickwork under, but only laid on top of the earth, was a building within the Act, and gave it as his opinion that even Cucumber-frames were not exempt. Now, sir, I report this case to you, feeling that it is a matter not to be trifled with, but should be dealt with promptly and decisively, and in the interests of flower-growers generally. I take the liberty of asking you to give this matter all the publicity possible.

Having seen the uncertainty which existed among tenants and the gardening papers generally, I took the precaution of employing a first-class solicitor to defend the case, thus incurring considerable expense. The case being adjourned, I had to reappear on Saturday; but it was all no use, I was fined the nominal sum of five shillings and the cost of the summons, with, of course, the privilege of appeal. Now this appeal will be of no use to me; but if your readers feel sufficient interest in the cause of tenants' rights as to having a greenhouse of their own, and will offer some assistance towards the cost of an appeal against this decision, I am quite willing to join in the expense, and allow my case to be used as a test case in the interests of tenants and flower-growers generally. Should you deem this worthy of insertion, those of your readers who wish to help in this important matter may forward their names, addresses, and amounts they promise to contribute, to Mr. Basil E. Greenfield, solicitor, 17, Katharine-street, Croydon, and they will receive an acknowledgment in the paper they choose to name. In writing please write the word "appeal" on outside of envelope.—A. Dent.

—— I have bought a greenhouse constructed *entirely* of wood and glass. It is quite portable, as it can be put together or taken down in less than half-an-hour. Size is nine by six by seven feet, and it rests upon the ground, about eighty feet distant from any dwelling-house. I should be glad to learn if I have a chance of successfully resisting the demand of the district surveyor to either remove it or to substitute brick-work for wood in the lower part. I expect the point has been raised before, but I do not know where to look for the decisions.—Viator.

Bulbs for spring gardening.—A most wasteful way of using bulbs has sprung up within the last few years which all good gardeners should set their faces against. I allude to the habit of throwing the roots away or planting them out in shrubberies. With the single exception of Hyacinths, when a sufficient stock of bulbs to decorate a garden has once been purchased not another farthing should ever be allowed to be expended in bulbs except occasionally for new varieties. If hardy bulbs such as are used for spring gardening are properly cultivated, the flowers will improve a little, every time the plants bloom, for a good many years, and a continual increase will go on by offsets. Deterioration of bulbs is due to bad cultivation, and to nothing else. Daffodils of all kinds are useless for spring bedding; lifting and drying them injures them so much that they scarcely ever bloom decently until established a year, and generally two; even moving them about in a garden injures the next year's bloom a little. Polyanthus Narcissi, on the contrary, bloom finely the first year, probably because, being natives of a drier climate, they stand drying better; they bloom badly the second time after planting, but come right the third season.—J. D.

INDOOR PLANTS.

FOLIAGE PLANTS FOR COOL HOUSES.

During the winter months, amateur gardeners experience considerable difficulty in making cool houses look interesting, for as soon as the gay summer flowers are over, there comes a long, dreary blank, unless some ornamental-foliaged plants are available. Happily, there are many most useful plants that do not require heated structures, but simply the protection of a glass roof, and sufficient fire-heat to exclude frost, to make them quite at home; and a brief list of the most useful may be acceptable now that the rapidly-decreasing daylight warns us that winter is close at hand. Fan Palms (Chamærops humilis and C. excelsa) are the most useful of hardy Palms, for they keep perfectly healthy in cool houses, while those that require a stove temperature languish and look sickly, if they do not actually die, when kept for any length of time in a cool house. The best way with Palms intended to be wintered in cool houses, and, in fact, with all plants intended for similar structures, is to re-pot them in spring, so that they get well established before winter comes round, as we find those plants keep the healthiest that have their pots well filled with roots. Aspidistra lurida (or Parlour Palm, as it is sometimes called) and its variegated form are among the best of all plants for cool house decoration, as they are very ornamental. Good sized plants may be grown in six-inch pots, and they are then most useful for room and dinner-table decoration. Aralia Sieboldii is another capital plant, having large, handsome, Fig-like foliage. It makes a handsome specimen plant for large pots or vases, and is of the easiest culture. The variegated form of this handsome plant is now obtainable at a very reasonable price, and it is quite as robust as the green form. The New Zealand Flax (Phormium tenax) and its variegated form are very distinct and handsome plants, with long, sword-like foliage; they look best as good-sized specimens. Ferns of many kinds, and notably Tree Ferns of the Dicksonia type, are capital cool house plants, giving a tropical look to any structure in which they are located, and, as even very small specimens, they come in admirably for standing among dwarf plants, as they rise up clear above them, and their long arching fronds are most graceful. Centaurea Clementii and Cineraria maritima are beautiful silvery-foliaged plants that succeed well in cool houses; in fact, are quite hardy in the south of England; they make beautiful pot plants, and for room decoration in artificial light are very effective. Cyperus alternifolius, and the beautiful newer variety, Cyperus nepalensis, are beautiful decorative plants, having a green verdant look at all seasons; they require plenty of moisture. Dracæna indivisa (Dragon plant) is one of the most graceful of the whole family of this beautiful tribe of plants; but the high-coloured leaved kinds are only ornamental for stove temperatures, while the green-leaved kinds are very hardy. Acanthus latifolius and A. mollis (Bear's-breech) are very beautiful-leaved plants, easily raised from seed in spring, and grown on out of doors during summer; they are amongst the most ornamental of winter-foliaged plants.

J. Groom, *Gosport, Hants.*

The Fan Palm of Nepaul (Chamærops excelsa).

Naturally-planted fernery.—The illustration from photograph of a naturally-planted fernery is very beautiful. It seems to me that the Ferns are planted in a turf wall, as we would call a peat-wall in Ireland. I have one made in that way. You take large, freshly-cut, damp sods of turf from the top of the bog, and build them together as you would build a wall, pounding and hammering them together till it is a solid mass. It must be supported with wires across. The Ferns are planted naturally in it, and it is syringed, of course, very often, to keep it moist; it very soon becomes covered with seedlings.—A. M. A. M., *Athlone.*

Late Chrysanthemums.—Whatever may be urged in praise of many of our late-summer and autumn favourites, this hardy perennial may justly be said to have attained a high degree of popularity. At a period when the Asters no longer remain to beautify the beds and borders with their showy colours, and that tender subject, the Dahlia—already marred by the effects of rain, and liable, moreover, to be cut down by a night's frost—has disappeared, this exquisite autumn and winter bloomer is beginning to open its buds as if under the stimulating influence of a genial spring; and there is at the present season, without doubt, no other subject capable of yielding so grand a display of flowers, and that at quite a minimum of cost to the cultivator. Hence we meet with it in every place worthy of the name of a garden, both in the pure air of the country gardener and in the vitiated atmosphere of towns. The great diversity both of form and colour observable in the different varieties is such as to afford ample scope for a brilliant show of bloom without violating the rules of good taste or producing the least monotony, where a little forethought in the arrangement of the several sections is exercised. As to cultivation, the amateur who may, perchance, find his plants fall short of his expectations will be able to discover any error of treatment by scanning the pages in recent numbers of Gardening Illustrated, where copious information is given. It may not be out of place, however, to remark that he who has produced specimens with healthy foliage of a deep green, extending nearly to the base of the stem, and with, as pot plants, from about four to as

many dozen plump flower-buds, may assume that he has succeeded in administering to its generally well-understood requirements in the matter of feeding, watering, &c., and also, under certain conditions, shading. In some soils, however, where cultivated out of doors, the drought of the past summer has put to the test the assiduity of the grower, for here and there, where the plants have not received constant attention as regards the necessary quantity of moisture, both at the roots and timely waterings overhead, many of the lower leaves have become dried up, to the detriment of the plant and the dismay of the amateur. But where failures of this kind exist, well-grown specimens with from six to about a dozen good blooms, in many of the improved colours now extensively grown for the London and other large markets, and to be had cheaply, will serve admirably to fill fill up blanks, as well as to hide any "legginess" resulting from a loss of the lower leaves of those plants bearing good flowers. And where a stock is not at hand, a fair show of these may be had for a small outlay where a few bright flowers are required to enliven the greenhouse, which, it need not be said, is the best position they can occupy, and though liking a cool situation, the slight increase of temperature to be afforded by one of the many contrivances for heating now in use would be rather beneficial than otherwise, having regard to the damp condition of many structures at the present time. Placed also between small pot evergreens these enliven a balcony or window, or even in the atmosphere of a sitting-room will last a long time. Small plants with from two to half-a-dozen good flowers form excellent table plants, for which purpose the large white incurved is especially showy, and the low price at which these may now be had, considering their handsome appearance, should find for them many a niche in the homes of those who are able to appreciate good flowers, and for whom the garden has its attractions.—STAMFORD HILL.

REPLIES.

14481.—**Plants for vinery.**—There is no fear of starting the Vines till next March if the temperature does not exceed forty degrees at night, and pretty well all greenhouse plants may be kept in such a temperature. Heliotropes and scented-leaved Pelargoniums will do well on the back wall. If the Vines occupy the roof, there will be no room for climbers, except on the back wall. If the house is kept cool, Camellias might be tried on the back wall, as they will succeed without fire-heat. Other things that may be grown in a cool house are Richardias, Tree Carnations, Coronilla glauca, Cytisuses of sorts, Daphne indica, Dracæna indivisa, &c., Myrtles, Neriums (Oleanders), Phormium tenax variegatum, Veronicas of sorts. It is better not to aim at too much.—E. HOBDAY.

14487.—**Stock for greenhouse.**—I should be very glad to help "Anxious." Cinerarias, Primulas, and Calceolarias may be purchased now in small plants at a low price per dozen. A look through the advertising columns will afford much information. Zonal Geraniums may be bought cheaply, and will give as much pleasure as anything I know. Fuchsias, also, are cheap and indispensable for summer Many things can be raised from seeds in spring, such as Balsams, Cockscombs, tuberous Begonias, Mignonette, Nicotiana affinis, &c.—E. HOBDAY.

14490.—**Tropæolum Jarrattii.**—I do not think a hanging-basket near the roof is a good place for Tropæolum Jarrattii. The light is too intense; besides the plant likes to cling to something. Try it in a position a little further from the glass.—E. HOBDAY.

14494.—**Heating bed in fernery.**—If the pipe is enclosed in a bed, it will, of course, reduce the heat a little, especially in times of sudden pressure; but I think sufficient heat will be obtained if the bed, which I suppose will be a narrow one, rests on the top of the pipe, something else being used to take the weight. If the bed were filled with tan or something that would hold the heat, the warmth from the pipe below, with its upper surface level with the bottom, should be nice and genial. —E. HOBDAY.

14496.—**Gloxinias.**—I should keep the Gloxinias in heat and let them flower. If they have a night temperature at sixty degrees they will flower during the winter, and after a rest during summer they will flower again next winter. I have for years adopted this system and find the flowers very lasting and useful in winter.—E. HOBDAY.

14806.—**Salvia splendens.**—The best way to manage this most useful plant is to take cuttings in February or March. They strike freely in a brisk heat, and if grown on in a warm house or frame, and shifted into larger pots as they require more root-room, they will be fit for potting into their flowering-pots in May. I find ten-inch pots produce very large specimens. They should be gradually hardened off as the summer advances, and in June they should be set out of doors, on a coal-ash bed, in a position sheltered from wind, as they are tender subjects, and easily injured by rough gales. Keep them well supplied with water at the root, and in hot weather give a good syringing over the foliage, as red spider is apt to attack them, and soon destroy the leaves. Pinch the points out of the shoots to induce a bushy growth and prevent flowering until the autumn. By September they will be very fine plants, just coming into bloom, and may be transferred to a cool greenhouse or conservatory, where they will make a brilliant display until Christmas, if a little heat is applied as soon as the nights get cold so as to keep up a temperature of about fifty degrees. These brilliant flowers are most useful for mixing with Liliums and other autumnal flowers, and, later on, with Chrysanthemums, as the prevailing tints of these, being light or of sombre hues, need some brilliant colour to give a cheerful effect in the dark days of autumn and early winter.—J. GROOM, *Gosport.*

14812.—**A cool greenhouse.**—Those who possess one greenhouse only are naturally anxious to have flowers in bloom during winter and spring, consequently a temperature must be kept up to keep a few Tree Carnations, Chinese Primulas, Bouvardias, and other things in flower, and also to cause the flower-buds to open freely. Forty-five degrees will answer very well as the lowest point, supposing that winter and early spring flowers are not required. The frost may be kept out by having a fire on when the temperature is likely to fall considerably below the freezing point. Camellias, Chrysanthemums, Calceolarias, Ericas, Epacrises, Pelargoniums, &c., will do very well if the temperature is not allowed to fall below thirty-five degrees, although it may fall to thirty-two degrees occasionally and none of the plants be harmed.—J. D. E.

14833.—**Treatment of Camellias.**—The general culture of the plants has evidently been good, as the results, so far, have been entirely satisfactory. Camellias frequently produce more flower-buds than they ought to be allowed to develop into full-blown flowers. It is safer not to give them any manure-water at all. They will probably require to be repotted when they have passed through the flowering period. If they are now in seven-inch pots, a good shift will be into nine-inch ones. Drain the pots well with clean potsheads, and repot in a mixture of loam and peat in about equal portions. —J. D. E.

14828.—**Treatment of Solanum capsicastrum.**—These should have been pruned back about the first week in March, and grown on in a greenhouse or warm window until planted out in the open ground about the end of May, in good loam. A sheltered, sunny situation should be chosen; and during warm weather they require watering regularly at the roots, and occasionally overhead to keep down insect pests. A little manure-water may also be given twice a week. During September they should be potted up, watering the previous day, and kept shaded for a week or two until established, as, if allowed to suffer a check through shifting, the fruit is liable to drop. When established, give all the sun you can. A warm window or greenhouse, near the glass, is a suitable position and favourable to ripening the berries. Water, when the soil requires it, with tepid water during the dull months, and an occasional cleaning of the leaves with a soft sponge will keep the plants in health.—STAMFORD HILL.

14837.—**Large room for sheltering Chrysanthemums.**—If you have plants enough, you may utilise both of your rooms for the purpose you name, but that with the south aspect is the best. Take the plants and form them in groups of a half circle in front of each window, about four feet deep in the widest part. During the day let the windows be open both top and bottom, unless the air is very cold. The plants, to be kept in good condition, should be turned round every other day to prevent them from being drawn too much on one side, but you must not expect to keep them in good condition for so long a time as those kept in a light greenhouse. If the weather should be damp and foggy, a fire lighted in the room twice a week would help them to retain their flowers longer.—J. C. C.

Autumn-sown annuals.—I quite agree with "D." on page 428 of Oct. 3, about the non-success of seedsmen's annuals sown in autumn. Like him, I have followed the plan recommended in late numbers of GARDENING, of sowing in the autumn, but no seedlings have appeared as yet, and it is now three weeks since I sowed.—C. N. P. *** *You must wait. Autumn-sown seeds take a longer time to germinate than those sown in spring. If the seeds were good and properly sown, we think there is nothing to fear in your case.*—ED.

14823.—**Landlord and tenant.**—I assume "E. S." is under no agreement with his landlord in any way relating to his garden, and he cannot, therefore, legally remove his Raspberry-canes, Gooseberry-trees, and flower-roots, nor the Apricot-tree he refers to. None of these things can be legally taken away by a tenant, except where the tenant is a nurseryman who has planted them in the way of his trade for sale. The landlord may not, and, as to flower-roots, I believe, he rarely does, exercise his legal right to retain them, but there is nothing to prevent his doing so. In your issue of October 3, "A. B. T., East Anglia," in reply to a "tenant's question," whether standard Rose-trees are removable by a tenant, gives her own experience of having taken a garden in June which was full of standard Rose-trees budded by the former tenant, and, in consideration of her allowing them to remain in the ground till the following November, the outgoing tenant offered to give her half of them, to which she agreed; and as her landlord is a lawyer, she concludes that such trees are legally removable. The outgoing tenant had no right to remove them without the consent of the landlord, and, if debarred from doing this it is clear he could not sell or give them to "A. B. T.,"; and, if the landlord be ill-natured enough, at some future time, to insist upon his strict legal rights, he could prevent their being either taken away or disposed of to an incoming tenant.—LAWYER "Y."

14826.—**Peat-litter manure.**—1. This litter is of such a fiery nature, and consequently the heat is so soon exhausted, that I do not set a high value on it for heating purposes. We have tried it in our Pine-pits for bottom heat at the rate of one-third litter with tree-leaves; for the first fortnight we got more heat than we wanted, and then it suddenly dropped. It does very well as a reviver for a short time, but it is not lasting. I certainly prefer good leaves, or leaves and manure to the litter. 2. There is nothing injurious in this litter when used for any purpose. We have Azaleas and a variety of other plants growing in it, and they are doing as well as we could expect. Those who have a heavy soil may manure their land with it; and in such cases it will be beneficial for a time, as it will keep it open, but as a manure of itself it is of but little value. When it comes from the stables it is charged with urine, and in that case it is of some value as a stimulating manure, but its nature is not of a durable kind; and, therefore, not so serviceable to the garden as the ordinary manure made from straw.—J. C. C.

—— I am constantly using this on all kinds of crops, vegetables, and fruits; also in the flower borders. We dress all our herbaceous borders, Rose-beds, &c., with it. It is also used mixed with the potting soil, and for dressing Strawberry-beds; but we do not dig it in there. It is placed between the rows in winter. It makes excellent hot-beds, if mixed with quite as much leaves; but the heat of peat-litter manure is very violent at first, consequently it is soon over. Mixed with leaves it lasts longer, and the heat is not so violent.—J. D. E.

ROSES.

THE BEST ROSES.

"How many Roses are there as good as Gloire de Dijon, and worthy of going in the same rank?" We sent this question to an amatcur grower in Surrey, in whom we have great confidence, and the following is his reply:—

In regard to Roses which bloom from Junc to October without much intermission, I think that the seven best I know are—Charles Lefebvre (deep red), Belle Lyonnaise (large yellow), Homère (pink and white bud Rose), Gloire de Dijon (salmony yellow), La France (pink), Boule de Neige (best white), Madame Falcot (apricot). These are all sweet-scented, strong growers, free bloomers, and of good colour. Off one standard, Belle Lyonnaise, I have cut over 200 blooms this year. Of course, it is a large standard. Falcot should be cut in the bud, but it is exquisite in that way. I am doubtful about what Roses most to recommend; but I have no doubt about the merits of the following:—

Hybrid Perpetuals: Xavier Olibo, Prince Camille de Rohan, Sultan of Zanzibar, Reynolds Hole, all very dark reds; Charles Lefebvre, slightly lighter red; Duke of Edinburgh, Thos. Mills, A. K. Williams, reds of different shades; Dupuy Jamain, cerise (lovely); Marie Baumann, ditto. Tea and Noisette: Madame Falcot, apricot, lovely and free bloomer; Adam, pinky white salmon (lovely); Celine Forestier, yellowy cream; Lamarque, lemon-white (beautiful); Devoniensis, ditto; Souvenir d'un Ami, pink; Maréchal Niel; Comtesse Panisse (Turner), pink and cream, very uncommon; Niphetos, white; Marie Van Houtte, pale yellow and peach; Catherine Mermet, flesh colour.

In this list I have given no Rose without a scent, and have left out The Baroness and Captain Christy; but I have given Roses which I know to be good, and in most cases, if well grown, *i.e.*, well planted, not over pruned (Teas hardly touched), and properly watered in the summer, will bloom well and be a source of great delight. Give only cow manure; don't use horse manure—it is too hot. If you can give them manure water in blooming-time all the better. Such is my experience. C. J. G.

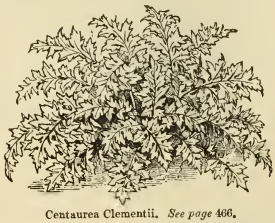
REPLY.

14809.—**Roses in pots.**—Assuming that "Puzzled," wishes to grow twelve Roses in pots, I should advise him to have six Hybrid Perpetuals and six Tea-scented varieties. The best Perpetuals are La France, Boule de Neige, A. K. Williams, Charles Lefebvre, Anna Alexieff, and John Hopper. For six Teas, select Madame Lambard, Perle de Lyon, William Allen Richardson, Catherine Mermet, Marie Van Houtte, and Niphetos. The Teas had better be purchased in four-inch pots; the Perpetuals should be dwarf plants taken from the open ground and potted at once in six-inch pots, using a compost of good mellow loam and some coarse grit. Pot the plants firmly, and let them stand during the winter in a cold pit or frame. Early in January prune them back to within three buds of the old wood. The Tea varieties should be put into the same size pots and description of soil as the others, and treated in every way like the Perpetuals, except that they must not be pruned for the first three or four years—in fact, they wonˈt rcquire pruning until they get too large for your purpose; then they may be shortened back late in the autumn. Aftcr they have been in the six-inch pots one year, shift them into eight-inch size. In these they will live for years if they are annually taken out of the pots, and one-third of the old soil shaken away from the roots and fresh supplied. This work should be done in September every year. The Perpetuals should be pruned every year in December. It is best to let them winter in some cool, light structure, where severe frost cannot reach them. An ordinary greenhouse is the best place for amateurs to grow their pot Roses after the beginning of February, as they require plenty of air and not too much heat; and, at all times, they are benefited by frequent doses of manure water. The Perpetuals should be taken out of the greenhouse about the middle of May to a warm border, where the pots can be plunged to their rims in the soil. The Teas may remain in the house for a few weeks longer, until they have produced a second crop of flowers.—J. C. C.

THE KITCHEN GARDEN.

ONIONS, TURNIPS, AND CARROTS.

In all households a good supply of thesc is of the utmost importance; nothing can be done without them. A dish of Kidney Beans may be wanted to-day, Peas to-morrow, Tomatoes next day, and other things in succession before the same may be required again; but there is no interval in the demand for Onions, Turnips, and Carrots. Cooks, male and female, use one or the other or all of them in nearly every one of their compositions, and if they are withheld from one dish, they certainly cannot be from a full



Centaurea Clementii. *See page 466.*

dinner supply. Happy the man, then, who has plenty of Onions, Turnips, and Carrots; but those who have the misfortune not to possess them may have failed while doing their utmost to secure them, as Onions and Carrots are two of the most difficult crops to producc in the

New Zealand Flax (Phormium tenax). *See page 466.*

whole range of kitchen garden subjects, and it is no easy matter at all times to grow Turnips large, sound, clean, and sweet. It is only too well known that Onions are most liable to "go off" at all stages of growth through being attacked by worms or maggots; Carrots are equally liable to their attacks; and Turnips frequently bear worm traces through the base of the bulb. Wherever these crops grow well one may conclude that the soil is good and well managed; but some soils take a great deal of managing bcfore they produce perfect specimens of the esculents now under notice, and it is to this part of the matter that attention should now be directed. There is no time better than autumn and winter for dressing soils for these crops. If the materials used in doing this now were applied in spring or just before sowing-time, the cure might be worse than the disease; but any dressing given now will be considerably toned down before seed-time, and so will grubs. One of the best of all antidotes for Onion, Turnip, and Carrot pests is gas-lime. Provided the soil is suitable in other ways for the growth of the crops just named, I will venture to assert that gas-lime will do its part with regard to getting rid of insects. I have never known it to fail when properly used. Now is the time to dig it in. The surface of the ground should be cleared from the preceding crop and the lime should be spread all over it at the rate of one and a half tons per acre, then dig it well into the soil and do not disturb it further until spring. Another way is to spread it on, but not to dig it in until a good deal of rain has fallen on it. I have tried soot and salt, together and separate, in the same way as the lime, but in my opinion they are not so efficacious. No manure should be dug into the ground at the same time as the lime, but manure may be applied in spring for the Onions and Turnips. Care must, however, be taken that insects of an injurious character are not introduced afresh with the manure. To prevent this, I would rccommend the manure for the quarters to be put by itself, and a hundredweight of salt and three bushels of soot to be added to every ton of it, mixing all well up together some time before use. This might appear to some to be rather troublesome work, but it really is not so—and, indeed, no amount of labour should be considered too great to secure good crops. Sand, such as that which can generally be had in unlimited quantities along the seashore, is capital material for roots, as they turn out of it beautiful and clean, and in heavy soils it may be used extensively with much advantage. J. M.

REPLIES.

14478.—**Asparagus seed.**—Lay the berries in a heap till the outside pulp decays, then wash the seeds out. The seeds would grow if the berries were sown without clearing them of the pulp. The action of the soil and moisture would soon remove it for the germinating of the seeds. Hundreds of berries which drop from the stems at this season grow on the beds.—E. Hobday.

14489.—**"Palatine" Lettuce.**—The "Palatine" Lettuce may, perhaps, be known in this country under another name. If "J. P. H." will give a description of it, perhaps some one may identify it. And if he were to send a description of it to any of the large seed-houses having dealings with the Continent, it might easily be obtained. I have no doubt that any of the London firms could obtain it.—E. Hobday.

14829.—**Failure with Cucumbers.**—It is difficult to say how failure has resulted in this case, if all the conditions mentioned in the question have been observed. The probability is that the conditions have not been followed out to the letter. I object to water-tanks under beds where Cucumbers or Melons are planted out; but success has been attained with them. Do they get too much water? A "liberal supply" from above and constant evaporation from below cannot be considered judicious management.—J. D. E.

International Potato Exhibition.—The tenth annual Potato Exhibition was held at the Crystal Palace last week, and was very successful. In the principal class the winning collection included the following kinds:—Red Rounds: Adirondack, Reading Russet, Queen of the Valley, The Dean, Lord Rosebery, Blanchard, Vicar of Laleham, and Early Regent. White Rounds: Schoolmaster, First and Best, London Hero, Sutton's Favourite, M.P., and Woodstock Kidney. White Kidneys: Fidler's Prolific, Cosmopolitan, Snowdrop, Chancellor, and Edgecote Seedling. Red Kidneys: Beauty of Hebron, Crimson Beauty, Rufus, Edgecote Purple, and Prizetaker. The best new white Potato put into common use since last year was Chancellor, shown by Mr. Chopping; Fidler's Prolific was next, and The Doctor third.

Crystal Palace Hardy Fruit Show.—A finer show of Apples and Pears than that at the Crystal Palace last week could hardly be wished for. There were but few classes, but the liberal prizes offered tempted the largest growers to enter into the competition. In the winning collection of Apples, Worcester Pearmain, Cockle Pippin, English Codlin, Duchess of Oldenburgh, Brabant Belleficur, and Lord Suffield were found; and among the Pears were Beurré d'Amanlis, Seckle, Souvenir du Congrès, Beurré Clairgeau, Glou Morceau, Rivers' Princess, Rivers' Magnate, and Louise Bonne of Jersey. A very fine collection of the last was brought into the exhibition—not for competition.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The Letters on business should be sent to the Publisher. The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

1952.—**Best Hybrid Perpetual Roses.**—Will any Rose-grower tell me the names of twelve of the best H.P. Roses for pot culture?—AMATEUR, *Halifax.*

1953.—**Ornamental Grasses.**—Will C. F. Davis, or any other reader, inform me where I can get the seed of Grasses mentioned by her on p. 337?—BEGINNER.

1954.—**Daphne Mezereum.**—Would any reader tell me how to treat cuttings of Daphne Mezereum? I have tried to propagate them several times, but without success.—W. W.

1955.—**Irish Peach Apple.**—Can anybody tell me where this beautiful Apple originated? I have always seen it most abundant in Ireland, and it is known in many parts of England.—J. H.

1956.—**Spring flowers in window-boxes.**—Will any reader kindly tell me about how long Tulips, Crocuses, and Snowdrops grown in a window-box will continue in bloom?—YORKSHIRE.

1957.—**Heat Radiator.**—Will anyone who has used Gillingham's Patent Radiating Heat Generator tell me whether it would be suitable for a small conservatory, north aspect, where Camellias and potted Roses are kept? —J. E., *Exeter.*

1958.—**Mushroom spawn.**—Is fresh Mushroom spawn, when it can be obtained, the best to use? If not, of what materials should the "bricks" be made, in what proportion should they be used, and at what temperature should the bricks be kept?—TYRO.

1959.—**Grub on Monterey Pine.**—Can any readers tell me how to prevent the ravages of a grub which attacks the young shoots of Pinus insignis, causing them to wither and fall off?—E. A. F. *** *Can you not send us specimens of the grub?*—ED.

1960.—**Gladiolus The Bride.**—I should be glad to learn the treatment of bulbs of Gladiolus The Bride and Milla biflora. Will they satisfactorily force another season, and when they die down should the bulbs be taken out of the pots and kept dry?—GREY FRIARS.

1961.—**Niphetos Roses in pot.**—I have a Niphetos Rose, which I bought in spring and have kept in a greenhouse since. It has a few more buds to open. How shall I treat it?—ROSE. *** *Keep it in a sunny, pleasant position in the greenhouse and encourage it to open its flowers.* —ED.

1962.—**Tuberous Begonias.**—How early can I sow Tuberous-rooted Begonias with a reasonable hope of their doing well in a greenhouse kept above forty in winter? Do they require heat to start them, and how could I do so—say in January—as my hotbed will not be ready before February?—TRINETTE.

1963.—**Succession of spring flowers.**—I planted Crocuses and Snowdrops during the first week in September. When should I plant again to have another batch coming on when the first have finished flowering?—YORKSHIRE. *** *Plant now, at once. You should plant all the bulbs before November is over.*—ED.

1964.—**Dissolving bones.**—I have used a quantity of bones in a vine border, after breaking them as small as my means of doing so allowed, but I find that they do not readily decay. Will any reader tell me by what means I could soften them before putting them in the ground, to assist their more rapidly dissolving?—A SUBSCRIBER.

1965.—**Stove for greenhouse.**—Will your readers kindly state their experience of slow combustion coke-stoves or charcoal-stoves for a small greenhouse twelve feet by eight, and what is the best inexpensive heater? The arrangement described May 2, 1885, in GARDENING ILLUSTRATED would, I fear, be insufficient.—L. M., *Dublin.*

1966.—**Forming an Osier-bed.**—Will readers kindly give me any hints as to the formation of an Osier-bed? I want to make an Osier-bed in low bottom partly watered with sewage. What is the best kind of Willow for the purpose, when should it be planted, and what is the best way to make cuttings of the Willow for planting? —NEMO, *Monaghan.*

1967.—**Heating small greenhouse.**—Will any of the readers of GARDENING kindly tell me the best way of heating a small house, nine feet by six feet, span-roof, so as to keep the frost out during the winter months? There is no brickwork, and the lower part is of one-inch boards. I should prefer to heat it without boiler or flue, if possible. —YOUNG AMATEUR.

1968.—**Vegetables for shaded ground.**—I should be glad to know what I could grow in a portion of my kitchen-garden which is shaded by a large Apple-tree. I have tried Potatoes, but they become drawn, and do not make roots. Will any one who has dealt with a similar plot of ground kindly give me the benefit of his experience?—G. A. F., *Cheshire.*

1969.—**White scale and red spider on Ferns.** —I bought a number of Ferns and other plants last spring, and, after a month or so, found them more or less covered with thrips, spider, and scale. The thrips I keep down by fumigating; but the other two I cannot get under—especially scale. Any information as to the course to follow will be very acceptable to AMATEUR.

1970.—**Flowering shrubs for Devonshire garden.**—Will any readers tell me what are the most suitable and prettiest flowering shrubs for a garden in Devonshire where the soil is rather heavy, and where the plants must be a good deal exposed to strong N.W. winds? I have Rhododendrons, Azaleas, Laurustinus, Arbutus, and Bay, which do fairly well.—JOHN S. NORTHCOTE.

1971.—**Brazil Maiden-hair Fern.**—I have an Adiantum cuneatum in a No. 1 pot embedded in rockery in an intermediate house. Should I keep it growing all in the winter, or how should I treat it? I have also some in twelve-inch pots, which I should keep in the same house if it will not hurt the plants.—A NEW SUBSCRIBER. *** *Keep it growing in the intermediate house all the winter.* —ED.

1972.—**Keeping atmosphere in greenhouse moist.**—Will anyone who is experienced in the management of greenhouses tell me how to keep a moist atmosphere in mine? I have a lean-to greenhouse fifteen feet by twelve, heated with four-inch hot water pipes. I can keep it at from fifty to sixty degrees, but nothing seems to do well on account of its being so dry. I should be grateful for advice.—W. W.

1973.—**Covering dry sandy bank.**—Will any correspondent kindly say what plants and shrubs would be likely to do well and cover a very dry sandy bank in a park? It is fenced out from the rabbits.—M. H. A., *Elgin.* *** *No doubt our readers will be fertile in suggestions, as they generally are. We ourselves know nothing prettier than groups of the different Rock and Sun Roses, Helianthemums, and Cistus. They are very beautiful, and love a sunny dry bank, flower abundantly, and in many cases are very hardy.*—ED.

1974.—**Chrysanthemum - leaves failing.**—I have several Chrysanthemums, grown in pots alongside a wall with north aspect until a month ago, when I put them under glass. Some of them on the under side of the lower leaves appear to me affected with mildew, and the leaves seem to die off. Will anyone tell me if it is mildew, and what would be the best treatment and preventive?—SENEX. *** *You took your Chrysanthemums in too early. Doubtless some reader will give you the benefit of his experience, and tell you what to do.*—ED.

1975.—**Deciduous climbers for greenhouse.**—My greenhouse is twelve feet by twelve feet, and runs up to thirteen feet at back; it will be kept above forty deg. During winter what creepers can I grow to train up the roof, which will shade it sufficiently to render unnecessary artificial shading and outside blinds during the summer, and will lose all their leaves in winter, so as to admit the light? I should like Plumbago capensis and Tacsonia Van Volxemi, if deciduous, and not specially liable to insects. South exposure, and well-sheltered.—TRINETTE. *** *The Plumbago is deciduous.*—ED.

1976.—**Spireas and Deutzia gracilis.**—May I trouble some practical correspondent of GARDENING to be kind enough to explain the probable cause of the curling-up and drying-off of the foliage of my Spireas and Deutzia gracilis? This has been the case for two or three seasons past, and I have tried in vain to discover the cause. They are grown in cool houses among a general assortment of amateurs' flowers, and no change of position, soil, or weather seems to be effective in inducing a healthy foliage. The soil used is a composition of loam, peat, and sand, in which most of my other plants do well.—GEO. TURNER, *Fishponds.*

1977.—**Greenhouse facing north.**—I have erected a lean-to greenhouse, ten feet by six feet, facing north, and against neighbour's greenhouse wall. I have partial warmth from his flue, which runs in a horizontal direction at the bottom of my house, and last winter I kept several cuttings by the aid of this dry heat in a small temporary structure. Would any reader of GARDENING kindly inform me whether I could, with additional heat—viz., oil-stove—keep soft-wooded cuttings through winter, and give me some information as to the best selection of plants which would thrive under these circumstances?—POSSUM, *Croydon.*

1978.—**Heating greenhouse.**—I wish to heat a lean-to greenhouse over a room. The room has an asbestos gas fire fitted in the ordinary grate. I wish to know whether it would be possible to heat the greenhouse from this room, the object being that the gas should warm the room as well as the greenhouse. An open fire in the room not so much an object if it is warm. A cistern could be put in the greenhouse. The distance up chimney from fireplace is nine feet. Would it be possible to force the hot water up the pipe and keep it sufficiently warm? Any suggestions, or name of any stove which would answer this double purpose, will be thankfully received by BRITISH MATRON.

1979.—**Peaches and Nectarines for out-door culture.**—What are the best varieties of these? Will they grow as well against a fence as against a wall? Does the colour of the fence or wall make a difference to the growth of these trees? My fence is made of tanned Oak (Oak formerly lining tan-pits). Will its dark colour be a disadvantage? Should it be whitewashed?—TYRO, *Godalming.* *** *Our fruit-growing readers will doubtless help "Tyro," but we will say for ourselves that we are wholly in favour of a white-coloured surface for wall or fence fruit-trees. We should say "yes" to the whitewashing question. In the district from which "Tyro" writes there are many gardens, and it would be worth his while finding out how the Peach gets on in the neighbourhood. Some of the poor sands near are not good for fruit-trees, so far as our experience goes.*—ED.

1980.—**Shrubs for lawn.**—I have a lawn forty-five yards long by seven yards wide, running down the centre of my garden. On either side of the lawn, beginning half way down, are various fruit-trees; and at the near end along the sides I have hitherto had Standard Rose-trees in small round beds, in which, also, have been planted Pyrethrums and Lobelias. Like "J. D.," I have found that standard Rose-trees will not grow in this way, and I wish to plant some neat ever-green shrubs in their place. As I know but little of gardening, my failure may have arisen from want of knowledge in their cultivation, or unfavourable soil, or, as I live at Brixton, Surrey, from being too near town. Will the one of your readers kindly tell me what shrubs, under the circumstances, would be the most suitable? I want neat, dwarf, compact shrubs, which can be kept down to the height of an ordinary standard rose-tree, in all about half-a-dozen, but of three different kinds.—Y., *Brixton.*

1981.—**Naturally-planted ferneries.**—In this week's GARDENING ILLUSTRATED you give us a view of a planted-out Fernery, and it is particularly interesting to me, because I have for some few years possessed a small one on this system, but with this difference, that I have no heat for winter. Everything has had to take its chance of perishing from frost and damp, particularly the latter; but even with this drawback I have had very great success, not only with British Ferns, but some hardy exotics, such as Adiantum pedatum, Pteris tremula, Onoclea sensibilis, Woodwardia radicans, &c. My object in writing you is to ask for information as to heating the house, about which nothing is said in your description of the place. My difficulty is in this way. The fernery is about four-and-twenty feet long, a lean-to, with glass roof and a small window in front. The banks are constructed generally of old red sandstone, which, by the way, is, to my thinking, by far the best material, as, in a short time, it becomes so saturated with moisture as to resemble a sponge. If the hot-water pipes are put under the banks, a great deal of heat would be lost, and there is no room on the other hand to put them in the path, as there is at present only room to stand in it. I hope some practical gardener will give the required information, which may be useful to many of your readers, as it certainly will to me.—G. A., *Burtonon-Trent.*

1982.—**Cilanthus Dampieri and puniceus.**—If "T. B. C.," who wrote a most practical and valuable paper on the above, on May 27, 1882, and "An Englishwoman," whose last letter, on March 1, appeared in GARDENING Feb. 7, 1885, will give me a little advice about wintering my plants I shall be truly grateful. Their history, briefly, is this. I received the seeds from New Zealand, and sowed them in April. In the middle of June I had but one plant of C. Dampieri left, as the others withered off without any apparent cause. I, therefore, took "An Englishwoman's" hint as to being in too sunny a window, and took the whole nursery (one C. Dampieri and fourteen C. puniceus) to the other side of the house, facing N.N.E., where they have flourished well all the summer. I have pricked and treated them otherwise entirely by "T. B. C.'s" directions, and they are perfectly healthy. C. Dampieri is in a six-inch pot, and about three inches high, but abundantly furnished with leaves, and having two strong side shoots at the bottom about the same length as the main stem. I have given away six of C. puniceus, but the remainder vary in height from about four inches to twelve inches, and are as healthy as the one C. Dampieri, but in much smaller pots. But my difficulty consists in not having a heated greenhouse to enable me to keep them in the temperature named by "T. B. C." Our greenhouse opens out of the back drawing-room, and often falls below forty-five degrees, though we can just keep out frost with an oil-stove. The middle shelf of the window where they still are would be colder still probably, and only the kitchen window where they were reared, facing S.S.W., remains. The kitchen is always warm, but the temperature is very variable, and where servants are as fond of draughts as ours are, and, having three doors and three windows, can indulge their taste, where should my choice fall?—M. L. E. T., *Norwood.*

1983.—**An unsatisfactory kitchen garden.**—In the year 1869 I entered upon my present place. The garden was then a green field, when my kitchen crops all prospered, and for some years afterwards—viz., Onions, Carrots, Potatoes, Cauliflowers, &c. The principal part of the plot (which is a strong loam on a clay subsoil) was divided into three parts. One-third has always been occupied with Strawberries, but now on one part and then on another. I have year by year heavily manured with good stable manure only. At first I was able to raise Carrots three pounds each, but now I cannot grow a root that is not only very small, but is also eaten through all over, so that they are all quite useless; and this has been the case for a few late years. Of Onions I am not able to produce the weight of the seed sown, while the Potatoes are one complete scab, and I may now consider myself fortunate if I can cut six out of six score plants of Veitch's Autumn Giant Cauliflower, and those very small indeed. They are very badly infested with grub at the roots, and this occurred after a heavy dressing of gas-lime applied the previous autumn. No crop, except Strawberries, is grown on the same plot two years together. My neighbours will have it that I am too liberal in the use of manure. The soil has become a rich, black, friable one, but were it not for Strawberries and the Peas, I should have no return for all labour and compost. Onions and Carrots I have had to cease growing, and now have made up my mind to let the Cauliflowers alone also, unless I can do them better some other way. I cannot bring my mind to believe the liberal use of dung can bear all the blame. I am an amateur of forty years' practice and over sixty summers; I love my garden, and flatter myself to be successful as a fruit-grower, but am now getting disgusted with the vegetables. The garden is situate in East Cheshire. Some years since it was well trenched to bring up a little of the under-spit of soil. Query, is it possible and likely to do better if I cease to use stable manure for a season or two, and substitute some artificial stimulant for a few years? Will any growers kindly advise what is best to do to obtain more satisfactory results in my case?—J. T.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

1984.—**Planting Privet** (*C. W. E., Stirlingshire*) —You can plant now or any time before December.

1985.—**Seedling Pansies** (*B. F. Edgcrew*).—The flowers did not travel well. They seemed fairly good blooms.

1986.—**Window-boxes** (*P. E. G.*)—Yes, the bottom part should be perforated. (See reply to 14375, p. 452, last week).

1987.—**Stimulating Chrysanthemums** (*A. Cooper*).—Manure-water syringed over the foliage would have no good effect. Apply it to the roots.

1988.—**Cutting down Pampas-grass** (*S. S.*).—If the plant is in your way, the best thing is to remove it. You cannot cut it down without injuring it.

14989.—**Geraniums after blooming** (*P. M*).—Cut them in only slightly at present, store in a dry place, and cut down to promising eyes when spring comes.

14990.—**Making Fern-case** (*Apprentice*).—The article on "Fern-cases" in this week's number will give you information on all the points that you mention.

14991.—**Retarding Chrysanthemums** (*F. E. P.*).—Keep the plants in a north aspect, either out of doors under canvas or in a shaded unheated frame or house.

14992.—**Books on fruit-culture** (*M.*).—For simple fruit-culture we advise you to take up "Apple in Orchard and Garden" and "Fruit-Culture for Profit" (Hobday).

14993.—**Primula rosea** (*M. M.*).—It is not unusual for this Primula to die down in the way that you describe, and you may expect it to come up strongly at the proper time.

14994.—**Insects on Apple-trees** (*R. M. E.*).—The use of paraffin ought to clear the tree from the insects, but it should be applied with a brush, as a mere syringing is not enough.

14995.—**Procuring white Dutch transparent Currant** (*Robert Keating*).—You ought to be able to get this from any fruit nursery. It is the same as that called the white Dutch Currant.

14996.—**Fern-cases** (*R. A. G., and Brussels*).—See note on the subject in this week's issue, and write again if further information is desired. "Brussels" other question will be dealt with next week.

14997.—**Chrysanthemums in the open air** (*P. E. G.*)—Yes; a good many Chrysanthemums will flower in the open air. Let us know what sorts you wish to grow, and we will advise you further.

14998.—**Evergreen climbers for north side of house** (*W. W.*).—The best things you can have for growing in the box are some of the small-leaved forms of the common Ivy—not the variegated forms.

14999.—**Peaches and Nectarines under glass** (*Tyro.*)—They want no artificial heat unless you want to force them. The temperature that suits them would do for the Marechal Niel and Niphetos Roses.

15000.—**Plants for narrow moist border.**—Put a bit of fresh Ivy or the common Periwinkle—the white one is very pretty—in the border. If it is shady, a few hardy Ferns may be planted among them.

15001.—**Pruning Virginian Creeper** (*F. G.*).—You need not be in a hurry about pruning this—any time in winter or spring will do. Do not prune it at all unless you want it to cover a surface in a short time.

15002.—**Treatment of Cactus Dahlia (D. Juarezi)** (*M. E. H.*).—When the Dahlia is touched by frost or has quite done blooming, take it up on some dry day and store it away in a dry place free from frost.

15003.—**Arum Lilies fading** (*J. C. Williams*).—We think it is only some of the summer leaves that are decaying. Treat the plants well, give them as warm and sunny a position as possible, and no doubt they will flower well.

15004.—**Procuring plants** (*D. Latham, Torquay*).—You would find most of the plants in a good Exeter nursery—say Veitch's or Pince's. One of the plants—Arabis speciosum—we do not know. You probably mean Ribes speciosum.

15005.—**Destroying Woodlice** (*Beginner*).—Your best remedy is to trap the woodlice and destroy them. A piece of Potato at the bottom of a flower-pot, and covered with moss or hay, forms a good trap. A bucket of hot water should be used for emptying the traps.

15006.—**Cultivated edible English fungi** (*Tyro*).—We have never heard of any besides the common Mushroom having been successfully cultivated, and, considering the plenitude of Fungi in our woods at this season, there is hardly any need to cultivate them.

15007.—**Treatment of Pelargoniums and Begonias** (*Amateur*).—You must tell us more precisely what plants you mean. Are the Pelargoniums show or zonal kinds? as each class requires different treatment. Again, are the Begonias tuberous or fibrous-rooted?

15008.—**Pruning Fuchsia fulgens** (*Enquirer*).—You may prune it now; cut it hard back, and when the plant is in vigorous growth in summer it will be none the worse for occasional doses of liquid manure. It requires, generally, the same treatment as other greenhouse Fuchsias.

15009.—**Scale on Ferns** (*An Old Maid*).—The "excrescences" you refer to are scales, from which the Fern must be thoroughly cleaned before it can be expected to thrive. Brush them off with a stiff brush and soap and water. Give the plants a thorough syringing with clean water afterwards.

15010.—**Smut on leaves of greenhouse plants** (*C. C. H.*).—There is nothing like a continual sponging of the leaves of the plants in question; but as they are so frequently covered with smut, we think you must seek for the cause in the condition of the house itself. Is it in a perfectly clean state?

15011.—**Blackberries** (*C. H. M.*).—The article on the subject in this week's number will satisfactorily answer the first part of your question as to whether the Blackberry can be grown with advantage. The Parsley-leaved, the Kittatinny and Wilson Junior, are good kinds. See recent advertisements in GARDENING.

15012.—**Keeping out-door Fuchsias during winter** (*M. E. H.*).—In the south of England many Fuchsias will survive out of doors in winter with a little coal-ashes or tan, or similar material, thrown over the roots, or even without this protection. Some kinds are quite hardy all round the coast district. Even greenhouse Fuchsias may be left in empty rooms.

15013.—**Storing Potatoes** (*H. T.*).—You should have no difficulty at all in keeping your Potatoes. A cellar is a very good place. Put them in heaps on the ground if it is not too damp. They must not be given light. Damping is a very good way to store Potatoes, although they are not so easily got at as when they are in a cellar or similar place, where they can be readily examined at intervals.

15014.—**Tomatoes v. Wasps** (*R. H. Wake*).—A little while ago a correspondent of the *Garden* recommended the growing of a few plants of Tomatoes in a vinery to prevent the wasps from attacking the Grapes. This recommendation called forth several letters, the writers of which expressed the opinion, based upon experience, that Tomatoes afforded no such protection to Grapes, and that the only effectual defence was netting. Perhaps some of our Vine-growing readers will touch upon the point.

15015.—**Grapes for wall** (*Bryuteg*).—Four Vines can be grown as suggested; and as the wall is protected by a glass screen, it would be better to omit Himrod, White Cluster and substitute Black Hambro' in its place. The varieties would then be in the order of their merit—Black Hambro', Foster's White Seedling, Royal Muscadine, and Esperen. The plan of training will answer very well.—*J. D. E.*

15016.—**Blight on Apple-trees** (*G. D. C.*).—From the description it seems probable that the trees are attacked by American blight; this insect would not kill the trees. The manure from the closet would if put on too thick. It is an error to place strong manure in immediate contact with the roots of Apple-trees. It would be better now to lift them, and replant with some fresh soil round the roots, but no manure. A mulching over the roots after the trees are planted is good. A small brush dipped in paraffin and applied to the insects will destroy them; but it ought not to be applied to the buds, else it might injure them.—J. D. E.

15017.—**Laying out a geometrical garden** (*Wm. C. Crowley*).—First get the right square of the ground by stretching a line through the centre from north to south, and a second line from east to west, also through the centre. For intricate patterns lines will also be required from N.E. to S.W., and from S.E. to N.W. When these lines are laid down exactly, the compasses and the measuring-rod or tape will do the remainder of the work easily. Circles, ovals, half-moons, &c., are easily struck out, when their size has been decided on, with a piece of string and a few small pegs. In laying out your lawn you should first of all lay down a line straight through the centre lengthways. A second line should cut the first transversely at exactly right angles in the centre. The piece of ground will now be divided into four equal parts. The ends of the lawn should now be measured off so many feet on each side the line at each end, and a stump driven down at each corner to mark its size. A line from a stump on the transverse line, at a suitable distance from the centre line, will give just as much or as little curve to the lawn as is desired. Simply moving the stump out from the centre line, or drawing it in, will alter the sweep of the curve. The work might be done with a ball of string and a few pegs in a few minutes.—E. HOBDAY.

REPEATED QUERIES.

14462.—**"Assyrian Codlin" Apple.**—Does anyone know an Apple called the Assyrian Codlin? And if so where could it be procured?—X., *Loughgall*.

14463.—**Tufa for fernery.**—Will anyone kindly tell me the districts in which tufa can be got easily, or where it can be purchased cheaply?—CARBONIFEROUS.

TO CORRESPONDENTS.

J. Saddington.—We may be able to find space for any short note on the subject that you send us.——*Littlebourne.*—See note as to Cloches on page 437.——*Wm. Shelmerdine.*—Barr & Sons, King-street, Covent Garden; probably through local seedsmen also. Directions for use are given to purchasers.——*W. H. P.*—A book on geometrical flower-gardening is, we believe, published at 171, Fleet-street.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Ray.*—Viburnum Opulus (Guelder Rose).——*T. Douglas.*—Fuchsia gracilis; some variegated Euonymuses run green.——*J. H.*—Chlorophytum orchidastrum.——*Penkridge.*—Please send shrub in flower; other is Deciduous Cypress (Taxodium distichum).——*J. Hulme.*—We do not attempt to name sorts of Fuchsia; 4 is F. fulgens.——*Carter.*—1, Salvia spectabile; 2, Salvia splendens; 3, Justicia speciosa; 4, Phygelius capensis.——*Mrs. Alexander.*—Red Winter Cherry (Physalis Alkekengi). (This is the fruit, enclosed in a bladdery calyx).——*Sharon Helsby.*—Specimen too small.——*Calecolaria.*—Calecolaria viscosa.——*W. IW.*—1, Euonymus japonicus aureo-maculatus; 3, Cuphea platycentra. Send better specimen of other.——*J. F. E.*—Crocus nudiflorus.——*Lady.*—Appears to be Gout weed; must be rooted out.——*B. Amoore.*—The plant is not a Smilax, but Myrsiphyllum asparagoides (the Creeping Myrtle).——*Mac.*—1, Myriophyllum spicatum and M. alterniflorum; 2, Cardamine amara.——*W. S., Waltham Abbey.*—You will see by the notice above that we do not name varieties of florists' flowers.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*F. C. P.*—1 and 3, Beurré Diel; 2, Easter Beurré; 4, Beurré Hance.——*E. Carver.*—Seckle,—*Ramalho.*—The numbers 5 and 6 became detached. The larger Apple is the King of Pippins; the other specimens are too small and poor, and cannot be named.——*G. F. T.*—1, Evagil; 2 and 3, Cox's Orange Pippin; 4, Pomme de Neige.——*W. H. Mackenzie.*—1, Doyenné Boussoch; 2, Marie Louise; 3, Beurré de Capiaumont; 4, Beurré Diel.——*T. E. F.*—1, Queen Caroline; 2, Yorkshire Beauty; 4, Yorkshire Greening; others not recognised.——*J. Tubbs.*—Peach is Late Admirable; Pear, Vicar of Winkfield; large round Apple, Golden Noble; other, Lord Suffield.——*W. Stemp.*—1, Flower of Kent; 2, Queen Caroline; 3, Lord Suffield; 4, Lord Derby.——*E. M. P.*—1, Hollanbury Pippin; 2, Scarlet Nonpareil; 3, Cehini; 4, probably Duck's-bill, but not good specimens; 5, not known.——*B. B.*—Beauty of Kent.——*A. P., Hants.*—1, Beurré d'Amanlis; 2, Marie Louise; 3, large Apple is Beauty of Kent; other not recognised.——*F. R.* and others.—Next week.

MAXIMS FOR GARDENING.

I CAME across the following maxims for gardening in an old magazine for the year 1850. They seemed to me so useful that I make no apology for copying them, and hope that they will be carefully followed by all who wish their gardens to prosper. Failure in growing seeds or plants to perfection is in nine cases out of ten owing to careless neglect of the following simple rules:—"Grow nothing carelessly. What is worth growing at all is worth growing well. Sow none but new seeds. Melons and Cucumbers form an exception to this rule; their seeds should not be sown until several years old; they will then bear scanty foliage, but abundant fruits. See that all weeds are burnt. Seeds will not grow unless within the influence of moisture, air, and sun; so do not sow your seeds too deep, or they will never come up. Let unoccupied ground be left in as rough a state as possible, so that it may become exposed to the frost and thoroughly loosened. Do not crowd your plants in beds; light and air are as necessary as water. In pruning, begin below the bud situated on the upper side, and end just beyond it; this keeps the rain from settling on it and rotting it. Light is necessary to flowers, that they may attain their proper hue; when in rooms they should be as near the window as possible. No plants can bear sudden changes of atmosphere. Remove all dead flowers unless you wish to save for seed. Fruit should be gathered in dry weather, and *laid*, not dropped, into a basket; the slightest bruise will cause it to decay. Never remove leaves from bulbs after flowering; as long as the leaves retain life they are transmitting nourishment to the roots. Potted plants should always have a thorough drainage, as few plants thrive in stagnant moisture. All garden hedges must be kept clear of weeds." Now, after reading these simple rules, why does not every one have a Geranium, a Fuchsia, or some other flower in the window? They are very cheap, and can be easily raised from a slip or from seeds, and they are "things of beauty" while they live. As Leigh Hunt says, "it sweetens the air, rejoices the eye, links you with nature and innocence, and is something to love. If it cannot love you in return, it cannot hate you, it cannot utter a hateful thing even when neglected, and, living purely to afford you pleasure, how can you neglect it?"

Leatherhead. C. F. DAVIS.

14814.—**Double Begonias.**—"H. H." should be able to do these very well in the house mentioned in the neighbourhood of Leytonstone. It will be necessary to have a blind fixed to run down when the sun gets strong, and up again directly it is no longer needed. Grow the plants on shelves or open wooden stages, where there will be a free circulation of air all round them, as they will do much better thus than on a solid damp bed. Afford free ventilation, both at the top and front of the house in all warm or favourable weather, at least after the plants have got into full growth. Give the greatest attention to watering and cleanliness, and success is certain.—B. C. R.

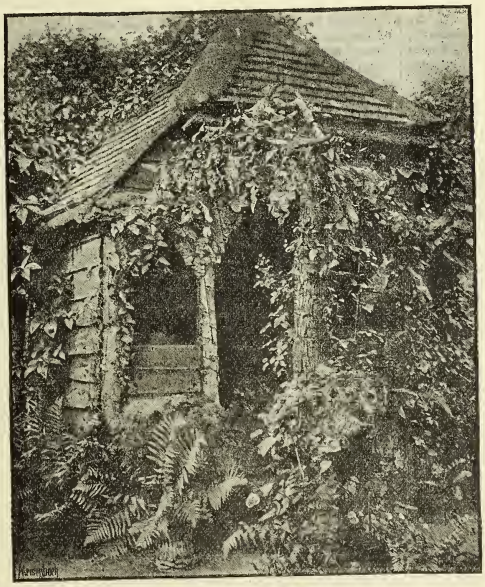
Books received.—*Bible Flowers and Flower Lore.* Hodder & Stoughton, 27, Paternoster-row.

Catalogues received.—*Collection of Dwarf and Standard Roses.* Ewing & Co., Havant, Hampshire.——*Plant List.* Richard Smith & Co., Worcester.——*Roses, Vines, Orchids, &c.*—Liverpool Horticultural Company, Garston, near Liverpool.——*Catalogue of Roses.*—James Backhouse & Son, York.

GARDEN BUILDINGS AND SUMMER-HOUSES.

This charming little picture is a reproduction of a photograph sent us by Mr. F. Mason Good, of Winchfield, Hants. It shows a little garden-house, embowered in Ferns and creeping plants, and not unpleasant in its surroundings. The building stands in a corner of a pretty garden in Eversley, attached to a house formerly occupied by Dr. Haynes (who attended Charles Kingsley in his last hours), and, still earlier, the residence of Canon Kingsley's mother. It is faced with Cork, and the Clematis and other climbers hide, picturesquely, an otherwise unsightly corner.

As regards the general question of garden-houses and out-offices—cattle and implement sheds, &c.—in country places, they are, in our opinion, usually too flimsy in construction. They are very inefficient in protection to man or beast, though they offer a friendly shelter to vermin of various kinds. It would be much better to change the material, and use less wood in such structures. However picturesque the thatch is, it should never be used, on account of its vermin-sheltering qualities and combustibility; earwigs, woodlice, rats, and mice, find what they want in wooden thatched structures. It is infinitely better to make use of stone or brick, or still better, perhaps, of the new excellent and cheaper material, concrete, especially when the materials for this are under our feet, so to speak, as they are in gravel and rocky soils. By the use of such materials we get simply and cheaply floors and walls which are impervious to moisture and vermin, and which will also endure, and will not come down about our ears as the wooden shanties sometimes do. We should often employ a concrete roof, which may, being like a rock itself, be a flat roof; that is a gain, because in many situations in the garden and in the home landscape it is not desirable to push up roofs if it can be avoided. The common idea of a roof is that one must get a high slope to throw off the water. In small garden structures, sheds, &c., it is quite easy to get a roof like a rock, which need have no more pitch than a path, and which will support itself without iron ties across. With the aid of these ties, of course, structures of any kind can be covered with concrete roofs. After this, the most pleasant kind of roof for a garden structure is a strong, well-coloured tile, or the flags which are used in Horsham and several parts of the country, where they can be obtained; but they are not easily procured. The common slate is always ugly in colour, and never should be used; moreover, the flimsy slight roof is entirely unworthy of comparison with that made of concrete. We know that what we say of concrete roofs is opposed to the common idea regarding roofs, but we think most people will agree with us if they consider for a moment how foolish it is that the part of a building which is most exposed to the weather should be the most flimsy. The tiled roof here shown is pretty, and, of course, picturesque little arbours are made of rustic wood, and are sufficient, perhaps, to meet the slight demands made upon them. Our remarks refer more particularly to structures in which one may wish to find perfect shelter and dryness in bad weather, and in which work can be carried on in comfort.



A Picturesque Summer-house at Eversley.

14468.—**Obtaining Melilotus officinalis.**—The common Melilot grows wild in some parts of the country on clay soils; I believe I have seen it in Sussex. It is a near relation of the Clover, and its flowers would be valuable for bees. The seeds might be obtained through one of the seed firms. The Cretan Melilot (M. creticum) was made a lot of fuss of some years ago, and this, I should think, would make a better bee plant than the common form.—E. Hobday.

FRUIT.

PREPARING GROUND FOR FRUIT-TREES.

The planting season being now at hand, a few remarks on preparing ground for fruit-trees may be acceptable to those who are halting between two opinions, or what may be termed the new and old systems of fruit-culture. The old system taught us in our young days that giving manure to fruit-trees was a dangerous practice, but every-day experience proves the contrary. Never under the starvation system and hard cutting-in of the branches were such collections of fruit seen as are now shown at our exhibitions, and from personal experience in gardens that produce the finest collections of Apples, Pears, and other kinds of fruits, I know that good short stable manure is used in unlimited quantities; in fact, walking between the rows of trees seemed like walking in a farmyard. Yet we still hear many who contemplate planting fruit-trees quoting the old theory that manure promotes all sorts of ailments. But what are the facts? If we visit any of the large nurseries in which the thousands of fruitful young trees annually sent out are produced, we shall find large stacks of rotten manure at this time of year ready to be dug into the quarters in course of preparation for young stock; we find, too, the trees in spring bristling with flower-buds, and in autumn producing fine crops of fruit. Apples in fruit-tree nurseries thus managed bear good crops when two years old; therefore the old maxim respecting planting fruit-trees for the next generation to reap the benefit is no longer tenable.

In preparing a site for new trees, let the soil therefore be not only deeply cultivated, but liberally enriched with thoroughly rotten manure; and if the position has been long occupied by old fruit-trees, wheel out a good proportion of the exhausted soil, and replace it by fresh material from other parts of the garden. Turf and top-spit pasture soil are not always available; but this need not matter, for any good soil that grows vegetables well will grow fruit-trees to perfection, provided its fertility is kept up by annual dressings of manure, "a little and often" being a good maxim in this matter. If we consider the weight of crop which a fruitful Apple-tree produces, it is evident that the soil must soon become exhausted, and if this is not made good the roots will strike down into the cold subsoil, and watery, unripe, and consequently unfruitful shoots will be the result. It is by keeping the roots actively at work near the surface, where the sun's rays can act on them, that the modern fruit-grower gets young trees to be so fruitful. The manure that I have seen most extensively employed for fruit-trees with good results is mainly composed of stable manure, with more or less of every conceivable kind of town refuse. This is stacked in heaps and turned over once or twice until it is thoroughly decomposed, when it is fit for use, and for healthy, fruitful trees there is no artificial compound, new or old, that I have yet tried equal to it. In the case of new plantations, the main thing is to have the manure thoroughly mixed with the soil, and for this purpose steel forks are better than spades. Top-dressing or mulching the soil with manure has of late years been most successfully carried out. By this plan of annually adding a little fresh food in the shape of a top-dressing, the active rootlets find something congenial close to the surface, for the worms draw it in and the rains wash down the nutriment, so that there is little difficulty in keeping up the fertility of trees when once properly started.

Canker follows unripe wood, and severe frost splits the watery tissues, while hard, well-ripened wood passes safely through the ordeal. This is the time to take such trees in hand. Open a good-sized trench, from two feet to three feet from the stem of the tree, according to its size and age; large old trees require more space than younger ones. Dig down two spits deep; cut any large, thong-like roots, but carefully preserve all fibrous ones. Then proceed to undermine the ball of earth, cutting off the roots that strike down perpendicularly. Ram the soil in again as firmly as possible; then proceed to fill up the sides with the loosened soil, enrich with some thoroughly decomposed manure and some of the surface soil from the vegetable quarters; spread out the fibrous roots, and cover them with fine soil; tread the whole quite firmly, and finish off with a good barrowful of manure spread on the surface. If those who are not satisfied with the result of letting the roots take care of themselves will try more liberal diet, they will soon find a marked improvement both in the trees and their produce. J. G. H.

BLACKBERRIES.

It is more than probable that dwellers in highly-cultivated England are not aware of the value of the Bramble as an edible fruit-producing shrub. If space permitted, much might be said for as well as against this graceful, trailing Rosaceous shrub, for it belongs to a very old family, and claims kinship with the Raspberry (Rubus Idæus), which is too well known and appreciated to require description; the Roebuckberry, the badge of the McNabs; the Cloudberry, the badge of the M'Farlanes; and it has cousins in America. But the shrubs to which I now wish to direct attention—R. rhamnifolius and R. corylifolius—are indigenous to our soil, and although man has been at war with them no doubt ever since Cain commenced tilling the ground, they hold their own and prosper—nay, more, they clothe the naked hill-sides and barren rocks with verdure, and in due course deposit decaying vegetable matter capable of supporting Gorse, and Broom, and Foxgloves, and not unfrequently the quick-growing, profitable Larch. Moreover, they adapt themselves to all soils that are not absolutely wet, but prefer the warm, light hedgebanks and hillsides, where, as in this part of the country, they soon cover many acres of waste land, and, while tipping the stone walls, raised where hedges will not grow, with graceful Bramble clusters, they yield a rich

harvest to the poor, a source of livelihood to middle-men (here called badgers), and furnish rich, wholesome food to dwellers in all the large, densely-populated towns in the north of England and Scotland. In many parts of the country, where high farming prevails and long, straight hedges are trimmed to the thickness of one's hand, the Bramble is not allowed to extend; but then, even, it is known to every child, although it may not be sufficiently plentiful to yield fruit worth looking after. Here, however, the wild, richly-wooded, semi-enclosed nature of the land forms a home for Bracken, bush, and Bramble, certainly not surpassed, if equalled, in any other part of the kingdom. This tract extends for many miles along the Herefordshire spurs of the Malvern range of hills, and the warm, igneous character of the soil favours to a great extent not only the growth, but also fruitfulness of the Bramble to a nicety.

Blackberry gathering, unlike Hop-picking, is confined to the natives, and although they do a certain amount of mischief, the owners of the property are not hard upon them, as the money they obtain for the fruit enables them to procure clothing for the winter. The harvest extends over about six weeks, and during that period, buyers, surrounded by women and children, may be seen at certain spots, where, until within the last seven years, wholesale markets were never held before, buying up the previous day's pickings. The price this year ranges from one penny to three half-pence per pound for good sound fruit, free from calyx and maggot, weighed in the "badger's" baskets, which hold about fourteen pounds each. In wet weather the berries are weighed in tubs similar to butter tubs, only smaller. As soon as the rural market is over the buyer drives off to the station and consigns them to his salesmen in the north. The pickers, principally women and children, return to their scathing labour, for it must not be supposed that they can work amongst Brambles without carrying away unmistakable marks of their occupation on their bodies as well as their garments. Men out of work, or who prefer an irregular life, sometimes turn in and earn from 2s. to 3s. a day. A quick boy at the present time can earn 2s. Although the Brambles must be as old as the hills, this trade for transit did not spring up until 1879; and already the quantity sent away from Ledbury Station alone amounts to thirty tons of ripe fruit. This quantity does not, however, represent the whole of the fruit gathered in the neighbourhood, as buyers drive into the stronghold from Evesham and other places, and, as a matter of course, consign from other stations. Then, again, a good quantity of fruit is consumed in the neighbourhood, either in tarts or boiled down into jam for use through the winter. Blackberry jam, is, however, too rich for many palates, and the people here correct and fortify it by the addition of well-peeled and cored Apples. So much for this spontaneous supply of rich, useful fruit, which comes in when all other berry fruits (a few autumn Raspberries and wall Currants excepted) are over, thus enabling many a poor woman to renovate, if not renew, her children's wardrobe; and, taken at 1d. per lb., brings into the district a sum little short of £300. This sum, I need not inform growers and others acquainted with the London fruit trade, does not represent more than one-third of the price which it costs the consumer, as I lately heard that good Blackberries were selling in Leicester market at 4d. per lb. Pershore Plums at the same time were selling in Evesham market at 6s. per pot of 84 lb. But why this difference in price? It cannot be that this wild fruit is better than the Plums. Certainly not; to my taste it is not half so good, but it is a novelty to thousands who have never seen it growing, while the Plum, this year a glut, is better known and has long been hawked through every town in the United Kingdom.

Culture.—Having shown that the wild Blackberry of our hillsides is greatly appreciated by our teeming population, and that it comes into use when Plums and Apples are the only kinds of fruit that working men can purchase, many will agree with me in thinking this wild indigenous plant, which neither fire nor billhook can destroy, may be improved and cultivated at a fair profit. The Americans cultivate their Lawtons, their Early Harvests, their Kittatinnies, and others much as we grow Raspberries, and why should not we follow? We do not presume to lead. We have acre upon acre of waste land now yielding next to nothing, in many instances plenty of that which is worse than nothing. Why not, then, give culture a fair trial? Good, well-drained ground, no doubt, would produce the best crops, but poorer land on which the Bramble springs up spontaneously might be enriched and improved by cultivation. The plant could be had for nothing, and labour would not be a heavy item. In America the canes are planted three feet apart in rows, and eight feet from row to row, for the convenience of getting in between them and cultivating the ground. In this position they are allowed to grow into long natural hedges, from which it is not difficult to pick the fruit, and they profess to cut out the old wood and shorten the young canes once a year. But the varieties grown there differ greatly from ours, as they make much stronger growth and produce finer fruit. There they are perfectly hardy, and they would, no doubt, pass through our sharpest winters, particularly when planted on dry warm soil, where their growth would get thoroughly ripened. These, then, should be tried, and although they might not succeed in every situation their introduction might lead to a union of the Roses, which would result in the production of a race superior to that which lacerated the limbs of contending Royalists on these very hills more than four hundred years ago.

Eastnor Castle, Ledbury. W. Coleman.

Barren Strawberries.—I am obliged to "E. M. M." (p. 439) for his suggestion, but I am only interested in the matter as a horticultural curiosity; the Editor's note embodies my experience of runners. "C. M. H., *America*," has given a valuable hint; perhaps some other correspondents will supplement it by giving the varieties which may be expected to fail like "Princess of Wales," and so prevent much disappointment in ordering plants. My own crops have never failed, so I have only seen the result in other people's gardens.—A. B. T., *East Anglia.*

—— Is not "E. M. M." in error when he says that the second and third plants on the runners are generally barren? I think he must be, for I would as soon plant the third runner as the first, only, as the Editor remarks, the first is the strongest. The late Mr. R. Fish, when he was at Putteridge Burry, always preferred the second runners to the first, as he said they were more fruitful, and no man forced better Strawberries than he did. He used to call it his pet theory, because he found that no one else was so particular in that respect as he was. Whether it was a pet theory or anything else, he always secured good crops of fruit from plants so obtained.—J. C. C.

Kentish Fillbasket Apple.—An Apple that I do not see noticed in the pages of Gardening is the Kentish Fillbasket, and I think it deserves to be better known. We have a few trees, and they have never failed, in good or bad seasons, to produce an enormous crop. It is a cooking Apple, very large and sweet, and every bough of the tree is so weighed down with fruit that we are obliged to prop it with strong stakes.—Grey Friars, *Wolverhampton.*

REPLIES.

14475.—**Pruning neglected fruit-trees.**—Prune now, the sooner the better, as then the wounds will have time to dry before frost comes.—E. Hobday.

14493.—**Making a Vine border.**—Land strong enough to grow good Wheat and Beans will grow good Grapes. The late Mr. Bell, of Norwich, told me twenty years ago that, in building his house at Thorpe, he came upon a bed of natural loam, and that caused him to build the range of vineries that he established there. He added nothing to the natural soil but some night soil. The houses were situated on the side of a rather steep hill and the drainage was perfect. Now, anyone with a soil of this character may go and do likewise, but if an artificial border has to be made at all, it is as well to do it properly. On a dry soil, such as a good part of Norfolk is, and where the rainfall does not exceed twenty-five inches, I should excavate two and a half feet, concrete the bottom six inches in thickness, and fill in the border with the best loam I could get, enriching it with bones or dry, mellow night-soil if I could get it. The concrete should slope from the front of the house to the front of the border, to throw off any water that might accumulate in wet times. If the natural soil required it, a drain should be run along the front of the border to some outlet. The width of the border would depend in some measure upon the width of the houses, but ten feet or twelve feet will, in most cases, be enough, as the extremities can be lifted at any time and placed in new soil. In keeping up the condition of Vines a good deal can be done with surface mulchings. The ground must be naturally very poor if, when the roots get away from the surface, long jointed wood is not produced.—E. Hobday.

14820.—**Vines.**—If the stem of a Vine was covered with earth and sand, the roots would be sure to root into it, and derive sustenance therefrom. It would be better not to interfere with them now. Place some better soil near the roots, so that they may grow into it. Surface roots are much more useful to the Vine than those planted much deeper into the ground. In planting young Vines, it is best to spread the roots out in a horizontal manner, not more than six inches deep. We subsequently mulch with short litter, to entice the roots near the surface.—J. D. E.

14831.—**Grapes.**—The cause of the spotting is doubtless impure moisture, which gathered on the berries, and caused the spotting during evaporation. Mealy bug has no respect to varieties of Vines; it is a mere chance that it is not also on the Muscats.—J. D. E.

14839.—**Orchards.**—When I answered the question on orchard culture (see page 413), I had in my mind a very large orchard planted in the way there indicated. The trees were mostly grafted on the Paradise stock for Apples and the Quince for Pears. The orchard alluded to was over twelve acres in extent. A small portion was planted first, and the trees were ultimately thinned out to twelve feet apart, but this was rather too far apart for trees on the dwarfing stocks. If they were grafted on the free stocks, twelve feet apart would not be too much. Trees from one to four guineas a dozen are trained for walls. If a nurseryman charged so much for two-year-old bush or pyramid Apple and Pear trees, he would get no custom. The best way would be to ask any of the large dealers—such as Bunyard, Maidstone; Rivers, Sawbridgeworth; or Smith, of Worcester—what they will charge for two-year-old trees per 100. I am sorry to say the fine orchard I allude to was cut up for building purposes when the trees were in full bearing and about twelve years old. The manager told me that most of the trees cost from fifty shillings to seventy-five shillings per 100. The question about trenching is most proper. My own system is to trench the ground from eighteen inches to two feet deep; when new ground is broken up, crop it for a year with vegetables, and re-trench it the following season. I have also done it in this way:—Trenched the ground, and planted the trees at once, and next season it was re-trenched, lifting and replanting the trees as the work proceeded. In the case alluded to in this question, I would certainly not bring the loamy clay to the top, but would take out a trench thirty inches wide to the depth of the black loam; I would then break up the clay subsoil six or nine inches deep with a fork, and place a layer of manure over it. The next trench would then be dug out and thrown on to the broken-up clay subsoil, taking care not to bring any clay to the top, but breaking up the bottom of each trench to a uniform depth. If the ground is very poor, some more manure ought to be worked into the top soil. Trees on the dwarfing stocks seldom require root-pruning. The free-bearing sorts I have named certainly do not. If Plum-trees are too much crowded with wood, it must be thinned out, and if the ground is poor give it a dressing of manure.—J. D. E.

14840.—**Pruning pyramid Apple-trees.**—Allusion is made in this question to the price of fruit trees, so that "N. Wood" will see that small quantities were purchased at one shilling each. Surely the same dealers would supply them by fifty or a hundred for ninepence each or less. It is a real pleasure to answer such enthusiastic amateurs as "W. W." alludes to. The trees that have "put forth a few tufts of leaves on a small

twig" are in the best possible condition to bear fruit next year. In the centre of these tufts will be found some prominent buds, or perhaps only one bud; these are blossom-buds, and if spring frosts do not prevail against them will bear fruit next year. Amateurs must not be too eager to use the pruning-knife. It is a dangerous weapon in unskilful hands. My advice is to use it only to cut back the young growths that push too far out, and to cut out any that are not needed. As a general rule, it is only necessary to cut off a few inches. As the trees have made no fresh branches except the twiggy tufts, they require no pruning whatever. If any other difficulties crop up, they will be dealt with if inquiry is made.—J. D. E.

—— "W. W.," Staffordshire, is perplexed as to what course to adopt as regards the pruning of young pyramid Apple-trees. He says the trees have put forth tiny sprouts from the ends of the branches where they were cut by the nurseryman of whom he purchased them. Well! I have seen trees unpacked in all parts of the kingdom, but I never saw any come freshly pruned; they are simply dug up and the shoots tied together with soft string or bass matting, and are then ready for packing in crates or bundles. But, supposing they were pruned last year, either before or after planting, they ought to have made some nice shoots at least a foot long, but whether they are one foot, or only six inches, it is advisable at the winter pruning to take off the soft, unripened ends of the shoots, or at least half the length of the late growth, for there can be no doubt but that half-ripened wood is the forerunner of many of the ills that befall fruit-trees, especially if severe frost follows; and it is not from the young shoots, but from the buds on the spurs and older wood that the Apples will be produced next year. I find it best to take all pyramid and bush Apple-trees in hand, as regards pruning, from their earliest infancy, going over them at midsummer, and pinching the points out of any shoots that are monopolising too great a share of sap; and in winter, when the leaves have fallen, cut back all the shoots that are not required to form main branches to two or three eyes, to form fruiting spurs, and the shoots retained shorten to about half their length. We have gathered very fine fruit from trees planted last year, and a good crop from nearly every tree planted the year before.—J. Groom, *Gosport*.

14881 & 14885.—**Keeping Filberts and Cob-nuts.**—The best way is to place them in an earthenware pan as soon as they are picked, to tie a piece of brown paper over the top, and to put it in a cellar. The usual difficulties are that the nuts become either too dry or too moist, in which case they germinate. By following the simple plan given, nuts can be kept for a year with little loss of freshness. People who have no cool cellar may also keep them by burying the pan in the ground, with the top about three inches under the surface.—R. S.

Summer Chrysanthemums.—I have read with great pleasure the letters that have appeared in Gardening on Summer Chrysanthemums, and with your permission I send you my experience. I have a garden that, owing to the great increase of factories and houses in the neighbourhood, has gradually got so unproductive that only a few vegetables and fewer flowers will grow. About two years ago I bought a few Summer Chrysanthemums, and now have about a dozen varieties. These have been in bloom for nearly three months, and some are now (Oct. 12) literally covered with blooms. I have given away a large number both of plants and blooms, and in every case they have been greatly prized. I cannot too strongly recommend this class of plant for town gardens. They are very little trouble in rearing, and, beyond a stake and a little watering in dry weather, require no care, while from a few plants the number of flowers that may be gathered can hardly be credited. I take the liberty of sending you a few blooms that have been gathered to-day from plants that have had no shade or protection.—Amateur, *Nottingham*. *** *The blooms are a little tarnished by the weather, but, the conditions of their growth being taken, they are very satisfactory.*—Ed.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, October 19 to October 24.

Pulling up Echeverias out of beds. Digging up Raspberry suckers to make new plantations. Pruning Raspberries, and clearing all rubbish off the ground. Gathering Quinces, and storing them in fruit-room. Going over late Grapes, and cutting out diseased berries. Scrubbing, white-washing, and painting Cucumber-house. Earthing up Celery when sufficiently dry. Trenching south border for spring cropping. Sowing Mustard and Cress. Gathering Scarlet Runners for seed. Planting Early London Cauliflowers, five under a hand-light in sheltered corner. Digging up roots of Mint and Tarragon, and placing them in boxes in gentle heat. Potting old plants of Alternantheras taken out of flower-beds for stock.

Glasshouses.

The stock of the different kinds of plants that were planted out during the summer, either in frames or the open ground—such as Solanums, Salvias, Veronicas, and other things of like character—and taken up and potted a little while back and for a time kept close, will now have commenced to root freely, and should have more air. It frequently happens that such plants, for want of room, are crowded too closely together; this is an unsatisfactory way of treating them, inasmuch as their lower leaves always suffer for want of sufficient light and air, which gives them an unsightly appearance when they come to be used when in flower. It is much better to confine the stock of all things of this description within limits that will admit of the plants having enough room.

Winter-blooming Carnations.—These plants are impatient of too much water at the roots at this season, and not a few who fail with them do so because they have left them in the open air exposed to the rains too long, or have been inconsiderate in the application of water to the roots. Now, when comparatively little growth is going on an excess of moisture destroys the small feeding fibres. Water should not be given to them at this time of the year nearly so freely as in the summer. If they were at all affected with green fly when they were taken inside, the insects will increase and become troublesome as soon as the plants are subjected to a little warmth. Now, whilst comparatively cool, the stock ought to be carefully looked over, and if any insects are found they should be fumigated, repeating the operation until all are destroyed. Such of these Carnations as have been grown in the open ground and transferred to pots, require to be carefully treated, especially if the buds on the flower-stems have made considerable progress, otherwise they are liable to die off. Plants managed in this way are more adapted for spring flowering than for coming in through the late months of the year, consequently it is better to reserve them for this purpose where a portion of the stock happens to have been grown altogether in pots. As a matter of course those plants that have their buds the most forward will be in the best condition for subjecting to the extra warmth required to induce their flowers to open. In all cases keep them well up to the glass, and give them the lightest position in the house.

Chrysanthemums.—There are now such a number of varieties of these plants that flower through the latter part of summer, followed by others which fill up the time until the ordinary late-blooming sorts come in, that a supply of their flowers may be had over half the year. The late-flowering kinds should by this time be all housed, or located where they can have protection of some sort given them. Where fine flowers are expected they must be continuously supplied with manure water, which they will bear stronger than most things. It is particularly necessary that there should be no falling off in the application of this stimulant where the pots are very full of roots. Whatever necessity there may be for training Chrysanthemums that are required for exhibition, when they are to be used for ordinary decorative purposes it is a mistake to use more sticks and ties than will suffice to give the needful support. Half-a-dozen sticks are enough for a large-sized specimen. I have found ordinary willow or hazel rods with the bark on look better than painted sticks, and they cost much less labour to prepare. Continue to thin out the buds of the latest kinds so far as requisite, and where there is a disposition in the plants to throw up large quantities of suckers from the base, they should be so far cleared away as to prevent their interfering with the support which the advancing buds require. See that the stock is quite clear from aphides, for if these parasites are allowed to gain a footing on the plants they will give much more trouble later on.

Potting hardy shrubs for forcing.—It is well to get all the stock that will be required of such things as Ghent Azaleas, Azalea mollis, Laurestinus, Rhododendrons, Kalmias, Andromedas, Lilacs, Deutzias, Prunus, &c., taken up and potted without delay. It is much better to do this before the soil about their roots gets saturated with wet, as when in this condition the requisite compression in potting reduces it to a close, soddened state, which is far from being conducive to the satisfactory flowering of the plants. In choosing plants for this kind of work it is better to confine the selection to such as are comparatively small than to use large examples that require too much reduction of the roots to get them into reasonable sized pots, as whatever deprivation of roots they are subjected to will affect their flowering; in the same way, when an undue amount of soil has to be shaken away, they likewise suffer.

T. Baines.

Flower Garden.

Winter Bedding.—By the use of dwarf shrubs a nice appearance can be kept up during the winter, where winter effectiveness is considered of more importance than spring bedding. Many other species of plants may be used with the shrubs—such, for instance, as Thyme, green and variegated Lamiums, Ajugas, Veronica incana, Sedums, Saxifrages, and hardy Heaths. These all do well for outer lines and groundwork, the shrubs being used for central masses or as standards. The best kind of shrubs are the Retinosporas, Thujas, Cupressus, Osmanthuses, Aucubas, Cotoneasters, variegated Hollies, variegated Yews, variegated Ivies, green and variegated Periwinkles, green and variegated Euonymuses, Box, and Berberis. In the disposition or arranging of shrubs for winter bedding, the colours being so nearly allied, care is needed to keep them as distinct as possible by planting the lightest greens with the variegated kinds, the darkest with the silvery greens, and the formal growing kinds with those of an opposite habit.

Spring Bedding.—No time should be lost in clearing out the summer bedders and giving the necessary dressing to and digging over of the beds wherever spring gaiety is desired. As to the arrangement of the plants, much depends on the size and the number of beds to be filled and the plants at command. Provided there is no stint or limit as to plants, then preference should be given to planting in masses; but when plants and bulbs are short, then plant thinly and fill the intervening space with hardy carpeting plants. Small, choice, evergreen shrubs are also excellent for dotting about the beds as single plants in central positions, thus saving a certain number of bulbs or plants, and, at the same time, imparting an immediate finished effect to the beds. Hyacinths, Crocuses, Narcissi, Primroses, Forget-me-nots, Daisies, Pansies, Wallflowers, Stocks, Silenes, Candytufts, Limnanthes, Saponaria, and hardy annuals generally are among the kinds that ought now to be planted, and as soon as done, if the ground be not clothed with surfacing plants, it should be with Cocoa-fibre for neatness' sake. W. W.

Fruit.

Copings for walls.—An important matter in the management of wall trees is good coping, temporary or otherwise, for protecting the blossoms from frost. The subject is generally discussed once a year, and is again forgotten until the early flowers remind us that time is on the wing, and it is again too late to carry out the good intentions formed immediately after the last loss was sustained. It is not for me to advise the kind of protector, as circumstances alter cases, but I may say I give preference to portable glass lights two feet in depth, which can be taken down and stored away as soon as the fruit is set and safe from spring frosts; and as there is now a period of barely four months before us, my duty will have been performed

when I say now is the time to set about making, purchasing, or providing protectors for next spring. It will not, however, be well to put them up until they are really wanted, as constant protection makes the trees tender and more liable to injury from severe frosts.

Pruning and nailing.—With us the Currant is now ready for pruning; then will follow the Plum, the Cherry, and the Raspberry. The last will have the canes securely tied to stakes or trellises, the shortening back being deferred until later on, and a good mulch of rotten manure will make all safe for the winter. Peaches and Nectarines we always prune as soon as the fruit is gathered; the shoots are then neatly nailed in close to the wall to ripen, and nothing more is needed until the time arrives for unnailing and drawing the branches away from the walls to prevent the buds from getting too forward. To prevent the shoots from being injured by wind, a few stout Ash rods are placed in the border one foot from the base of the wall and bowed in to the coping. Every part of the tree is then washed with strong soap-water or a solution of Gishurst, eight ounces to the gallon of water; the shoots are tied up in small bundles and made fast to the rods, and the walls are left quite clear and ready for cleansing with a wash made of quicklime, linseed oil, and Venetian red mixed with boiling water. One quart of oil and a pound of Venetian red to every gallon of wash will produce a warm old brick-red colour when dry; and, to avoid having two shades of colour, a sufficient quantity for the season should be mixed up at once. If a fine, dry day is selected for applying the wash and working it into the old nail-holes, the enemies which usually attack and cripple the first spring growths will be destroyed, and the chances will be two to one in favour of useful early shoots getting thoroughly ripened before the following winter. In modern gardens where the walls are well built, a brine or Quassia wash may be preferred. W. C.

Vegetables.

All roots except Parsnips (which are better left in the ground) should now be taken up and stored. Fill up blanks in the Cabbage quarter, and keep the hoe moving among all growing crops. Lettuces for spring cutting may now be planted, and the latest quarter of spring Cabbage. Endive should be lifted as wanted; we put in a few at a time in any out-of-the-way corner, but under cover, plunged in any light material, sprinkling powdered charcoal all over the plants; no decay then takes place, and they blanch beautifully. Cut all unripe Tomatoes, and lay them singly on shelves placed above hot-water pipes in the late vineries, where they will ripen nicely. I find the smoother fruits preferable to the rigid ones. Outside Mushroom beds should be kept quite dry; ours are semi-thatched with long rough grass. Wheat-straw is not quite warm enough, but dried grass makes the best of all coverings. A mat thrown over all adds to the cost, but pays well in the long run. Finish earthing up Celery; keep a good supply of Mustard and Cress, and on favourable days tie up Lettuces. R. G.

14822.—**Trees overhanging a garden.**—The owner of any property who, in the use of it, prejudicially or unwarrantably affects the enjoyment of another person's private rights, is committing a nuisance, and can be restrained from continuing it, and is also liable to an action for damages. The trees in question overhang "Landlord's" garden so as to interfere with his full enjoyment of it, as plants will not grow under them. If the nuisance is unmistakable, "Landlord" may abate it himself by cutting back the branches of the trees to the party wall, but it is not always advisable to take the law in one's own hands, as it might lead to an action against him by his neighbour, though "Landlord" would have a good defence to it. I would suggest that "Landlord" represent to his neighbour the nuisance, and ask him either to cut the branches back himself or permit it to be done by "Landlord;" and, in the event of his neighbour declining to listen to these proposals, then, after notice to his neighbour, "Landlord" may, in my opinion, cut the branches back with impunity.—Lawyer "Y."

OUTDOOR PLANTS.

COTTAGE GARDENS.

It is, we think, a noteworthy fact that, although the rural cottager has the advantage of pure air and sunlight, and hence can have flowers with a minimum of care, we generally find him at the present season, where opportunities exist, anxious to lose no chance of beautifying his garden, and eagerly taking time by the forelock by planting out in the beds and borders many of the hardy spring flowers, which, though such as will thrive as well in suburban air as in favoured rural situations, seem to be almost lost sight of by the villa amateur. This, we think, must arise more from want of knowing what will really thrive than from mere careless indifference in the matter of gardening. Primroses of many lovely colours, Brompton and East Lothian Stocks, Wallflowers, Pansies, and Auriculas are among the many good things which help to make a spring garden worthy of its name, are commonly met with in the garden of the cottager, and are equally at home in suburban air; and with such resources at command it is not a little surprising that so many vacant spaces are to be seen in the early months of the year in the gardens of amateurs evidently fond of flowers, judging from the gay appearance of the beds during summer. A glimpse at the garden of the cottager is sometimes instructive, for in it there is generally to be found something of interest if not something new to the garden lover. It is, too, cheering to observe in many instances that the slender means of the peasant gardener evidently do not operate against his enjoying the presence of a few of the more expensive garden favourites, for here and there are to be seen standard and bush, or dwarf, Roses, Japanese Lilies, hybrid Gladioli, and many other subjects, probably beyond his reach, excepting, perhaps, through the means of exchange recently referred to in Gardening, and one certainly to be highly commended as helpful to the cottager of scant means. Asters and Dahlias form almost invariably a conspicuous feature of the cottage garden, for we very seldom find them wanting. Here, too, we alight upon many of the older hardy perennials, which, but for the cottager, might have been entirely forgotten; but a few are now happily finding their way into the florist's catalogue. Bedding-out is not distasteful to him, for a judicious combination of the usual tender, and a few carpet, bedders—many of which are wintered in the "living" room, mostly heated by the quaint, though familiar, log fire—forms part of his display, not omitting the inevitable mixed border of hardy perennials, and a host of trifles, such as Sedums, Sempervivums, Saxifrages, and those two favourites with most cottagers, the hardy Fuchsia and the old English Lavender. And though, by the way, both of these will thrive in suburban air, we very rarely meet with them in the villa garden. There is, we venture to say, on the whole, a something in the cottage garden at once refreshing and attractive to the true amateur, and the disappointed follower of the gardener's craft, should he exist, may take fresh courage by an occasional peep over the trim Quickset boundary, which will often reveal how much may be made out of a little, and how with proper care a bright appearance may be maintained far into the autumn; for even at the present time (September 30) the well-kept garden, especially in favoured localities, tells little of the falling leaf or of the waning floral year.

Stamford Hill.

Plants for growing under trees.—Experience has taught me that the ground under trees and in shady places can be made very pretty, and the list of plants suitable is not so limited as may appear at first. One often sees in an otherwise pretty garden bare places under trees, and if remarked upon the reply is generally, "Oh, nothing will grow under those trees." Let those who have these bare spots in their gardens plant some or all of the following plants, and they will be well rewarded for any little trouble or expense. All hardy Ferns grow naturally in shady places, and these, if not growing wild about the country, can be purchased in large quantities from itinerant vendors for a few pence. The Vinca, or common Periwinkle, is a good plant, and there are many beautiful varieties of it, such as V. major elegantissima, V. major reticulata, and V. minor aurea. These are all variegated and very showy, and have the advantage of being evergreen. Solomon's Seal, Lilies of the Valley, Dog's-tooth Violets, and Primroses, when once established, make themselves very much at home under trees. Another capital plant is St. John's Wort, or Rose of Sharon, which spreads very rapidly. Snowdrops, Scilla sibirica, and Winter Aconites are favourite bulbs. The noble Foxgloves, in their charming variety, will even grace the bare spot, and in the spring the "Bleeding Heart" (Dielytra spectabilis) will open its pretty pink blossoms. And last, but not least, there is the common Ivy, which will rapidly cover all bare ground. Now I hope these bare spots in gardens will gradually become fewer and fewer, until they vanish entirely.—C. F. Davis, *The Grange, Leatherhead.*

Notes on a few hardy flowers.—Senecio pulcher.—Some of your readers may remember my note on the culture of this in a last year's number. My plant, moved last spring, is now in magnificent bloom, sixteen blossoms, and is also throwing up another flower-stem. I may say I do not expect it to bloom next year, neither do I intend to move it this year. It is now in a very dry spot, which seems to suit it very well; the flower-stem is only eighteen inches high. No doubt it is a plant requiring much patience, nevertheless, too lovely to put on the rubbish heap.——Foxglove, yellow.—This was mentioned some time back—there is a yellow variety of the common Foxglove; at least, in my father's garden, now built over, it existed twenty years ago, and also in the garden of a villa in Reading where I went to school. It may have been a species, but as far as my memory goes it was exactly like the pink one, and only of biennial duration. Of course, there is Digitalis lutea—a yellow species which I very much admire.——Datura Knightii.—A correspondent some time ago asked if this, or a similar one, had been flowered out of doors in England. I have some fine plants, both of which have blossomed out of doors. I raised them from seed last year, kept them in a frame all winter, and planted out in the spring; they will again be taken up and housed. Some time back I saw a splendid bed of a white Datura, in the Jardin Anglais, Geneva.——Helianthus doronicoides.—This is a plant I cannot too strongly recommend. It is almost exactly like H. rigidus (Harpalium), but has a far longer period of flowering, and has not the objectionable habit of spreading at the roots, as the latter has. The flowers are not quite such a deep yellow, or so large. It began to flower with me early in June, and the large plants are only just over, and the bloom is now taken up by this year's seedlings. It seeds freely, which H. rigidus does not here.——Potentilla nepalensis.—Another little known plant now in bloom. The flowers are of quite a different colour from any other of the family I know, being a light magenta, or rose-colour. It is very effective as a cut flower. I find it, however, rather shy, both as to growth and flower; change of position may remedy this.—J. R. Neve, *Campden.*

Roses, Antirrhinums, and border Carnations.—I quite agree with "A. B. T.," (p. 428), that "it is a great mistake for amateurs to use the imperative mood for everything and say things 'won't do,' or 'require this, that, and the other,' simply because in their experience they have only seen one side of a subject." If "A. B. T." will consult the best books on gardening written by past masters in the art, and keep level with the best cultivation of the time, she will find that, except with new plants, "J. D." recommends nothing but what is recommended by all the best cultivators of the plants in question. "A. B. T." has a Rose soil and climate, and can do with Roses what any one with a garden situated on a thin hot soil would attempt in vain. There is nothing I am advocating more earnestly than Roses which will grow amongst other plants. "A. B. T." says "many of her Roses are over twenty years old." Exactly; many twenty-year-old Roses will grow amongst other plants, sufficient attention not having been given to the

garden capabilities of Roses. All authorities are agreed that planting Standard Roses in turf, or in little beds on the margin of turf is the first step to failure in Rose-growing. Standard Roses in a mixed border of good rich soil, judiciously mixed with other plants, will do perfectly well, especially if, like "A. B. T.'s," they are budded where they are to stand, and will with proper culture—that is, the culture of the Rosary, and with nothing over their roots—produce blooms fit for exhibition, but for general decorative purposes it is better to plant the Roses on their own roots. Antirrhinums will grow anywhere. I have grown them in stiff London clay dressed with leaf-mould, but it is one thing to grow them anywhere and anyhow, and quite another thing to grow them to perfection—for that they require a dressing of lime in the soil. Carnations can also be made to grow in most soils, and, *in pots*, require a firm soil about the collar of the plants. But in the open ground, all authorities are agreed that they require a light, well-drained soil which their roots can easily penetrate. "A. B. T.'s" case is quite intelligible. Ordinary border Carnations have one annual period of growth, and the roots have done their work almost as soon as the bloom-buds are formed. I have had once-flowering plants perfect their bloom, although the main stem was nearly eaten through by insects at the surface of the ground. Perpetual Carnations, which begin a second period of growth almost before the first is finished, will not stand the soil getting hard. The great danger of planting Carnations in a heavy soil is not the soil itself—that can be made suitable—but the fact that heavy clays are generally undrained and laid down to pasture, creating heavy dews and constant damps. In my last garden, Carnations perished in severe winters because, although the soil was suitable, the damp dews rarely lifted during the winter solstice for more than three hours on many afternoons. In cloudy weather all vegetation remained damp continually. I can assure "A. B. T." that my experience is not by any means confined to my own garden, but comprehends those of many other amateurs and professionals in all parts of the kingdom.—J. D.

Falling leaves.—The beauty of summer is past, and the rapidly-falling leaves denote that winter is nigh at hand, and the work of clearing them up entails endless labour if the garden is to be kept neat and trim; but they are so valuable for many purposes in a garden that not one should be wasted. For in addition to forming leaf-mould, which every gardener knows is the most valuable of all soils for seedlings and cuttings to strike roots in, leaves make one of the best and most natural protectors that can be devised, keeping out the cold and yet admitting air. Many a tender plant may be made quite safe for the coming winter by putting a good coating of dry leaves around the stem, and a few evergreen branches to keep them from being blown about by the violent gales that we get at this time of year.—J. Groom, *Hants.*

Gardening under difficulties in the Tower moat.—Perhaps a few more hints from "Tower Moat" may be interesting to many of the readers of Gardening Illustrated. In my former remarks I alluded to the "plague of flies" we have had this year. Well, my remedy for the fly is Quassia chip water. A handful of the chips is allowed to about four gallons of water, it remains for twenty-four hours, and then I syringe my plants or flowers, and I have been very successful. I use it to my Gladioli, Sunflowers, Pansies, Dahlias; also to my Celery, early Cauliflowers—in fact, to any plant or flower that the fly attacks. My Celery, which in previous years has been more or less attacked with the fly, has this year been entirely free from it, or any other insect, and my Dahlias also; these are remarkably healthy, and I have now a splendid lot of flowers on them. I give their names:—Doubles: Charles Ridly, George Rawlings, Ovid, Miss Henshaw, Goldfinder, the Scarlet Juarezi, and Rising Sun (scarlet). Singles: Dove, Mauve, Negress, gracilis perfecta, lutea, and grandiflora. My Pansies are in fine bloom. I have had hundreds of fine flowers during this month. I was equally successful with my Gladiolus, though too late for our flower show; also with my Cloves and Carnations. I have cut several Carnations within the last fortnight, and I have had some fine Sunflowers, one thirteen inches in diameter. The stem of it is as thick as my ankle, and I do not get so much sun by four hours as my comrades on the south and west side of the Tower. So that if this catches the eye of "Disappointed Amateur," I hope he may pluck up courage and be able to give a better account another year.—Tower Moat.

THREE SMALL DAFFODILS.

During the bulb-flowering season those who possess rockwork or narrow, shrubbery borders, should not forget the little Daffodils shown in our illustration. Narcissus minor, the uppermost flower, blooms when only two inches high, appears before the Snowdrops are over, and will thrive in almost any soil. It is, on account of its distinctness from the ordinary type of Daffodil, well worthy of pot culture for the sake of a very early bloom in winter. N. minimus blooms quite close to the soil, is the smallest of all Daffodils, and the rarest of the

The three small Daffodils (Narcissus minor, nanus, and minimus).

three now spoken of. N. nanus (the middle flower) is the most abundant of the three; it grows freely, increases rapidly in most soils, and forms a pretty edging to beds and borders, along with Snowdrops and Squills. Of all the Daffodils the dwarf kinds give most trouble to amateurs in the matter of nomenclature, and perhaps our little sketch will help some growers out of their difficulty. It will be seen that N. nanus can be readily distinguished from N. minor by the difference in the breadth of the perianth segments. Y.

Helianthus rigidus is a single form of the perennial Sunflower, and is chiefly valuable for its late-flowering properties. The first flowers open early in September, and it continues to bloom till severe frost cuts it off. The plant grows very tall, sometimes six feet or more, and, being rather thin-stemmed, staking is required long before flowering-time. The flowers are small (about the size of Rudbeckia Newmanni), and are of a light golden colour, with dark, almost black, centres. I first saw this plant growing and flowering most splendidly in the public gardens at Bournemouth (time, end of October, when most other hardy flowers had begun to look washed out), and I was converted at first sight into determining to have it home with me and give it place amongst our very best perennial plants. I have not grown it from seed, but I should think it would be likely to reproduce itself in that way, though by division of the roots a large stock may soon be had.—G. W.

REPLIES.

14076.—**Vacant spaces.**—I thank "J. D." for his answer to my queries. I cannot plead guilty to creating my own difficulties, for, though I have five beds, it does not follow that I have space for, or could condense them into one large bed. I am bound by the situation to have only five beds, and cannot enlarge them except by an inch or so. The plan which "J. D." advises me to adopt would suit admirably if the beds were wide enough, but they do not much exceed two feet in breadth; consequently I fear that the proposed arrangement would only result in overcrowding. If "J. D." would give suggestions for the seeding of "small beds it has been the custom to cut out on the lawn," I shall be much obliged. I do not strive for great decorative effects, but rather to have some blooms to look at and to pick.—E. W.

14364.—**Planting garden.**—The ground, being meadow-land, will have to be trenched up eighteen inches deep to bury the turf. The plot of ground would have to be laid out according to taste. I would suggest a border from six to nine feet wide all round the outside. Next to that a gravel walk four feet wide, with edging of Box, stone, or tiles; there would then be a centre plot in the form of a parallelogram. The centre could be planted with tall fruit-trees, flowering shrubs, and trees, proportioned according to the taste of the owner. The border round the outside might be planted with smaller growing trees or bush fruits. I would plant of flowering trees and shrubs, Arbutus (the Strawberry-tree) in variety, Berberis Darwinii and dulcis, Ceanothus Veitchii, Cornus alba (Dogwood), Cotoneaster marginata and microphylla, Cytisus albus (White Broom), the Purple Beech, Garrya elliptica, the Tulip-tree, Quercus coccinea (the Scarlet Oak), Ribes aureum (the flowering Currant), Viburnum Opulus (the Guelder Rose), Weigelas in variety. Of fruit-trees—Apples (dessert): Juneating, Irish Peach, Devonshire Quarrenden, Kerry Pippin, King of the Pippins, Cox's Orange Pippin, Scarlet Nonpareil, Worcester Pearmain, Cockle Pippin, and Sturmer Pippin. Kitchen: Lord Suffield, Duchess of Oldenburgh, Cellini, The Queen, Lady Henniker, Alfriston, Dredge's Fame, Norfolk Beaufin, Wellington. Pears: Jargonelle, Citron des Carmes, Williams' Bon Chrétien, Beurré Superfin, Doyenné du Comice, Louise Bonne of Jersey, Beurré d'Amanlis, Beurré Hardy, Passe Colman, Beurré Rance, Winter Nelis, Pitmaston Duchess. Plums: Greengage, Violette Hâtive, Transparent Gage, Jefferson's, Kirke's, Victoria, Coe's Golden Drop, Pond's Seedling, Prince of Wales, Orleans, Gisborne's, and Prince Englebert.—J. D. E.

14471.—**Large Sunflower.**—Sunflowers will grow in any good soil. We use them a good deal for the margins of shrubberies, &c. To have the flowers extra large, the small ones should be removed, leaving only the large central bloom. Helianthus macrophyllus giganteus (fl.-pl.) is a large grower—the largest kind I am acquainted with. Globosus fistulosus (fl.-pl.) is also a fine variety.—E. Hobday.

14473.—**Stocking a garden.**—It would require a good deal of space and much time to answer this question fully. But first, as to Roses: Dig in plenty of manure and some clay, if obtainable, and then obtain the following varieties of Roses budded on the Manetti. Plant deep, so as to cover entirely the stock, and mulch heavily with manure:—Gloire de Dijon, Jules Margottin, Duchess of Bedford, Captain Christy, Charles Lefebvre, Glory of Waltham, Countess of Oxford, Etienne Levet, General Jacqueminot, John Hopper, La France, Baroness Rothschild, Maurice Bernardin, Paul Néron, Monsieur E. Y. Teas, Perfection des Blanches; Teas: Anna Olivier, Catherine Mermet, Catherine Bell, Cheshunt Hybrid, Isabella Sprunt, Niphetos, and Souvenir d'un Ami. I have grown most of the ordinary border

flowers on such a soil, such as border Carnations, Pinks, Sweet Williams (but not Phloxes). Pyrethrums will succeed with mulching. Campanulas, including Canterbury Bells, Antirrhinums, Pentstemons, Violets, and, of exotic flowers, the Pelargonium and Petunia succeed well. Of annuals, seedling single Dahlias will thrive, as will also double Zinnias, Scabious, Stocks and Asters, if well cared for, and Marigolds. Most of the common kinds of vegetables will succeed after a fashion on such a soil. Everything depends upon the manure supply, and it is especially necessary to mulch in summer.—E. Hobday.

14498.—**Failure of Lilium auratum.**—Almost everybody who grows Lilies (especially imported bulbs) complains of occasional failures. My large bed of Lilium candidum this last summer was a picture—never had such fine spikes. A friend who saw them said: "Ah, you may never have them so fine again!" I knew he was speaking the truth, for there is a good deal of uncertainty, especially in some soils, about the results of Lily culture, even in the case of the commoner kinds. But "Primrose" says the Lily in the greenhouse did well, while those plunged in Cocoa-nut-fibre in the open air went wrong, although carefully tended, The inference most people would draw (I do not say it would be right) is that the plants in the open air suffered in some way; perhaps something was done that they did not require, or something omitted that was necessary. The wind sometimes has a mischievous effect, especially if the stems are not supported effectually. If the stems were loosened by the wind, they might die off without the real cause being found out.—E. Hobday.

14744.—**Plant for grave.**—The Mossy Saxifrage, or Queen's Cushion (S. hypnoides), forms a moss-like carpet over some graves in this village, looking particularly well within an edge of stone, over a flat surface. It never grews above an inch or inch and quarter high, and is always green and clean-looking. No weeds, as far as I have seen, grow up with it when once it is established. A few plants will soon cover a grave, or it may be covered at once with them. It is perfectly hardy, and is very pretty and bright.—Warrington.

14910.—**Plants for rabbit-infested grounds.**—I don't think there is anything that will better suit "J. L." for his rabbit-infested grounds than the common variety of Mahonia. It is a free-grower, and a very pretty border plant; and, thanks to the prickliness of its leaves, I don't think the rabbits will burrow under it, as they do under almost any other plant or shrub.—C. Stoney.

14879.—**Worms on lawns.**—If the garden is walled in all round, next summer get two or three peewits; either pinion or cut their wings. I have found them most useful on my lawn this year, not only for worms, but insects also. They are a great ornament to the garden, and require no feeding.—Harris, *Chichester*.

Photographs received.—We have to thank Mr. Vesey C. Nash, of Glenview, Upton, co. Cork, for photographs of very noble specimens of the Chilian Pine or Monkey Puzzle, feathered to the ground, and in superb health. The trees grow in the gardens of Mr. Leslie, Courtmacsherry, co. Cork. Mr. Nash also sends photographs of Cedars and Californian Pines from the same garden.——Mr. Hugh Blackman, Roshven, Mordart, by Ardgour, sends us photographs of a beautiful specimen of Tropæolum speciosum, but the flowers are not shown distinctly.——Mr. G. Noble Taylor, J.P., The Mount, Ascot, sends photos of a fine Wellingtonia and a Lawson's Cypress.——Several views of Torquay from Mr. Arthur P. Jackson, 7, Cannon-street, include some interesting photographs, which we hope to reproduce.

Beautiful flowers are ever the brightest and best of all personal ornaments, and the wonder is they are not even more generally used. A lady came to see our garden the other day, and it was quite refreshing to see natural flowers in her hat as well as in her dress—not rare Orchids nor hothouse blossoms, but simple Clove Carnations and deep red Maple leaves. The effect was so natural and exquisite, that I could not resist alluding to the good taste shown, and I could not help wondering why artificial flowers should be so largely worn by women who have the sweetest and best of Nature's gifts around them. "Ah," she said, "you notice my natural flowers, but few do so, except to laugh at me; and yet those who wear badly-made artificial blossoms would be aghast if you suggested artificial jewellery to them."—B.

WINTERING PLANTS.

The time of year is at hand when the gardener is reminded, by keen breezes of an evening, and, perchance, by a white rime on grass and housetop of a morning, that many of his vegetable *protégés* are immigrants from more genial regions, and need shelter from the frosts and fogs of our harsh winters. To those whom "Jeames" would style the "hupper suckles" of the gardening world this is a matter of small concern; they order their mighty furnaces to be lighted, and, in the twinkling of an eye, their million of gorgeous exotics are revelling in a magic counterfeit of their native climates. But, to the "toiling masses," as we are sympathetically described by political orators, it is a very different matter. The glass-less and stoveless amateur, with a stock of tender plants, is frequently compelled to do an amount of ingenious contriving that would set up half-a-dozen Robinson Crusoes. Windows of spare rooms, cellars, skylights, outhouses are brought into requisition, with more or less success, by us votaries of the noble art of makeshift. In my own case, an abject appeal to the higher powers for the scullery window having been peremptorily rejected, I was really driven out-of-doors with my houseless plants. Well, after much disconsolate cogitation, I happened to get hold of an ancient "light" very cheap; it had most of the glass out, but that I replaced somehow with the aid of putty and tintacks. I then set to work to dig a pit, the same size as the frame, in a corner open to the kindly sun, but shielded from the assaults of "blustering Boreas." I dug the pit so deep that idle onlookers made profane allusions to a bottomless pit. They did not know that in any work of the garden, however laborious, there is heaven—not its antipodes. It need not, however, have been more than three feet deep, to contain one foot of brickbats, stones, &c., and atop of that another foot of ashes. A strong framework, to match that of the light, is firmly fixed over the pit, so that the front rests upon the ground, and the back is raised on uprights to a height of about fifteen inches. The walls are made of mud, my soil being clayey, supported inside by rough pieces of board fixed against the outer sides of the framework. To let the rain run off quickly, these walls were carefully smoothed with a bricklayer's trowel, or a piece of slate would do. These mud walls may not seem very grand, but they serve very well, as many a Connaught peasant knows. Mine are entering upon their fourth winter as sturdily as ever, though the repairs during the whole of that time have been but trifling. I should mention, however, that the thickness at the base is much greater than at the top, where it bevels off to nothing. This, and the comparative lowness of the walls, is what makes the structure so durable. The next item "in this strange eventful history" is a false bottom or platform, consisting of strips of wood or narrow boards resting on brickbats. These boards are placed an inch or so apart, and the same from the sides of the pit, the whole arrangement being designed to facilitate the free passage of air, for damp, rather than cold, is our great enemy. The stock of plants awaiting this snug asylum is now overhauled, decaying leaves stripped off, and projecting branches pruned, the cut ends being dusted with flowers of sulphur, which is a great preventive of mouldiness. It is highly desirable that all plants sentenced to pass the winter in such—to use a fashionable word just now—"insanitary" quarters (for such they are, compared with what the plants "have been used to," as uppish servant-girls say), a sort of miniature mines of Siberia, in fact, should previously be properly prepared for it, as it is to hoped the poor Russian exiles are. On this preparation, indeed, success largely depends, so it should on no account be overlooked. As soon as a Geranium, for instance, has done flowering, it should be pruned, with a view to a good shape next season, and to occupy the minimum of space in the pit, and then be stood on its side (to keep out rain) in the sun, and water almost entirely withheld, unless the weather should turn out very sunny. The result will be that instead of great straggly plants with juicy branches, ready to succumb to a few days' bad weather, we shall have them compact and woody, fit to resist all the elemental forces of King Winter. As I said before, it is

Damp we have chiefly to contend with. Rain will enter under the frame of the light at the back or uppermost side, and trickle down the sash-bars till it is just over a particularly choice plant—tricolor Geranium, or something of that sort—and then drops, drops, and in a few hours leaf and branch rot through, as though mortification had suddenly set in. To counteract such calamitous chances I nail hereon a strip of oilcloth, so as to carry off the rain. If it blows up it can be fastened by each corner to pegs driven into the ground. Of course, cold must be provided against as well. Paper being cheap with me, I make mats by tacking together half-a-dozen large sheets of brown paper; damaged sheets will do for the interior, but the outside should be of whole ones, and receive a coat of paint. This mat, or mats—as many as may be required, placed side by side, to well cover the light—I find will keep out nearly all the frost we ever experience in these parts, as it retains the warmth arising from the earth. I have gone out at midnight, seen the glass white with hoar, laid on the mat, and in the morning—the frost outside continuing—on lifting the mats, found the glass quite clear. Nevertheless, when any very severe weather is expected it will be only prudent to call in the aid of an oil-lamp: Rippingille's I consider to be quite satisfactory. I do not find it necessary to turn the wick high, for with the mat on no heat escapes, and therefore very little oil is consumed; I do not suppose I burn sixpennyworth during the whole winter. There is little or no smell perceptible, nor have I noticed any injurious effects on the plants.

The daily routine of management is very simple. About nine in the morning, or ten if the weather be cold, windy, or foggy, the light is lifted and "trigged up" in front upon a couple of inverted pots; the mat, if on, is of course removed, rolled up, and stood under cover. In fine, sunshiny weather, the light may with advantage be taken off altogether; but then some one must be always at hand to whip it on again in case of a sudden shower, and this is just what most of us cannot manage, and the trigging up does nearly as well. Then the lamp, if alight, must be blown out, the wick trimmed, and the reservoir re-filled. From three to five, according to the season, it is time to shut up—or rather shut down; and, of course, the mat is placed in position when there is an appearance of frost. Whenever the wind is northerly and the sky clear, it is safer to cover up. Should it chance that a frost has swooped down in the night, and caught us, literally, napping, the plan is to cover up before the sun reaches the poor frost-bitten things, so that they may slowly thaw in the dark, when they will most likely be found all right, showing that it is not always vain to "lock the stable after," &c. I once had my whole stock of Persian Cyclamens—four plants—so horribly frozen that the pretty marbled leaves cowered down, looking as though they had been boiled: they were full of buds, and I trembled for them; but I gave them twenty-four hours' dark cell, like refractory convicts, with the happiest results, for they were perfectly restored, and in due course flowered beautifully.

Once a week or so the stock is thoroughly inspected, decaying leaves cleared away carefully, as these harbour and encourage the dread enemy, mildew. Should this make its appearance it is wiped off, and the place dressed with sulphur. Water is given only when the soil in the pots is dust-dry, and then none should be spilled. The object is not to excite growth, except in the case of winter and spring bloomers, but, on the contrary, to just preserve vitality, and that's all. The plants should rather hibernate than live. These little attentions are of the utmost importance, for they make all the difference between success and failure. Success I have achieved, albeit on a small scale. It has been a fight against time, it is true. Were winter a month longer, perhaps I should have no chance of boasting; but as it is, I have seen Fuchsias, Geraniums, Centaureas, Echeverias, Ferns, Vallotas, &c., safely through the dangers and perils of the hibernal night. By the time that "February Fill-dyke" comes, some of the long-tried plants will look the picture of misery, fit only for the dust-heap

but a few weeks' more patience and the welcome signs of recommenced growth will be seen, and then the enraptured amateur will exclaim, like Moore's enfranchised Peri:—

> Joy, joy for ever, my task is done;
> The gates are passed, and heaven is won.

Southampton. J. F. R.

BEES.

QUESTION.

15018.—**Making candy for winter-feeding of bees.**—Will "S. S. G.," Boxworth, or any other fellow-reader kindly inform "Rose Bank," what appearance candy has when it is cold and fit for use? Should it be transparent or in crystals similar to lump sugar? Also how to make "cake" for bees.

15019.—**Characteristics of Ligurian bee** (*J. P.*).—The Italian or Ligurian bee is in form and size similar to the common black honey bee, but differs in colour, being somewhat lighter, and having three yellow rings about the body, below the wings. The pure-bred Ligurians are of more amiable disposition than the blacks, and less inclined to make use of their stings, but when cross-bred are very peppery and difficult to handle. They are more prolific, more active, and work longer hours than black bees; but from the fact of their rearing greater quantities of brood, which necessitates an immense consumption of food within the hive, they seldom store much surplus honey. The small black bee which you refer to as being "exceedingly active and nimble" is probably the leaf-cutter bee (Megachile centuncularis), which is commonly seen about Rose-trees, from the leaves of which it cuts with its mandibles, which act like a pair of scissors, regularly-formed pieces with which to line its underground nest. It is in size somewhat less than the hive bee, is black, having light down upon its head, and three first abdominal segments, and reddish hairs on the thorax.—S. S. G.

Poisonous honey.—A writer in an American journal (the *County Gentleman*) calls attention to cases of poisoning at Branchville, due to the eating of honey supposed to have been gathered from the Wild Jessamine (Gelsemium sempervirens), which is abundant in the locality. He remarks:—"Poisonous honey is not infrequently met with. I have myself been made sick by honey several times during the past twenty or twenty-five years. Once the cause was clearly traced to the so-called American Great Laurel (Rhododendron maximum), which blooms in July and August. Another time it was honeydew, and many complaints have been made the past winter of the same result. If there are all these risks and dangers, must not honey-producers take pains to avoid them for the safety of the public? If a person sells poisonous honey, and death ensues, clearly a moral and a legal liability attaches to him. This is a very serious consideration. It has long seemed to me that a new departure must soon be taken by bee-keepers, and that is to own their own farms, and cultivate the best honey-producing plants for the forage of their bees. Another duty, clearly, is to avoid the use of all known poisonous plants by the bees.

—— In reference to this subject, the following extract from Kirby & Spence's "Entomology" may be of interest:—"I must not wholly pass over the serious and sometimes fatal effects produced upon some persons by eating honey, or even by drinking mead. I once knew a lady upon whom these acted like poison, and have heard of instances in which death was the consequence. Sometimes, when bees extract honey from poisonous plants, such results have not been confined to individuals of a particular habit of constitution. A remarkable proof of this is given by Dr. Barton, in the fifth volume of "The American Philosophical Transactions." "In the autumn and winter of the year 1790, an extensive mortality was produced amongst those who had partaken of the honey collected in the neighbourhood of Philadelphia. The attention of the American Government was excited by the general distress, a minute inquiry into the cause of the mortality ensued, and it was satisfactorily ascertained that the honey had been chiefly extracted from the flowers of Kalmia latifolia."—S. S. G.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.

(By Annie M. Griggs, Edinburgh School of Cookery.)

CUCUMBERS.

This delicious and cooling fruit is eaten both in its raw and cooked state, but shunned by a great many on account of its indigestible properties: although there are some who can indulge in a hearty repast of fresh Cucumber without the slightest inconvenience. When eaten raw, it should be cut young and before the seeds are fully developed, and as fresh as possible; if it must be kept, put the stalk end in cold water, and change the water every few hours. The very young and small Cucumbers are used for pickles, when they take the name of Gherkins.

Sliced Cucumbers as served with Salmon or Cold Meat.—Take a fresh Cucumber, peel as thinly as possible, and with a sharp knife cut it into very thin slices, place these upon a dish and sprinkle over a good portion of salt, and about one tablespoonful of vinegar. Let these stand for ten minutes, and then put the dish in a slanting position so that all the liquid may drain away, or put the Cucumber upon a hair sieve to drain for a few minutes. By this means the acrid juice of the Cucumber which is the cause of discomfort to some constitutions, will be got rid of. Then put the slices upon a clean dish with a goodly supply of pepper, salt, and vinegar, and, when oil is not objected to, a very little oil may be mixed with the vinegar. This should be served as soon as it is prepared, or the Cucumber will become soft and flabby.

Stewed Cucumber.—Take one medium-sized Cucumber, peel it, and cut it into slices, not too thin. Take of sliced small onions half as much as you have Cucumber, and put altogether into a saucepan with an ounce of butter, and one teaspoonful of salt, also six peppercorns and a blade of mace tied in a piece of muslin, so that they can be removed at the end of cooking. Cover with a tight-fitting lid and let the Cucumber stew in its own juice by the side of the fire for fifteen minutes. Mix a teaspoonful of flour with two tablespoonfuls of broth and one of white wine, pour this on to the Cucumber, stir until boiling, remove the muslin of peppercorns, turn the contents of the saucepan on to a piece of buttered toast and serve hot.

Stewed Cucumbers with Eggs.—Take fresh Cucumbers, pare them thinly, and cut them into slices an inch thick, and then each slice into quarters, so forming little lumps until you have one pint of Cucumber. Put these into a saucepan of boiling water and salt, and let them boil for two minutes, drain the water from them, and put them into a stewpan with one onion stuck with cloves, two ounces of chopped ham, two ounces of butter, and a teaspoonful of salt, put the lid closely on and shake occasionally over a slow fire for ten minutes; lift the lid and shake in one dessertspoonful of flour, and stir until there are no lumps; add a small cupful of milk, and simmer until the scum ceases to rise. Then take out the onion, and add one gill of cream, beaten with the yolks of two eggs; stir for a few minutes over the fire, but do not allow the sauce to boil after the eggs are added or they will curdle. Just before serving add the juice of one lemon, turn on to a hot dish, and place four well-poached eggs on the top, and serve hot. The recipe for poached eggs will be found in Gardening, May 9, page 128.

Pickled Cucumbers or Gherkins.—Secure Cucumbers as free from spots as possible, and the smallest you can procure. Put them into a vessel, with very strong salt water, and let them stand for eight or ten days, or until they turn yellow, but be careful to stir them at least twice a day or they will turn soft. When they are quite yellow, pour off the water and cover the Cucumbers thickly with fresh vine-leaves. Boil the water and pour it hot over the leaves, &c., cover with a thick cloth and a lid or dish on the top to keep in the steam, and set them near the fire to keep warm. When the water is nearly cold, pour it off and boil again, and return to the pan of Cucumbers, always taking care that they are well covered in vine-leaves; continue this operation until the Cucumbers are of a pretty green colour. Six additions of boiling salt water should be enough to render them green, with a good supply of fresh green vine-leaves. When this is accomplished, drain the Cucumbers upon a sieve, and when they are quite dry put them into a stone jar, and pour over them the following mixture. To every two quarts of white wine vinegar allow two ounces of salt, one ounce each of long pepper, whole ginger, and whole pepper, a quarter of an ounce each of mace, cloves, and allspice. Boil all for three minutes' with a cover on the pan, and pour hot over the Cucumbers, Tie down with bladder and put aside for future use. They should be ready in about six weeks.

Large Cucumbers pickled. — Select Cucumbers that are not too ripe, cut them (unpared) into pieces about two inches long, and then each piece into four lengthways; should the seeds be formed cut them away. To every quart of pieces thus prepared allow two medium-sized Onions very thinly sliced, put these into a pan with a good quantity of salt sprinkled among them; cover and let stand until the next day, when drain them in a colander, and then put them into a stone jar with a few peppercorns, cloves and a blade of mace. When the jar is half full add the rest of the Cucumber and Onions, and a few more spices. Boil one quart of vinegar with one ounce of salt and pour hot over the Cucumber, cover, and when cold, if there is not enough vinegar to entirely cover the Cucumber, add some more. Tie down with bladder and this will be ready for use in a fortnight.

Stuffed Cucumbers.—Take thick Cucumbers for this purpose, and cut them into lengths of about three inches. Scoop out the seeds from one end, do not make a hole through. Plunge these into boiling salt and water and boil for three minutes, drain and fill the cavity with forcemeat, made with one Shallot finely minced, three tablespoonfuls of bread crumbs, pepper, salt, one teaspoonful of vinegar, and one egg well beaten. Stand the pieces of Cucumber in a stewpan and pour enough hot broth around them to reach about half way up. Put the lid on and simmer for twenty minutes. Lift the Cucumber on to a hot dish, still keeping each piece standing, keep hot in the oven while you thicken the gravy, and pour round them; decorate with sippets of toasted bread and serve hot.

REPLIES.

14870.—**Use for unripe Grapes.**—I advise "E. D., Brixton," to make jam of his unripe Grapes. Dip the bunches in water, then pick off the Grapes, and put a layer of them into a stewpan; on this put a layer of sugar, then another of Grapes, and so on, till the pan is nearly full. As the jam boils the pips rise to the surface, and can be skimmed off. It should be stirred frequently, and will be done when all the pips have risen to the surface and been skimmed off. Do not wipe the Grapes after dipping the bunches in water, but put them in with the water that clings to them. As the Grapes are not ripe, put three-quarters of a pound of sugar to one pound of Grapes. The jam is like superior Gooseberry.—S. C. L., *Clapham.*

—— You can make wine of the unripe Grapes. See reply to Query 14872 in this week's number.—C. E., *Walthamstow.*

—— These make very nice tarts used in the same way as Currants, Gooseberries, &c. To some tastes it is improved if a few Apples are added. See also answer to 14872.—Ferndale the First.

14872.—**How to make Grape-wine.**—It is of no importance whether the Grapes are green or ripe. They should be picked off the bunches and measured, then placed in a glazed earthen pan and thoroughly crushed, after which add equal quantity of water (viz., one quart to each quart of fruit), cover up, and let stand for ten days; then strain through a tammy-cloth, and add to each quart of liquor one pound of sugar; stir well and place in stone bottles, keeping them uncorked till thoroughly fermented, during which process it is advisable to keep the bottles filled. Do not cork till the wine is quite quiet, or it will possibly burst the bottles; it will be fit to drink in a few months, but will greatly improve with age.—C. Embleton, *Walthamstow.*

—— To each pint of unripe Grapes, when picked and bruised, add one quart of water; let it stand twenty hours, then squeeze and strain;

to every gallon of liquor add three pounds of loaf-sugar, and the next day put into a clean cask, which bung tightly, with half-an-ounce of isinglass hanging from the bung; in two or three days bung tightly. Bottle as soon as the sweetness has sufficiently passed off, which will be in about two months.—FERNDALE THE FIRST.

POULTRY.

HINTS ON THE SELECTION OF BREEDING-STOCK.

It is often affirmed by poultry-keepers whose yards never contained a single pure-bred bird, that nothing pays better in the poultry line than fowls of the barn-door type—that is, birds which have been bred in a happy-go-lucky kind of way, without any thought whatever as to the parentage of the stock from whom they are descended. It would puzzle the most astute judge, in thousands of poultry-yards about the country, to tell with certainty how the stock in those yards has been bred. A feathered leg here and there may be considered positive proof that Asiatics have at some time or other been used; an occasional crest would show that the birds possessed some French or Poland blood; and five toes, again, would entitle the owner of them to be a descendant of a Dorking or Houdan; but it would be difficult to get much beyond this. The truth is, too many poultry-keepers care nothing as to the pedigree of their stock birds; but, on the contrary, are content to breed from whatever comes in their way. Hence it is that chickens which are sent merely as a present for the table, and are fit for nothing else, often find their way into the breeding-yard instead, and never leave it until they have numerous descendants to take their place. Then, it sometimes happens, a sitting of eggs is sent from one friend to another, the hens by whom they were laid being noted either for their laying powers or for their excellence as table fowls. The produce of these eggs—cockerels as well as pullets—will, in due course, be turned amongst the mongrel stock already existing, and the following year sees another class of chickens, and so it goes on. It is impossible for birds to be improved in this way. Even supposing that the best birds are picked out in such cases to serve for breeding stock, the progeny will be nothing but a lot of mongrels after all. True it is that birds belonging to breeds possessing excellent qualities, either as layers or for the table, may have been used from time to time; but the fact is, so many varieties have been used, and those in such a haphazard fashion, that the good qualities can only exist in a very limited degree. But, instead of the best cockerels being selected for breeding, it is by no means unusual for the worst of the brood to be reserved for the purpose, for, as the chickens get fit for the table, they are killed off, until at last there remains but one, and that the owner determines to use as a stock-bird. Is this the way to promote early maturity? Then, again, cockerels hatched late in the autumn are kept in the same way, the owner being apparently forgetful of the fact that one cannot breed good specimens of anything from immature parents. I have no objection to cross-bred fowls, on the whole. By careful crossing, birds may be got which shall be of good size, fair layers as well as sitters, and also excellent for the table. All these qualities cannot be readily found in birds of the pure breeds. But what I do object to is the want of judgment displayed in selecting the stock intended to breed from. So long as the owner is careful to breed only from pure-bred cocks, and occasionally uses some hens of the same variety as his original stock, he will be likely to do well. But as soon as he uses home-bred cockerels amongst his pullets, and depends entirely upon his own yard for keeping up his stock, deterioration will set in. To those poultry-keepers whose sole ambition is to have plenty of fresh eggs and an occasional chicken, I would say—Be careful and do not introduce a mongrel cock into your yard, nor breed from your own cross-bred cockerels. DOULTING.

REPLIES.

15021.—**Breed of fowls** (*E. P. R., Carlow*).—The birds that you describe appear to be Langshans, a variety of poultry introduced into England, if I remember aright, about ten or twelve years ago. At first they met with considerable opposition, for they were looked upon by most people as Black Cochins, deficient in leg-feathering. Major Croad (who imported the first specimens) and other fanciers were of a different opinion, and through their exertions the Langshan Club was eventually formed. The breed possesses undoubted merits, the hens being good layers, and the chickens not to be despised when sent to table.—DOULTING.

14876.—**Red lice in chicken-house.**—By all means get rid of the lice in your chicken-house. It is impossible for the fowls to be in a state of comfort, or thrive, so long as insects are living on them, and continually tormenting them. The birds should be slightly dusted with sulphur, or anointed with oil at the back of the head, under the wings and legs, and wherever the lice can be seen. As regards the house, the best remedy is to thoroughly whitewash the interior with some strong lime, taking care that the brush enters all the crevices. The material composing the nests should be destroyed, and before any fresh straw is placed in the latter, some carbolic disinfecting powder ought to be scattered about. Lastly, use nothing but straw for the nests, and, as soon as a hen has finished sitting, destroy every vestige of the litter.—DOULTING.

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GARDENING ILLUSTRATED.

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GROWING VIOLETS IN FRAME.

14889.—If "A. J. W." wants to have a supply of blossoms from violets in frames this winter, plants must be obtained which have been specially grown during the summer for this purpose. At the present time they ought to be good clumps, with solid crowns well furnished with leaves and buds. All that is needful is to lift them carefully and transfer them to their winter quarters in the frame, give them a good watering and a slight shading from the sun if needful for a few days, then expose fully night and day until frosty weather sets in, when the lights can be kept on. The soil in which they are planted should be light and rich. An old cucumber or melon bed, on which eight inches of good soil has been placed, is a very suitable position for them, and the frame should face towards the south. April or May, after the plants have done blooming, is the best time to propagate. "A. J. W." should then set to work and get a supply of well-furnished clumps for the next season's blooming; all that is needful is to plant out a sufficient number of healthy young crowns, eight or ten inches apart, in good rich soil, and take care that they do not get choked with weeds or baked up by the sun during the summer, and when the autumn comes round, lift and plant as before. The Violets sent herewith are samples of the success of this simple treatment. We are now, and have been for several weeks past, gathering from 4,000 to 5,000 blooms weekly, and this is but the coming in of the tide. At high water we shall probably multiply this by five or ten. The best sorts to grow are New York, an improved Marie Louise, *facile princeps*. This begins to bloom in August generally, and goes on until the following May. De Parme, quite as good, except that it begins to bloom about one month later; but as the spring flowers keep their size and fulness rather later than New York, this makes up for it. Marie Louise, the least shade paler than New York, a most excellent kind. The old pale Ilhao Neapolitan is quite eclipsed by De Parme, which is nearly the same colour, but produces ten times as many flowers. The new double white Neapolitan Comte Brazza is a gem of the first water. It has not yet come fully into bloom (Oct. 19), but is just commencing, and will go on until May. Double Red Russian also blooms freely in the autumn, winter, and spring, and is quite distinct in colour. Belle de Chatenay is the largest double white, slightly tinted with purple. It blooms moderately only in autumn, not at all in winter, and very finely in late spring. Belle de Chatenay cærulea, a deep-blue sport from above, has the same characteristics. Carter's Mazarine Blue is a very fine deep blue-violet of the Belle de Chatenay type. All the above are double varieties. The best singles are Princess of Prussia, a very grand large flower, beautifully scented, and a fine early autumn bloomer; Victoria Regina, not quite so large, but very rich in colour and perfume, not quite so free in autumn as the above, but in spring quite unsurpassable. The Russian and the Czar are also blooming very freely now, and are valuable kinds. Willsiana, the new single sent out by Turner, is not distinguishable at present from Victoria Regina, but may improve. White Czar is the finest single white, but does not bloom very freely until the spring. Old single lilac Neapolitan is very pretty, sweet, and free blooming. I have named, I find, sixteen varieties, all of which are well worth growing. There are several others which are interesting and pretty, but these are the cream of the thirty sorts I grow. R. W. Beachey.

Kingskerswell, Devonshire.

*** *We have to thank Mr. Beachey for sending us a collection of Violets extremely well grown, large, and deliciously scented.*—Ed.

—— Violets should be propagated in April, either by division of the old plants, or from the runners. Grow them in the open garden during the summer, and plant them in cold frames in September; plant them as near the glass as possible, and admit air on all favourable occasions. Keep down red spider by syringing occasionally on fine mornings.—G. S., *South Yorkshire.*

INDOOR PLANTS.

Christmas Roses in pots.—At one time it was rather rare to see Christmas Roses in pots; now one frequently meets with them in good condition grown in that way, a fact which testifies to the estimation in which this fine old hardy flower is now held. Seeing how highly white flowers are valued in winter, it seems strange that this way of growing Christmas Roses should not have become more popular years ago. The blooms come so much finer when protected than out of doors and with so little forcing, that they can be had in abundance at Christmas and during January, just when there is a more or less scarcity of white flowers, I do not know whether it is better to keep the plants in pots the year round or to plant them out after flowering, but I know that they can be well grown either way. If grown in pots, they should be plunged and get plenty of liquid manure when growing.—B.

Yellow Calceolarias.—This is the best time to propagate a stock of bedding Calceolarias. A frame such as is used for Cucumbers in summer is the best quarter for them. Set on a hard foundation, and put in two inches of coal ashes, beaten down firm, and on this put three inches of finely sifted soil, with a layer of sand on the top; take the cuttings by pinching off the growing points that are usually plentiful at this time of year, and dibble them in about three inches apart; give a good soaking of water to settle all down firmly, and keep the lights close for a month, then give air freely on all favourable occasions, and cover securely with mats, or litter if frosts prevail. Nearly every cutting may be relied on to make a good plant: pinch the growing points to induce a dwarf, branched habit. Golden Gem and Aurea floribunda are the best yellows in cultivation.—J. G., *Hants.*

Wintering bedding Pelargoniums.—On the approach of every winter numerous enquiries are made as to the best mode of keeping old plants of Pelargoniums safely through the winter, and many are the devices adopted, with more or less success. One of the most frequent mistakes is that of cutting the shoots down at lifting time; the consequence of this is that the dampness of the atmosphere causes the shoots to decay, and unless the plants can be pushed into fresh growth by means of fire-heat, great portions of them perish. Now I find that the best plan is to lift carefully, so as not to break either roots or shoots, but to preserve both entire, pick off all the largest leaves, and then place the plants in boxes moderately thick, filling in around the roots with finely-sifted soil; give one good soaking of water, and afterwards only enough to keep them from withering. Just enough fire-heat should be used to keep the atmosphere dry, as the less they grow at the darkest period of the year the better. As soon as the days begin to lengthen, however, more heat and moisture may be given, and every shoot, if taken off and used as a cutting, will make a good plant; the old plants will make fine bushes. Few plants are so easily propagated and grown as the Pelargonium, if only reasonable precautions are taken, but there are few more easily injured by using the knife too freely when vitality is at its lowest ebb. One may cut when growth is progressing freely, but when lifted, mutilating both roots and tops at once is more than even the hardiest plants can endure, and I need hardly say that the variegated-leaved sorts are more easily injured than the green-leaved kinds.—J. G., *Hants.*

FILMY FERNS AND THEIR CULTURE.

It is a great mistake to think, as the majority of people do, that the culture of Filmy Ferns in general, and of Todeas in particular, is surrounded with insurmountable difficulties. It is quite true, I admit, that with many amateurs these plants, instead of thriving, only exist, and that even for a comparatively short time. But in the majority of cases it is not to the difficulty of their management that the failure is due, but to the excess of attention which they receive at the hands of persons really too anxious about their welfare. To show that they are not nearly so troublesome as one generally imagines, I may here state the case of Mr. A. Wills, of Esher, where, after being for some time only partially successful in their management, he decided upon having holes two feet square and two feet deep dug in the ground, outside. In these holes the plants were then put, and simply covered over with a sheet of ground glass. Since then the plants thus treated, and which formerly under great care only grew with difficulty have done exceedingly well, although the attention paid to them is of the simplest description; they not requiring to be looked after more than once a fortnight on the average, and not even so often during the winter. Some may object, and not without reason, that under that sort of subterranean treatment we lose the advantage of having the pleasure of the possession of the plants. But this disadvantage is easily obviated, for the above instance was only mentioned to illustrate the simple treatment under which those plants thrive; and provided that a similarly suitable atmosphere be produced there is not the slightest necessity for their being grown out of view. Inhabiting in their natural stations shady ravines and damp forests in which the air is constantly charged with moisture,

they naturally require a degree of humidity in the atmosphere much more considerable than other Ferns. That is an essential point, and the next one, which is also of a great consequence, bears on the

Temperature, which must be maintained as even as possible. If a dry atmosphere is highly injurious to them, the sudden changes of temperature are equally conducive to disastrous consequences. Purity of water is another very important matter. Rain-water is the best, and, indeed, the only one which should be used in connection with filmy Ferns, as it has been proved beyond doubt that if a Trichomanes, a Hymenophyllum, or even a Todea has been frequently sprinkled or syringed with water containing lime it gradually loses its vigour; and here let me emphatically state that no kind of watering over the fronds is half so beneficial to these plants as a heavy dew produced by condensation which is the result of a close atmosphere, with a quantity of Sphagnum kept round the plants, these having previously been stood on a firm, solid bottom. The Hymenophyllums and the Trichomanes are both provided with rhizomes, which are entirely different, and require different materials to run upon. Those of the Trichomanes have a peculiar propensity for clinging to anything within their reach, and should be encouraged by placing pieces of sandstone, or of porous stone, near them. To these they will attach themselves, and derive a

The Round-leaved Filmy Fern (Trichomanes reniforme).

nourishment equal to that which they would get from the soil itself. The rhizomes of Hymenophyllums, thin and wiry, have no tendency to fasten themselves unto any stone, but will run and cling to a decaying piece of wood or plug readily in semi-decayed moss. For these, a mixture of two parts peat and one part of chopped Moss is the best material; whereas for Trichomanes, the best compost is sandy peat mixed with a little loam and numerous pieces of sandstone, but no charcoal or any other material of a naturally dry substance. For Todeas, fibrous peat coarsely broken and a little silver sand forms the material the most suitable to their growth. In all cases a very high temperature is especially to be avoided, as well as any sunlight. Good light, with absolute protection from every ray of sun, is the point to be aimed at. But, although all sunshine *must* be carefully excluded, it does not follow that the plants should be kept in continual darkness; indeed, there are only a very few species which like deep shade, although we are told, on Mr. J. Backhouse's authority, that "the Killarney Fern (Trichomanes radicans) in a wild state sometimes grows in positions so gloomy, that its fronds are scarcely discernible." In a Fern case devoted to their culture they should be planted out, and not kept in pots plunged into other material; they will, if planted in that way, and *not* with any other kinds of Ferns, give a great deal less trouble and a greater amount of satisfaction than any other Ferns, on account of their particular beauty and also of the extraordinary length of time during which their lovely fronds remain perfect.

S. G.

REPLIES.

14546.—**Plants for small greenhouse.**—It is difficult to answer this question in a perfectly satisfactory manner, as a great deal depends on the taste of the owner; but for a few permanent plants I would recommend Abutilon King of Yellows, purpurea and Boule de Neige, Coronilla glauca, Cytisus racemosus, varieties of Cyclamen persicum, varieties of Epacris, Hydrangea hortensis and H. paniculata, Fuchsias, Pelargoniums, Cinerarias, Chinese Primulas must also be grown, and Hyacinths, Tulips, Polyanthuses, Narcissi, and any other varieties of Dutch bulbs that may be desired; Lilium auratum, L. lancifolium, L. longifolium, or any other Lilies that may be fancied; but the three named are the best.—J. D. E.

14548.—**Plants for wire baskets.**—The following, or any of them, will grow successfully in wire baskets: In summer, Fuchsias, Ivy-leaved Geraniums, Petunias, Achimenes, Musk, Gloxinias. At other seasons, Saxifraga sarmentosa, Campanula Barrelieri, Cissus discolor, Sedum carneum variegatum, Ferns, such as Adiantum cuneatum, Asplenium flaccidum, Davallia Novæ-Zelandiæ, Pteris scaberula, Nephrolepis exaltata, and Selaginella denticulata.—E. Hobday.

14631.—**Wintering Monkey-plants.**—They can be wintered by plunging the pots in cocoa-nut fibre refuse in cold frames, or they may be placed on a shelf in a cool greenhouse.—J. D. E.

14570.—**Orange trees in dwelling-house.**—It is easy enough to raise Orange and Lemon trees from pips, but the seedlings will not produce blossoms let alone fruit in an ordinary dwelling-house. Some varieties of Orange trees blossom and bear fruit in an ordinary greenhouse, but they are grafted plants, and even these would not fruit in an ordinary window.—J. D. E.

14827.—**Propagating the White Peruvian Trumpet-flower.**—Brugmansia suaveolens is propagated from cuttings, or suckers springing from base of stem, or from seed.

—— This plant will readily propagate by cuttings taken now and put in a little heat.—C. F. Davis, *The Grange, Leatherhead.*

14825.—**Stocking greenhouses.**—By all means use the smaller as a forcing-house, keeping it up to between sixty and seventy degrees through the winter, and the larger one as a warm greenhouse, say fifty to sixty degrees on the average, with a minimum of forty-five degrees. This will suit bedding stuff better than a lower temperature, especially if kept near the glass, while Cinerarias, Primulas, Cyclamens, Zonal Pelargoniums, Epacris, Heaths, &c., will bloom freely in it through the winter, and in spring Hyacinths and lots of other things, and you will have a few Roses as well, probably nearly always. In the smaller house, Bouvardias, Begonias, Poinsettias, Euphorbias, and Jasminum gracillimum will open well, and you can also force properly prepared Azaleas, Spiræas, Hyacinths, &c., and have always some nice Ferns. Pot up at once a quantity of Roman Hyacinths (chiefly white) and early Paper-white Narcissus, which will come in very early, and get in some ordinary Hyacinths, Tulips, Spiræas, Lily of the Valley, and Dielytras for early spring blooming.—B. C. R.

14890.—**Culture of the Dove-flower.**—This plant (Peristeria elata) requires to be grown in a hothouse, and it should be potted in turfy loam and leaf-mould, adding some lumps of charcoal and broken potsherds to it, in order that it may be kept open to allow the water (of which this plant takes a good supply) to pass freely through. The minimum temperature required is fifty-five degrees. The plant does not require any different culture from other stove plants. When it has made its growth it does not need much water until it starts into growth again. Its usual time to flower is in July and August; the spikes will continue to flower for two months.—J. D. E.

14886.—**Cyclamens.**—The plants should now be placed in a warm greenhouse, and be kept close to the glass. In watering them be careful not to pour water into the centres of the plants. The atmosphere of the house should be kept moderately dry.—J. D. E.

14834.—**Amaryllis not flowering.**—Never dry these bulbs off; always keep them growing. An article appeared in Gardening a short time since, giving instructions how to grow Guernsey Lilies. Read that article carefully and follow its instructions and your bulbs will bloom. Guernsey Lilies belong to the Amaryllis family, so the remarks apply as much to the one as the other. Yours are probably in too large pots, and they do better without heat.—C. F. Davis.

14887.—**Geraniums for exhibition.**—Plants intended for exhibition should be good specimens now, and this is the best time to repot them into their flowering pots. The potting soil should be good decayed turfy loam four parts, one part decayed manure, one part leaf mould, and some white sand. Before repotting the plants, see that they are sufficiently moist at the roots. When they are repotted into eight-inch pots, place them in the greenhouse as near to the glass as convenient, and it is better not to water them until they have made some new roots—probably a week or more after repotting them. As the shoots make growth they ought to be tied out, and if there are too many thin them out. The house where they are growing must be freely ventilated in fine weather.—J. D. E.

—— In order to secure fine and profuse bloom early growth and under-potting are of the first importance, and success depends upon their chief growth being completed before Christmas. No after-management can compensate for neglect of early growth, so encourage your Geraniums to make all the growth possible by keeping them in heat, and, above all, let them be pot-bound. Some varieties will scarcely bloom at all unless pot-bound.—C. F. Davis, *Leatherhead.*

14906.—**Hydrangeas not flowering.**—The wood on your plants has not been well ripened, which is the reason they have not flowered. As your plants make good growth and plenty of leaves all they want is more light and air and full exposure to the sun to harden up the wood. If they are in a greenhouse or anywhere under glass, turn them out of doors under a warm wall or fence, and plunge the pots to their rims in the ground. Probably those in forty-eight pots will want larger pots before the plants begin to grow in the spring. If very severe frost sets in cover over the plants with some long dry litter or two or three old mats.—J. C. C.

14960.—**Gladiolus The Bride.**—I grow this beautiful variety both in pots and planted out, but the roots are never taken out of the soil. They can be grown in pots year after year. When the stems decay they are cut over, and the soil is kept dry for two or three months; the bulbs are then repotted and plunged in cold frames until they have grown a little, when they are removed to the greenhouse.—J. D. E.

14951.—**Cineraria leaves curling up.**—The best treatment now would be to place the plants close to the glass in a greenhouse; admit plenty of air, but when the wind is high the ventilators must be closed sufficiently to prevent them from being injured by it. Keep them clear of mildew by dusting lightly with flowers of sulphur, and fumigate with tobacco smoke to destroy green-fly. Manure water should be applied only when the plants are in vigorous health and the pots filled with roots.

They have plenty of time to recover yet, and this they will do very rapidly.—J. D. E.

14972.—**Keeping atmosphere in greenhouse moist.**—It is not necessary to keep the atmosphere of a greenhouse moist in winter. A temperature of fifty degrees to sixty degress is too much. All that is required is to keep out the frost by heating the hot-water pipes in frosty weather; forty degrees is quite sufficient to keep greenhouse plants in good condition. A hothouse where stove plants are grown is kept at a temperature of from fifty degrees to sixty degrees; a moist atmosphere is maintained by sprinkling the paths and stages where the plants are growing with water; and more regularly by evaporating troughs cast on the hot-water pipes. —J. D. E.

14976.—**Spiræas and Deutzia gracilis.**—These are among the easiest grown of cultivated plants. Neither of them require peat in the soil; but it could not cause the leaves to curl up. This can only be caused by want of sufficient water at the roots; both of them require considerable supplies when they are growing; and if they once get over-dry at the roots, subsequent waterings result in the water passing rapidly through without wetting the roots sufficiently. There is nothing else to account for the want of success with such hardy free-growing plants.—J. D. E.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, November 2 to November 7.

Replanting Daisies and planting Crocuses in the flower garden. Potting Sweet Briers; putting in Rhubarb for forcing; taking up Dahlia roots, and putting them under greenhouse stage in not too dry a place. Planting standard Roses in flower garden; taking up blue Salvias for stock plants; taking out autumn Cucumbers to prepare for replanting. Putting hand-lights over early Lettuce; stacking Carrots and Beetroot in dry sand or dry ashes; clearing out a pit for Asparagus forcing. Potting herbaceous Calceolarias in good rough material, and placing them in well-crocked pots.

Taking up Gladioli. Putting in first batch of Seakale for forcing; getting all Cauliflowers which are ready put into trenches. Potting Lily of the Valley for forcing; also a large quantity of Narcissi; planting Gentiana acaulis and Pansies; plunging the most forward bulbs in tan, and keeping them at from fifty-eight to fifty degrees at night and sixty-three degrees by day with air. Getting all Fuchsias and Daturas under greenhouse stage; putting some hay over seed Potatoes; taking up untied Endive and putting it into a frame; examining Camellias for scale. Cutting Ivy off top of wall to prevent its being broken down by heavy wind or snow. Gathering all Tomatoes and putting them in vineries; digging vacant ground; pruning Raspberries; making a pit ready for forcing Seakale.

Glasshouses.

STOVE.—One of the difficulties that those who cultivate plants under glass have to contend with at this season is to find room for the numbers that require a greater amount of warmth from this time onwards through the winter than a greenhouse affords. In summer, many things that come under the head of stove-plants will do in a greenhouse temperature, but all such must now be located where more or less artificial heat can be given them. From now up to the close of the year, in addition to the plants that are permanently located in the stove, numbers of soft-wooded winter-flowering kinds that must have heat to enable them to bloom have to be accommodated; thus it often happens that the whole stock is so crowded together as to be seriously injured. In very light houses plants will bear standing closer together than in structures that are less adapted to the wants of the inmates; even in the best constructed houses it is far better to limit the number, so as to allow the lower branches and leaves to get enough light to keep them in a healthy state. Where the opposite course to this is followed it generally happens that the whole stock suffers, so that in the end no more flowers are forthcoming than a smaller number of plants would have produced, and, beyond this, the plants of a permanent character are often injured by the loss of their lower leaves to an extent that interferes with their appearance afterwards. *Insects.*—No inconsiderable part of the work connected with the cultivation of plants under glass consists in keeping down insects. The destruction of these requires incessant attention, as their présence in quantity on the plants renders a satisfactory condition impossible. All that is necessary in potting, watering, giving air, and shade so far as requisite, may be done, but if insects are allowed to get numerous, the best attention in other matters will go for little. The practice too frequently followed of letting these parasites go on increasing until they are present in quantity, and then making an attempt to destroy them, is the most unsatisfactory course that can be adopted. When insects once get numerous the work of getting rid of them is more than doubled, while the plants that have been so affected are never what they should or would have been had the parasites been non-existent. The reduction of temperature that takes place in plant-stoves from this time onwards causes a corresponding decrease in the rate at which insects of the different sorts that affect the plants breed. Advantage should be taken of this to eradicate them; nothing less should suffice so far as regards the worst kinds, such as mealy-bug and white scale. In the case of the former pest, there are now several insecticides that will effect their complete destruction, providing the dipping or washing is persevered with. But where the insects have been numerous, and have got possession of the wood and brickwork, it is necessary to stop up every crevice where they have taken shelter in both the woodwork and walls, painting and limewashing in addition. Respecting white scale, which does not increase so fast as the bugs, but is much worse to kill: if only a few plants of not much importance are affected, it will often be the wisest course to destroy them, as there are comparatively few stove plants that will bear the application of anything strong enough to kill the scale.

ROMAN HYACINTHS.—Where these are required to bloom early, and the bulbs have been potted long enough to admit of their getting well rooted, a portion of the stock may now be put in heat; with these, as with all other bulbs that have been plunged in material that has blanched the advancing crowns, care must be taken not to expose them suddenly to the direct action of light, otherwise the leaves will not afterwards grow freely. The old method of placing an empty pot over that which contains the bulbs will be found as good as any. Where the potting of these bulbs has been deferred, no time should be lost in getting them in. The principal lot of the large-flowered varieties should now also be potted, with whatever Narcissi, Tulips, Crocuses, and Scillas are intended to be grown, using good ordinary turfy loam, with about one-sixth of rotten manure added, and sand more or less in proportion to the heavy or light nature of the soil. A good deal of unnecessary expense used to be incurred in procuring pots of an unusually deep make wherein to grow Hyacinths and other bulbs, the influence of which in increasing the amount of the flowers produced was more imaginary than real. The way in which Hyacinths flower depends much more on the condition of the bulbs when they come to hand than upon anything beyond ordinary treatment that it is possible to do for them afterwards. So much is this the case that it may be well to give a word of warning to the inexperienced against the use of what are often called cheap bulbs, but which, although they do not fail to produce flowers, usually fail to afford them in more than half the quantity they should. The fault of most of these low-priced bulbs is that they are not old enough to admit of their having gone through the requisite preparatory process in the hands of the growers to enable them to flower as they ought. Neither is it necessary to use pots so large as those often employed; the splendid spikes of Hyacinth bloom that the leading market-growers get from six-inch pots are sufficient evidence of this. There is no better way of treating bulbs from the time they are potted until they have made enough roots to admit of their being put in heat than plunging them in cocoa-nut fibre or coal-ashes in the open air. The material should be four or five inches thick over the tops of the pots to prevent the bulbs being frozen.

POTTING SOIL.—Many amateur gardeners, or those who reside in the vicinity of towns, find a difficulty in procuring the requisite potting soils. The autumn is the right time to lay in a stock of these that will suffice for the year, as then the fibrous matter contained in the soil, consisting of the roots of the Grasses and Ferns that have grown on it, is matured, and in a condition to longer resist decomposition than it is in the spring or summer. The loam, dug in turves four to six inches in thickness, from a pasture or meadow, and the peat from land where the common Bracken has grown thickly, are the right sort of materials; these should be stacked in a heap in the open air, which keeps them in a much better condition than if placed under cover. If with these are included some leaf-mould, and some rotten stable-manure and sand, they are enough for the generality of plants grown in pots. A sufficient quantity should always be at hand long enough to allow the roots of the grass to die before the soil is used. T. B.

Flower-garden.

PANSIES AND PINKS.—The ground about the roots of Pansies and Pinks in beds should be kept constantly well stirred, and for this purpose small Dutch hoes, about four inches wide, answer best. Beyond this they require little more attention, except to see that the plants are steady in the ground. The soil should be pressed round the roots with the fingers, and some of the plants may be tied to small sticks to steady them. Slugs and the leather-coated grubs must be searched for at night. Pinks for forcing, comprising such sorts as Anne Boleyn, Derby Day, Lady Blanche (the best pure white), Lord Lyons (fine rosy purple), Mrs. Pettifer, and Newmarket should now be lifted from the open ground, and potted in good soil. If the plants are large they should be potted in five-inch or six-inch pots, and small plants in four-inch ones. Place them in a cold frame near the glass, where the light must be kept close for a few days, and then air may be freely admitted.

MIXED FLOWER BORDERS.—There is at present a look of untidiness about these which must be remedied. Chrysanthemums need tying up, and some of the clumps may be worth protecting from frost, which is easily done by placing a few sticks round the plants and lightly wrapping round them pieces of tiffany or matting. Other plants, such as Antirrhinums, Michaelmas Daisies, and Anemones that have done flowering should be relieved of useless spray and seed-pods. Annuals should be encouraged to make sturdy growth by being well thinned out, and the entire surface of the border should be freed from weeds and be lightly pointed over, but previous to that all vacant spots should be filled up with any spare biennials or bulbs there may be left from the general planting.

ROSES planted at this early season will next year flower just as freely as old established plants. In light soil we find it advantageous to lift all the plants every alternate year. They are heeled in for a couple of days or so, till the beds are deeply trenched and manured with well-rotted stable manure. The soil is then well firmed by treading, and the plants at once put in, the roots having previously been examined as to the removal of useless portions, suckers, &c. They are at once staked, tied, and well mulched with cocoa-fibre for the winter. In strong loamy soils (the best description for Roses), the treading must, of course, be dispensed with, except just as much as is needed, when planting, to keep each one in position and to ensure the soil being in close contact with the roots. I have observed that Roses moved thus early are not nearly so liable to injury from severe weather as are those not moved, the reason doubtless being that the check assists perfect maturity of the wood, the frost having the worst effect on plants full of sap. There is one drawback to this early transplanting, and that is the occasional sacrificing of numbers of flowers; still, it is better that this should be, than to risk even the slightest failure at the proper Rose season.

GENERAL WORK.—The sweeping and raking up of leaves, and rolling to remove worm casts should be attended to. Regravelling or fresh surfacing of walks should not be neglected, and all ought to be freed of weeds and well rolled after rain. In shrubberies replanting and thinning out should have attention. W.

Fruit.

HARDY FRUIT.—When the foliage of Apricots, Peaches, and Nectarines part readily from the

trees, they ought to be occasionally lightly brushed over for the purpose of bringing it down, in order that the sun and air may have full play on the trees. Push on planting, lifting, and root-pruning, as the present is the best season of the whole year for such work, and trees operated upon rarely fail to produce a full crop of fruit the next season. Gooseberries and Currants, being divested of foliage, may now be pruned. It is usual to defer the pruning of Gooseberries till spring, because birds are apt to make an onslaught on the buds; but if pruning be done now, and if afterwards the trees are splashed over with a mixture of soot and lime, with cow manure added to cause adhesiveness, the composition will not only be distasteful to birds, but will kill Lichen and Moss, which usually abound on neglected fruit bushes. When pruning, select the best-ripened wood for cuttings, which may be tied into bundles, and heeled in to give profitable employment in bad weather in preparing them for insertion, which should be in rows one foot apart and about six inches asunder in the rows. All the buds should be picked out of that part of the stem that is inserted in the ground, or there is a tendency to produce suckers, and each tree is always best when grown with only a single stem.

Vines.—Some kind of covering should now be placed over the main roots of Muscats, Lady Downes, and other late kinds intended for winter use or bottling. By this time the Muscats will have attained perfection, and the other kinds will be sufficiently advanced to admit of a general lowering of the temperature to about fifty-five degrees at night and a few degrees higher by day, when gentle fire-heat is needed to keep the atmosphere of the houses dry and favourable to the ripening of the foliage. Prune successional houses as soon as the leaves fall, and take advantage of wet days for cleansing the canes; also wash or paint the internal woodwork and ventilate freely if, as is too often the case, they are not wanted for plants. Pot Vines that were shortened back about the same time may also be watered, top-dressed, and placed in position, and as these do not always break so kindly as old Vines which have been forced for a number of years, it will be well to tie down the points before the terminal buds begin to swell. M.

Vegetables.

Winter Onions now growing rapidly should be planted out to check growth; the young growth is so tender that frost cripples them at once. The time is fast approaching for getting early Potatoes well and steadily started. Good strong green shoots have much to do with success; therefore put in the first lot for that purpose. The plants in our first house of Cucumbers are now about one foot high; they are planted on mounds of earth and leaf-soil. Keep the house sweet and clean, and the thermometer at sixty-five degrees in the evening, letting it run up with the sun from ten degrees to fifteen degrees before air is admitted. Tops of Asparagus will now have turned yellow, and should be removed; but, as in other cases of a similar nature, they ought never to be cut away while they have life in them. If there are any weeds on the beds, they should be cleared away. The beds should then have their winter dressing applied. This ought to consist of three inches of well rotted manure evenly spread over the surface. This not only has the effect of enriching the soil, by its fertilising properties being washed into the ground by the rains, but it also protects the crowns from frost; for, although a perfectly hardy plant, yet, like many others under a system of cultivation, it is better not to have the roots exposed to severe frost. The great mistake in the cultivation of this vegetable is in too close planting; two rows are quite enough for a four-foot bed, instead of three or four. There is nothing gained by close planting; when plenty of room is allowed, the heads, if they are not so numerous, are double the size. G.

14832.—**Heating greenhouse.**—I would advise "Perplexed" to use one of Roberts's Patent Terra-cotta Stoves in his greenhouse. They are cheap, cleanly, require no brick setting, and emit absolutely pure heat, which can be regulated to any required temperature. They burn ordinary coal or coke, and require no attention after lighting for from twenty-four to forty-eight hours.—Semper Paratus.

DRYNARIAS.

The genus Drynaria is closely allied to that of Polypodium, from which its members are mostly distinguished by their sori being scattered irregularly all over the under part of the fronds, instead of being disposed in regular rows as in real Polypods. All the known species of Drynarias are native of hot countries, principally from the Mauritius and Malay Islands, and, all of them being strong growers, they form splendid objects in the tropical fernery, especially when planted on the summit of projecting rocks as their large fleshy rhizomes have a peculiar tendency to grow round and round, forming thus circles well furnished with massive fronds. The subject of our illustration, Drynaria morbillosa, also known under the name of Polypodium heracleum, is undoubtedly one of the most ornamental of the whole genus, producing as it does from its thick succulent rhizomes numerous fronds, which, in some instances, attain from five to six feet in length and eighteen in breadth. They are pinnatifid, stiff, but slightly curving, of a light green colour; their underside completely covered with the closely dotted sori. Like all the other species belonging to that genus, this interesting and highly decorative plant, if grown in pots, should have its rhizomes kept well above the rim so as to avoid all excess of moisture. The best way to grow Drynarias is on pyramids of peat as fibrous as can be procured, on which they are readily established, and only require pegging down until the root action commences, after which they will take care of themselves. It is also best to keep their foliage dry, as, unless the house in which they grow be well ventilated, they are likely to get spotted through permanent moisture, in which case the fronds will soon begin to decay. S. G.

Drynaria morbillosa.

TREES AND SHRUBS.

Aucuba-leaved Ash.—There are several kinds of variegated Ash, but Fraxinus aucubæfolia is the most effective of any that have come under my observation. It is a form of the American Ash (F. americana), in which the leaves are distinctly blotched with yellow, after the manner of the oldest type of the Aucuba. It sustained no injury from the hot, scorching weather which we experienced last summer; on the contrary, exposure to full sunshine seemed to render its variegation still more distinct. The American Ashes have mostly much larger leaflets than are to be found in the European species, and to this rule this variegated kind forms no exception.—A.

Propagating the Variegated Laurel.—Aucubas are in general procured from a nursery when any are required; still, raising them by means of cuttings is so simple, that a few remarks thereon may not be out of place. Aucubas will grow in almost any position, and thrive much better under trees than many plants. Strong retentive clayey soil suits them admirably; in this the leaves are larger and the markings more clearly defined than when grown in light sandy soil. They are the easiest plants to move which we have, and, owing to the quantity of fibry roots which they make, they lift with plenty of soil around the roots. A good way of increasing the stock of this plant is as follows: At this season take off some small pieces of shoots from four inches to six inches long with a small heel attached to them; insert them firmly in six-inch pots in sandy soil, placing about nine cuttings in each pot; give a good watering and plunge the pots in ashes in a cold frame, where they may remain until February; by that time each cutting will be nicely callused. During winter they will not require much air—just a little at times to dry up superfluous moisture. At the time just named (February) they should be plunged in a gentle bottom-heat, either in a hotbed or propagating-house, where they will soon start into growth, and by the month of April or May they will have made good shoots They should then be gradually hardened off, when they may be planted in lines on a border. A west one suits them well. They will grow into good sized plants the same year. In the following spring they may be planted in any vacant places in front of shrubberies, or they may be again transplanted to wider distances apart on the same border, this time using some well-rotted manure, which will assist their growth.—E. M. S.

REPLIES.

14899.—**Carpet plant for Rhododendron bed.**—Few, who have not tried, can imagine how pretty a carpet of St. John's Wort is under straggling Rhododendrons, and it blooms when these shrubs have done.—C. F. Davis, *Leatherhead.*

——I will give "C. W. E." a list of the plants I have growing among my Rhododendrons. There are the dwarf Rhododendrons, hirsutum præcox (very early), Chamæcistus, myrtifolium, and ferrugineum; on the sunny side, Menziesias, white and purple (lovely pendent bells now); M. empetrifolia, pink, and many beautiful Heaths, Erica carnea sometimes blooming in January. On the shady side, Andromeda polifolia and tetragona; Gaultheria Shallon and procumbens; Orchis latifolia, bifolia, and Gymnadenia look very lovely peeping out from among the dwarf shrubs. The bulbous Iris likes peat, and Oak Fern and Musk do remarkably well under the densest parts. I have large clumps of Hepatica, all colours, blooming in February, and all round the edge next the grass, a border of Dog's-tooth Violets on one side, and Triteleia uniflora on the other. All the above do well, although I have not the best peat, it being rather pasty; but I give a top dressing of leaf-mould every year, and, of course, the beds are never dug. I ought to have said that I find that nearly all the species of Primrose do well here, and many Liliums, so that "C. W. E." will see there is quite a wealth of beauty and interest to add to his clump of Rhododendrons.—H., *Durham.*

14980.—**Shrubs for lawn.**—I name below a few things for "Y." to select from. The limit as regards height will tell against employment of Conifers, as the Lawson Cypress, or some of its varieties, will do admirably; but without, there are plenty of materials. Standard Portugal Laurels will do, perhaps, with pyramidal Box alternately. Golden Queen and Silver Queen Hollies are permanent. The Laurustinus and Bay are useful, though somewhat tender. The Golden Yew makes a handsome plant.—E. Hobday.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for our guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The Name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, we cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who are seeking assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15021.—**Planting monthly Roses.**—Will any one kindly tell me the best time to plant monthly Roses?—CORK.

15022.—**Growing Pezizas or Jew's Ears.**—Would any reader kindly tell me the way to grow Pezizas or Jew's Ears?—H. B.

15023.—**Oil stove.**—Will J. G. S. (p. 450) kindly inform me where the stove that he recommends may be obtained?—W. H. BAKER.

15024.—**Ferns.**—Will any Fern-grower inform me what are the most suitable sorts for a small house fernery, in Glasgow, with a western exposure?—ST. MUNGO.

15025.—**Worms on rubbish heap.**—Will some one tell me how to get rid of worms in my rubbish heap, which make it quite useless for potting?—SPHINX.

15025a.—**The Sheoak.**—Will Mr. Miller, or any other reader, kindly tell me the Latin name of the Sheoak, a South Australian shrub?—AN ENGLISHWOMAN.

15026.—**Stove for greenhouse.**—Will "A Lincolnshire Rector" kindly tell me what stove he uses in his greenhouse, and what is the size of the greenhouse?—CONSTANCE.

15027.—**Melilotus officinalis.**—Is there any possibility of buying seeds or plants of this? We have tried at some of the largest seedsmen, and they honestly tell us they cannot supply it.—EDGWARE.

15028.—**Pruning Vines.**—I have a lean-to greenhouse, twenty-seven feet by ten feet, containing two well-grown Vines. Will some one kindly give some hints on their pruning?—NEW IRISH SUBSCRIBER.

15029.—**Parsnipe forking.**—Will any good grower let me know the season that Parsnipe do what some growers call "forking"? I should be glad of a few hints as to the best mode of cultivation.—YOUNG GARDENER, *Neath.*

15030.—**Earwigs.**—I think the earwig is the most troublesome of all pests in gardens. They eat the petals of my Chrysanthemums, and make them look very bad. I take a light in my greenhouse after dark and catch them. Is this the best way to get rid of them, or will some kind reader tell me of a better or quicker way of disposing of them?—A. O.

15031.—**Bedding Geraniums.**—Will any reader kindly tell me the names of what they consider the best kinds of bedding Geraniums of different colours—low-growing and free-flowering kinds not easily affected by rain. Say pink, rose, salmon, and deep crimson, if there be any good kinds of these for producing a mass of colour.—AN OLD SUBSCRIBER.

15032.—**Turning playground into lawn.**—The garden to the house I have just taken has been turned into a gravelled playground for children. I wish to change it into a lawn. Will any reader kindly inform me how to proceed, so as to dispose of the gravel, and when to sow seeds? Also time, manner, &c. I take it that I must sift it all over as a preliminary step.—W. B. B.

15033.—**Heating low frame.**—I am anxious to heat a frame, about twenty feet long, sufficiently to keep out frost. Can any of your readers recommend from experience a good heating apparatus, and inexpensive—to burn coal preferred? Would the "Loughborough" be suitable? The frame is very low, so the heating apparatus would require to be small and low.—N. C.

15034.—**Plants in front-room windows.**—Having tried many plants in windows facing north-east, but without success, I should be pleased if any one will give me a hint as to the reason. They come out of cool greenhouses, and are carefully watered, but the foliage always dies. I have tried all sorts, but without success. Have given them air in the day-time.—A LOVER OF FLOWERS.

15034a.—**Mulberry-tree.**—What is the best kind of Mulberry to plant for fruit? Has any nurseryman a specialty for Mulberries? How old a tree might I safely plant? and how should it be treated? Any information will oblige.—K. A. J. *** *We think the Mulberry a greatly neglected tree, and shall be glad if any readers who have the same respect for it as ourselves will kindly help "K. A. J."*—ED.

15035.—**Climbing Roses.**—Will any Rose grower kindly tell me what climbing Roses are most suitable for walls. I wish to plant one on a wall facing south-west, and one on a wall facing south and east—an angle. Of the kinds known to me I should select Gloire de Dijon and Maréchal Niel. The soil is gravel, but the surface to a considerable depth made up with clay and turf-mould.—P. G. L., *Wandsworth.*

15036.—**Primroses for culture near town.**—Would some grower of Primulas kindly give me the names of half-a-dozen of the best for growing near a town?—C. H. B. *** *We presume "C. H. B." means hardy Primroses, of which none surpass the varieties of our common native kind, many of them very fine in colour. Certain of the hardy Indian Primroses thrive admirably even in the London district.*—ED.

15037.—**Heating a greenhouse.**—I have read Mr. Hobday's answer to Query 14420 (p. 454), and should be pleased if he would give me some information on the following subject:—I intend building a small greenhouse thirteen feet by eight, with brick wall three feet high, with two feet of glass on the wall each side, glass ends and roof, the ridge being about seven feet high. Can I heat such a house with a coil built in brick-work, and how many feet of pipe and what size shall I require? I also wish to know if I could build such a house on timber, say two-inch plank, so as to be a tenant's fixture, as I am only a sub-tenant? Will such a house do for Zonal and other Pelargoniums, Ferns, &c., also for raising, and plants for kitchen garden.—A YOUNG BEGINNER, *Yorkshire.*

15038.—**Destroying leather-jackets.**—"An Old Subscriber" would be much obliged by receiving information of a remedy for the larvæ of the "daddy long-legs," which, in her garden (in Surrey) and all along the high Nutfield ridge, is doing great havoc in the vegetable gardens. All Turnips are destroyed, Lettuce the same, and Spinach, three times planted, the same. The grub is so hard that nothing kills it except hand-picking, which takes up too much time. Will any reader kindly suggest some means of dealing with the pest? *** *See note, page 459 (Oct 17th). They may be caught by burying about an inch from the surface, near the roots of plants, small pieces of Potatoes, Turnips, &c., with a small piece of stick attached to show where they are; they should be examined every morning, and any grubs found sticking to them destroyed. Trenches six inches wide, and with upright sides of the same height, are useful for catching the grubs; in their nocturnal rambles they fall into these pitfalls and cannot escape. Doubtless readers will suggest other remedies.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15038a.—**Ferns on jars** (*Woodlands*).—You will find a note on the subject in this number.

15039.—**Moving Creeping Jenny** (*F. G.*).—The best time to move your Creeping Jenny is in spring.

15040.—**Brussels Sprouts** (*Edgware*).—If the large side leaves are still green they should be left on the plants.

15041.—**Treatment of Arum Lilies** (*W. S. Southsea*).—Continue to treat them liberally while they are in vigorous health. The worms will not harm them.

15042.—**Cyrtodeira fulgida** (*Anxious*).—It is a relative of the Gesnera, and requires the usual compost for stove-plants—peat, loam, leaf-mould, and sand.

15043.—**Propagating Sultan's Balsam** (*Constant Subscriber*).—It may be propagated readily by cuttings or from seeds at any time of the year, provided you have sufficient heat.

15044.—**Cutting down Canna** (*Holw*).—No, your Canna, which is in perfect vigour and beauty in a room, should not be cut down. The leaves should be allowed to decay naturally.

15045.—**Sowing seeds of half-hardy annuals** (*J. E. M.*).—Yes; you can sow the seeds of half-hardy annuals and the other plants you mention in a cold greenhouse in spring.

15046.—**Temporary protection for young Pelargoniums** (*W. Kerr*).—They would not suffer if kept for a few weeks in a light room, or under any kind of artificial protection.

15047.—**Four-leaved hardy Trumpet-flower** (*W. J. P., East Dulwich*).—Plant Bignonia capreolata in good soil on a south wall, or the next best aspect that you can find. Try Laing, of Forest-hill.

15048.—**Fuchsias after flowering** (*Amateur*).—Do not "cut them down," but prune them. Cut the branches back to firm wood, and this will induce them to throw out strong branches in the spring.

15049.—**Watering Myrtles during winter** (*Amateur*).—No plants require as much water in winter as in summer. You must use your own judgment. Do not let them become excessively dry, and, on the other hand, take care that the soil is not soddened.

15050.—**The Araucaria imbricata at Kew** (*R. K. W.*).—No; the Monkey Puzzle at Kew, referred to in our note, (p. 454), is not indoors, but in the open, and not particularly sheltered. It is of great age, being the first Araucaria introduced into this country.

15051.—**The anti-cat crusade** (*B. J. Willak*).—A great amount of correspondence on the subject of the cat nuisance appeared in GARDENING of Sept. 5 and in previous numbers. You will probably find all the information obtainable on the subject in those articles.

15052.—**Single Pyrethrums** (*Holw*).—It would be better to mulch now. Pyrethrums do not quite die down, but there is not much of the plants to be seen during the winter. They begin to flower about May, and generally continue in bloom throughout the summer.

15053.—**Begonia rex leaves turning brown** *R. B.*).—We cannot tell you how to prevent them from turning brown and becoming spotted, because you have not told us anything of the treatment you have followed. Perhaps you have treated them improperly; write again.

15054.—**Araucaria branches dying** (*Walton Elm House*).—We fear that in this case is hopeless. If there appears to be any vigour left in the tree you may top dress the soil well around it, but that is all that you can do. When these trees once begin to decay they seldom recover.

15055.—**Treatment o. Amaryllis** (*R.*).—Now that the leaves have developed, you must endeavour to keep them in a healthy condition (by giving the plant a nice warm temperature and watering well) until next year, when they will die away naturally; afterwards you must ripen the bulbs.

15056.—**Sowing Limnanthes Douglasi** (*H. L.*).—Sow the seed now in pans in a frame and prick them out in early spring when the weather is favourable; you will then have a crop of blooms in early summer. This is an early spring plant, usually sown early in autumn so as to get good strong plants for flowering by the spring.

15057.—**Books on culture of stove plants** (*W. K.*).—The books you mention are of no use for your purpose, and are quite behind the time. On the culture of stove plants the best book is Baines' "Greenhouse and Stove Plants"; it is written by one of the best cultivators of plants of our time, and is published by Mr. Murray, Albemarle-street.

15058.—**Procuring plants** (*Subscriber, Devon*).—We know Cholinia serratula, but not P. variegata. The Australian Cabbage tree is the English name given in Mr. Miller's book to Corypha australis—probably that is the plant you mean; the tree Fern of New Zealand is Dicksonia. These should be procurable at any of the large Exeter or London nurseries.

15059.—**Moving Rhubarb** (*Young Gardener, Neath*).—Move Rhubarb at any time you like, from now until March. You can hardly make a mistake with a plant so vigorous if you give it plenty of deep, good, rich soil. We do not know what is meant by the phrase "cracking it down to lean on the ground." Will you explain more fully?

15060.—**Obtaining Ataccia cristata** (*A. K.*)—This a difficult plant to obtain, as it is not often kept in nurseries. The writer of the article suggested application to leading nurserymen; plants are sometime procurable from Botanic gardens, and no doubt any large nurseryman in your neighbourhood would be willing to procure one for you if he cannot supply you himself.

15061.—**Books on Vine culture and greenhouse management** (*A New Irish Subscriber*).—Mr. Barron's book on the Vine, 171, Fleet Street, will meet your requirements; if you want a cheaper publication try Mr. Simpson's "The Grape Vine" (Routledge); Baines' "Greenhouse and Stove Plants" (Murray) treats of the culture of indoor flowers, Ferns, &c.

15062.—**Articles on Potato disease** (*Potato Disease*).—Various articles on this subject have appeared from time to time in the horticultural and agricultural journals. An illustrated article, by Mr. Worthington Smith, and other notes appear in the second volume of the *Garden*, and the subject is dealt with in GARDENING ILLUSTRATED, Vol. IV. (No. 185 and following numbers).

15063.—**Manuring Vines** (*New Scotch Subscriber*).—Vines established and in good growing health want little manure, a little top-dressing only if the soil be warm and otherwise suitable. In gardens where there are deep sandy loams we have often known Vines to travel out and provide for themselves in a thoroughly good way; on the contrary, the excess of manuring on many borders seems useless.

15064.—**Camellias during winter** (*Anxious One*).—No; a bedroom will not answer the purpose. In order to save the Camellia buds you must modify the atmosphere of the house—a dry atmosphere is fatal to them. Cannot you devise some method of placing a watering-trough over the stove, so as to produce a moist atmosphere? You do not want a hothouse for Camellias—in fact, they are almost hardy.

15065.—**Slugs and snails** (*R. T.*)—The protection is to be found in a variety of measures, information respecting which you can find in many back numbers, if you have the index to the last volume. A ridge of salt around a plant will assist in protecting it, and the culprits may be caught in traps of various kinds; flower-pots containing Potato-parings, or fresh Lettuce, &c. A few ducks turned out in a garden will free you from the pests and enjoy themselves at the same time.

15066.—**Hyacinths after potting** (*H.*).—The best plan, after you have potted them, is to place them in the open, and put a layer of ashes a the top about six inches in depth. Leave them a month or so, at the end of which time roots will have formed in the pots, and the crowns will begin to swell and push up. Then you may take a few into the greenhouse, and force gently into flower; if you take a few into the house at intervals, you will be able to get a succession of flower. The pots outside must be protected from severe frost under a frame.

15067.—**Planting bulbs and sowing seeds of half-hardy annuals** (*Vernia*).—The seeds you name, being of plants mostly natives of warm countries and of our own, had better now be kept until early spring. If they had been sown in light, warm soil in August, or early in September, they might have had a chance of getting over the winter, and flowering well in early spring. Aster alpinus is a perennial which is hardy enough to be sown at any time, but you would get the best result by sowing in spring. The Lilies you mention are all hardy, and should be planted as soon as possible.

15068.—**Heaviest bunches of Grapes.**—We believe that the heaviest bunch of black Grapes ever recorded was grown by Mr. Roberts, gardener to the Countess of Charleville, Charleville Forest, Tullamore, King's County, in 1877. It weighed twenty-three pounds five ounces; its length was twenty-four inches, and width across the shoulders twenty-two and a half inches. The variety was Gros Guillaume. This bunch was only third in the list of heaviest bunches (irrespective of colour), being two pounds fifteen ounces less than the bunch of Raisin de Calabre (twenty-six pounds four ounces), shown by Mr. Currer, at Edinburgh, in September, 1875; and two pounds five ounces less than the White Nice (twenty-five pounds fifteen ounces), shown by Mr. Dickson, of Arkleton, at the same time and place.

15069.—**Fungus** (*Skulak*).—The fungus which has appeared on your rockery is one of the Starry Puff-balls or Earth-stars—Geaster fimbriatus; it generally grows in Fir plantations. All the Earth-stars are rare.—W. G. S.

15070.—**Ammonia for Chrysanthemums.**—(*Jessica*).—An ounce of it may be dissolved in a gallon of rain-water, and be applied to the roots of the plants twice a week. We would rather use the same quantity of guano; it is a better stimulant for Chrysanthemums.—J. D. E.

15071.—**Temperature of stove-house** (*Erin*).—The temperature of an ordinary plant stove can be too high in winter. If kept too high, the plants are excited into growth at a time when they ought to be at rest. The lowest point ought to be fifty-five degrees. If it should fall a few degrees below this in very cold nights the plants would not be injured thereby. In summer a higher temperature can be kept up with very little artificial heat.—J. D. E.

15072.—**Onions for exhibition** (*Young Gardener*).—Mix a compost of three parts loam to one of decayed manure with the addition of a little sand. Place one crock in the bottom of the pot, and press the compost in firmly. Sow two seeds (or three if the quality is not good) in the centre; when the seeds have vegetated remove all but one. The pots should be plunged in some moist material within six inches of the glass; ventilate freely when the young plants are growing, but shut up the frame at night, and throw a mat over it if it is likely to be a frost.—J. D. E.

15073.—**Fungus on Beurre Rance Pear** (*R. Taylor*).—This variety of Pear seems very liable to be attacked in this way. We grew it for many years, and never failed to have a considerable portion of the fruit damaged in the same way as the specimens sent. We have now discontinued its culture. The roots getting into unsuitable soil may be the cause, therefore pruning the roots and adding fresh soil would be beneficial. Do this, and paint the tree over with a solution of soft-soapy water thickened with flowers of sulphur and some soot.—J. D. E.

15074.—**Crop on Apple-trees** (*R. W. R.*).—Pyramid trees are certainly the best to plant, as indicated in reply to query 14491 (p. 413), but we would not be too anxious to keep the trees in the form of a compact pyramid. It is best to allow some of the branches freedom to grow wherever there is space for them. We let the trees grow more in the columnar form—that is, nearly as wide at the top as at the base. It is not expecting too much to estimate the average annual crop at fifty pound weight of fruit to each tree. Some of them might bear 100 lb. weight or more. The trees named are strong growers, and the most likely to produce heavy crops of fruit.—J. D. E.

15075.—**Grapes not colouring** (*Mabor*).—The variety, Gros Colman, takes a long time to ripen and colour, but the Black Hamburgh is now quite ripe in our garden, and has scarcely received any heat, further than that received through the glass. It is stated that "the pipes have been kept warm in all damp weather." This is not enough heat for Gros Colman. The proper treatment now will be to keep the pipes quite warm, night and day, until the grapes are ripe. A very little air should be admitted at the highest part of the house all night. Leave the ventilators open about half an inch. The temperature of the house at night should be not less than sixty degs.—J. D. E.

15076.—**Failure of Black Currants** (*Mabor*).—The specimen of young wood sent is very imperfectly developed, and until the bushes are encouraged to make better wood, the buds will also be immature. The buds are too far advanced, and, being in the state they are in now, will not be likely to do any better in the coming season than they have done in the past. Black Currants will succeed almost anywhere if the soil is deep and rich. Perhaps the bushes in question are worn out. If not, cut out some of the old wood, give them a good dressing of manure, and encourage a good growth. In the meantime, plant a few bushes of the following varieties: Lee's Prolific Black and Black Champion. It will be best not to rub the buds off.—J. D. E.

15077.—**Treatment of Gloxinias** (*Constant Subscriber*).—Gloxinias lose their leaves, and the bulbs remain dormant during the winter. The soil in the pots where they are must be allowed to become quite dry. They may be kept in a warm greenhouse during the winter, and may be started any time after Christmas. Place them in a temperature of fifty to fifty-five degrees at that time, and give enough water to thoroughly moisten the soil. In ten days or so they will show signs of growth, when they should be shaken out and re-potted, using for the purpose clean, well-drained pots, and a compost formed of three parts loam, one of turfy peat, and one of decayed manure, with some white sand. The temperature during the growing period need not be more than fifty-five degrees. Place them near the glass in a moist atmosphere, but do not syringe the leaves.—J. D. E.

15078.—**Propagating Ferns** (*Alpha*).—Ferns which are grown in quantities for market purposes, and supplied in thumb pots, are all fast-growing kinds, such as Adiantum cuneatum, Asplenium bulbiferum and biforme, Cyrtonium falcatum, Dicksonia antarctica, Dictyogramma japonica, Lastreas of sorts, Lomaria gibba, Nephrodiums and Nephrolepis of sorts, Onychium japonicum, Osmundas of sorts, Phlebodium aureum, Pteris of sorts, &c. These are usually sown on the surface of the pots of plants of slower growth, generally Palms, so as to save room, but where room is not of such a great consequence, they are sown in boxes. In either case they are, when showing two or three fronds, pricked off in small patches of several young plants together, instead of singly, as is the case for choicer kinds, and likewise potted several together in long thumbs, when they only require a few days in a close house to be sufficiently established and fit for use. A most important point in the above culture is the loose way in which they must be potted, for if the soil is at all pressed in the pots the growth of the plants is more substantial, but it is also of a much slower nature.—S. G.

15079.—**To raise Currant-trees** (*H. T.*).—For a little money you would probably suit yourself better by buying some trees two years old; and for Black Currants you should go in for the "Green bud." To raise trees yourself, however, cut some young strips of wood from your old trees—say, six or eight inches long in the case of Black Currants, and bury these strips in well-tilled ground till within about three buds of the top. Those buds which are below the surface will be continually throwing up fresh wood, which you want, as a Black Currant-tree should be formed of several canes coming from the ground, and not be trained with *one* stem only. Stick the strips alluded to in the ground, some six inches apart, now or after Christmas, and if they do well, next November you will find some trees almost fit to transplant. If not, with a sharp knife cut off all the wood they have made down to within about two buds—or three (at the most—of the ground; and the following year you will have trees good enough for anything. No fruit-tree perhaps is more easy to raise than a Black Currant. If you have plenty of room, give the strips a little more space than is mentioned, and next winter pour some night-soil round them, not over them, and they will grow apace. Red Currants, like Gooseberry trees, require a body; hence when you prepare your cuttings, take off the bottom buds, so as to prevent young wood coming out of the ground. Stick the cuttings in the ground in a row—about three or four inches deep—leaving some six or seven inches out of the same with three or four buds at the small end, the bottom one being a few inches from the ground, according to how long a body you wish the trees to have. Shorten all the shoots—not too severely—next November, and let the trees stand another year. In preparing the strips they require to be severed at the thin end, unless you wish to have *Standard* Red Currant trees, in which case the bud at the extreme end may be left on, and the strips chosen at the outset should be the longest and straightest that can be found. Choose nicely-ripened wood to cut into strips, strong and well-budded ones, with a view to getting sound fruitful trees.—R. J. F.

REPEATED QUERIES.

14484.—**Culture of Salvia splendens.**—I have purchased plants of Salvia splendens for several seasons, and lose them at the end of summer. I should be much obliged for particulars as to whether they can be raised best by seeds or by cuttings, and the way to do either.—A Subscriber.

14575.—**"The black Narcissus."**—We have read of "the black Tulip," the black Dahlia is common, so, too, the black or Sarum Lily and the Persian Fritillary; but what is the flower to which the name of "black Narcissus" was applied? In the early accounts of the myth of Proserpine (or Demeter), the flowers she let fall "from Di's waggon, Daffodils," are called "black Narcissus." So, too, Kushak Khan, the favourite poet of the Afghans, uses the phrase: "Black Narcissus are thine eyes, thou dear one, so beautiful, so gay!" Can any reader kindly enlighten me as to this misty legend of the black Daffodil or Narcissus?—E. F. B.

TO CORRESPONDENTS.

Young Gardener.—You will find answers to both your questions in the number for October 17, p. 462.——*Subscriber.*—You do not give us your name or address, and therefore we cannot tell you where to send fruit so that you would be certain to make a profit. There may be a suitable market in your locality, but not knowing where that locality is, we cannot assist you.——*J. W. A.*—The question was answered in our issue of October 10, but under a different name. See No. 14861.——*J. E. A. Edison.*—Thanks for your suggestion, which shall be considered.——*Tyro.*—See article in this week's number.——*Yorkist.*—In what respect is the support superior to those offered by the trade generally? Thanks for your kind note.——*Mabor.*—Answered this week. See lower portion of first note at head of query columns.——*Latham.*—In your query you adopted the pseudonym of "Amateur," and it was dealt with last week (see No. 15007). When making inquiry as to your previous note you should not adopt an entirely different name.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor, 37, *Southampton-street, Strand, W.C.*

Names of plants.—*Old Friend.*—1, Asplenium Colensoi; 2, Osmunda palustris; 3, Anemidictyon phyllitidis; 4, Pteris serrulata cristata.——*M. R.*—Polystichum aculeatum lobatum.——*Nemo, Linthorpe.*—Lastrea Filixmas.——*J. B. M.*—1, Cystopteris dentata; 2, Asplenium Adiantum nigrum; 3, Cystopteris fragilis (?). The last arrived in such a shrivelled condition that it is very difficult to identify it with certainty.——*Ash-tree.*—Two forms of the common Ash are here sent; one (No. 2), the every day state with pinnate leaves and long fruits, the other with shorter entire leaves and leaves in which only the terminal pinna is developed. In all probability No. 2 is simply a dormant bud which has sprung from the stock; this assumes the Irish plant to be a "worked" one. If not it is simply a curious branch sport, a reversion of the variety to the parent type. Several seeds have been sown at Kew, and the progress and behaviour of the seedlings will be critically watched. To ensure success kindly send more seeds.——*W. Threlfall Hollowforth.*—100, Lobelia syphilitica var.; 500, L. Milleri (a hybrid); 600, L. cardinalis (true).——*Mrs. Holmes.*—1, Helianthus strumosus; 2, Grindelia angustifolia; 3, Sedum maximum purpureum; 4, Sedum reflexum.——*W. H. Odlum.*—Looks like Impatiens Sultani (Balsam), but the specimen is miserably insufficient.——*D. E. H.*—1, Pteris serrulata; 2, Selaginella Mertensi; 3, S. Galeotii; 4, send better specimen.——*Mrs. Moysey.*—Nicandra physaloides.——*C. H. Mullard.* Liriodendron tulipifera (Tulip tree).——*W. H. Ashmount.*—Looks like large-leaved Poplar.——*Mrs. Clitheroe.*—Eccremocarpus scaber.——*X. Y.*—Looks like Cotoneaster frigida; may be propagated from the berries, which should be treated like Holly berries.——*E. S. R.*—We can only guess at the name, as it is almost impossible to say from the leaf alone. It seems to be a kind of Fraxinus.——*J. G. W.*—The yellow flower is Rudbeckia hirta; the fern is too small to name.——*James Webb.*—1, common Barberry (Berberis vulgaris); 2, Doodia Dives; 3, a Polypodium (specimen not good); 4, Ampelopsis Veitchii; 5, looks like a Polypodium.——*J. A. Busey.*—1, Cuzania splendens (not hardy); 2 Eccremocarpus scaber; 3, send better specimen; 4, looks like Rochea falcata, but cannot be certain from specimen.——*Garhart.*—It is called the bronzed-leaved Ivy, and you would be able to get it under this name; we know no other name for it.——*M. Collins.*—1, cannot say; 2, Spiræa Lindleyana; 3, Sedum spectabile; 4, looks like a Daphne, send in flower.——*F. Lennan.*—6, Apparently Pinus Pence; 7, P. Cembra; 8, Cupressus Lawsoniana; 9, apparently a Juniper, but the specimen is not good. We do not remember the other plants that you refer to.——*P. R. M.*—Pteris serrulata.

Books received.—*The Chemistry of Cookery.* By W. Mattieu Williams.—Chatto & Windus, Piccadilly. —*Wanderings of Plants and Animals.* By Victor Hehn. Edited by J. S. Stallybrass.—Swann, Sonnenschein, & Co., Paternoster-square.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruits.—*W. Threlfall.*—Apple is Irish Peach; Pear, Seckle.——*Alpha.*—Pearson's Plate; 3, Augustus Pearmain; others not recognised, probably local seedlings.——*Leeds.*—1, Cellini; 2, Pear, Napoleon; 3, Keswick Codlin; 4, Pear, Beurré Rance.——*J. H.*—Beurré Clairgeau.——*J. S. Udal.*—West espalier, right side, is Pine Apple Russet; W. E., left side (No. 2), is Ribston Pippin; North espalier, left side (3), is Bedfordshire Foundling; other not recognised.——*R. B. Thomes Ditton.*—1, Winter Nelis; 2, Louise Bonne of Jersey; 3, Fearn's Pippin; 4, Winter Hawthornden.——*John House.*—1, Brahant Bellefleur; 2, Hollandbury; 3, not recognised.——*M. E. Smyth.*—No numbers sent with Apples. The red one is Worcester Pearmain; other two not known.——*Yorkie.*—1, Like the Keswick Codlin; 2, Cox's Orange Pippin; 3, Yellow Buckland; 4, Carlisle Codlin.——*Redford.*—Believed to be Golden Reinette.——*H. K. M.*—1, not known; 2, Louise Bonne, of Jersey; 3, Belle après Noël; 4, Easter Beurré.——*G. T. Blomfield.*—1, Old Crassane; 2, Bergamote d'Esperen; 3 and 4, too much decayed.——*Cork Subs.*—1, Wyken Pippin; 2, Court Pendu Plat; 3, Fearn's Pippin; 4, not known; 5, Downton Pippin.——*E. C.*—1 and 2, Marie Louise; 3, Comte de Lamy; 4, Jersey Gratioli: other is Ne Plus Meuris.——*S. P., Hants.*—1, Brown Beurré; 2, Beurré Capiaumont.——*J. H. V.*—1, Fearn's Pippin; 2, Aromatic Russet; 3, Lady Henniker.——*C. Kelmisch.*—1, Beurré Bosc; 2 and 6, Louise Bonne of Jersey; 3, Seckle.——Others next week.

14967.—Heating small greenhouses.—I have tried several of the heating apparatus advertised during the last few years, and have found they either smoked at times or raised the heat unduly. I have had one of Rippingille's stoves given me, and at the top of it was connected four - inch piping running the length of one side of the house, which is nine feet by five; at the end of this pipe is an escape-pipe, about two inches, and separated from this for about three inches a similar pipe to the top of the house. I find I can regulate the heat continuously. The lamp has two burners, but one I find quite sufficient, and not requiring any attention after regulating; there is no smell and no trouble but cleaning the lamp and wick.—H. A. R.

Early Chrysanthemums.—From Mr. W. E. Boyce, of Holloway, we have received a selection of early Chrysanthemums, which includes some new varieties. Among these we particularly noticed the following:—Mandarin, a flower of the Japanese type, cream colour, shaded and marked with purplish rose. Pomponium, a pretty globular flower of a pleasing shade of bronzy orange. This variety was awarded a first-class certificate at a recent meeting of the National Chrysanthemum Society. Petit Mignon, a pompon variety of a silvery rose colour, with the edges of the petals white. La Bien Aimée, a dwarf free kind with small very compact blooms of a carmine-rose colour tipped with white. Surprise, a good deal like the preceding, but with the tips of the petals prettily fringed. All of the above are from the collection of that well-known raiser, M. Délaux. With these also came blooms of Frizou, a beautiful canary-yellow flower; Late Flora, deeper tinted than the preceding; and La Petite Marie, a pretty little dwarf pompon that is now so much employed for blooming in small pots. The beautiful white-flowered Madame Desgrange, which still holds its own as one of the finest of all, was represented, as well as the pure yellow sport therefrom (G. Wermig), which fully bears out the encomiums passed on it last season when exhibited for the first time, and awarded a first-class certificate by the Royal Horticultural Society.

Catalogues received.—*Catalogue of Roses;* also *List of Forest Trees, Conifers, Fruit Trees, &c.*—W. Smith & Son, 1, Hadden-street, Aberdeen.——*Catalogue of Roses*, and *Roses, Fruit Trees, Grape-vines, Evergreens, &c.*—Wm. Paul & Sons, Waltham Cross, Herts.——*Forest and Ornamental Trees and Shrubs, &c.*—James Backhouse & Son, York.——*Select Roses.*—F. & A. Dickson & Sons, Chester.——*Fruit Bushes.*—Richard Smith & Co., Worcester.

Smithfield market, Evesham.—List of prices realised Oct. 23, 1885:—Brussels Sprouts, 4s. 6d. to 5s. per pot (40 lb.); Cabbages (pickling), 8d. per dozen; Carrots, 2s. 9d. to 3s. 6d. per cwt.; Cauliflowers, 1s. to 1s. 3d. per dozen; Celery, 1s. to 1s. 6d. per dozen; Onions, 2s. 9d. to 3s. 6d. per cwt.; Parsnips, 3s. to 3s. 6d. per cwt.; Potatoes, 1s. 6d. to 2s. 6d. per pot (80 lb.); Apples, 1s. 6d. to 6s. per pot (64 lb.); Pears, 1s. 6d. to 6s. 6d. per pot (72 lb.); Walnuts, 5s. to 6s. per bushel (48 lb.).

BUILDING GREENHOUSES.

14909.—"Tyro" should take his brickwork up to three feet six inches from the floor-level of the intended house, which may be a few inches above the ground-level rather than below it, unless the soil is very well drained. On the walls lay plates of 6 × 3 inch quartering, into which posts or "styles" should be mortised at distances of about three feet apart. Five by three-inch quartering will do for the lower plates, but the larger size will be better if obtainable, as, the heavier the plates, &c., the more substantial and enduring the structure will be. The styles should be of 3 × 3 inch stuff, and 2 feet 6 inches long. On the upper ends of these, mortise another plate, of 4 × 3 inches (or 3 × 3 inches will do) stuff, which will support the lower ends of the rafters. The door-posts should also be of 3 × 3 inches quartering, and mortised, or firmly fixed to the plates. The doorway should be at least two feet six inches wide in the clear. Now, there are two ways of forming the roof, the first being to fix strong rafters every three and a half or four feet—say 5 × 3 inches, or 4 × 3 inches, at the very least—and on these to lay sashes or "lights," kept in place by a "parting-piece" between each, and a batten nailed on after to keep them down. The house being ten feet wide will make the rafters ten feet six inches to eleven feet long, according to pitch of roof, and if the lower lights are made six feet long (a very usual size), and the upper ones five feet, they will just reach nicely, and every other one of the upper row should be made to slide, and be fitted with a pulley and cords. This method, though more expensive, is on the whole the best, especially if there is any probability of the house ever having to be removed.

The second, and more inexpensive, way is to fix stout sash-bars, properly rebated to take the glass, at about eighteen inches apart all along the house, and just lay the glass in these, leaving a space of, say, four feet long by three feet wide (two bars) at intervals for the roof ventilators, which must be hinged either at their upper or lower edges, and made to "lift" with a cord, pulley, and arm. Eighteen inches is a very good width for the glass, which may be cut to two feet or two and a half feet in length—a very good size for strong twenty-one ounce glass, for large panes admit much more light than small ones, particularly where the bars are heavy; but if much breakage is to be feared reduce the width between the bars, and use glass one foot or fifteen inches wide by eighteen inches long. If the rafters are fixed at their upper ends at or near the top of the wall (twelve feet high), that will give a rise of six feet in the ten-feet span—quite a sufficiently sharp pitch for ordinary purposes. The upper ends of the rafters must be firmly nailed to a flat plate about eight inches by two, with a three-eighths groove run along it, level with the rebates, to take the upper edges of the glass. This plate is to be fixed to the wall by means of plugging and spikes. The bars for the roof (by the second method of construction) must be four inches deep by two inches, or two and a half inches thick. If anything less is used, or if they are not all perfectly straight, a longitudinal rafter must be fixed across them half-way up, on their undersides of course, to keep them in place. The roof being completed, fill in the spaces in the front framework with ordinary framed sashes; these will be found about three feet long by two in depth, and each alternate one should be hung at the top and made to open outwards. Nail the others firmly in their places, and tack some beading all round each sash, on the inside.

I should recommend arranging a flat wooden stage, three feet wide and three feet from the floor, along the front of the house, and three shelves a foot wide and of one and a quarter inch stuff along the back, each a few inches above the one in front of it. These will take large plants, and the front stage the smaller stuff. By the way, an excellent and almost imperishable staging is formed by laying sheets of corrugated galvanised iron on iron or wood supports, the sheets being covered with a thin layer of beach shingle. Three rows of four inch piping, two flows and a return, will maintain greenhouse temperature in a house of this size. Place these against the front wall under the stage, and, if more heat is required in the house, or part of it, two or three rows more under the back stage will give the desired result. A door with the upper part glazed looks better than one all of wood, and admits more light; but a common "ledge" or wooden door is quite good enough, if appearances need not be consulted. B. C. R.

WOODRUFF AND IVY.

One of the most delightful little plants that we know for the garden belongs to our native flora, and is found in woods and groves in many parts of England. We refer to the common Woodruff, a plant famous for its use in Germany and many other parts of the Continent, and a very pretty one, as we think. Its little white stars spreading under the trees in early summer form one of the prettiest effects that we know of in wood or in garden. Some plants that look well in woods are not happy in gardens, and others that are very pretty in gardens are often of little use outside them. This little inhabitant of the woods, however, is quite as happy around the steps of a cottage door or under the shade of shrubs in the garden, as it is in its native haunts. It seems to grow in many places without any particular care, is a delightful plant for the wild garden—that is, the garden where plants take care of themselves

Woodruff and Ivy.

—and one of the most useful things for carpeting bare or half-bare places under Pines and other trees. Its effect was charming as we once saw it, mingled with some of the common Ivy, its white, starry flowers looking very pretty among the foliage.

14823.—**Landlord and tenant.**—You must leave all trees and shrubs in the garden; the flower roots you can take away. You could not remove the Apricot-tree.—C. F. Davis, *Leatherhead.*

—— "E. S." must leave everything in the garden; he is not entitled to remove Raspberries or other fruit trees or flower-roots, unless he is a market gardener.—K. M. H.

14911.—**A hard case.**—The case of "J. T." is a very unfortunate one, which, however, might have been different had he—if he will permit me to say so—exercised a little foresight. "J. T." says that he knows he cannot disturb the freehold, by which he evidently means digging up the trees, shrubs, and flowers; but cutting them off above ground level *is* disturbing the freehold; and by doing this "J. T." will be committing what is technically known as "waste," which his landlord can restrain him from doing, or his landlord may sue him for compensation. This legal right depends upon a legal principle, that whatever becomes annexed to the freehold or soil becomes part of the soil; and, whether the trees be dug up or cut down, it is equally an interference with what has become the property of the landlord, whose interests in such circumstances the law will protect. The application of this principle may be varied by agreement; and, though it is not usual in an ordinary lease of house property to provide for compensation to a tenant for improvements made by him, it could have been done in "J. T.'s" lease, or, at any rate, an option of renewal could have been given him, which would have ensured him the enjoyment of the property for a longer period; and, in such case, before the expiration of his renewed term, had he so decided, he would have been able to dispose of his lease at a premium, which would have, more or less, compensated him for his improvements. The landlord has the legal power to take the benefit of "J. T.'s" expenditure; he can refuse to renew the lease, whatever his oral promises may have been; he can raise "J. T.'s" rent, and he can also sell the property; and, on account of "J. T.'s" improvements will get a higher price for it; and, if he chose to do all these things, the law will provide "J. T." with no remedy.—Lawyer "Y."

14822.—**Trees overhanging garden.**—"Landlord" is entitled to cut back any portion of his neighbour's trees which overhang his premises. Before doing this himself he should give his neighbour notice.—K. M. H.

Garden labels.—Mr. Joseph Weaver, Enniskillen, sends us a description of a method adopted by him for doing away with the use of ink for labels. He employs labels of various shapes, the difference between each being sharply defined. These correspond with a sketch hung up in his greenhouse, opposite to which the name of each variety of Pelargonium, Dahlia, Fuchsia, Chrysanthemum, &c., distinguished by each particular label, is written. He states that fifteen of these labels are quite enough for his purpose, as each label will serve to distinguish a particular Dahlia from all the rest, a particular Fuchsia from all the rest, and a Chrysanthemum, Petunia, &c. All that is necessary is to put a particular number in his list of plants opposite the name of the variety, and then see that the plant has a label of the shape opposite that number in the sketch. For convenience of reference Mr. Weaver has made a similar sketch in his pocket-book, so that the name of each variety can be immediately distinguished, and he states that he finds these labels very convenient and easily made.

—— I enclose two labels which have been exposed a long time. One is dated Nov. 2, 1883. One part of this is written with Berlin black ink, and the other with A. E. I. ink. Each seems equally durable, but the latter is the more convenient. It is the best ink I have ever used for the purpose. — J. Dand. *** *We have known painted labels last seventeen years in the open air.*—Ed.

English names of plants.—Latin names must ever be used first and always, but there is a large and intelligent class who cannot learn, or care not for learned nomenclature. Besides, it is in the vulgar tongue that all the poetry, the sentimental, the cherished associations of home and country and of friends reside. The very name of the field Daisy calls up the genial spirit of Chaucer and the pathos of Burns. Speak of Daffodils, and the names of Shakespeare and Wordsworth and Herrick stand writ on their golden petals more firmly than if writ on brass. I think it was Leigh Hunt who said that no fairies ever swung themselves in the bells of the wild Hyacinth in his time, and when asked why not as well as in the time of Shakespeare, he said the dreadful language used by botanists in speaking of innocent blossoms drove them all away!—V.

14569.—**Overrun by Earwigs.**—They have been very troublesome this year, and when they get indoors it is difficult to trap them, as there are so many holes they can crawl into by day. Catch and kill with a light at night. They can be trapped out of doors by placing hollow bean-stalks near their haunts, or they will crawl into inverted flower-pots if some dry moss is put in. Look over the traps every morning and destroy them.—J. D. E.

14874.—**Worms on lawns.**—I have found that powdered charcoalis the best thing to use as the worms will not come to the surface to make their casts if this is spread about an eighth-of-an-inch thick. A single application about the autumn or winter will suffice for twelve months; as it is soon washed into the ground by rain, it is not at all unsightly and serves the purpose of manure, it being all vegetable matter.—R. Brooke.

14549.—**Heating brick frame.**—Try a flue made of glazed pipes, passing along the front across the end, and climbing up the back. A very small fire of cinders or house-fire refuse will keep the frost out. The furnace should be brickwork, and two or three feet from the fire.—E. Hobday.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XIII.

Crassula jasminea.—A year or two ago this was quite a novelty, but, unlike so many plants that have for a time created something like a sensation and then dropped almost out of cultivation, it is likely to remain popular, and, when better known, will probably be a favourite window-plant. A great point in its favour is that it is of very easy cultivation; in fact, there are few flowering plants more manageable than this little succulent. It forms a mass of pale green foliage, only a few inches in height, the flowers being pure white and delicately perfumed, resembling the Jasmine in shape, colour, and odour. When well-grown, it is a charming little plant, a proof of its worth being that it is now largely grown for Covent Garden Market. Like all plants of a succulent nature, it rejoices in an abundance of sunshine, and can therefore only be successfully grown in a light window, where there is good ventilation in fine weather. It should not be wintered in a living room, but in one where it cannot be hard frozen, although it does not mind a few degrees of frost. The great point in the culture of this Crassula is to induce the plants to make a good strong growth in summer, and harden the same by fair exposure to sun and air during the early autumn months. The blooming time is in May and June, and, as soon as the flowers fade, the stems should be at once cut down. In the course of a month young growth will begin to be made, and this is the time to shift the plants into larger pots if they need re-potting. Loam, with a little leaf-mould, suits them best, and they should be firmly potted, giving rather more drainage than the generality of window-plants require, as, like all fleshy-leaved things, the roots soon feel the ill-effects of stagnant moisture in the soil. If the plants are already in pots as large as may be considered suitable, they will have to be shaken out of the old soil and divided. As roots are quickly formed on the stems, when old plants are pulled to pieces, each piece will be found to be more or less provided with them, so that by keeping the soil in an even state of moisture, after potting, and not exposing for a time to strong sunshine, a quantity of fresh roots are soon working into the new compost. In this way the necessity for taking cuttings in the usual manner is entirely obviated, and any plant which can be thus easily maintained in a flowering condition from year to year should be cherished by window gardeners. As Crassula jasminea is of a hardy nature, it may be grown in the open air through the late summer and autumn months. In fact, it will do far better on a sunny window ledge than indoors at that time, and I must again repeat that it may not at any period of its growth be coddled. A close atmosphere so enfeebles the growth that good flowers cannot be produced.

The Scarborough Lily (Vallota purpurea) is one of the best-known and handsomest of window-plants. When well grown it is at all times ornamental, the graceful poise of the leaves and their deep glossy hue rendering it of considerable decorative value even when out of bloom. As to the flowers, they rival in brilliancy those of the zonal Geraniums. As I write I see a plant in an eight-inch pot carrying twelve flower-stems, with an aggregate of upwards of sixty blooms. This is too large for ordinary windows, but another close by, in a six-inch pot, is not, and it will illustrate the exceptional value of this plant for window culture when I mention that it contains eight bulbs which have had no fresh soil for four years, that the foliage is as healthy and abundant as can be desired, and that each bulb has thrown up a stout spike of bloom bearing from four to six large flowers. I know of no flowering plant which will remain in vigour without change of soil as this does—in fact, it is by no means grateful for the attention in re-potting which constitutes a necessary feature in the culture of most flowering plants, but rather blooms most freely when the roots are constantly cramped for space. Simple though the culture of the Scarborough Lily would thus seem to be, the conditions of perfect success appear in many instances to be be but imperfectly realised, for one often sees plants that have unhealthy-looking foliage, and rarely throw up good blooms. I fancy that the cause of failure lies in want of patience, and giving too much water when the plants are at rest. Amateurs are, as a rule, so impressed with the necessity for a supply of fresh soil that they over-pot, and then an overdose of water quickly ruins the roots, when only radical measures can restore health. When a plant ceases to grow freely, it is easy to see by turning it out of the pot whether the roots are in the condition they should be. If they look black at the tips, the nutritive process can no longer be carried on by them, and the only remedy lies in getting quite rid of the old soil, and giving a reduced amount of fresh compost which is of a nature to stimulate root-action. The best way is to well wash the roots and cut away all diseased portions with a sharp knife. Then replace in a pot only just large enough to contain the roots, using a compost consisting of equal parts loam and peat, with plenty of white sand in it. Give good drainage, pot rather firmly, and water only when dry, until the plant comes well into growth. The beginning of April is about the best time for doing this, as root-action commences about that period, and there is ample time for the pots to get well filled with roots by the end of the summer. Unless the soil is thoroughly packed with white fibres, so that they seem to have eaten up the compost, do not shift into a larger pot, and, as before stated, there is no absolute necessity for repotting for several years together. In time, the mass of roots will force the bulbs above the level of the pots, so that they rest on a mound, and in the growing time it is impossible to give enough water in the usual manner. In such a case the pots must be stood in pans, which in hot weather should be occasionally filled up; for, when growing, Vallotas need a lot of water, and if they do not get it the leaves turn yellow or lose the gloss and depth of verdure which is so pleasing when they are doing well. At the same time an excess of moisture is ruinous, for the roots, being thick and fleshy, possess great powers of absorption, and quickly decay when the soil around them comes into a close, sour condition through the continued presence of a large amount of water. Therefore, the pans may not be kept continually full, and they should be empty, or nearly so, in dull weather—they are simply to be considered as aids to supplying an extra amount of liquid food when the pot-bound condition of the plants, in combination with strong solar heat, creates an occasional demand for it. From the time that new growths commence to push from the bulbs in spiring until they are in full growth, a certain amount of discretion is necessary in watering, as it is indispensable that they get a plentiful supply of moisture, which at the same time must not be in excess of their wants. The rule should be during that time to water only when the surface-soil becomes nearly dry, giving enough each time to thoroughly moisten the whole body of compost. Later on, when the first leaves are getting to be fully grown, the soil should be kept constantly moist, or the foliage will not keep growing and the bulbs will not attain the solidity necessary to produce a strong flower-spike. After flowering, do not neglect to water, or there will be a loss of vitality, which will show itself the following year; but after the middle of November very little indeed will be required. I do not water mine more than three times during the winter months between the above-mentioned date and March, which seems quite enough to keep the foliage healthy and green, and the roots plump. Plants more than one year in the same pots should get frequent doses of liquid manure when growing; for, of course, whatever nourishing properties were in the compost have been drawn and washed out, so that the poor plants must starve unless they are fed. Clear soot-water is good, also guano-water, but it should be very weak.

BYFLEET.

GROWING HYACINTHS IN WATER.

THERE is something peculiarly interesting in the cultivation of Hyacinths in water. Many people cannot grow plants because they have no glass-houses, and others, especially in towns, because they have no accommodation or soil, but here we have some of the most beautiful, and certainly the most fragrant of flowers, capable of being cultivated to a very high and satisfactory degree of perfection without a square yard of garden ground, glasshouse, particle of soil, or flower-pot. Probably those who possess all these might never desire to grow Hyacinths in water, but those less favourably situated need not be deterred from doing so, as any one who cares to try may be successful. The only appliances needed are bulbs, water, and glasses. In order to have flowers for a long time, and in succession, early, medium, and late-flowering bulbs must be secured, but a very few successional sorts will be found more useful than a large quantity of very early or very late ones. Some of the earliest sorts may be taken in hand at once. Sound, medium-sized, well-ripened bulbs are best. Glasses for growing them in vary in form and hue, and may be had to suit all tastes. Colour and form or quality has, however, nothing to do with the development of the flowers; indeed, as good spikes may be grown in a common upright sixpenny glass as in a rich, six-shilling transparent and ornamental one.

In beginning their culture, each glass should be almost filled with clean water, and if a small piece or two of charcoal can be put in the water, it will help to keep it pure and benefit the bulb, but this is not absolutely necessary. When the glasses have bad water put in them, the bulb should be placed on the top with its base all but touching the water; then move them into a cool, dark place. A cupboard or some such place suits them perfectly, and there they should remain until roots have been emitted, and have nearly reached the bottom of the glass; they may then be gradually brought to the light. The roots will soon increase, and the top growths push upwards, and when growing freely they may be fully exposed to the light and air of an ordinary room. In a warm atmosphere the water soon evaporates, and this must be filled up from time to time as may be necessary. Should the water begin to smell offensively, empty it out, and fill up immediately with more perfectly clean. As the flower-spikes grow up and become top-heavy, they must be supported with wires made for the purpose, and it is well to put these in before the heads of bloom fall to one side, as if once twisted their expansion may be checked. Invalids, and all who are much confined to rooms, should try the culture of Hyacinths in this way, as watching the delicate root-growth, the increase of the leaves, and the expansion of the sweet flowers is interesting.

J. M.

REPLIES.

14534.—**Plants for entrance-hall.**—Palms are the best thing. Then come India-rubber plants and Australian Dracænas; next Tree and other Ferns, New Zealand Flax, Cyperus alternifolius, and Aspidistra lurida variegata.—E. HOBDAY.

14281.—**To grow Ferns outside bowls or porous bottles.**—It is necessary that these should be made like those used extensively in Madeira, viz., with a rough exterior surface made of contiguous ridges and furrows. Then the soil prepared to cover them must be mixed with a small quantity of clay to give it adhesive power. It is not every Fern that will grow in such a mixture or in such a position, but the bowl or bottle will quickly get covered with foliage if young seedlings of Adiantum Capillus-veneris, or A. venustum, or A. assimile are inserted in it. These species produce creeping rhizomes, which, in a remarkably short time, will take possession of the soil and hold it firm, especially if, by pouring water in the bowl or bottle, the outside mixture is kept constantly moist, and if the operation is performed in April or May and the plants kept in a close place for a few weeks.—S. G.

14944.—**Books of reference** (*Ostler*).—One of the best books on gardening in all its branches that I know is a small book called "The Amateur Gardener's Calendar." By Mrs. Loudon (London: Longmans, Green, & Co. 1867). Another most useful and instructive book, "The Lady's Country Companion; or, How to Enjoy a Country Life Rationally." By Mrs. Loudon. Same publishers. 1845.—L. C. JACKSON.

FRUIT.

Autumn-fruiting Raspberries.—These are by no means so much grown as one would expect from the fact of their coming in at a time when a dish of fine ripe Raspberries makes a most agreeable change in the list of dessert fruit. I believe many amateurs have been deceived by not getting the right sorts, for out of many so-called autumnal fruiters I have found but very few worth cultivating. The best of all the red sorts is undoubtedly a kind that is grown about here under the name of "Rogers's Victoria"; a really distinct kind, that produces large bunches of fruit like Mulberries, borne at the tips of the shoots of the current year's growth. This kind makes underground shoots very freely, and when once established sends up a quantity of canes, which in the aggregate bear a heavy crop of fruit that ripens in September and October. I find the best plan with these varieties is to cut them down close to the ground in winter, and give a good dressing of manure over the roots; then, if the shoots come up too thickly, thin them out so that each one stands clear of its neighbour. No staking or tying is required, but where birds are plentiful they must be covered with fish nets as soon as the fruit begins to colour. For dessert this variety is most useful, being very large and high-coloured, and for mixing with the latest Red Currants for culinary purposes they are highly esteemed. In fine, dry autumn the flavour is very good, but the present season has been by no means favourable, as an excessive rainfall in September and October, with cold, frosty nights, is about the worst atmospheric condition for imparting colour or flavour to fruit of any kind. —J. Groom, *Gosport*.

Sulphate of iron for fruit-trees.—In a newspaper exactly twenty years old I read the following:—"A curious discovery has been announced as to the culture of vegetables and fruit-trees. By watering with a solution of sulphate of iron the most wonderful fecundity has been attained. Pear-trees and Beans which have been submitted to this treatment have nearly doubled in the size of their productions, and a noticeable improvement is remarked in their flavour. Dr. Becourt informs us that whilst at the head of the establishment at Enghien of the sulphureous springs he had the gardens and plantations connected with it watered during several weeks of the early spring with sulphureous water, and that not only the plantations prospered to a remarkable extent, but flowers acquired a peculiar brilliancy of colouring and healthy aspect which attracted universal attention." I am very curious to know if the plan has been to any extent adopted, and with what results; if so, what strength of solution is suitable, and what is the cheapest mode of obtaining the sulphate? —G. G. B. *** *We are afraid this conclusion was arrived at after but slight observation.*—Ed.

Wintering pot Strawberries.—The time is now at hand when Strawberries in pots will have to receive some sort of protection, for, although hardy enough to withstand severe frost in the open ground, they are far more susceptible to injury when grown in pots, from the more sudden fluctuations of temperature, dryness, and saturation; therefore, although as far as the tops are concerned they would be best fully exposed, yet, as success or failure depends mainly on the roots, we must see that these are protected from extremes that would be likely to injure them. After trying various plans, I am convinced that a cold pit or frame where the pots can stand on a coal-ash bottom is far better than setting them on any kind of shelves, as the moist, cool bottom keeps the roots from drying, and therefore very little artificial watering is needed in the darkest days of winter. To protect the sides of the pots, we place the fallen leaves of forest trees between them, pressing them up close as each row is placed in position. We keep the glass lights quite off, except during heavy rains, or sharp frost, for a little of both does more good than harm, while an excess of rain when the plants do not require it washes the soil too much of its nutritive qualities, and excess of frost beyond what will ensure perfect rest for the plants can do no good, and may do much harm. Wintering on shelves near the glass, such as are utilised for fruiting, is about the worst plan that can be adopted, as the soil not only dries rapidly and more watering is absolutely necessary than is good for the plants, but perfect rest is impossible, and I am sure that any one comparing two sets of plants in early spring that have been wintered under the two different plans will soon be convinced which is the best to adopt. Stacking the pots in layers on their sides in coal ashes, and building them up to any desired height, either against a wall or in the open, and covering with mats or straw in severe weather, is a plan that used to be largely adopted, but it is open to the great objection of the impossibility of moistening the soil, so that if I had no glass available for covering the tops, I would far sooner bed the pots in leaves or ashes on the level, and trust to covering the tops with litter, mats, &c., in severe weather, as no plant suffers sooner that the Strawberry from drought; and if red spider gets established on the foliage, it soon spreads when the plants are introduced to heat. It is a singular thing that one seldom finds amateur gardeners very successful with their pot Strawberries; and, from my own observation, I should say that many failures arise from putting them into glasshouses with a temperature at least ten degrees too high for them, when they ought to be at rest.—James Groom, *Gosport*.

Prize Gooseberries.—I see it is stated that if we want any Gooseberries for the house we must avoid planting prize sorts, as under ordinary cultivation they will only produce a few fine berries. The sorts "W. W." recommends will not produce any fine berries; if he has been a grower of Warrington Reds or Whitesmith he will perhaps be able to tell us what size they can be grown, and about what number it will take to make a quart. It seems to me that he has got the wrong end of the stick if he is discarding prize sorts for Warrington Reds or Whitesmith. I can assure him that he is making a mistake; he will require double the number to make the same weight. Warrington Reds sell at about 2d. or 3d. per quart, and prize Gooseberries sell at 10d. or 1s. per quart—this is the price they have been this season. I think "W. W." has got wrong sorts for cropping; if he gets the right sorts, true to name, I am quite certain that under ordinary cultivation they will pay as well as anything he can put in the ground. If he had seen the crops of prize berries this season that I have seen—the trees laden like ropes of Onions on a string—he would have bought some more, and these were under ordinary cultivation. I have known them to be sold at 1s. per quart, and the purchaser pay railway fare to take them.—W. B., *Stockport*.

Storing Apples.—I have kept Apples for some years past, packed in large jars, and placed in a cool cellar, merely covering with a few sacks to keep out frost. They have kept quite sound until after Easter, and are not shrivelled like those I have seen exposed to the air, but are looked over the early part of the year to see that there are no decayed ones. They should be carefully pulled and packed, so as not to bruise them.—H.

REPLIES.

14552.—**Fruit trees for open situation.**—Fruit trees should succeed on such a position. The following varieties are the most hardy and free bearing; but it would be well to ascertain what varieties do best in the immediate neighbourhood:—Early dessert Apples: Devonshire Quarrenden, Irish Peach, and Kerry Pippin. Early kitchen Apples: Lord Suffield and Manks Codlin. Late dessert Apples: Downton Pippin, Red and Yellow Ingestrie, Golden Winter Pearmain, Ribston Pippin, Adam's Pearmain, Margil, Scarlet Nonpareil, and, latest of all, Sturmer Pippin. Kitchen Apples (late): Alfriston, Hawthornden, Gloria Mundi, Bedfordshire Foundling, Dumelow's Seedling, Yorkshire Greening. Pears: Doyenné d'Eté, Citron des Carmes, Jargonelle, Williams' Bon Chrétien, Louise Bonne of Jersey, Hessle, Fertility, Bishop's Thumb, Lammas, and Windsor. Plums: Early Rivers, Early Orleans, Gisborne's, Victoria, Pond's Seedling, Damson, and Prince Englebert.—J. D. E.

14571.—**Failure of Raspberries in good soil.**—Under the conditions named these ought to carry large crops of good fruit. The only feasible reasons why they do not bear is that the variety is bad, or the canes are crowded so closely together that they do not get sufficient light and air to ripen them. They should be planted at a distance of three feet apart in the rows, and four feet between the rows; and do not allow more than six canes from each stool. The best varieties are Fastolf, Prince of Wales, and Red Antwerp.—J. D. E.

14556.—**Stock for Plum.**—The White Pear Plum and St. Julien are the kinds used for stocks for dwarf trees. The best sorts to grow are Early Rivers, Early Orleans, July Greengage, Kirke's, Angelina Burdett, Goliath, Victoria, Belle de Septembre, and Late Rivers.—J. D. E.

14644.—**Black Alicante not setting well.**—This variety of Grape does not set so freely as Black Hambro' or Foster's White Seedling; but we never fail with this or any other if the temperature at time of setting is kept up to seventy degrees at night; we also tie a rabbit's tail on to the end of a long stick, and gently draw it first over the free setting sorts, and finish with those that do not set so freely.—J. D. E.

14718.—**Making a Vine border.**—Queries are often made as to making Vine borders, but correspondents generally neglect to state what soil they are about to make it in, which ought to be the first point. On a good clay, loamy soil, with good drainage, it takes very little making; in the case of a poor, hot, gravelly soil, with no clay, and none to be got, and very little top soil, it would be best to take it out four feet deep and ten feet wide. A border for four Vines ought to be sixteen feet long, with a drain along the front to some outlet; then get some brickbats, and put about six or eight inches in the bottom; give it a little fall by making it a little deeper near the drain; then put two feet of turf, the best that can be got—grass part downwards—all over the bottom, and get some loam—the top spit is the best—and to every twelve loads add two loads of good rotten manure and a hundredweight of trimmings from horses' feet from the blacksmith's shop, or the same amount of crushed bones, but the former is the best. Then mix the manure and the loam; turn it over two or three times so as to mix it well together, then run it on to the border, and make it about thirteen inches higher at the back, so that the wet will run off. Let it remain, say, six or eight weeks before planting the Vines. A border thus made will be a permanent border, and will insure a good crop of Grapes, and with protection of the Vine it would last for years. It would take about twenty cartloads altogether, but, if a cheaper border is preferable, remove the bottom soil only away, and do not go so deep, and fill up as above. However, a permanent border at first is the cheaper in the long-run.—Norfolk.

14840.—**Pruning pyramid Apple-trees.**—Do not cut off the little shoots with the "little tufts of leaves," as perhaps they are the only shoots with blossoms for next year. The nurseryman's pruning and the transplanting (if they are good-sized trees) would give them a check, so that the only growth they would make would be little, and that would be blossom spur. Younger trees often make more growth than older trees. Be careful in observing the buds of the trees and you will soon find out which are wood-buds and which blossom-buds. The blossom-buds are rounder and larger, so take care that you do not cut them away. As the trees progress in growth all the pruning they need is just to cut out any branch that is crossing its neighbour.—J. G. G.

14881 & 14885.—**Preserving Filberts and Cob Nuts.**—Put them in flower-pots and stand them on the cellar floor, or bury them in the garden. A piece of slate placed over the top of the pot will protect them from mice, and they will keep perfectly fresh for several months.—G. S., *South Yorkshire*.

——Fill some glazed jars or clean flower-pots with the nuts. Put a saucer or a piece of slate over the top, then bury them in the earth six inches under the surface, and the kernel will keep fresh and sound for two or three months. You will find that the outer shell gets discoloured in this way, but there is no other means of keeping the kernel fresh.—J. C. C.

14882.—**Propagating Mulberry tree.**—This is easily propagated by cuttings inserted now or in spring.—C. F. Davis, *Leatherhead*.

14905.—**Vines.**—Unless one knows the age of the old rod of your No. 4 Vine, the question cannot be answered satisfactorily, but as you say the new shoot is a strong one you will not be doing harm by cutting out the old one. You ought to shorten back the young rod to four feet.—J. C. C.

Ailantus glandulosus.—I send a flower and a piece of the foliage of a tree in my garden, Ailantus glandulosus. Although I have for many years bad fine specimens of this tree, I have never seen it in blossom before. Please tell me, Is it not very unusual to blossom in this country?—J. Dand, *Surrey*. *** *It is not common, but not very unusual.*—Ed.

OUTDOOR PLANTS.

THE EARLY SULPHUR DAFFODIL.

Until within the last few seasons the Tenby Daffodil—a beautiful dwarf yellow flower with a large trumpet—was the earliest Daffodil, but now we have one that is earlier still, and is, moreover, distinct from other Narcissus, its colour being a bright yellow. It is supposed to be a very old Daffodil, and some of those learned in Narcissus lore think it is identical with one that used to be grown in this country about two or three hundred years ago, but which became extinct. Messrs. Barr & Son, of Covent Garden, who have done more, perhaps, than any other firm in bringing Narcissus under the notice of cultivators, introduced this beautiful sulphur-coloured kind from the Pyrenees, where it flowers naturally in early spring, as our common Daffodil does in the woods here later on. It is dwarf in growth, and vigorous—that is, it does not give the trouble experienced with some of the other kinds. Our illustration shows a flower of full size; and, as may be seen, it is well formed, the sepals overlapping, and the trumpet, or crown, being short and standing out boldly. Although this is a new kind, and much sought after, growers must not neglect the beautiful Tenby Daffodil, which has so long been a favourite on account of its early-flowering tendency, and which still has no rival in some respects, it being, perhaps, the only true self-coloured Daffodil in cultivation—that is, the sepals are almost of the same shade of colour as the crown. The Early Sulphur Daffodil (N. pallidus præcox) is now as cheap as some of the other kinds, and no one who is a lover of Daffodils ought to neglect it. W. G.

SOME HARDY WALL PLANTS.

The stock of many hardy plants suitable for covering walls and other places can at this season be easily increased by means of cuttings inserted in sandy soil in a cold frame. When put in, give them a good watering to firm them in the soil (a necessary matter), and keep the frame nearly closed until they are rooted, when more air will be required. Cuttings from four inches to six inches long made of half-ripened wood and taken off with a piece of heel attached to them make the best plants. If carefully chosen and properly treated, no difficulty will be experienced in getting them to grow, and by April they will be well furnished with roots, and may then be planted in their permanent positions, or inserted on a west border in rows, using some well-rotted manure, where they can remain for a year or so to strengthen. When in their permanent places and growing freely they are much benefited by copious supplies of liquid manure at the roots, particularly when planted at the foot of brick walls, as some kinds of brick absorb a great quantity of moisture from the soil. Thorough drenchings with clean water applied with the garden engine over the foliage occasionally are beneficial as regards keeping down many sorts of insects which nestle under the leaves. The undermentioned are some of the plants which can be treated in this way, all of which are suitable subjects for the positions herein named.

Escallonia macrantha is a neat, dense-growing plant, well suited for covering low walls, its rosy pink flowers, freely produced at the points of the shoots, contrasting well with the dark green foliage; if seed-pods are picked off, it will continue to grow and bloom all summer. E. montevidensis produces large panicles of white flowers freely during September and October, and by reason of its strong growth is well adapted for covering high walls or screens or wooden fences. This species requires a little more time to strike than E. macrantha. Garrya elliptica is another fast-growing plant which is readily increased by cuttings. It grows freely, too, on a northern aspect; therefore its value cannot well be over-estimated where large spaces on north walls have to be covered. Male plants of it produce their long, graceful catkins ten and twelve on a shoot during the winter months, and on the females may be found clusters of berries. Coronilla glauca is another plant that strikes freely, and one that is useful for covering low walls in favoured aspects. A south exposure suits it best, where, during the autumn and winter months, it produces its bright yellow flowers in abundance.

Jasminum nudiflorum and the common white sweet-scented Jasmine are both good plants for the same purpose, and easily grown from cuttings. J. nudiflorum does well on a north wall, where its bright yellow flowers are produced freely during the winter months. The variegated Honeysuckle (Lonicera aureo-reticulata) is a useful wall plant, which grows fast when planted in good soil. It may either be tied in closely to the wall, or, if preferred, the long shoots may hang loose. Other kinds of Honeysuckle also answer well for covering walls or trellises. Their flowers, too, are useful in a cut state, and, if growing near the windows of dwelling-houses, their perfume is much appreciated. The variegated kind blooms freely all the summer, and it strikes freely from cuttings. Kerria japonica is likewise a useful wall plant, its bright orange, rosette-like flowers being freely produced in spring, and again in autumn if the plants are pruned in a little after the first crop of blooms is over. Both the single and double varieties are plants of easy culture. Ceanothus divaricatus and C. azureus are amongst the best wall plants grown, their dark green leaves and light blue flowers forming a

The Early Sulphur Daffodil (Narcissus pseudo-Narcissus pallidus præcox). Natural size.

grand contrast with their associates. They grow into large bushes in a short time if water be freely given them during the summer months. Cotoneaster Simonsi is well adapted for covering high walls either on a north or a southern aspect; its red berries, too, which are freely produced, give it a very ornamental appearance. C. microphylla is more suitable for low walls, iron railings, mounds, or rockeries, its dense habit of growth rendering it a desirable plant for such purposes. It requires little or no training. Berberis Darwini is useful for hiding wooden or iron fences, or for covering any other bare places where close training is not desired; if planted in good soil, its bright orange-blossoms are produced freely. Exochorda grandiflora, although deciduous, is well worth using for covering walls where great variety is required. Planted at the foot of a south wall, its pure white flowers are freely produced in long wreaths in May. On account of its manner of blooming, it requires careful pruning.

Veronica Andersoni and other New Zealand Veronicas, although generally grown as bush plants in shrubberies or in greenhouses, are well adapted for covering low walls; either on north or south aspects they bloom in profusion all the summer and autumn. Although they will stand a few degrees of frost, they are not what can be called hardy. In order to keep them safe through a severe winter they require protection, both roots and tops. Cuttings made of short side shoots strike freely in a gentle bottom-heat in spring. After being rooted they should be potted off and grown on in a little heat until good stiff plants are produced, which will soon be effected, as they grow quickly. They are much assisted by being freely watered at the root and overhead during summer. The broad-leaved Myrtle is another plant which can be advantageously used on walls when planted where it can have the protection of a south wall; it grows freely, and its lovely white scented flowers are produced in abundance. When planted where it does not get the full benefit of the sun's rays it does not bloom nearly so well, the wood does not get sufficiently ripened; hence the advantage of placing it in a southern aspect. Cuttings of it strike freely. They should be slipped off with a heel and placed in a cold frame at this season, or cuttings may be inserted thickly in pots, and plunged in a little bottom-heat in the spring. Euonymus japonicus aureo-variegatus is a neat-growing evergreen plant, well suited for low walls; on a south wall its golden stems and variegated leaves are more highly coloured than when planted in less favourable positions. It is a free grower, and retains its foliage right down to the bottom for a very long time. Cuttings of it taken off now, placed in pots, and plunged in ashes in a cold frame for the winter, and then given a little bottom-heat in spring, soon make thrifty little plants. E. M.

Ornamental Vines.—Vines are all fine-foliaged plants, but some are handsomer than others, and some are even well worthy of culture as wall-climbers. In this part of the south coast Vitis humulifolia, or the Hop-leaved Vine, is extensively used in that way, and very handsome it is when covered with its highly ornamental foliage and pretty clusters of berries. It enjoys a warm, sunny position, especially the roof of any building where it gets the benefit of reflected solar heat. It clings by means of its tendrils tightly to any support which it can reach; and for covering old tree-stumps, Vines of all kinds, if once planted and given a start, make very pretty objects in a short time. They are vigorous growers, and in no way do they show their beauty so fully as when allowed to grow in wild luxuriance, with only sufficient fastening of the main shoots to keep them in position.—J. G., *Gosport*.

Marigold Meteor.—It is not every double flower that harmonises well in floral arrangements, and I was surprised to note the pleasing appearance effected by this one. A few blooms of it, interspersed with sprays of Fuchsias, Clematises, and other hardy flowers, looked very distinct and pleasing. This new Marigold is a fine addition to the family, the flowers being beautifully formed and distinctly and regularly striped. It is not particularly showy, but its beauty gains by close inspection, and is more impressive in a cut state than on the plant. —B.

Weeds overrunning herbaceous border.—The advice given in 1791 (see p. 454) is still good. Digging the border up is the only way to get rid of the weeds. If the work be carefully done, the plants will not suffer; and if manure be added they will be benefited. I find it best to replace the plants immediately the ground is dug. This kind of work is not always liked by gardeners, but it must be done if the border is to be a success next year. If the bed has not been dug for three years, the necessary labour should not be grudged. I ask "S. E. C." to consider how much time would have been spent had the same area been taken up with bedding out plants.—R. S.

REPLIES.

14635.—**Culture of Clematis.**—"Sphinx" does not say if his Clematis are in pots or planted out, but in either case it is important that the drainage should be perfect. Some years ago I planted half a dozen of Jackman's hybrids to cover an arch. Holes were made and a barrowful of fresh, turfy soil placed for each plant. The natural soil beneath is clay. The arch has been covered long since, and no fresh soil has been given. I find all this class of plants do best in nice, mellow, turfy loam. If grown in pots, they must have good drainage and be watered carefully.—E. Hobday.

14817.—**Creeper for exposed position.**—"M. Q." should certainly have a Cotoneaster

microphylla; it will grow in and adorn any position, is evergreen, covered with white flowers in spring and red berries in winter. It requires to be properly trained at first, or it will ramble about at the foot of the wall and never get up. He should start first with a good straight leader, or make one by nailing the plant straight. The side-shoots can be trained horizontally, a brick or two apart, and the intervoning ones shortened, but on no account must he shorten the shoots he intends to carry on, as they will throw out a bunch of shoots at the end and quite spoil the regularity. Trained in this way it soons forms a close, mat-like growth, which only requires running over with the shears in August, to cut off any rough breast wood.—H.

14828.—**Treatment of Solanums.**—If "S. C.'s" garden is situated in or near a large town, he is sure to find that these plants will not berry. In pure country air they are the easiest possible plants to grow, especially when planted out, never failing to set a full crop of berries; but in a smoky atmosphere, all the care or skill possible will not produce more than a stray berry or two here and there. The planting out system, however, is not a good one; the plants should be potted very firmly in good strong loam in April or May, and when fairly in growth set out of doors (on a bed of ashes, to keep worms away), six or eight inches apart, and in an open sunny situation. Here, if kept properly watered, and fed up a little when pot-bound, they will make handsome bushy plants, with abundance of fine fruit. To get the plants large enough for potting by the time mentioned (and the earlier this is done the better) the cuttings must be rooted in December or January. —B. C. R.

14883.—**Hardy Primroses.**—If the seeds are sown now the plants would not flower next April. It would be better to wait until that month, when the seeds could be sown in boxes or pans; it would vegetate best in a frame. The plants would flower well the following season in March.—J. D. E.

14891.—**Prize Pansies.**—I cannot give a "Young Fancier" a list of the sorts that have taken prizes in Scotland during the past season, but, as I know a host of named varieties, I think he will find the following amongst the best in their respective classes. Fancy: David Findlay, Colonel Welsh, Evelyn Bruce, Alexander M'Couth, General Grant, Ruby, Mrs. E. W. Wood, Lady Falmouth, Mrs. Welsh, Jessie Dunlop, and William Dean. Show: (selfs) Black Prince, Agnes Fairgrieve, Gower, Golden Lion, Rev. J. Smith, and A. Scott; (yellow ground), Robert Burns, Pilrig King, James Cook, Chancellor, and Defoe; (white ground) Bonnie Jean, Mrs. Harvey, Lavinia, The Mede, Mrs. Gladstone, and John Clarke.—G. Watt.

—— The following is a list of eighteen of the best show and fancy Pansies:—*Show*—White Grounds: Mrs. J. G. Paul, Mrs. James Miller, Miss Ritchie, and E. Semple. Yellow Grounds: Miss Bulloch, Tom Ritchie, David Dalglish, William Robin. White Selfs: Mrs. Galloway, Mrs. Turnbull, Mrs. Dobbie. Yellow Selfs: Gomar, William Crockhart, G. McMillan. Dark Selfs: Rev. J. Morrison, David Malcolm, Captain Knowles, Crosshill Gem. *Fancies*—John Gold, William Dick, Endymion, Mrs. John Downie, Evelyn Bruce, Mrs. G. P. Frame, Catherine Agnes, Charles Stansel, May Taite, Miss Bliss, Mrs. William Stewart, Allan Ashcroft, William Cuthbertson, Mrs. Sword, Mrs. Findlay, R. Stewart, Mrs. Forrester, Mrs. Cameron.—A Fancier, *Motherwell.*

14897.—**Pansies.**—Have you a cold frame? If so, the best plan would be to put your Pansies in pots in a cold frame during winter. They are very difficult to keep sometimes. If you have not a cold frame try this:—Put some silver-sand all round the roots, then a few sticks in tent fashion, and on cold or very wet nights cover them with matting, taking care to remove it in the daytime.—C. F. Davis, *Leatherhead.*

14907.—**Utilising a border.**—If you plant pyramid trees in your border you will find that you cannot do very much with the space between them or the wall behind them. You can plant Strawberries between the trees, and on the wall you may train Pears or Plums horizontally.—J. C. C.

14910.—**Plants for rabbit-infested grounds.**—I cannot advise you to fill the border with the flowers you name unless you are prepared to endure the sight of seeing them scratched out of the ground soon after they are planted. You had better fill the whole of the space at once with St. John's Wort; this will make a permanent border which will be evergreen, and during the summer it will be bright with flowers, and the blossoms are really very handsome. The border may want protecting with wire netting until the plants get established in the soil, but after that they will not do it any harm. You should put in the plants thick at first, and then they will soon make a mass of green.—J. C. C.

—— The flower-garden here is perhaps as much exposed to the depredation of rabbits as any can very well be, and yet the following plants have not been so much as touched during the past season. Geraniums in variety, Pelargoniums, Calceolarias of sorts, Ageratums (sorts), Petunias (sorts), Dahlias, Perilla, Koniga variegata, Iresine Lindeni, Musk (Harrison's), Cerastium tomentosum, Golden Feather, and Marguerites. Japonica was partly eaten, and Lobelias and Tropæolums were never allowed to produce a single bloom. They seem to be particularly fond of Lobelia, and, knowing this, I planted it thickly amongst other plants where it was not at all wanted; but it served the purpose of saving others that in all likelihood would have been more or less damaged had it not been there.—G. Watt.

ROSES.

Tea Rose Adam.—This with me is one of the finest Roses of its class. Growing on the back wall of a conservatory, alongside a Maréchal Niel, it is, in my opinion, a fitting companion to that best of all yellows. The deliciously fragrant pale-blush blooms are much esteemed, and are in great demand, and this year mine has flowered with the profusion of a Gloire de Dijon. A freer loam than that generally given to Roses, with a good admixture of well-rotted cow-manure, and attention as to keeping it entirely free of insects, are all that is required to ensure success.—G. Watt.

Rose La Reine.—This Rose, although introduced many years ago, is surpassed by but few similar in colour; in fact, it is an open question whether, as an all-round Rose, it is surpassed by any. It is a good grower, whether on its own roots or budded on the Brier, and its glossy full sized flowers are very striking on a stand; but it is as a garden Rose that I recommend it, on account of its fragrance, which is very sweet.—J. C. C.

REPLIES.

14893.—**Maiden's Blush and La Seduisante Roses.**—Mr. J. Walters, Rose Nursery, Exeter, will, no doubt, be able to supply you with the Roses you inquire for, as he grows a large number of sorts of the old-fashioned Roses.—J. C. C.

14952.—**Best Hybrid Perpetual Roses.**—The best twelve Hybrid Perpetuals are: Alfred Colomb (crimson), Baroness Rothschild (pale pink), Beauty of Waltham (dark crimson), Captain Christy (pink), Charles Lefebvre (deep crimson), Duchess of Edinburgh (bright crimson), General Jacqueminot (deep velvety crimson), John Hopper (carmine-rose), La France (beautiful pink), Marie Baumann (crimson), Prince Camille de Rohan (dark crimson), Xavier Olibo (very dark crimson). All the above can be obtained from any good Rose-grower.—C. H. B.

—— The best twelve for pot culture are Abel Grand, Anna Alexieff, Comtesse Cahen d'Anvers, Dr. Andry, Duke of Edinburgh, François Michelon, La France, Madame Charles Wood, Madame Victor Verdier, Mdlle. Eugénie Verdier, Mrs. Laxton, and Prince Camille de Rohan.—J. D. E.

THE KITCHEN GARDEN.

Onion maggot.—I have been a successful grower of Onions over thirty years, and have grown them where it was said they would not grow. I give the ground a good digging in the autumn, and put plenty of manure in, if light soil. I have the ground trodden as soon as dug, then, as early as possible in February, I sow the seed in drills, ten or twelve inches apart. I then tread the ground or roll it, if not too wet. When the Onions are growing nicely, say in May, or as soon as nicely out of the ground, I give them a dressing with soot, which keeps back the maggot, but does not kill it if it is already there. It helps the growth of the Onion, but the secret of it all is sowing early and making the ground firm; the maggot seldoms attacks the summer or autumn-sown, so that the age of the Onion has a great deal to do with it. My spring Onions measure from eight to fourteen inches round, and autumn-sown from twelve to eighteen inches.—J. Grice, *Moorlands, Sunderland.*

REPLIES.

14564.—**Forcing Potatoes.**—"A. E. W." might grow Potatoes in his greenhouse, but they would not be fit by Christmas, and probably they would not be of much use if grown altogether under the stage. If they were started under the stage, and, when two or three inches high, moved to a position near the glass, they would succeed, but they must have light. The best soil is a light loam enriched with old hot-bed manure, adding a little artificial, such as Clay's or Amies'. They may be planted any time when continuous growth can be assured, but, as I have already stated, they must have a light position and genial atmosphere. There is a way of growing new Potatoes in the dark. The tubers of the previous year are kept over and are placed in layers in a warm dark place like a Mushroom-house. First a layer of Potato sets, and then a thin layer of soil, and then another layer of Potatoes, and then soil as before, alternately, till the place is full or the stock of Potatoes gets exhausted. In the course of time, Potatoes would form on the underground stems or roots, though no tops would arise. They are not so good as Potatoes grown in light, but they are passable.—E. Hobday.

14572.—**Greens clubbing.**—Salt and gas-lime applied in winter will be of use in cleansing the land. If the soil is deep enough to bear it, dig deep, burying the surface-soil, and bring up fresh from below. When planting the greens, dress the roots well with a puddle of soot mixed with soap and water.—E. Hobday.

14627.—**Preserving Kidney Beans for winter.** They ought to be gathered dry, and preserved whole in jars between layers of fine salt.—J. D. E.

14646.—**Heated pit for Cucumbers.**—There is nothing impossible to the enthusiast, and Cucumbers may be raised at any season of the year in such a pit as "E. W." describes. The furnace should be deep enough in the ground to permit of the flue of glazed pipes being carried along the bottom of the pit to give root warmth, then to ascend and return at a higher level for top heat. It is impossible to say what it would cost, as prices of materials, &c., vary in different districts; better ask a builder on the spot—it should not cost much. The bottom heat flue should be well covered in first with a layer of broken bricks, and then a good thickness of leaves and stable manure, to form the bed for the plants. The fire would require careful management, but I have seen such a pit work well.—E. Hobday.

14968.—**Vegetable for shaded ground.**—The Jerusalem Artichoke appears to be the vegetable most suited for shaded ground. I find that Gooseberries and Raspberries also do well under trees; but much, of course, depends on the quality of the ground, as well as the amount of the shade. My experience is only of a rich, deep sandy loam.—R. S., *Surrey.*

14536.—**Slugs in house.**—They will not go near lime, salt, or soot. Any of these strewed on the ground outside would prevent their going near it. They will breed inside if there is much moisture; and they can be trapped by putting down pieces of carrots or potatoes.—J. D. E.

Remedy for cockroaches.—I have lately removed from a house in which we were troubled by cockroaches in every room, but completely got rid of them by having the bedrooms and kitchen floors washed every week with carbolic soap. Carbolic acid diluted may be sprinkled about, but it discolours carpets and floorcloth. I tried this first, but have found the carbolic soap most effectual.—A. E. G.

—— I have found what is called the Dalmatian Insect Powder very successful in the destruction of cockroaches. It is to be had from any good chemist, and is sold in boxes with perforated lids for sprinkling the powder. After they have taken the poison, the insects should be brushed up and thrown into the fire, as they may merely be stupefied. Repeated doses of this powder must have the desired effect.—E. Glasgow.

A new gardening journal.—In America, as in England, our name and plan has been copied. The word "gardening," first used by us as the title of a journal, is now the name of a monthly paper recently started in Buffalo, America. Not only are the words "for town and country" employed, but the heading has some points of resemblance with one occasionally used by ourselves. The journal is well printed and illustrated, contains a variety of useful matter, and appears to deserve success.

VEGETATION ON A TROPIC BEACH.

Canon Kingsley, in "At Last," thus writes of a tropic beach which he visited in Trinidad:—"I scrambled down on a gravelly beach, and gazed up the green avenues of the brooks. I sat amid the Balisiers and Aroumas, above still blue pools, bridged by huge fallen trunks, or with wild Pines of half-a-dozen kinds set in rows. I watched the shoals of fish play in and out of the black logs at the bottom. I gave myself up to the simple enjoyment of looking, careless of what I looked at, or what I thought about at all. There are times when the mind, like the body, had best feed, gorge if you will, and leave the digestion of its food to the unconscious alchemy of Nature. Whether on a Scotch moor or in a tropic forest, it is well at times to have full faith in Nature; to resign yourself to her, as a child upon a holiday; to be still and let her speak. She knows best what to say. And yet I could not altogether do it that day. There was one class of objects which I had set my heart on examining, with all my eyes and soul; and after a while I scrambled and hewed my way to them, and was well repaid for a quarter of an hour's very hard work. I had remarked Palms unlike any I had seen before, starring the opposite forest with pale grey-green leaves. Long and earnestly I had scanned them through the glasses. Now was the time to see them close, and from beneath. I soon guessed (and rightly) that I was looking at that Palma de Jagua (Jessenia) which excited—and no wonder—the enthusiasm of the usually unimpassioned Humboldt. Magnificent as the tree is when its radiating leaves are viewed from above, it is even more magnificent when you stand beneath it. . . . . I stood and looked up, watching the innumerable curled leaflets, pale-green above and silver-grey below, shiver and rattle amid the denser foliage of the broad-leaved trees; and then went on to another and to another, to stare up again, and enjoy the mere shape of the most beautiful plant I had ever beheld, excepting always the Musa Ensete, from Abyssinia. Truly spoke Humboldt of this or a closely-allied species, 'Nature has lavished every beauty of form on the Jagua Palm.' . . . . Then we emerged upon a beach, the very perfection of typical tropic shore, with little rocky coves, from one to another of which we had to ride through rolling surf, beneath the welcome shade of low, shrub-fringed cliffs; while over the little Mangrove swamp at the mouth of the glen Tocuche rose sheer, like McGillicuddy's Reeks transfigured into one huge emerald."

Vegetation on a Tropic Beach.

BEES.

SEASONABLE NOTES.

The bees being now inactive and at rest, having settled down for the winter, it is important to see that each hive is amply protected from the weather, perfect protection from rains and storms being aimed at in covering them, and, where hives are in exposed situations, precautions should be taken to guard them from the full force of strong winds, or results may be disastrous.

Coverings for hives.—Roofing-felt makes very excellent covers for straw hives, being very durable, and impervious to water. When new it is stiff and hard, but if warmed it can be fitted to the hives. Outer cases of wood for straw hives are very serviceable, and have the appearance of square bar-frame hives. Roofs of wooden hives should be examined and repainted, tarred, or covered with roofing-felt, where there is any doubt of their being perfectly weatherproof. Dampness within the hive must be carefully guarded against, dryness, as well as warmth being of first importance in successful wintering of bees. All roofs should be of sufficient size to throw off the rain clear of the stand and floor-board.

Winter passages.—To enable the bees to reach their stores in the combs adjoining the cluster, it is advisable that each comb should have a hole cut through it, about three inches from the top and an inch in diameter; for if there are no passage-holes for the bees to pass through, it necessitates their going round the ends of the frames, causing them to become chilled in cold weather. These passage-holes can be made by passing a narrow-bladed knife through the comb and twisting it round, or a passage-cutter may be used for this purpose, which consists of a tin tube, having its edges at one end serrated like a saw. The edge is passed through the comb with a circular motion, and on withdrawing it, the piece removed from the comb is driven out of the tube by means of a wooden plunger which works inside it, and which is kept in its place by a pin sliding in a slot in the tube. These winter passages are not so necessary where candy is given over the combs under the quilt, as the space the candy occupies gives the bees the opportunity of passing over the frames.

Moving hives to new locations.—Where deemed desirable, the removal of hives to fresh locations may now be made. If this be done in cold weather, it will cause but little disturbance to the bees. In forming or rearranging an apiary, a south-east aspect should be chosen, with the ground gently sloping to the front. It is important that bees should have the morning sun, as this induces them to begin work early, for, as a rule, they get through the greater portion of their business in the morning; but, whatever aspect is chosen, it should be that in which the sun will shine upon the hives at one time of the day. It is very desirable to have the protection of a hedge from the north and west winds. It is a great advantage to the bee-keeper to have his apiary in the neighbourhood of orchards, as nothing can excel the blossoms of Apple, Pear, Plum, and Cherry trees for the production of honey early in the season. Each hive should have a separate stand, which should be low, for if hives be raised two or three feet, as they sometimes are, the bees frequently miss the alighting-board in rough, windy weather on their return from the fields heavily laden, and fall to the ground. The hives should be quite three feet apart, should be placed in a right line, and as all operations are more easily and safely performed at the back of the hives, a space of four feet should be allowed between the hedge and the hive row to allow of a pathway. The front of the hives should be free from shrubs or plants that grow higher than the entrances, as they much hinder the bees in passing to and from the hives. Low bushes or trees near at hand are, however, convenient for swarms to cluster upon, from which they are easily hived.

Keeping entrances of hives clear.—The entrances of hives should be contracted for the winter, but in all cases there should be room enough left for two bees to pass at a time. Bees take every favourable opportunity during the winter of casting out their dead; but oftentimes in cold weather get them only as far as the entrance, causing it to become blocked, and stopping the ventilation of the hive. It is therefore, a good plan to occasionally search the floor-board of the hive, with a bent wire, for dead bees. The searching wire should be thin, but strong, and long enough to reach all round the floor-board when introduced at the entrance. It should be bent at the end, the hook being only of a size to permit of its being easily withdrawn through the entrance-way. Colonies that have a sufficient amount of stores to winter upon, and are well protected from the weather, need but little further attention. S. S. G.

Boxworth.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY. No. XXV.

(By Annie M. Griggs, Edinburgh School of Cookery.)

MUSHROOMS.

Mushrooms belong to the edible fungi, of which there are many species that form an important article of diet to numbers of people abroad, but owing to prejudice they are but little used in this country except for flavouring. When eaten in their fresh condition they may be broiled, baked, or stewed, and certainly furnish an excellent and delicate relish. A very good ketchup is also prepared from the Mushroom, and the young button Mushrooms are used for pickling.

Broiled Mushrooms.—Secure some fresh and medium-sized Mushrooms; remove the end of the stalk and skin the flap, and do not commence to cook this dish until a quarter of an hour before it will be required, as, the sooner they are eaten after they are prepared, the better. Have a bright and clear fire, and the gridiron hot. Grease the bars so as to prevent the Mushrooms sticking. Put on the Mushrooms and let them remain for five minutes, turn them, and cook five minutes on the other side. Have in readiness a very hot dish, and, as each Mushroom is cooked, put it on the dish, season highly with pepper and salt, and add a pat of butter on the top. Place a hot cover over them, and by the time they reach the dining-room they will be ready to serve. *Another Way.*—Remove the stalks and skin the flaps. Take some sheets of white writing-paper and oil them on both sides. Lay some two or three Mushrooms on the paper, season them well with pepper, salt, Lemon-juice, and a pat of butter; fold the paper over, and turn down a double pleat all round so as to make them quite secure. Place the papers on a hot greased gridiron, and grill them for ten or fifteen minutes, turn them once or twice and serve in the papers as hot as possible. These form an excellent accompaniment to mutton-chops and beef-steaks.

Baked Mushrooms as an entrée.—Take seven paper ramakin cases, and oil them inside and out; set them to drain while you prepare the ingredients wherewith to fill them. Parboil two Shallots and chop them very small; skin twelve medium-sized Mushrooms and cut them in pieces; take one tablespoonful of finely-minced Parsley, three ounces of butter, a liberal supply of pepper and salt. Break the butter in small pieces, and mix all thoroughly. Fill each ramakin case with the mixture, and place them upon a greased baking tin. Put them into a moderately hot oven for twenty minutes. Lift them from the oven and squeeze a good drop of lemon juice into each case, and serve as hot as possible.

Baked Mushrooms for breakfast.—Well butter a pie-dish and lay around the sides and bottom thin slices of crumb of bread, previously dipped into hot water; upon these put a layer of skinned Mushrooms, pepper, salt, and a few small pats of butter. Cover these with some more crumb of bread dipped into hot water, then more Mushrooms, &c., and finally soaked bread again with butter on the top. Place the so-prepared dish in a hot oven for half-an-hour, or until it is slightly brown on the top. Serve in the same dish.

Stewed Mushrooms.—Take two dozen fully-grown Mushrooms, remove the stalk, skin them, and break each one in four. Place them, when thus prepared, in a saucepan with half a pint of cold water and one tablespoonful of white wine vinegar, leave the lid off the pan, and let the water boil for about three minutes, then drain them upon a hair sieve or soft cloth until quite dry. Melt two ounces of salt butter in a saucepan, add one dessertspoonful of flour, and when these two are thoroughly amalgamated put in the Mushrooms, toss them over the fire for five or six minutes; then add a small cupful of water or broth, and let them simmer by the side of the fire for fifteen minutes, then add a small grate of nutmeg, a pinch of powdered sweet herbs, with the yolks of two eggs. Thoroughly mix the whole, and pour all on to a hot dish, on which has been placed a slice of hot buttered toast, the moment before serving. Squeeze the juice of a Lemon over, and sprinkle a tablespoonful of finely chopped Parsley over the top. These may be served alone, or with plain chops or steaks.

Mushroom Powder.—This should be made when Mushrooms are plentiful, as it is so useful for soups, sauces, &c., when Mushrooms are not attainable. Select large and fully-grown Mushrooms, remove the outer skin and break them into pieces, measure four quarts thus prepared and allow to this quantity two large Onions peeled and sliced, half a teaspoonful of powdered mace, two dozen cloves, the same number of peppercorns, and two teaspoonsful of salt; put these all into a stewpan by the side of the fire without a lid on the pan, stir them occasionally and let them remain thus (taking great care that the Mushrooms do not burn) until all the moisture has evaporated, then turn them on to a clean sheet of paper on a baking tin, place these in a cool oven to thoroughly dry. When they will crumble to dust in your fingers they are ready to be pounded in a mortar, and all that is possible passed through a fine sieve. Put the powder into clean, dry bottles and cork tightly; set aside in a cool, dry place. When this is used for flavouring soups or sauces do not add it until just at the last, and then let the sauce boil once, and serve quickly.

To Preserve Mushrooms.—When Mushrooms are preserved in the following manner they may be used in either of the foregoing recipes of stewing, baking, or grilling in cases. Take two quarts of fresh, firm Mushrooms, peel them, and throw them into cold water containing one tablespoonful of white vinegar, and let them remain for fifteen minutes; drain away the water and dry the Mushrooms thoroughly. Melt half a pound of salt butter in a stewpan, add the Mushrooms, with a good sprinkling of pepper and salt. Let these simmer by the side of the fire for half-an-hour, then turn all into clean, dry jars, set aside to become cold, and then pour some clarified butter over the top. Cover securely, and store the jars in a cool, dry place.

QUESTIONS AND REPLIES.

15080.—**Sloe wine.**—Would any kind reader of Gardening tell me how to make Sloe wine?—John Morton.

15081.—**Marrons glaces.**—Will some one kindly give me a recipe for making marrons glacés?—Sphinx.

15082.—**Herb beer.**—Can any of your readers say how the above is warmed and spiced?—J. B. M.

14873.—**Blackberry jelly.**—Pick your Blackberries before they are too ripe, and gather a good many red ones among them. To every pound of fruit put a pound of preserving sugar. Boil all together till everything is well melted, then put it through a strong muslin, and squeeze all the liquid well out; replace the liquid in the pan, and boil till it jellies. To about seven pounds of fruit put about one dozen Crabs or small sour Apples. The above recipe is very good, and the preserve is quite like the Scotch Bramble jelly.—A. M. A. M., *Athlone.*

14874.—**Rosemary hair-wash.**—This recipe is very old, and perhaps "E. A. M." is not aware that great quantities are seldom given in old recipes. I usually make use of two quarts of water, six Bay-leaves, a handful each of Bay cuttings and Alder shoots, and as much Rosemary as would fill a large pickle-bottle; the young shoots and leaves of the last being put into the bottle and pressed down till it will hold no more—a quart bottle would be large enough. If the hair is naturally oily, it might be advisable to use more borax and camphor—one ounce each I find sufficient.—A. B. T., *East Anglia.*

14870.—**Use for unripe Grapes.**—"E. D." can make very good marmalade and pickles with unripe grapes. *Grape marmalade:* Remove the Grapes from the stalk into a large jar, cover it with a lid or paper, and place in a moderately-hot oven or saucepan of boiling-water until the grapes are sufficiently soft to be broken and passed through a coarse sieve. To every pound of pulp thus obtained allow twelve ounces of sugar. Put these into a preserving-pan and boil very rapidly for three quarters of an hour, taking care to remove the scum as it rises. Pour hot into dry jars, and cover first with brandied paper, and then with gummed paper to exclude the air. Store in a cool, dry place. *Pickled Grapes:* Pick the Grapes singly, and put them into clean, dry bottles, with a small portion of salt, a few white peppercorns, and enough hot white wine vinegar to cover them. Cork the bottles tightly, seal with resin, and the pickles will be ready for use in six weeks.—Annie M. Griggs.

14871.—**Elderberry wine.**—Take one peck of ripe Elderberries, picked from the stalks, put them into a vessel and bruise them, and pour over three gallons of boiling water; cover and let stand until the next day, then strain through a coarse cloth, squeeze well so as to express all the juice. Measure the liquor, and allow to every gallon four pounds of brown sugar, one ounce of cloves, one ounce of allspice, two ounces of bruised ginger, and half a pound of large raisins chopped. Boil these for one hour, carefully removing the scum as it rises. Let stand until it is nearly cold, and then pour the wine into a clean, dry cask, with four tablespoonfuls of yeast to every nine gallons. Leave the bung out of the cask for about a fortnight and let the wine ferment. Then add one bottle of brandy to nine gallons of wine, put in the bung, and do not move the cask for three months; at the end of this time the wine will be ready for bottling.—Annie M. Griggs.

POULTRY.

QUESTIONS.

15083.—**Spotted eggs.**—My hens' eggs for the last year have had small brown spots in them, one and sometimes two in the whites. Can any reader of Gardening tell me the cause and cure? My fowls are light Brahmas, and are kept in a large wood-yard.—R.

15084.—**Sneezing pullet.**—Will "Doulting" or other correspondent tell me what is the matter with my fowls? About three weeks ago one of my pullets began to sneeze and run at the nostrils very much. I thought it was cold, but she is now much worse, and another is becoming ill. I should be very much obliged for any advice as to treatment, also for information as to whether it is a disease that will spread.—Anxious One, *Cheshire.*

A few hints to poultry-keepers.—Great care should be taken to keep them in the dry, especially young chickens, for if they are allowed to go out on the cold, wet grass they will soon drop their wings and die. Breed your chickens about February, and rear them to sell in May, as they will then realise a good price; and it certainly is more profitable than rearing them for eggs, because at this time eggs are usually cheap. Take your chickens away from the hen when they are six weeks old, so that the hen may have another opportunity of bringing out her second brood about the latter end of May, and her chickens will be ready for sale about August. She should then sit and rear her third and last brood for the season not later than August, as it is not advisable to rear them in the winter months. The February, or early chickens, are also the best to keep for stock, as they will come in to lay in the fall of the year when eggs are dear, but should not be allowed to sit until February the following year.—W. Judd.

Remedies for roup.—Roup usually causes a discharge at the nostrils, which is easily discernible. It is, as a rule, accompanied with hoarse breathing, the comb changes colour, and the fowl droops. The beak will be open if breathing is very difficult, and a foul odour will prevail in the coop, or will be given off by the bird. In light attacks, a sneeze, or an occasional "pip" may be heard, but the great danger is from the eases accompanied by the foul odour and hoarse breathing. The first thing to do is to remove the phlegm, which should be done gently with a soft mop, dipping the mop in a solution of chlorinated soda, to be had at any chemist's shop. Repeat this once a day until the bird is well. Feed, either in the soft food, or in the shape of a pill, a mixture of equal parts of asafœtida, ground ginger, gentine, and boracic acid, allowing a teaspoonful of the mixture to every ten fowls. It may be given night and morning. A dry, warm place is essential, as roup is caused by cold and dampness. A spoonful of kerosene oil in the soft food, for ten hens, will assist in preventing the disease, while the drinking water should be changed often to prevent contagion.—*American Farm and Garden.*

Feathers from geese.—The common geese yield about a quarter of a pound a year, on an average, but the large breeds, such as the Toulouse and Embden, have given from three-quarters to a pound.—F. G.

THE VILLA GARDEN.

(*Continued from p.* 463.)

FORCING VEGETABLES.

Seakale.

There are two ways of forcing Seakale. One—the old-fashioned way—is to cover the crowns with pots, and place enough fermenting matter (tree leaves chiefly) over them to create a temperature in the pots of sixty to sixty-five degrees. If it exceeds this the produce will be weakly, and may possibly have an earthy taste, as this temperature will not be exceeded unless too much manure has been mixed with the leaves. Forced in this way the plantations will go on bearing for a number of years without renewal; but it makes a good deal of litter, and to keep the temperature steady requires watching. When rightly managed, the Kale is fine, and white, and sweet. The second way—and perhaps I might call it the modern way of forcing Seakale—is to take up the roots in autumn, and force them in succession, as required, in some heated structure adapted for the work where a temperature of sixty degrees can be maintained. A Mushroom-house does very well, or a darkened pit; or it may be forced in small quantities by planting the roots in boxes such as wine-merchants use to pack wine in. In planting the roots space must be left between the crowns and the lid of the box for the Kale to grow—from eight to ten inches will in most instances suffice, and space enough should be left between the crowns for the full development of the blanched growth. If the crowns are strong, three inches will not be too much. It is as well to take up all the stock of roots we intend forcing and lay them in thickly on the north side of a hedge or wall; this has a resting, ripening tendency, and they will force all the better for it. All small roots and pieces of roots removed from the large roots, intended for forcing, should be laid in and covered with a little loose litter till the spring, and then cut up into pieces four inches long and planted in rows, with a dibble, eighteen inches apart, and twelve inches apart on the rows, just covering the thick ends of the roots, which in the course of time will develop strong crowns.

To keep up a succession, fresh relays of roots should be introduced every three weeks or so. After the first crowns have been cut, if they are not cut too deeply into the roots, a fresh lot of shoots will start, smaller considerably than the first, but in other respects quite as good; indeed, some people like these second growths best, saying they are more delicate, both in appearance and also in flavour. But when the old roots are encouraged to produce all they can, they are not so useful to plant out again, nor is it necessary, as the small pieces planted in March will produce strong crowns in one year.

By Seeds.—It may sometimes be necessary to raise plants from seeds. I have often sown seeds of Seakale about the third week in March, thinned the young plants out, and guarded them from slugs and snails in spring, and had them strong enough to force the following winter. I don't think I should trouble to sow seeds when I had plenty of root-cuttings, but plants from seeds are just as good to force as the others if both are equally strong.

Celery.

Though not often forced beyond its first period of life, yet, if forced very gently on a bed of leaves in a deep pit or frame, it may be obtained very early for any special purpose. The plants are pricked into pots, and shifted on till the bed is ready, then planted out all over the bed at equal distances apart; nine inches will give nice little heads, but if large produce is required, more space should be allowed. When large enough to blanch, draw the stalks up carefully without bruising, wrap a sheet of paper round them, and secure it loosely with a piece of matting. When all are tied up, place the material used for blanching among the plants with care. Tree leaves (if sweet), short hay (if not mouldy), old tan, coal-ashes, chaff or cut straw, moss, or anything of a like nature that is not likely to give a bad flavour to the Celery. The best kinds for forcing are those of dwarf, sturdy habit, that do not soon bolt. Incomparable White and Major Clarke's solid red are good varieties.

Turnips.

If sown on a bed of light, rich soil, on a bed of leaves and manure, and the soil kept moist, Turnips may be had much earlier and better than under ordinary circumstances. If a trench be opened in a sheltered place, and filled full of warm manure, placing eight or nine inches of light, rich soil on the top, a bed will be improvised that will bring forward, not only Turnips, but nearly every kind of vegetable. Some shelter will be required at night; but this may be of a very simple character. Some long Ash or Hazel rods bent over hoop-fashion will form the skeleton, over which can be thrown mats, canvas, or oiled calico when required. The Strap-leaved Stone is a good variety for forcing, the Early Milan Strap-leaved being the best form of it. E. Hobday.

WALKS.

Walks for convenience should, as a rule, take the shortest route to a given point; if not, a footpath will speedily be formed, which is not only unsightly, but a reproof to the original maker of the walk. Had that taken the shortest and most direct cut between any two or more given points, the footpath would never have been made. But it is a mistake to apply this hard and fast rule to walks in pleasure-grounds or landscapes. In such the walk itself may become no mean feature, while its main object is to lead, on the most pleasant lines and by means of the easiest gradients, to all the main features of the landscape. This is mostly accomplished by a series of easy and graceful curves. But herein lies a danger, on which many walks have had beauty and utility alike wrecked. No curve should be introduced capriciously, nor be repeated too often. It seems frequently to be forgotten in choosing the line of a walk that a series of meaningless curves is more monotonous, if less stiff, than a series of straight lines. In each curve there ought to be an obvious meaning, real or apparent, and it often taxes the highest skill to succeed in this point in small places in which long walks are wanted. Again, the same curve should never be so often repeated that two or more are visible from the same point. Some also err in considering every divergence from the straight line a line of beauty. No line is less beautiful than a curve without either meaning or grace. Curves should above all things be flowing and easy; and never, unless in the case of sharp turns, which are sometimes unavoidable, should they be abrupt. It is distressing to meet at times with mere zigzag walks led hither and thither, without taste or design of any kind; and yet, because they are not straight, they are assumed to be beautiful. Where belts of plantation or grounds are so narrow as to render impossible the flowing grace of a curve, it is better not to attempt it, but to choose a straight walk.

Next to the line of walk, its width is the most important point. Thousands of walks are ruined by their narrowness. Three-feet walks, unless in the smallest places, must needs look mean. Five feet should be the minimum width, and six feet is far better and more effective than five feet. In large places nine feet, or even twelve feet, may be needful. But the relation of width of walk to size of demesne needs to be nicely adjusted. A nine feet walk in a small garden is even more ridiculous than a three feet one in a pleasure-ground of ten acres or twenty acres. Wide walks give an air of grandeur and a feeling of abundant space to large gardens that hardly anything else can impart. They are also most useful for exercise, and make walking so much more enjoyable by enabling several to walk abreast without overcrowding.

To many, however, the quality of the walk is more important than either its line or breadth. Garden walks ought to be dry, smooth, hard, slightly elastic, bright, and clean. A wet walk is a perpetual source of discomfort. To have a walk thoroughly dry, the earth on which it rests must be made so first. The use of porous or even impervious materials will not insure a dry walk, unless it rests on a dry basis of earth. As is the foundation, so in the end will be the walk. Therefore, mere under-drainage is not enough; the earth must be drained, and a free outlet provided for the water, if the walk itself is to become and remain always dry. A slight elasticity gives a great charm to a garden walk. It may be readily provided by placing a layer of brushwood or furze over the stratum of rough drainage. The stones or rough gravel may then be laid over this, and the wood will impart a charming elasticity for ten, twenty, or more years. Smoothness of surface is readily attained by the choice of suitable materials. The larger stones with a mixture of chalk should be placed on the bottom; then a second layer of fine stones or coarse gravel; and finally a thin coating of fine gravel. These, thoroughly rolled down and consolidated by time, will form a walk almost as hard as a rock and as smooth as granite. Brightness may be secured by the choice of reddish gravel for a finish. Some prefer a white surface, and there are gravels of many colours, and some that wash almost white. But a ruddy colour on the whole is best for walks; it contrasts well with the masses of green shrubs and trees and wide expanses of Grass. Such prominent factors, too, as walks are in the landscape, ought always to be clean. Weeds and Moss on walks are like cobwebs and dust on pictures. They are set as an offence beyond endurance in the very eye of vision, and ought to be instantly removed. F.

14880.—**Ferns for competition.**—The six best British Ferns for competition are the following:—Athyrium Filix-fœmina plumosa, Lastrea Filix-mas grandiceps, Osmunda regalis cristata, Polypodium cambricum, Polystichum angulare, Henleyæ, Footi, Holeanum, and Wollastoni, Scolopendrium vulgare crispum maximum, digitatum, laceratum, and ramosum. Six best Ferns (greenhouse) for competition: Balantium Culcita, Gleichenia flabellata, Lomaria discolor bipinnatifida, Lomaria zamiæfolia, Osmunda japonica corymbifera, Pteris serrulata cristata major. Six best stove Ferns for competition: Adiantum farleyense, Davallia fijiensis, Didymochlæna truncatula, Neottopteris australasica, Nephrolepis davallioides furcans, Microlepia hirta cristata.—S. G.

Red spider and its remedy.—Red spider (Acarus telarius) is a minute mite of microscopic size, and is first seen with the naked eye as a red moving speck. The genus to which it belongs (Acarus) contains an enormous number of species, mostly parasitic in their habits, either upon plants or animals. The present species mostly begins to attack exotics when they are young and tender. The female red spider deposits its numerous eggs upon the underside of leaves; they are exceedingly small, whitish, and scattered over the leaves. The larvæ, as hatched, resemble their parents save in size; when mature they are of a dark brown colour and slightly hairy. Like spiders and mites in general, they moult several times before reaching maturity. They spin for themselves silken webs, which shelter them from weather and other influences. The cause of red spider is a dry, arid atmosphere, and to keep these pests down, the plentiful application of clean, cold water is the best means. Soft water, in which a little sulphur-soap has been dissolved, is a very good remedy. Where they have a firm hold, however, one of the following should be applied: Insecticides: Those sold by nursery and seedsmen are effectual, if applied as the makers direct. Sulphur: This, applied to hot-water-pipes, makes a good clearance in a short time. Mix flowers of sulphur with twice its bulk of clay, and make this into a thin paint with water. Paint the pipes with this and make them hot, but the water should not boil. As, however, we have found this injure some plants, we have adopted the following plan with much success Boil ordinary stock bricks in a copper for an hour and remove to the house at once, then sprinkle them with flowers of sulphur, placing a slate or piece of glass a short distance above each brick, to prevent the fumes from injuring the foliage immediately above the bricks. If a damp atmosphere be kept afterwards, the spider will not again be troublesome. Flowers of sulphur may also be dusted on the leaves as soon as the spider appears. Sulphur should not be applied in any form to tender plants.—From "Garden Pests and their Eradication."—Celer et Audax.

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FRUIT.

THE THREE BEST COOKING APPLES.

Disgusted with the general state of our gardens, owing to numerous kinds of fruit being planted, we recently wrote to Mr. Ingram, of Belvoir, Grantham, who is a good Apple-grower, asking him what his statement would be if he had to take his oath before a justice of the peace as to the three best cooking Apples for his own country. He kindly replies to us as below. We fear that nothing that we can say will open the eyes of fruit-growers to the fatal mistake of planting a lot of kinds in our gardens. The general state of things is that a gardener does not know what Apples he has, and is either wondering what the names are, or sending the fruit to be named by somebody else. Our own impression is that no one should ever have in his garden an Apple that he did not know all about and care a great deal for. The usual mixed rubbish of the English garden is most profitless from another point of view, and that has reference to making a good use of the fruit. If we happen to have a first-rate kind, it often occurs only as one tree—perhaps a neglected tree—and it is very rarely that anything like a decent crop is gathered in a small garden, owing to the owner accepting every fruit offered to him as worthy of a place. Mr. Ingram's reply is as follows:—

"In the position you describe, as a witness as to the quality of Apples, I should well and truly swear that according to my belief and knowledge the three best cooking Apples are Bramley's Seedling, Blenheim Pippin, and Frogmore Prolific. Tastes differ; I do not like acid juicy Apples that require much sugar; some people prefer Dumelow's Seedling and such great pulpy fruit as Warner's King, Lord Suffield, and Stirling Castle, excellent in their way, and good and profitable market fruit, but requiring much sugar to help them. Old people in this county and Notts think there is only one good Apple, and that is Besspool. I am willing to acknowledge its excellence, and I use it when I can get it, but its bearing is uncertain and it grows into a timber-tree."

Tree roots in Vine borders.—I frequently come across cases of Vine failures that are caused solely by the roots of strong-growing forest trees, and shrubs getting a footing in the rich soil provided for the Vines, and not only robbing it of its richness, but making it so dry that it is simply impossible for anything else to thrive. It is in small gardens that one finds the too common error of crowding carried to excess, for the practice of planting trees as screens to insure privacy brings them into too close proximity to the Vine borders; and, although some precaution in the shape of brickwork is usually put down, the roots soon find their way under it, or through any crevice, and it is surprising how soon they take entire possession of the border, and the Vines begin to fail. I was lately asked by a lady to look at her vinery which had gradually gone from bad to worse. The real cause were some tall forest trees, which, although on the other side of the garden wall, had evidently got their roots through and in full possession, while the tops shaded the house for nearly half the day; the extent to which their shade extended was clearly defined by the condition of the Vines, for at the end furthest removed from their influence the Vines still furnished good crops. Now, trees grow up rapidly, and those who live among them and see them daily are not nearly so likely to be struck with their power of obstructing light, and sucking out the very life of the Vines, as those that go into a garden for the first time. I am well aware of the value of shelter for a garden in many ways, and of the love of privacy and seclusion in our homes, but I must say that even so desirable a thing may be purchased too dearly, and either the trees or vineries ought to be removed from such close companionship, as they cannot get on together. I may also add that climbers, and especially Ivy, are very frequently the cause of Vine borders being robbed, although the owners have not the faintest idea of their doing any harm. It is no uncommon thing to see arches of Clematis, Roses, and creepers of various kinds spanning the walks next the Vine border, and, of course, the roots soon find the best soil and grow luxuriantly, while the Vines suffer. I only give the above as instances that have many times come under my own notice, and anyone having Vines failing should look to see that the Vine border is kept sacred to the roots of its proper occupants.—J. Groom, *Gosport*.

Canker in Apple-trees.—In my neighbourhood, canker in Apple-trees is principally caused by too great an amount of cold moisture in a clay subsoil, or where water in the subsoil is restrained by the obstructions in shallow ditches. Ditches around orchards are generally eighteen inches or two feet deep; these only drain the surface soil, the subsoil remaining cold and sour, and under no control whatever. Efforts are made to keep the roots out of the deeper soil, by planting near the surface, mulching and severing the long roots, and very often with only partial success. I live in the midst of orchards where fruit is largely grown and sent to the nearest markets. The most famous garden amongst us is almost surrounded by a public road, which has been excavated to a depth of three to five feet. I believe that its fruitfulness is greatly enhanced by the subsoil drainage the excavated road gives it. Having the above garden in view, I have tried to bring two of my orchards into a similar state of drainage by simply making most of the ditches three, and in some places four and a half, feet deep. By so doing I have isolated the soil to a certain depth from sour cold water, which most probably will have lost most of the fertility of newly fallen rain. I am certain that a clay subsoil so isolated will become warmer and more responsive to tillage. However, I have tried it, and my crops are already doubled, and dead branches have become a thing of the past.—F. C. Foster, *Royston, Yorks.*

REPLIES.

14955.—**Irish Peach Apple.**—This Apple is grown in a few gardens in Somerset, but it is not generally known. The samples which I have seen are remarkably handsome, and the flavour fairly good. The only recommendation it possesses in my opinion is that the trees bear pretty regularly, whether large or small. I can give no reliable information as to where it originated.—J. C. C.

15014.—**Tomatoes *v.* wasps.**—I am quite convinced that if Tomatoes are grown in the same house as Grapes, the wasps will attack the Grapes quite as soon, and do as much harm to them, as they do in houses where there are no Tomatoes, as I have tried it many times. To keep wasps from Grapes, there is no better plan than putting coarse muslin or fine mesh-netting over the ventilators of the house in which Grapes are grown. This is a better plan than putting the bunches in muslin bags, as in that case the air cannot readily reach them, and then they get mouldy.—J. C. C.

—— Last year I was greatly troubled with wasps in my vinery, so this year decided to grow a few Tomato plants on wires at the end of the house. This has proved most effectual. I have not seen a single wasp in my vinery this summer.—Arthur H. Gasten, *Yorkshire.*

15034*a*.—**Mulberry-tree.**—As the Mulberry-tree does not fruit in a young state, and as there is some risk in removing large trees, you had better get a nurseryman to guarantee to plant you a tree that will live. That means that he will take all risk of the plant dying, and replace it if it should die, if he does the planting with his own men. You will, as a matter of course, have to pay a little more for the risk incurred, but it will not be very much over and above what you would pay if you purchased and planted the tree yourself. I quite agree with the Editor that the Mulberry is a much neglected tree, as, apart from its delicious fruit, it is a tree that will grow in almost any kind of soil and position, except in a cold north border. Very few seem to have any idea of the value of the Mulberry as a lawn tree for affording shade during the summer; within a few miles of where I write there is a large tree standing on one side of a vicarage lawn, that gives shade sufficient on a hot summer's day to protect more than a hundred school children while they are having their annual tea treat, and its largest branches are strong enough to support the children's swings. This, however, is a venerable old tree, and it is probably more than a century old; but we could not have a finer example to demonstrate its useful as well as ornamental character. Its wide-stretching branches and ponderous head and abundant leafage command respect. As a lawn tree where space is limited, I consider it most valuable, and the fact that it is leafless in winter is an advantage in some confined spaces. As the fruit is not considered quite ripe until it falls from the tree, the ground beneath the tree should be laid down with grass when it is grown in any other position than the lawn, and then the fallen fruit will be free from grit. It is not often that we see the Mulberry nailed to a wall, as other fruit-trees are trained, but I saw a fine specimen of it at Uphill Castle, and it was carrying a fine crop of large fruit; the tree ap-

r . ed to be quite as amenable to training as a other. For my own part, I should prefer a standard tree to one of any other form.—J. C. C.

THE GREENHOUSE QUESTION.

To the Editor of GARDENING ILLUSTRATED.

SIR,—There are three questions affecting greenhouses:—(A) As between landlord and tenant. (B) As regards liability to poor-rate assessment. (C) As regards liability to surveyor's supervision. (*a*) In the Metropolitan district, under 18 & 19 Vict. c. 122. (*b*) In the extra Metropolitan district, under the Public Health Act and Bye-laws, sanctioned by the Home Secretary, on the model issued by the Local Government Board; for all urban districts, and some rural, on order of the Board. (A) Upon this your correspondent, "G. C., Eccles," has well said all that has to be said in your pages, Vol. IV., 69, 320, 381, 441, 501. B follows A, I think, on all points. C is a much-vexed question, as your columns show. Therein are cases—Mr. Morris's, at Clerkenwell Police-court (see GARDENING, I., 654; II., 595, 621; III., 30), in which the greenhouse was held exempt; two at Worship-street (II., 60, 359, and III., 5), one at Marylebone, one at Greenwich, and two at Hammersmith (III., 5), in which it has been held non-exempt; and two at Lambeth (IV., 260, and VII., 465), in one of which it has been held exempt, in the other non-exempt, by the same magistrate, who has not only, apparently on similar facts, given contrariant decisions, but actually used the very same Cucumber-frame illustration as affording contradictory inferences. This is strange, or a mistake. These cases are all in the Metropolitan district. The only case mentioned from the country is at Oldham (II., 359), in which it is said that the magistrate held it exempt. But as the writer also says that this decision was given under 18 & 19 Vict., which does not apply to Oldham at all, no weight can be attached to this case. Under the majority of Metropolitan decisions (and the bye-laws of urban authorities, operative also in many rural districts, are stronger in language than the Metropolitan Act), it would appear that almost every greenhouse, span-roof or lean-to, is a "building" subject to the supervision of the surveyor and the rules of the Act or bye-laws—that is, none can be erected otherwise than with a nine-inch brick-wall up to the glazing. Portable greenhouses are illegal. Cucumber-frames must not be placed upon a hotbed, but upon walls.

The question is therefore a very serious one throughout the country, because, although it would appear that the metropolitan surveyors have almost alone moved in the matter, all may do so everywhere, and, as I have said, with an even stronger case. I, therefore, quite agree with Mr. Dent that it ought to be brought to a final decision in a superior court.

The various plans of greenhouses or framcs would, I think, all come under one or other of the following heads:—1. Wood and glass-work resting on wall-plates, or planks, on brick walls having brick foundations sunk in the earth. 2. Wood and glass-work resting on wall-plates or planks, or bricks laid on ground, or on the ground itself. (*a*) With brick sides up to glazing. (*b*) With wood. (*c*) With all wood and glass sides. 3. Wood and glass work resting on sockets sunk in earth, wood or wood and glass sides. No. 1 is the extreme case on one side. No. 3 on the other.

I myself lately put up, with my own hands, a lean-to glasshouse against a stable wall, of wood panelling and glass alone (No. 3), all put together with screws only, the uprights resting on four-inch and three-inch drain-pipes, somewhat after the fashion suggested by Mr. Rivers' "Orchard-house," on iron sockets. But, fortunately or unfortunately, the surveyor here seems to take a sensible view of the law, for he has not troubled me, so that I have no grievance to appeal upon.

Provided that other "cases" for appeal can be obtained and combined so that the whole question, under both Acts and for the whole country, can be raised before the High Court, I will gladly contribute my sovereign to prosecute the appeal, if sufficient funds can be obtained. There ought to be no difficulty in obtaining them, for so many thousands of persons are interested in getting the matter cleared, and their freedom from extortionate demands and absurd restrictions—never contemplated by the Legislature—established. That it would be so ruled by the Court I have no doubt. The Cucumber-frame *argumentum ad absurdum* would effectually settle the construction of the Acts against the contention of the surveyors. Landlords' fixtures (1) would be held liable, and tenants' fixtures (2 and 3) exempt. Real property (1) would be held liable, personal property (2 and 3) exempt. Buildings (1) would be liable, movable greenhouses (2 and 3) exempt. The same rule, under different technical terms, would govern all three questions—A, B, and C. I enclose my card. C. A. S.

—— Is a greenhouse a building? Not strictly speaking, so long as it is a mere framing (of wood); but I am afraid for legal purposes it must be considered a building. Of course, Mr. Chance's decision (letting alone his remark about Cucumber-framcs)—see page 466—is a *reductio ad absurdum* of the Building Act; but what remedy? There is a simple way out of all this bother about tenants' fixtures and landlords' rights. Become the owner of your house, you will not then be afraid to put up your brick-wall and footings, as the Act and good construction require, for fear of having to forfeit them. To think of anyone who can afford to build a conservatory living in a house not his own in these days of building societies and other helps to ownership! Catch me putting up a conservatory, or even planting a Gooseberry bush, till I had secured the freehold.—W. SIMMONS.

14823.—**Landlord and tenant.**—Mr. Alfred Schumacher writes us a letter in which he quotes a decision given to a friend of his by a solicitor, to the effect that in such cases the tenant can remove "anything which is ornamental." Roses, he assumes, would come under this description, while fruit-trees [are not they ornamental too?] cannot be removed, as they are "useful." He points out forcibly, that if the law is as laid down by "Lawyer Y." (page 467) it is unjust and also mischievous, "as it deters people from improving their gardens because they do not wish to improve their landlord's property for his benefit." He suggests the taking of measures to get the law altered.

Gold fish.—I have an outdoor fountain and cement tank two feet deep and eight feet diameter, and a number of gold fish, for some years. Could any reader give his experience with view of ascertaining cause of their not breeding? I have some Water Lilies in large pots, and the bottom is gravel.—UNSUCCESSFUL, *Clapton*.

INDOOR PLANTS.

PLANTS FOR UNFAVOURABLY SITUATED GREENHOUSES.

IN some town gardens it will be found, owing to want of light and sun, shade thrown by high buildings, impure air, or other similar causes, that ordinary flowering plants, such as Cinerarias, Pelargoniums (zonal and fancy), do not succeed satisfactorily, and, even if induced to make a moderately good growth, will only at best produce a meagre and scanty bloom. There are in many such places glasshouses in which it is almost impossible to grow presentable flowering plants, and to those who are fond of gardening, and wish to make the greenhouse a source of pleasure, instead of being an eyesore, I wish to suggest a mode of procedure by which this can be attained, however unfavourable the conditions may be. This is, to furnish the house with such vigorous-growing, strong-textured foliage plants as, with plenty of moisture and a moderate amount of warmth, will not to any great extent be affected by absence of light, by smoke, &c.; especially as with these the house can be kept much closer than for ordinary flowering subjects, which have to be freely ventilated to maintain them in health. It does not matter how a house is situated, or how impure the air may be, there are plenty of fine-foliaged and more or less handsome plants that will succeed very satisfactorily with a moderate amount of care.

Phœnix reclinata. (*See* "Plants for Unfavourably Situated Greenhouses.")

The greenhouse.—Preferably, for growing the class of plants I am now advocating, the greenhouse should be well and solidly built, with large and wide squares of stout glass, well heated by means of a greater quantity of hot-water pipes than would be necessary for ordinary greenhouse plants; that is to say, supposing the structure to be a span twelve feet wide and eight or nine feet in height to the ridge in the centre, at least two, and preferably three, rows of four-inch piping on each side should be fixed; or in case of a lean-to house of the same width, and probably twelve feet high from floor to roof at the back, three rows along the front and two or three more at the back would be necessary. The pipes should be also fixed as low down as possible, near the floor, and be, if practicable, placed beneath the staging, so as to prevent the heated air from them acting directly upon the plants. Little or no front ventilation need be provided, and the roof ventilators need not be large, but should be made to lift, or be arranged under a super-roof, so as

to prevent the ingress of "blacks" to some extent at least. A tank or open cistern of considerable size is also of great advantage in such a house, not only for providing water at the same temperature as the house, as the moisture diffused through the air by a large surface of water will be found very beneficial to growth in the case of ferns, &c.

Contents of the house.—The following will all be found of vigorous and easy growth, and, being mostly evergreen, or nearly so, will at all times present a more or less rich, or at least presentable, appearance:—Aspidistra lurida, of both the green and variegated forms; these produce large, handsome leaves of great substance and most enduring character, and, if kept clean by sponging, always give a fine effect. Ficus elastica and F. Cooperi, two very fine evergreen species, with bold foliage, which must be kept clean by sponging; of free but not at all rapid growth. Ficus repens, a small-leaved, rapid-growing creeper, would scarcely be taken to belong to the same family at first sight. It clings naturally and firmly to a damp wall in a moderate warmth, and in such a house as the one under consideration will rapidly cover any bare spaces with its rich green foliage. Dracænas, especially of the common green-leaved varieties, such as D. australis, D. viridis, &c., will be found extremely useful, easily grown, and ornamental in either a large or small state. The varieties with coloured foliage are doubtless more handsome, but are much more difficult to keep in health in an impure atmosphere; still, a few may be tried as affording variety. Cyperus alternifolius is another very suitable subject, and if grown in a large pot or small tub, with an abundant supply of water, attains noble proportions. Palms of the hardier and more vigorous varieties must not be overlooked. Seaforthia elegans, Chamærops humilis and excelsa, Phœnix dactylifera and reclinata (see cut), and one or two Latanias and Kentias will probably be found useful and successful, and the graceful Curculigo recurvata may also find a place. Phormium tenax, the New Zealand Flax plant, has very characteristic foliage, and a common Bamboo or two will look extremely well rising above the rest. Of Ferns, there are many species that will do very well. Pteris serrulata, P. cretica, P. longifolia, P. argyrea, P. albolineata, and P. tremula will all do well in a mixture of peat, loam, and sand. Asplenium bulbiferum, A. caudatum, and A. lucidum; Blechnum corcovadense; Davallias of sorts; Lomaria gibba, L. cycadæfolia; Neottopteris australasica; Nephrodium molle; Platycerium alcicorne; and also some of the more vigorous Tree Ferns, such as Alsophila australis, A. excelsa, Dicksonia antarctica, &c.; any of the above will be found to grow well, either planted out or in pots.

Then we have the Aralias, with their bold and handsome growth, and long-enduring foliage. A. Sieboldi is perhaps the most useful of these. Arundo Donax var. is another stately plant, growing to a height of six feet or so. Eurya latifolia is a pretty evergreen plant; Farfugium grande is easily grown, and the Rhopalas will all be found to succeed generally with but little trouble. Again, the whole tribe of Yuccas, Agaves and Dasylirions will make a very nice variety, and do well under the simplest treatment. Abutilon Thompsoni and A. Darwini tessellatum are both very handsome plants, with variegated foliage (green and gold) and very easy growth. The former is much the more robust and larger-growing of the two; but almost any of the finer-foliaged Abutilons may be grown as well, as, though they do not flower at all freely in town air, the foliage is very distinct and striking. Of these are A. Duc de Malakoff, A. Darwini robustum, A. Emperor, and A. Chryostephanum, the last having magnificent large downy leaves of a peculiarly soft shade of green. Of annuals we have Cannas, Castor-oil plants (Ricinus) of several varieties, Nicotianas, Solanums, Wigandias, and others, all of rapid and luxuriant growth, and with liberal treatment and plenty of root-room and moisture they cannot fail to present quite a tropical appearance. Grevillea robusta is exceedingly elegant in habit and foliage, and easily raised from seed in a gentle warmth, and Sparmannia africana (see cut) will grow and flower, too, anywhere and anyhow. In the way of dwarf-growing subjects for filling up gaps, hanging over the front ledges of stages, and so forth, Isolepis gracilis and Panicum variegatum are both pretty, and easily grown; and for hanging baskets, the common green Tradescantia, T. zebrina, T. multicolor, Saxifraga sarmentosa, or "Mother of Thousands," and Mesembryanthemums of many varieties are eminently suitable. Begonias, too, of the fibrous-rooted kinds, such as B. weltoniensis, B. fuchsioides, B. Rœzlii, B. Pearcei, B. nitida, B. semperflorens, and many others will do well, either in pots or baskets, and a few of them will bloom to some extent as well. Then there are the whole family of succulents (too numerous to mention here), and a large number of other plants belonging more properly to the stove, upon which we may touch on another opportunity.

Keep the temperature about sixty to sixty-five degrees in winter, or never less than fifty-five degrees, with a rise, with sun-heat, in summer to seventy-five or, perhaps, eighty degrees. Ventilate only when really required or when the air outside is mild, and, with abundance of moisture, a most luxuriantly tropical appearance cannot fail to be realised. Under such conditions, the Ricinus will become almost perennial, and attain enormous proportions in a year or two. B. C. R.

REPLIES.

14972.—**Keeping atmosphere in greenhouse moist.**—Water your plants overhead, and the floor of your greenhouse as often as necessary. Use a watering-pot with a fine rose. Be careful not to get it too wet, or your plants will damp off.—M. M. B.

—— Sprinkle the floor and stages with water, or place pans filled with water on the pipes.—J. L. J.

—— Pipes can be had with evaporating troughs cast upon them; but, in the absence of these, I have used shallow trays of water placed upon the pipes, which will give off a large amount of moisture; but be careful with this in winter, or you will soon have an invasion of mildew and damping off.—K., *Southend*.

14962.—**Raising tuberous Begonias from seed.**—"Trinette" should not be in too great a hurry to sow Begonia seed unless there is plenty of heat at command. The lowest temperature in which they are likely to succeed during the early months of the year is sixty-five degrees, and the more evenly this is maintained the better. Seed sown in the middle of February, and grown steadily on, will usually give better results than if sown earlier. Many of the seedlings will flower in July, and come on in succession until the end of September.—R. W. Beachey.

—— Your hotbed being ready by February, that will be quite early enough to sow your Begonia seed. Prepare a clean pan, fill up one third with crocks, over these put a little Moss, fill the pan to within half an inch of the rim with two-thirds of leaf-mould and loam and one-third sand, well mixed. Firm the soil gently and evenly, give it a watering through a rose, then sow the seed on the surface, and over it a very slight sprinkling of fine silver-sand. Put a square of glass over your pan, and over this a piece of paper, or anything to keep it dark. Place the pan on your hotbed. Should the soil in the pan get dry at any time, never water it on the surface; to do so would wash the seed in heaps, or if it had germinated, it would cause the young plants to damp off. Instead, steep the pan up to rim in a pail of water. As soon as plants are seen, remove the paper or covering and tilt the glass. As soon as the plants have developed two leaves and you can handle them, prick them off into pans similarly prepared to the seed-pan, and put back on hotbed. Beware of too much moisture in your frame, and tilt the light on every favourable occasion. When the plants have grown sufficiently large in the pan, you can pot them off into thumbs or forty-eight pots, using a compost a little richer than that prepared for the seed. Give them gentle watering with tepid water. If you have a cold frame to spare, place the potted-off plants in it; if not, put them in your greenhouse near to the light. Keep it close for a little while, and shade the plants from strong sunshine. After May, tuberous Begonias do much better grown in a cold frame and aired well. Should all go well, you ought to have nice, strong-blooming plants about the beginning of October to place in your greenhouse, and to keep on blooming up to Christmas. We have at the present time some two to three hundred plants in full bloom pricked out in a cold frame, the seed from which was sown the last week in February, and treated according to the foregoing instructions.—J. K.

14974.—**Chrysanthemum-leaves falling.**—"Senex" certainly put his Chrysanthemums into his house too early. The first week in October, as a rule, is quite soon enough, and the following directions should be observed in housing them:—1st. The house should be thoroughly cleansed of all dirt, leaves, &c., that may have accumulated during the summer, and if the house is not painted, a very good plan to adopt is to well wash all glass and woodwork with Gishurst compound. This will thoroughly cleanse the house, make it nice and sweet, and destroy insects. Keep all the lights open to thoroughly dry it before housing the plants. 2nd. Do not house the plants on a wet day, or when the foliage is wet with rain or dew. If you do you are sure to have mildew appear. 3rd. If mildew does appear, slightly dust with flowers of sulphur. I should therefore advise "Senex" to pull off a few of the lower leaves from his plants, then slightly dust them with flowers of sulphur. If the house is heated with pipes, a very little of the flowers of sulphur can be put on the pipes and a fire lighted, and every light thrown open at the same time; this will soon dry up all dampness.—W. E. Boyce, *Yerbury Road, Holloway, N.*

—— It is very common for Chrysanthemums to lose their leaves when grown in pots; it is, I think, caused by beginning to feed them too late or feeding too strongly. Some growers recommend a little top-dressing with some artificial manure, but I have found a slight dressing with soot, or judicious feeding with guano-water (one tablespoonful to a gallon of water), very successful. Your Chrysanthemums were taken in too soon. I do not take mine in until they show colour, and, when under glass, they have abundance of air. If mildew appears, wash the leaves with soft soap and water and dust with flowers of sulphur.—J. L. J.

14975.—**Deciduous climbers for greenhouse.**—"Trinette" will find that an Ampelopsis Veitchii will answer her purpose. It will cling to the wood and even to the glass, harbours no vermin, and looks most elegant—trailing from the roof—in summer a light green, in autumn a bright crimson.—W. H. Jacob, *Maida Vale.* *** *We have never seen Ampelopsis Veitchii planted inside a house, but no doubt our correspondent has good reasons for recommending it.*—Ed.

HOUSE & WINDOW GARDENING.

FERN-CASES AND THEIR MANAGEMENT.

During the last twelve or fifteen years the growing of plants for the decoration of apartments has made enormous strides. Indeed, such is the recognised necessity of these accessories to the ornamentations of our dwelling-rooms, that whenever a purchaser intends buying a plant, the first and, it would appear, the most natural question uttered is: "How long will that last in a room?" The nurseryman who has to study the taste of his patrons, and the gardener who, above all, must please his employer, find it necessary to follow the fluctuation of their respective tastes, and it is thus that now-a-days we see thousands, nay, millions of flowering plants, Palms, and Ferns, the latter especially, which never reach a mature age, but are annually sacrificed for indoor decorations. Among the many ingenious ways resorted to with a view to lengthening the duration of plants of all descriptions, the Fern-case may safely assume to be the most satisfactory combination arrived at up to this time. Whatever its shape may be, it is most essential that it should be provided at the bottom with a trough for collecting the water, which can then be easily let out through a little tap inserted in it for that purpose; and at the top with a movable piece of glass made to slide, and thus form a free ventilation with the end doors. In these glass structures many species of Ferns will thrive, especially when situated in a warm room, where they can get

plenty of light, without, however, being exposed to the direct rays of the sun. A compost formed of one part of loam and two of peat or good leaf, mould will suit nearly all the Ferns adapted for that purpose. If the case is sufficiently spacious, the effect will be greatly enhanced by having a miniature rockwork built in it, with a few pieces of stone or tufa; but great care must be taken that no more stone or tufa be employed than is strictly necessary, and the whole may be rendered more attractive still by having some small pieces of Selaginella denticulata dotted over the whole surface. After the Ferns have been planted in it, a good watering at the roots should be given them, but the foliage must be kept dry. When the Ferns have once taken possession of the soil they require but very little water, and it must be borne in mind that it is generally through too liberal waterings that they go wrong. In a case where Ferns grow well it is necessary at the end of a twelvemonth that some new soil should be added if the whole case itself does not require planting afresh; and the best time to effect this operation is about the beginning of March, just before their vegetation commences. The fitting-up of a Fern-case with a quantity of shells, minerals, fossils, &c., is an error common to many amateurs, with whom, in that case, Ferns only become a subject of secondary importance, and we could not too strongly impress intending growers with the idea that the appearance of a case is in no-wise improved by such an exhibition, which must in all cases be made at the expense of the Ferns themselves. Among the many Ferns adapted for growing in a case, we may mention the following as the most suitable:—Adiantum Capillus-veneris and varieties, A. formosum, A. venustum, Asplenium marinum, A. biforme, A. bulbiferum, Davallia bullata, D. tenuifolia, Doodia aspera, D. a. multifida, D. caudata, Lastrea glabella, L. aristata variegata, L. quadrangula, L. Sieboldii, Niphobolus Lingua, N. l. corymbifera, N. rupestris, Nephrolipis tuberosa, Onychium japonicum, Platyloma rotundifolia, Polystichum mucronatum, Pteris cretica, P. c. albo-lineata, P. longifolia, P. scaberula, P. serrulata and varieties, Selaginella cæsia umbrosa; S. Wildenovii, hæmatodes; S. viticulosa caulescens minor; Todea africana.

S. G.

Ferns for indoor decoration.—As very small plants for vases, to stand on brackets or drawing-room tables, there are no plants that equal Ferns, either for graceful effect or for the length of time they remain in good condition. All kinds of Ferns, however, do not succeed equally well, nor are they all adapted by their habit of growth for this kind of work, and when one has got the right kinds the plants must receive careful preparation, for if they are taken straight from a moist stove-house, looking verdant, with tender young fronds, their period of service will be very brief. If, on the other hand, grown to the required size in a genial temperature, and then gradually inured to full exposure in a cool greenhouse, the fronds will get hardened, and they will last many weeks, or even months, with care in watering, and an occasional syringing overhead — to wash off the dust that is sure to settle on them in any room that is in constant use. In transferring the plants to the vases, shake away the soil, so as to get all the roots entire, then put a layer of crocks or potsherds, broken up fine, at the bottom, over a hole drilled in the bottom, then work the roots carefully into the vase with very finely-sifted soil, pressing it down firm, and finishing off with a layer of fresh green Moss; give a good watering, after setting the vase in its saucer, and the work is complete. By this means really effective plants may be got to live for a long time, and even make a good growth in dwelling-rooms. The tiny vases to which I principally refer, that are made in various coloured earthenware, can hardly be expected to do more than sustain the plant of the size it is when transferred from the pot; but if larger ones, in proportion to the size of the plant required, are used, there is no reason why Ferns of greenhouse kinds should not only live, but make fine specimens, in dwelling-rooms—in fact, one of our finest plants of Asplenium bulbiferum had been in a cool drawing-room for over two years, and was in robust health. This is a good Fern for hanging-baskets or vases, set on brackets, as its long arching fronds, with the tiny little embryo plants set thickly along them, have a very striking effect. But perhaps the best of all for small vases are the numerous varieties of Pteris, or Ribbon Ferns, such as P. longifolia, P. serrulata, and all the crested varieties allied to it. Then there is the variegated P. cretica, a most effective and hardy Fern; P. tremula in its young state is very effective, and, when too large, if shifted on makes fine specimens. Some of the hardiest Adiantums, such as A. formosa and A. Capillis-veneris, answer well, and Blechnum braziliense and the smallest Lomaria gibba look very pretty, as their Tree-Fern habit, although in miniature, makes a nice contrast to the more gracefully drooping kind.—J. Groom, *Gosport, Hants.*

REPLIES.

14982.—**Clianthus Dampieri and puniceus.**—I found C. puniceus a very accommodating subject, doing well in any window of the house. Plants a year old have been left outside in autumn until frost came. Damp was the great enemy I had to fight against. I soon discovered that C. Dampieri could bear dry cold better than mild damp. Seedlings were successfully wintered in the window of a room over the kitchen, the atmosphere there (the warmth from beneath counteracts slight frost) being the most equable I could command. The afternoon sun shines on that window, a benefit to plants in winter. When frost set in I removed the Desert Peas further into the room. If cold increased, the pots were taken into a room where fires were used till the cold period passed. The English name Desert Pea suggested a mode of treatment, and I have since read a traveller's account in an Australian paper of the habitat of Dampier's Pea—viz., "arid, sandy regions." The potting soil used was very sandy. I kept the plants as dry as possible in winter, watered with warm water when the surface soil was quite parched. I hope "M. L. E. T." will save the plant, and see its splendid blooms in due time.—An Englishwoman, *Monmouthshire.*

14983.—**Ornamental Grasses.**—"Beginner" can get the seeds of the Ornamental Grasses from Messrs. Carter & Co., 237 & 238, High Holborn, London, and any other good house.—C. F. Davis, *Leatherhead.*

—— The seed of most of the Grasses mentioned on page 337 can be obtained of Messrs. Sutton & Sons, Reading.—Young Amateur, *Basingstoke.*

SPARMANNIA AFRICANA.

This is one of the commonest plants in good gardens, but it does not often find its way into small greenhouses, although it is one of the most useful plants for such places that could be selected. It is of the simplest culture, is nearly always in flower, and its white blooms are suitable for cutting, as they last a long time. It may be termed a shrub, and, being of rapid growth, it soon makes a good plant, but it can, if necessary, be pruned with impunity; in fact, it is best to prune it hard at the end of each season, as then it breaks out into vigorous growth, and produces a good crop of flowers the following season. Our illustration represents a flower-spray at about half the ordinary size; the feathery tuft of stamens inside the flower is particularly beautiful, each stamen being, as it were, crystallised, of a golden colour, red-tipped. There is a double variety of it, which we have seen in Belgium; it has been introduced once or twice into this country, but although it has been known for some years it is still rather rare. It is not, we believe, a free-flowering plant, but it is a beautiful variety, the flowers making compact rosettes of pure white, as every stamen is transformed into a petal. Sparmannia africana is one of the plants which we recommend everybody, who has a greenhouse, to grow. It does not require much heat, is, as we have said, of very simple culture, and—another good point—it is not much troubled by insect pests. Potted in the usual soil, and treated liberally when in vigorous growth, it will flourish satisfactorily.

G.

Sparmannia africana. (*See also page* 494.)

Improved flower-pots.—No doubt Mr. John Tringle's proposed square pots (page 446 *ante*) would have advantages, but I fear they would be much dearer than round ones, having to be made in a mould instead of on the potter's wheel. There is, however, no good reason for preserving the present awkward form of pot, which seems peculiarly adapted for tumbling over, and is most roomy just where room is least wanted—round the neck of the plant. A much better form would have vertical (not slanting) sides, and be considerably less deep in proportion to breadth. If the bottom edge were continued down three-quarters of an inch below the floor of the pot, and the latter pierced with many holes, there would be good drainage without the use of potsherds.—W. Simmons.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and seasons vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15085.—**Begonias.**—Would some growers of Begonias kindly give me the names and colours of a few good single and double roots?—J. D., *Carlow.*

15086.—**Chrysanthemums.**—Could you inform me the proper time for taking Chrysanthemum slips, also how to treat the old plants afterwards?—MOSS JEWEL.

15087.—**Preserving leaves.**—Will any reader kindly tell me how I can preserve autumn leaves, so that they may retain their brilliant colour?—YUM-YUM.

15088.—**How to make a cheap frame.**—Will any reader kindly suggest the best and cheapest way to make a frame for keeping bedding plants in during the winter? R. H. G.

15089.—**Roses for Lancashire.**—Will "J. C. C.," or other readers, kindly tell me the best and sweetest Roses for Lancashire; also whether they are light or dark coloured?—A. R.

15090.—**Mulching Apple-trees.**—Should I begin this now, or wait until after Christmas?—E. S. P. *** *Begin mulching now.*

15091.—**Bedding Pelargoniums.**—Will any reader tell me how to raise a stock of bedding Pelargoniums? I fear it is too late to take cuttings now, but should like advice.—BEGINNER.

15092.—**Drying Pampas Grass.**—Will any readers be so kind as to give me directions for drying Pampas Grasses? I have tried many ways, and fail, with all my care.—SOUTH NORWOOD.

15093.—**Solution for cut Geraniums.**—Is there any "solution" in which the ends of Geraniums may be dipped to prevent rotting? Will any grower of the plant give me full information?—ROKEBY.

15094.—**Plants and Ferns for rockery.**—What are the best plants and Ferns for a rockery in a poor chalky soil, in a shady part of the garden? What time of the year should they be planted?—L. A., *Hambleden.*

15095.—**Artichokes "which have no choke."**—Can any one tell me where to get the Globe Artichoke "which has no choke?" I have not succeeded in getting this sort from the nursery gardeners.—L. A., *Hambleden.*

15096.—**Treatment of Poinciana.**—I have been sent some seeds of Poinciana Gilliesii from Rome. CAN anyone tell me what kind of plant it is, and how the seeds should be sown? They are large and flat.—KILKENNY CAT.

15097.—**Judging Vegetable Marrows.**—Will any one kindly tell me how to judge a Vegetable Marrow? I wish to grow some for exhibition, and to have some means of judging what plants to choose.—YOUNG GARDENER.

15098.—**Virginian Creeper leaves.**—Can any reader tell of any plan for preserving colour in the leaf of the Virginia Creeper, to be used in winter for decorating? —N. N. *** *You will find a note on the subject in this number.*—ED.

15099.—**Ordinary oil-lamp for heating.**—Does any reader of GARDENING use an ordinary oil-lamp for heating purposes? If so, I wish he would kindly tell me what oil he uses. I find that paraffin smells so objectionably.—YORKSHIRE.

15100.—**Kentish Fillbasket Apple.**—Will any north-country fruit-growers kindly tell me whether this Apple, referred to recently by "Grey Friars, of Wolverhampton," would be a valuable one to plant in this district?—J. M. CROSBIE, *Glasgow.*

15101.—**Failure with ridge Cucumbers.**—Can any reader advise an amateur who has planted ridge Cucumbers this year, watered them well through the summer, and yet has had no fruit, although the plants are looking perfectly healthy?—AMATEUR.

15102.—**Culture of Mandevillas.**—Would some one kindly give me hints about growing a Mandevilla? I have one in my greenhouse, but it looks weak, and suffers from green fly. Ought I to grow it in a pot for trailing, or is it too hot under the glass?—A. S. W., *Dorchester.*

15103.—**Rose Maria Leonida.**—Can any reader inform me where an old-fashioned evergreen white Rose, worth cultivating—Maria Leonida—can be procured? I have not seen it for many years, and have failed in my inquiries to obtain it.—A CONSTANT READER, *Southampton.*

15104.—**Roses for severe climate.**—Will any growers tell me the best Roses for growing in a district where the winters are rather severe? I should like to get flowers well into the autumn, and, as I am an amateur, Roses which are not difficult to grow would be most suitable.—C. N. P.

15105.—**Peach-growing under glass without heat.**—I have a large span-roof greenhouse, in which I intend growing Peaches. I shall be glad of any information as to making the bed, &c., and the general management of the trees. Also, what is a good book on the subject?—B. E. M.

15106.—**Unproductive Cherry-tree.**—I have a fine young Cherry-tree which does not bear. Will any fruit grower kindly tell me how to treat it to make it fruitful? My garden stands high, a light made soil on calder and rubbish. The Apple-trees bear well, and the fruit is splendid.—E. S. P., *Norwich.*

15107.—**Plants for hanging-baskets.**—I have got a particular fancy for hanging pots, baskets, &c., about my little greenhouse. Will any reader kindly recommend drooping plants, trailers, &c., suitable for such a purpose? Please give every-day names—I am not good at Latin. House not heated.—C. M. P.

15108.—**Growing Celery.**—I have Celery planted late in good soil, about ten weeks ago. Some plants are now from twelve inches high, others smaller. Will any good celery grower kindly give me instructions how to grow them on successfully? Is there any need of a coveriug from frost?—YOUNG GARDENER.

15109.—**Aralia.**—I have a large Aralia about four feet high. It has two small shoots coming at the base. I wish to know if it would injure the plant to have these shoots? —MOSS JEWEL. *** *No; leave them, and next spring you may separate them from the parent plant, and so increase your stock by making cuttings of them.*—ED.

15110.—**Vegetable garden facing east.**—Have a plot of land at the side of my house which faces due east, and only gets the morning sun during the three summer months. Will any kitchen gardener kindly say what vegetables will be best to sow or plant in spring. The soil is a stiffish loam and damp.—WORSLEY, *Eccles.*

15111.—**Sowing Araucaria imbricata seed.**—Will any one who has had any experience in this matter, kindly tell me when is the best time to sow Araucaria imbricata seed, and whether in heat or not? I have some plump seeds which were brought me off a fine tree near Exeter this year.—BORDERER, *Tunbridge Wells.*

15112.—**The Malmaison Carnation.**—I should be glad to have some advice on the culture and treatment of the Malmaison Carnation. Last year the flowers on my plants were small and of a pale, sickly colour; the foliage, too, was wanting in luxuriance. What manure ought to be used in potting, and when ought the potting to take place?—GEORGE.

15113.—**Marechal Niel Rose in pot.**—I have a small greenhouse in which I have placed this year a Maréchal Niel Rose in a pot about fourteen inches in diameter and about nine inches deep. The plant has made some good top growth. Can any one inform me how to induce the lower growth, and whether it will get sufficient root room in the pot named for any length of time?—NOVICE.

15114.—**Lobelias in pots.**—Can I keep the blue Lobelia through the winter indoors, or will it die down like ordinary annuals? It has been out all summer. [*It will die down if you leave it in the open air.*—ED.] I lately saw a potful of Lobelia hanging in a cottage window. It was drooping over the side of the pot about eighteen inches, and looked very nice. Will any reader kindly tell me how such long growths are produced? I wish to make a basket-plant of—LOBELIA.

15115.—**Procuring Gooseberries.**—Having tried in several nurseries to obtain the following Gooseberries and failed, I apply to readers of GARDENING to assist me, as some correspondents have spoken highly of them:—Dan's Mistake, Companion, Catherine, Stockwell, British Oak, Faithful, Speedwell, Leveller, Mount Pleasant, Gretna Green, Careless, Transparent.—A READER. *** *We have no doubt that the Lancashire nurserymen would be able to supply most of these.*—ED.

15116.—**Treatment of Roses in pots.**—Having just bought a few Tea and Noisette Roses in pots, such as Maréchal Niel, Niphetos, Triomphe de Rennes, Catherine Mermet, &c., I shall be glad if any good growers will kindly tell me when they should be pruned, and to what length, as their shoots vary from three to six feet. They are not intended for forcing, but will have cold greenhouse treatment. What is the best time for repetting them? They are now in six-inch pots.—J. B. K., *West Dulwich.*

15117.—**Compost for Pelargonium cuttings.**—Will you kindly inform me as to what is the best sort of compost for potting rooted cuttings of Pelargoniums? I have an old Cucumber-bed. The bottom is three inches thick of hops, and then about one foot thick of rotten sods and horse manure. If I chop this up altogether and put some sharp sand to it, will it do?—AMATEUR. *** *You may make use of the stuff that you mention, but it is rather richer than the compost need be, and should be modified with a considerable addition of the best ordinary loam or pasture earth that you can get, or, failing these, good garden soil.* —ED.

15118.—**Keeping Pelargoniums in winter.**—Could you tell me the best plan of keeping Geraniums through the winter? At present they are in pot, having just been taken out of the ground, and are in a dark but dry cellar.—A WEEKLY READER, *Essex.* *** *There are various modes of keeping Pelargoniums in winter described in our columns. "A Weekly Reader" does not state what accommodation he has. He may, however, keep them in the dry cellar, provided frost is kept out, until spring, when they will be glad of a more genial habitation in a greenhouse or warm frame, and, failing this, a sunny window.*—ED.

15119.—**Cultivation of bulbs for spring flowering.**—Will you allow me to ask "J. D." through your paper, to tell me the best way to cultivate bulbs? He says, on page 466, that a good stock of bulbs should last for years. I have this year planted Hyacinths, Tulips, Narcissus (Trumpet major), and Polyanthus-Narcissus about five or six inches deep in good soil, and shall be very glad to know how to manage them, so that they may not deteriorate? I want to leave them in the earth after blooming, to save the trouble of lifting. Will he say what he considers good cultivation, and whether artificial manures can be used with advantage?—LUCY, *Hammersmith.*

15120.—**A meteorological question.**—I have a greenhouse, with a mixed collection of plants, heated with hot water. Now, I want to know when to "fire up." I read in GARDENING not to put too much fire in except in case of frost; how am I to tell when to expect frost, as it comes like a thief in the night? Last winter I was caught napping one night, and lost about half my plants.—E. GORDON, *Stockport.* *** *A good gardener should certainly know when frost is about. What should we say to a sailor who did not know the signs of a storm? Frost never comes like a squall in some seas! Perhaps some of our meteorological readers will tell you when to expect frost.*—ED.

15121.—**Decaying Marechal Niel Rose.**—Some years ago I had a Maréchal Niel Rose on its own roots, planted in the open ground of conservatory, and trained on trellis on roof. This grew to a large size, and flowered splendidly its third, fourth, and fifth years, when a large knot grew at the collar of the tree, and it died. After, I planted a similar Rose in another house; it has flowered for three years, and the same sort of knot has formed at the collar. The Roses were not thin this spring, and the tree has had some blooms on it nearly all summer, and is still throwing out miserable little buds. The branches are decaying, and leaves got yellow. Can anything be done to save it, or had I best cut it down?—M. S. R., *Ramsoch.*

15122.—**Growing vegetables for exhibition.**—Will some successful exhibitor of kitchen garden produce kindly tell me the best way to grow Shallots, Carrots, Potatoes, and Broad Beans for exhibition? Also the best time to plant and sow so as to be fit by the end of July? Mine is a light, black loam, well drained, but the garden is not walled in.—YOUNG GARDENER, *South Devon.* *** *You will find information regarding the vegetables that we have omitted from your list on page 462 (Oct. 17th). You should not lump all sorts of kitchen produce together, and if you ask for information respecting a few vegetables only, you will probably receive fuller and more complete instructions from those readers who answer your questions.*—ED.

15123.—**Fruit-growing for profit.**—Having a desire so to make use of a piece of ground, composed of light, yet good soil, that it may become a source of profit, I intend to plant in it Gooseberries, Raspberries, Black Currants, and, possibly, Red Currants. The ground comprises about one and a half acres, having an inclination to the north, but partially protected from the north wind. I shall feel obliged for information as to what varieties of the above-named fruits would command the best sale, both for immediate consumption and for jam-making, and whether the demand for the above fruits, and the prices now obtainable, are sufficiently good to induce one to plant? Will Mangabey or Strawberries, if grown between the rows, interfere with the growth of the bushes?—W. P. M.

15124.—**Building brick flue.**—Would some kind reader give me instructions how to build a brick flue to heat my Cucumber house, which is a span-roof twenty-seven feet long, fifteen feet wide, and ten feet high. I want the fire-place and chimney at door end—that is, the flue to run along one side, and across the end, and up the other side, and the beds on each side of the flue. Please state how to build fireplace, how deep the flue should be, how wide, what rise it should have, what size the chimney should be, and what height. Can I get sufficient heat to start them the last week in January? I may just say I only erected my house this spring, and built the flue to run all round, as just stated, but I could not get it to work, so I built two straight flues and two chimneys. If one would answer it would save both fuel and labour.—J. W., *Cheshire.*

15125.—**Plants for shaded house.**—We have erected a glass structure outside the garden-door of house next the principal sitting-room, which communicates with the same by half-glass door. The object is to keep out the winter cold. It looks bad empty, but as the sun seldom or never shines on it I am afraid to stock it with the ordinary greenhouse plants. Will some experienced reader kindly advise the sort of plants to grow in the same without artificial heat. I should like Ferns or other subjects that would not take much time to look after.—W. W., *Derbyshire.* *** *New Zealand Flax and Japanese Aralia Sieboldi, and Laurustinus (in tubs as grown by the Belgians) would be useful with some hardy native and foreign Ferns. No doubt some readers will help you with advice, and you receive some valuable hints from the article by "B. C. R." in this week's issue.*—ED.

15126.—**Caterpillars on Gooseberry-trees.**—Will some practical readers kindly advise me under the following circumstances? The caterpillars attacked my Goosberry-trees early in the summer. I tried hand-picking, but not having very much time to spare, I had no chance at all, so I dusted the trees all over with lime, when the grub disappeared; but after a few showers, which washed off a little of the lime, they reappeared, and ate up every leaf, except a few at the point of each shoot, which were taken possession of by a colony of black flies. Last winter I put a good mulching of stable manure under each tree. I was thinking of putting, say, three-quarters of an inch of gas-lime under them now; or would it be better to put the gas-lime upon the manure or under the manure, or put the manure on now and fork it in March, and then put on the gas-lime, or would ordinary slaked lime be preferable?—H. W.

15127.—**Hardy Cyclamens.**—Will some grower of hardy Cyclamens kindly give me a little information as to the different varieties of these beautiful window foliage plants? There appears to be some confusion of name among the different plant catalogues concerning them. How many well-marked varieties of C. hederæfolium are there? I possess two; one with large handsome leaves on rather long stalks, the centre of the leaf dark green, surrounded by lighter colour; flowers, pink or white. The other was brought from Toronto, and has the whole surface of the leaf of a silvery colour, with an irregular band of darker green about equidistant from edge and centre; very compact habit of growth; leaves and flowers far more numerous than in the other kind. Is this neapolitanum, or is that a distinct variety, and græcum also? I have seen a pretty variety on the new rockwork at Kew, but could get no information about it. C. Coum is about a plain dark-green leaves, but my plant, procured from one of the best hardy-plant firms, has leaves marked like C. Atkinsii. Is that right? Are C. Atkinsii and ibericum very much alike? Also C. vernum and ripandum? Any light thrown on these questions will oblige.—J. MADDY, *Dolaeron, Aberayron, Cardiganshire.*

15128.—**A young lady's garden.**—I have a small patch of the kitchen garden given me for my flowers. It is twenty-two feet by fifteen, and close to a wall. I would be thankful for hints as how to put in to the best advantage, and make it look pretty. Would different shaped beds, with grass paths between, be advisable? What kinds of hardy plants would be best to put in now for summer blooming? I have some bulbs for spring. The soil is a heavy, rich loam, with a subsoil of limestone.—O. *** *We should throw it into simple oblong beds about four feet wide, with a small alley between, no grass walks and no more waste space than is quite necessary. Give the whole*

of the space to a mixed garden of beautiful flowers, but do not aim at too great a mixture, and try to have a distinct patch of each thing. It would be impossible in a short answer to give you a list of the beautiful things that you might employ, but you will see a list of hardy plants in GARDENING, *Oct. 3, and you may choose those which you like best. Recent articles will also give you much information as to present work. Hardy alpine plants you should also grow, and for these consult "Alpine Flowers," published by Mr. Murray. Your other questions must be separated according to our rules.* —ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15129.—**Cutting leggy Evergreens** (*R. A. B.*).—Cut them in April.

15130.—**Scale on Roses** (*B. E. M.*).—Dress with paraffin or fir-tree oil.

15131.—**Manure-water for Azaleas and Ferns** (*Coleus*).—No. Ferns and Azaleas do not require manure-water.

15132.—**Sowing Balsams, Thunbergias, and Cockscombs** (*C. N. P*).—These should be sown in spring in heat.

15133.—**Transplanting Pinks** (*W. M. Miller*).—You may transplant them now, but the work should have been done earlier.

15134.—**Potting Imantophyllums** (*London*).—Pot them now; but to grow them properly you ought to give them a little heat.

15135.—**Greenfly on Geraniums** (*Oakleaf*).—Soft soap—three ounces to a gallon of water—will kill greenfly. Dip or syringe the plants.

15136.—**Spindly Geraniums** (*Oak-leaf*).—Your Geraniums are spindly, in all probability, because they have been grown in partial shade.

15137.—**Horse-hoof chips for Vines** (*A Reader*).—Yes, we think they are useful to the same extent as bones. Dig into and well mix with the soil.

15138.—**Uses of poultry manure** (*Novice*).—Use it in moderation for plants, mixed with other soil. A note on page 460 (Oct. 17) answers your question more fully.

15139.—**Keeping Pelargoniums without potting** (*J. E.*).—Hang them up by the heels in a dry cellar, or in any place where they are likely to be safe from frost.

15140.—**Growing Mushroom Gourd** (*Truly a Novice*).—We are sorry we cannot help you, because we do not know what gourd you mean. Cannot you find out the proper name?

15141.—**Cork on walls in fernery** (*H. Ballantine*).—The use of Cork for this purpose is not recommended in the article on page 444; when used, it may be fastened to the walls with nails.

15142.—**Climbing Roses on Pillars** (*Ever a Learner, Taunton*).—You might be sure of success with a Gloire de Dijon and Céline Forestier on pillars, in Somersetshire. Both are lovely Roses.

15143.—**Anemones showing leaves** (*Anemone*).—Your plants are all right, we think. Anemones are of the hardiest race, and they will probably not suffer during the winter, especially as your garden is in Somersetshire.

15144.—**Propagating Chrysanthemums** (*Londoner*).—If your plant is in vigorous growth, it will soon be throwing up some offshoots, from which you should propagate in January or February, so as to have nice plants.

15145.—**Lilium auratum and candidum** (*Rokeby*).—All the Lilies you mention are hardy, and should flower in the open air. They should also succeed in pots, and would increase and flower regularly under good culture.

15146.—**Worms on bowling-green** (*Jack*).—The same question was asked a few weeks ago, and you will find an answer on page 485 (last week). Doubtless other readers will tell you how they have dealt with similar difficulties.

15147.—**Planting Day Lilies** (*E. G. S.*).—Day Lilies (Hemerocallis) grow in almost any garden soil, and may be planted at any time when you can get them—certainly with the greatest safety throughout autumn, winter, and spring.

15148.—**Pots plunged in Cocoa-nut fibre** (*A. M. B.*).—Yes, you may use Cocoa-nut fibre, but it is not necessary. One advantage resulting from its use is that the soil is kept in an equable state of moisture; it also hides the pots.

15149.—**Taking up single Dahlias** (*J. E.*).—You had better take them up before frost is likely to injure them, and store them in a dry shed. Some growers hang them up, others put a layer of Cocoanut fibre or some similar material over the tubers.

15150.—**Plants for greenhouse** (*C. N. P.*).—You want plants to fill your house "while the Pelargoniums, &c., are out in the garden." Tomatoes would be suited to your purpose, or you might have Vines or Peaches, both of which do perfectly well in a cool house.

15151.—**Tuberoses damping off** (*Kevin*).—We should say you obtained them far too late in the season. We have always planted them in the spring. It is probable that you bought old bulbs, which could not come to perfection, as the plant wants a good deal of heat.

15152.—**Plants in room facing south.**—If the temperature of the room is kept above freezing-point, the flowers (see p. 155) would not be harmed. You may use an oil-lamp to keep out frost, but you must be careful that no fumes escape, or the flowers will inevitably suffer.

15153.—**Keeping Pelargoniums** (*C. N. P.*).—You had better get a small oil-stove, to keep out the frost, as the kitchen fire that you speak of would be of no use on a frosty night. You cannot keep the plants in such a structure unless you maintain the temperature above freezing-point.

15154.—**Heating span-roofed house** (*Soldier Amateur*).—You will find in the present and in past (some recent) numbers of GARDENING, various expressions of opinion as to the first of the two heaters that you mention. We do not think you would be helped if we again asked the question.

15155.—**Liquid manure for Impatiens** (*Constant Subscriber*).—Liquid manure is useful for most plants, but need not be applied unless the soil is worn out or the pot is full of roots. Plants in good soil and sufficiently watered frequently have all the nourishment they want without liquid manure.

15156.—**Hyacinth tops broken** (*W. M. Miller*).—The probability is that your Hyacinths in glasses will send up several secondary shoots, which will be weaker than the primary one which your bird destroyed. They may flower weakly, and they may not bloom at all; we should advise you to get fresh bulbs.

15157.—**Treatment of Pelargoniums** (*F. E., Forest-hill*).—Your Pelargoniums should be kept moderately dry during the winter. The reason that they turn black is that the wood is not thoroughly ripened; it was too sappy when the plants were lifted. The best treatment is to cut back to the hard wood.

15158.—**Obtaining Daffodils** (*Mrs. Janverin*).—The three small Daffodils (Narcissus minor, minimus, and nanus) lately illustrated in GARDENING, may be obtained from any of the leading bulb-growers. Some nurseries make a specialty of bulbs, and our advertising columns will give you full information on this point.

15159.—**Removing biennials and perennials** (*Beginner*).—Remove them now. People are far too nervous about moving biennials and perennials. We should not be afraid to move perennials at any time of the year almost—certainly should not hesitate to do it at any time from September to March, except during hard frosts.

15160.—**Water not wetting soil in pots** (*W. C. B.*).—Certainly you should make the ball thoroughly moist when you water. Probably the soil in the pot allows the water to escape down the side; you should, if this is the case, press down the soil with your thumbs, so that the water may go through the ball. This is a common trouble with neglected or badly-potted plants.

15161.—**Obtaining French Paradise Stock** (*D. C. H. E.*).—Any good English fruit-grower ought to be able to get you the Paradise stock. Of course, it is the only stock of the kind used by the French growers, and therefore there should be no difficulty in getting it. You must be careful, however, not to accept in its place some things which are sold under the name.

15162.—**Damp in Greenhouse** (*W. C. B.*).—All water spilt in a greenhouse would naturally tend to cause a certain amount of damp and evaporation; but it is absolutely necessary, when a house is kept at the temperature that you mention (fifty to fifty-five degrees) to have moisture in it; and, used in a reasonable way, water should not cause damp in any injurious degree.

15163.—**Compost for Spiræas** (*Beginner*).—Spiræas vary from low trees to tiny Alpine plants, and it is well always to state what kinds you mean. Of the popular kinds many are wholly distinct in character and requirements. You probably mean the greenhouse Spiræa, or Hoteia, which is so often forced; if we are right, kindly say so, and we will help you.

15164.—**Planting the Flame Nasturtium** (*E. G. S.*).—If you have the bulbs, plant as soon as possible in rich peaty or leaf-mould soil, or the most open soil you have, in a rather cool place. As you are in the south of England, plant in the coolest place that you have, among bushes or American plants, or against a north wall, creeping up the fruit-trees or other objects on it.

15165.—**Green Tomatoes** (*Thulé*).—There are yellow and red, but no green Tomatoes, and if yours remain green they are not ripe. If they are outside you had better cut them, and put them in a sunny place near the window, when they will change colour. If they are indoors the probable cause is want of sun, and they will ripen if cut from the plants and put in a favourable position.

15166.—**Apple for cooking and dessert** (*C. N. P.*).—You do not mention your district or county, and therefore it is not so easy to give you advice. If you are in the south, we think Calville Blanc is a capital Apple for your wall; if in the north or Midlands, you could not beat the Ribston. Your desire for an Apple that combines both cooking and dessert qualities will be met by those, and the Blenheim, during the season, is not bad.

15167.—**Chrysanthemums in the open air** (*P. E. G.*).—In your climate, in the south of Ireland, you might flower the Chrysanthemums under a sunny wall in the open air. It is only in genial districts that late-flowering Chrysanthemums make any show in the open air, as far as our experience goes; but there are some kinds that flower earlier now making their appearance in our gardens. Kindly send your other questions on separate slips of paper.

15168.—**Obtaining Nasturtiums** (*J. G. A.*).—There should be no difficulty in obtaining both the single and the double kinds from or through any good nurseryman. Special growers of soft-wooded plants would be most likely to have the best variety. Single kinds are sold abundantly by seed, and in any of the principal seedsmen's catalogues you will find a selection. Double ones will be bought in the form of plants, and we think you will easily procure what you want if you write to some of the firms who advertise in GARDENING.

15169.—**Manure-water for Coleuses and Begonias** (*Coleus*).—You ask how often manure-water should be applied. If the plants are in vigorous growth—and you can always tell when plants are doing well by the healthy appearance of the foliage—you may occasionally give a dose of manure-water; but you should bear in mind that manure-water is only used as a stimulant to assist in making the growth, and unless the plant is strong it should not be applied. Anything like a regular use of manure-water, without judgment as to the condition of the plant, would be a mistake.

15170.—**Sickly Maiden-hair Ferns** (*Patsy*).—We cannot in our editorial columns advertise any special manure. You ought to be able to get a perfect result in the culture of your Ferns with fresh ordinary soil, peat and loam. You must look for the cause of the sickly green colour in some error of treatment, and not in the want of a patent fertiliser. Remember that all the lovely Ferns in different parts of the world, from the gullies of New Zealand to the hills of Westmoreland, thrive very well with natural fertilisers. Let us know what treatment you have followed, and send us a portion of the Fern, and we may then be able to advise you what to do.

15171.—**Unhealthy Vine-roots** (*J. Hawken*).—There is evidently something very wrong with the roots of your Vine. We have several times had roots sent us in the same condition, but have never been able to discover any insects on them, nor to determine the cause of their decaying condition. Their being so unhealthy would quite account for the poorness of the shoots. Examine the border thoroughly and see if the roots have got among something they do not like, or if the soil below be too dry or too moist—perhaps the drainage is deficient. —G. S. S.

15172.—**Insects on Potatoes.**—(*C. E. Cox.*)—The small wiry centipedes are one of the Snake millipedes (Julus pulchellus). These pests, if I can judge from the number of specimens sent me for inspection, are unusually numerous this year. They are very difficult to get rid of; no insecticide can reach them—feeding as they usually do at the roots of plants—without injuring the plants. In your case, I should recommend that when the crop is off, the land should be rendered as clean as possible by not leaving any small or damaged Potatoes in the soil, so as to starve the pests, and giving a heavy dressing of gas or quicklime, or salt. These creatures may be trapped by burying small bundles of dry Moss in the earth, which should be examined every day; but this is only useful for a very local attack. On further examination of your Potatoes I find they are infested by one of the Springtails (Lipura ambulans) as well as the Snake millipedes. These are probably the small white insects you alluded to, and which I overlooked on my first examination, as they had worked into parts of the Potatoes where I only found them when I cut the Potatoes in pieces. These are destructive creatures, but I can suggest no better means for their extirpation than those I have suggested for killing the Snake millipedes.—G. S. S.

TO CORRESPONDENTS.

Moss Jewel.—In your third query you accidentally omitted the name of the plant. Write again.——*Tannergram.*—It is of little use asking our readers if they agree with the statements in a book which probably most of them have not seen. The best way is to describe briefly the points upon which you are doubtful, and to invite expressions of opinion on those subjects.——*B. M. Tite.*—Thanks for your letter. Your suggestion has been made before, and considered, and we do not think it can be carried out.——*William Stow.*—We do not think it would be of any use sending your Chrysanthemums to Covent Garden, as the market is generally glutted with them at this time of the year. Cannot you find a more profitable market in your immediate neighbourhood?——*Constant Subscriber.*—See No. 15043 last week for query respecting Impatiens Sultani.——*J. Gillingham.*—You do not state your locality, upon which a great deal depends. We will hold over your question until you write again.——*J. Hawken.*—Deformed flowers, such as the Anemones you send us, are not uncommon, but by no means desirable.——*H. Hatch.*—You need have no difficulty in getting plants of Double Begonias. Try any good nursery and you will get what you want.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

⁂ *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton - street, Strand, W.C.*

Names of plants.—*Moss.*—Cratægus tanacetifolia.——*Ignoramus.*—Abelia rupestris.——*Miss Reay.*—1 and 3, cannot name from leaf only; 2, appears to be a Cassia, but you must send a better specimen; 4, Plumbago capensis.——*Rev. W. O. Wait.*—Abelia rupestris.——*Dunbeath.*—Wild Service (Pyrus torminalis).——*J. Gibson.*—1, Oncidium tigrinum; 2, O. prætextum; 3, O. Forbesiæ; 4, Miltonia Clowesi.——*C. G.*—1 and 2, cannot name from specimens sent; 3, Common Rue (Ruta graveolens), frequently used medicinally, and sometimes mixed with food given to birds.——Anonymous ("*L. L.*" *written on Cigarette-box*).—Muhlenbeckia complexa.——*C. S. Dunlop.*—Fuchsia procumbens.——*Mrs. James.*—Phytolacca decandra (not poisonous, but hardly eatable); it is used, we believe, in colouring spurious "port" wine.——*R. R.*—Impatiens glandulifera.——*Borderer.*—The small spray is probably Spiræa Reevesiana. It is unfair to expect names from single leaves; it is no use attempting to determine plants from such scanty material.——*Chas. Scott.*—Lastrea elegans.——*G. Retrop (a constant subscriber).*—1, Asplenium lucidum; 2, Niphobolus Lingua; 3, Polystichum capense; 4. Doodia aspera.——Others next week.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*J. Beddow.*—1, Kerry Pippin; Others next week.—*W. W.*—Apparently Warner's King. —*M. B. E.*—1, Louise Bonne of Jersey; 2, Seckle; 3, Brown Beurré.—*R. E. S.*—1, Beurré Rance; 2, Beurré Clairgeau; 3, King of Pippins; 4, Lord Suffield.——*G. H.* and others.—Next week.

Smithfield market, Evesham.—List of prices realised Oct. 30, 1885:—Brussels Sprouts, 3s. 6d. to 4s. per pot (40 lb.); Cabbages (pickling), 4d. to 6d. per dozen; Carrots, 2s. to 2s. 3d. per cwt.; Cauliflowers, 4d. to 9d. per dozen; Celery, 8d. to 1s. per dozen; Onions, 2s. 6d. to 3s. per cwt.; Parsnips, 2s. 9d. to 3s. 6d. per cwt.; Potatoes (new), 1s. 9d. to 2s. 3d. per pot; Sage, 1½d. to 2d. per dozen bunches; Vegetable Marrows, 2s. 1d. per pot; Apples, 1s. 9d. to 6s. 9d. per pot (64 lb.); Grapes, 2½d. per lb.; Pears, 2s. to 5s. 6d. per pot (72 lb.); Walnuts, 4s. 6d. to 5s. 3d. per bushel.

OUTDOOR PLANTS.

THE GAILLARDIAS, OR BLANKET FLOWERS.

THESE charming border-flowers are now, after a long and persistent course of unreasonable neglect, and, indeed, almost entire annihilation, once more receiving the attention which their singular merits have long deserved. Since coming under the notice of the hybridiser, the selector, or the careful cultivator, the size of the blooms and their variety of colours have been vastly improved, so that they may now well claim a first place among summer flowering plants, whether annual or perennial. Among the most useful kinds in cultivation are the following:—

Gaillardia amblyodon is without exception one of the most useful hardy annuals of recent introduction. It is suitable alike for bed or border, and perhaps the only one not fastidious as regards situation. It is of an extremely free-flowering character, and the flowers, which are throughout of a brownish red, maroon, or cinnabar colour, are very peculiar and quite unique in appearance. They are two inches, and often three inches, broad, and the leaves, which are nearly all sessile, are oblong in shape and rough to the touch. It is easily distinguished by its fine compact habit and very pointed ray florets. It grows about one and a-half feet high. It is a native of the sandy prairies of Texas, and is fairly common in gardens. The seeds may be sown in the open border about the beginning of April where they are intended to remain, but this is not absolutely necessary, as they stand transplanting very well. G. aristata, although very variable both in size of flowers and cutting of the leaves, even in its natural habitats, always retains that robustness of growth and the firm, rough-textured leaves, so characteristic of it, and which so distinctly mark it under cultivation. It is perennial, and is often found in gardens under the name Richardsoni. With us it grows a little less than two feet in height, but seems to vary. When well grown it is a very handsome plant, but in damp, low localities it hardly ever develops its rays beyond the involucre. The flowers with us are never less than from four inches to six inches broad, are of a pale uniform yellow, disc purple, with hardly if ever a tint at the base of the ray florets. The leaves are always broad lance-shaped, and partly stem-clasping, and the whole plant is covered with coarse hairs, which are most marked on the unusually large and irregular involucre. It flowers from July, and is still in the open air (November) flowering freely. It is a native of Columbia, Oregon, South Colorado, and even California. G. lanceolata is also a perennial species, and though as yet sparingly in cultivation, it is a very beautiful and singularly marked species. It generally grows about two feet in height, and is always densely covered with short, stiff hairs, which enhance its appearance considerably. Owing to its neat, compact habit, this plant is well entitled to a prominent place on the rockery, where its sweetly-fragrant flowers will no doubt prove an acquisition. It seldom attains more than a foot in height. It has small linear, entire, or slightly-toothed leaves, and the flowers, which are of a pretty, soft orange-yellow, are beautifully marked with dark purplish veins. It blooms all through the summer months. It is a native of the dry Pine barrens of South Carolina, and even reaches Texas. G. pulchella is probably the oldest of all Gaillardias and most generally cultivated, at least in some of its various forms. It was first introduced a century ago, and, fortunately, found a quiet home in a country garden during the relapse which until lately had befallen this class of plants. The typical G. pulchella seldom grows more than a foot high; it is of perennial duration, though erroneously classed among annuals. It is diffusely branched from the base, forming loose natural, bushy tufts. The flowers are a little over two inches in diameter, ray florets always two-coloured, golden yellow at the tips, and blending half way down into red or dark purple, which becomes intense towards the base. It flowers freely all summer, and is a very useful border plant. It is a native of Louisiana, Texas, and Arizona. G. pulchella var. picta, for garden purposes, differs little from the type, except in having more succulent leaves and having shorter and stouter bristles on the receptacle, and also in having a distinct mark between the two colours, the yellow part extending only to the end of the teeth.

Gaillardia aristata grandiflora.

Among other varieties that may be mentioned is G. grandiflora, a fine vigorous form, with large and superb coloured flowers, but which is surpassed by G. maxima, which often attains six inches in diameter, and not is unlike a large coloured Helianthus multiflorus. G. picta or tricolor is also a handsome and desirable variety of singular merit. There are others, such as Loiselli, Bosselari, Telemachi, and hybrida, all differing more or less in intensity of colour, but G. Lorenziana, a large double-flowered form, is exceedingly beautiful. It seems to come in some of the forms singly, not probably having set, and all stages may be seen between the single and double forms. Var. fistulosa and Aurora Borealis are also desirable.

Culture.—Most Gaillardias are of perennial duration, although they generally succumb to our trying winters, unless they are in extremely favoured localities, or are afforded a little protection. In the case of G. pulchella, which is often on this amount cited as an annual, it will stand very well in dry, sandy soil in warm positions. But even were the possibility of their living through the winter doubtful, they may be perpetuated by cuttings with the greatest ease; they strike freely taken off in autumn and treated in the same manner as that practised in the case of Pelargoniums, &c., *i.e.*, in a cool frame where frost is excluded, or they may be raised from seeds, which ripen freely. Sown in spring, about March, they may be had in flower almost as soon as those that may have succeeded in living through the winter. When Gaillardias are planted in mixed borders, a warm dry situation should in all cases be chosen, and where they will get plenty of sun, the soil light, rich, and of a porous nature, loam, leaf soil, a fourth of well-rotted manure, and plenty of sharp, coarse river sand. However well they may look in the above position, and no one will doubt their appropriateness, I prefer devoting a bed or short border entirely to the numerous varieties cultivated, or a small bed to each shade of colour as taste may dictate, and as they have a profuse flowering habit and long continuance in bloom, from early summer to the middle or end of November, they are much better when kept by themselves. For overhanging ledges or covering bare unsightly banks in or near a rockery they are also desirable, and in such places, owing to the better drainage, seven in ten may be safely wintered. On the Continent, they are said to be used with surprising effect in bedding or clumping on smooth lawns. Some of the larger and finer sorts, such as maxima Telemachi, picta splendida, and others, may be advantageously used for greenhouse decoration, more especially as their flowers seldom measure less than five inches or six inches in size, with a corresponding intensity of colour when the plants have been liberally treated. The cultivation of Gaillardias in

naturally damp localities, and where the soil is of a stiff nature, though presenting many difficulties, may in part be overcome, and a fair amount of success obtained by mixing rubble with the soil and raising small mounds or hillocks on which to plant them; the highest and most exposed positions should always be chosen. D. K.

LOBELIA SPLENDENS VAR. QUEEN VICTORIA.

This is a plant well worthy of its name. For a late summer and autumn show in the flower-garden, no better plant, to our thinking, exists. Used in combination with such plants as the summer and autumn Chrysanthemums, Anemone japonica alba, and the tall African Marigolds, we have done a very great deal in the way of reducing that stiff and formal look so inseparable from the use of Geraniums, Calceolarias, Verbenas, &c.; and this, too, in a very elaborate and formal terraced flower garden. Although we have been using this Lobelia in our bedding arrangements for the last six or seven years, we never had it, nor have we ever seen it in such grand dress and brilliancy as it is this season. Even at the time we write (Oct. 24) it stands out conspicuously in its radiancy from all the other plants around it, which have a seedy look and washed-out appearance. For an isolated bed in any quiet corner, with a backing of evergreens, this Lobelia is particularly suitable. In such a position it would shine forth like a gem of the first water, its deep bronzy leaf and rich vermilion bloom contrasting well with the green-leafy surroundings. To have it very effective it requires to be planted in goodly numbers together, and the ground underneath carpeted with some dwarf plant. We have used several things for this purpose, but there is nothing better in our opinion than the old Koniga variegata, its white variegation contrasting with the bronzy Lobelia. Most of the tall Lobelias are subject to canker, and die off in large numbers, and the subject of our remarks perhaps more so than the others. To have sufficient stock for our purposes we formerly saved a certain number of clumps in the autumn, and these we severally divided and potted off in the spring in the way of ordinary bedding plants; but by this process we lost as many as 50 per cent. through canker. We now adopt a more simple process, and scarcely lose a single plant.

We leave our plants in the borders till the frost has nipped the tops; the plants are then lifted, the frosted parts cut off, and the clumps placed as close together as they will go in a cold frame, and the spaces filled up with any common soil to hand. In this position they are left till they have made fair growth in the following April. The beds are then prepared to receive them; a four-tined fork is thrust under the clumps, and they are lifted bodily into a barrow and taken to the beds. Those clumps that will bear division are divided, two or three shoots being left to each, and the whole carefully planted in a richly prepared soil, but the plants are not watered in, the soil being sufficiently moist for the purpose. Our experience is that it is the waterings given at a time when there is no active root action, especially if the plants are in pots, that induces and aids the canker from which so many of the plants die. J. K.

Red autumn-flowering Sage.—With the exception of Salvia coccinea and S. porphyrantha, neither of which are hardy, none of the Salvias are so handsome as S. involucrata or red autumn-flowering Sage. Against a wall at Kew it has stood the test of the last five or six winters without protection, and that, too, in a very cold position, but even in the open border it has thrown up spikes of beautiful flowers with remarkable freedom. It is probably the moisture lying at the roots more than actual cold that destroys many of our reputed tender plants in winter. In the present instance success is attributed to thorough drainage directly under the plant. In the open border it grows from three feet to five feet in height, and the flower-spikes, which are a little behind those of S. Bethelli, of which it is the type, are very handsome, and produced freely; the leaves, too, are of a beautiful light, soft green veined with purple. It may be easily increased by cuttings taken off now or in spring, when it begins to grow.—K.

Good distinct Ivies.—Judging by the very general and exclusive use of the common Ivy as a covering for bare walls, one may, perhaps, be excused for preaching once more from that old text, "variety is charming." It is especially so with Ivy, and seeing that we have at least a dozen good distinct green-leaved kinds of robust habit, this monotony is all the less excusable. As a robust growing kind, perhaps none can rival the Irish Ivy (Hedera canariensis); but other fine-leaved kinds, such as H. Rægneriana, H. Glynni, and H. dentata should also be employed more generally than is at present the case. The large-leaved golden, judiciously planted here and there among green-leaved kinds, shines out like a gleam of sunshine. H. atro-purpurea contrasts well with this, or with the dwarf silvery-leaved kinds on low walls or stumps near the house.—F. W. B.

Plants in bloom on October 1 at Campden, Gloucestershire—on the Cotswolds—600 feet above sea level:—

Achillea filipendula (Yarrow)
A. ptarmica fl.-pl.
Alyssum maritimum
Ammobium alatum (Winged Everlasting)
Anemone japonica alba
A. j. hybrida
A. j. rosea
Antirrhinum (Snapdragons) of sorts
Chrysocoma Linosyris Goldilocks)
Coreopsis
Cyclamen hederæfolium
Chelone lyoni (Shell-flower)
C. barbata
Calendula Meteor (Cape Marigold)
Campanula carpatica (Harebell)
Carnations of sorts
Chrysanthemum lacustre
Coronilla varia
Dianthus superbus (Fringed Pink)
Digitalis ferruginea (Foxglove)
Echinops Ritro (Globe Thistle)
Erodium Manescavi (Heron's-bill)
Gaillardia grandiflora in variety
Gaura Lindheimeri
Helenium pumilum (Sneezewort)
Helianthus doronicoides (Sunflower)
H. multiflorus fl.-pl.
Hypericum patulum (Spreading St. John's-wort)
Lychnis dioica fl.-pl. (Double Red Campion)
Matricaria inodora fl.-pl. (May weed)
Michaelmass Daisies:—
Aster Amellus
A. lævis
A. Nova-Angliæ
A. N.-A. rubra
A. turbinellus
A. longifolius formosus
A. hesarabicus
Mimulus cardinalis (Scarlet Monkey flower)
Monarda alba
M. didymus
Nierembergia gracilis (Cup flowers)
Œnothera taraxacifolia (Dandelion-leaved (Evening Primrose)
Papaver umbrosum (Scarlet Poppy)
Pentstemons
Phlox amœna (2nd bloom)
Phlox of sorts
Potentilla versicolor (Cinquefoil)
P. nepalensis
Polygonum Brunonis (Knotweed)
P. cuspidatum
P. vaccinifolium
Pyrethrums (Feverfew) double amber and cream
Rudbeckia Newmanni (Cone-flower)
Scabiosa caucasica (Caucasian Scabious)
Sedum spectabile (Stonecrop)
Senecio pulcher
Silene Schafta (Catchfly)
Tritoma Uvaria (Glaucous leaved Torch Lily)
Verbena venosa
Veronica hybrida (Welsh Speedwell)
V. longifolia subsessilis (Japanese Speedwell)
Dahlias, Pansies, Roses, Chrysanthemums, &c.

J. R. N.

Golden-leaved Columbine (Aquilegia Vervæneana fol. var).—Last February I sowed one packet of this beautiful hardy perennial in a cold frame, and transplanted the young seedlings to a bed in May, as a substitute for tricolor Geraniums, with the best possible result. The very ornamental foliage of this Columbine—gold, green, and, just now, different shades of purple, are lovely—and quite equal, if not superior, for effect to the Geranium. It would be entirely superfluous to mention the advantages arising out of the use of this hardy plant in preference to the Geranium, as most cultivators must needs be very familiar with the cultural details of the latter, for a fleeting and doubtful pleasure of a few months; whereas the Columbine will, when once planted, take care of itself, and at present it is in grand condition, and will continue so for a long time. It may also be employed in different foliage arrangements, only keeping the flower-stalks removed as they appear.—P. M. D., *Carlow*.

Torch Lily (Tritoma Uvaria).—For massing on lawns, pleasure-grounds, or as a single specimen on the herbaceous border during the months of September and October, this fine subject has few, if any equals. It is not, however, to its highly-decorative merits that I wish to attract attention at present, but to its value as a bee-plant, for at present (Oct. 20) its noble spikes of bloom are crowded every fine hour with bees extracting apparently a large supply of honey. Bees occasionally, if short of food, will gather honey from flowers that they would not touch unless necessity compelled them to seek every source of supply available; but we have a good plot of Borage in bloom, which is one of the best bee-plants, and they prefer the Torch Lily. Also our stocks are strong, having a fair amount of winter stores, which we increased by removing all empty combs, and supplying their places with frames of candy. Here, in Carlow, the plant is hardy, but it is well to give it a good annual mulching of stable manure, &c., about November, for the double purpose of enriching the soil and protecting, packing the material under the evergreen foliage around the crowns. I only saw it killed once by frost, which occurred during the terrible winter of 1878-9, when, in common with many supposed hardy or naturalised plants, it succumbed to the severity of the arctic weather. The plant delights in a warm, sunny border, but will succeed fairly well in a sheltered, well-drained situation, not too far north, requiring only the top-dressing, and to be let severely alone.—P. M. D., *Castletown, Carlow*.

REPLIES.

14954.—**Daphne Mezereum** is best grown from seed. If the soil for two feet round the stem of the plant be not dug up nor disturbed in any way, a quantity of young plants will be found to have seeded themselves every year.—M. M. B.

14891.—**Prize Pansies.**—List of show and fancy Pansies that have taken prizes at shows in Scotland:—*Show:* Yellow selfs, Gomer, Golden Queen. Dark selfs, Ormsa, Harry Paul. White selfs, Mrs. Galinay, Mrs. Dobie. White grounds, Mrs. J. G. Paul, Miss Hamilton, Mrs. Henderson, Jeannie Grieve. Yellow grounds, G. S. Veitch, Sir F. Roberts, A. Henderson, A. Cameron. *Fancy:* Beaconsfield, Wm. Windle, Mrs. Duncan, Mrs. Findlay, Mrs. McIntosh, Evelyn Bruce, John McInnes, John Livingston, Miss Maggie Wallace, Sir Richard A. Cross, May Fate, Mrs. Hodgart, Mrs. Mitchell, Miss Bliss.—J. Jardine, *Kilmarnock*.

14960.—**Gladiolus The Bride and Milla biflora.**—Gladiolus The Bride does exceedingly well in pots. Put eight bulbs in a six-inch pot early in February, and grow them on either in a greenhouse or cold frame; any common garden soil suits them. In well-drained soils close to warm walls they frequently stand through the winter, and, where they will do this, the flower-stems are much stronger than those grown in pots. It is a beautiful subject for amateurs to grow, as it is such an admirable plant when used in a cut state, as the colour is the purest white, and if the spikes are cut just when the first flower opens, all the others will open, if the stems are placed in water and kept in a warm room. We grow the principal part of our stock in the mixed borders; we plant out the bulbs early in March, and lift them again in September. During the winter we keep the bulbs in flower-pots in a cool place, from which the frost is excluded. Milla biflora is more tender than the Gladiolus. It may be grown in pots, but it succeeds best planted out in the open. We plant early in April, in a warm and sheltered bed, where the soil is fairly light and rich, as both the leaves and the flower-stems are weak. They should have a position quite apart from anything else. Strong bulbs will begin to flower at the end of June, and will continue to do so until the middle of October. As the bulbs must not be exposed to severe frost, they should be lifted early in November, and, when dried, placed in an empty seed-pan and covered with dry soil, as I find if the air reaches them the bulbs shrivel. I am very glad to see inquiries made about this beautiful bulbous plant, as I consider it the most lovely of all half-hardy white flowering-bulbs, and, seeing how easily it is grown, no one need hesitate to undertake its cultivation.—J. C. C.

14163.—**Tufa for fernery.**—Splendid tufa is to be had at Matlock Bath, Derbyshire. I think the price is about a pound a ton large pieces. Ferns do well on this material.—W. W.

——Tufa can be obtained in Matlock; the price is twenty shillings per ton. Letters should be directed, Mr. Ogden, Tufa Quarry, Matlock Bath, Derbyshire.—J. A. Trengrouse.

TREES AND SHRUBS.

Variegated Dogwood.—The variety of Cornus mas known as elegantissima aurea is one of the most effective of variegated shrubs, the golden margin to the leaf being broad and clearly defined, while the more exposed parts of the foliage become suffused with a beautiful reddish tint, which is much heightened when in the full sun. On dry sandy soils it sometimes suffers during the summer, but, in sufficiently moist ground, exposure to strong sunshine does not hurt it. Another prettily variegated Cornus is a form of the red-barked Dogwood (C. sibirica), in which the variegation consists of a wide margin of clear white, with sometimes a pinkish tinge on the extreme edge. The pure white variegation is very constant, and contrasts in a marked manner with the deep red bark of the young shoots. The above are two pretty variegated shrubs.—T.

Laurustinus hedges.—These form conspicuous features in gardens on the south coast; they begin to flower just when they are most needed, viz., when the falling leaves of deciduous trees indicate the end of the floral year, as far as the majority of our garden flowers are concerned. The Laurustinus is, however, an exception; it begins to expand its pretty heads of blossom in October, and is in full bloom about Christmas, and there are then few more attractive sights than the pretty hedges of Laurustinus that enclose the villa gardens in this district. Hedges, I may remark, are a necessity here in order to break the force of the south-west gales that batter tender garden inmates to pieces, and for this purpose the Laurustinus is a favourite. The usual course in forming hedges is to dig out a trench one and a-half feet wide and one foot deep, thoroughly breaking up the bottom, and in this to plant thrifty little bushes two years old, from cuttings at about one and a-half feet apart. They quickly form a dense hedge, as the soil being light and strong, they form an abundance of roots in comparison with the amount of top growth. The only pruning they require consists in shortening any strong shoots with a knife during the spring months, when the flowers begin to fade and before growth commences. March or April are good months for the operation, as they get a long season of growth, and, I may add, that a position in full sunshine where the wood gets fully ripened is the best, in order to ensure plenty of bloom. As single specimens on Grass the Laurustinus is extremely beautiful, and as a shrub for cemetery decoration there are few more generally useful. —J. G., *Hants.*

REPLIES.

14965.—**Shrubs for lawn.**—Three good Evergreen Shrubs for the neighbourhood of London would be common Laurel, Portugal Laurel, and Aucuba. They could all be kept to the height of a standard Rose-tree, if required, by cutting in the spring; and, if the leaves were kept clean by occasional syringing, would be sure to do well.—K., *Southend.*

14966.—**Forming an Osier-bed** is a very simple process. Now is a good time to proceed. Procure your Osiers, cut them into lengths of from nine inches to one foot long. Let the base of the cutting be cut close to a bud; sloping cuts will do. When all your cuttings are made, tie them in bundles, place in trench, and cover over with soil to keep them from shrivelling, and use as you want them. Open out a trench on one side of your ground, turn over a spit or two wide, then stretch a line along it, and with a spade cut down a perpendicular trench; place your cuttings against the wall of the trench thus made, at the distance of two to three feet apart, draw a little soil up to each cutting to keep it upright, turn the next spit over on to the cuttings, and firm down well with the foot. The cuttings should be left out of the ground from three to four inches, distance between lines about four feet. If for basket purposes, use the green Osier, or the cane or basket Osier; if simply for cover, use the Huntingdon, the Bitter, or Black Willow.—J. K.

14970.—**Flowering shrubs for Devonshire garden.**—Althæa frutex in variety, Berberis Darwinii, B. dulcis, Buddleia globosa, Calycanthus, Daphne Cneorum, Deutzia gracilis, D. scabra, Forsythia suspensa, Guelder Rose, Hypericum calycinum, Kalmia latifolia, Leycesteria formosa, Lilac (white and purple), Syringa grandiflorus, &c. To these you may add for planting in sheltered places, Desfontainea spinosa, Escallonia macrantha, Magnolia grandiflora, and Olearia Haasti.—J. C. C.

—— If your correspondent John S. Northcote is a clergyman, as I take him to be, residing near Exeter, I think, from ample experience, I can assist him. Let him plant Aucubas for their berries and foliage. Berberis Darwinii, B. stenophylla, B. nepalensis, Spiræa ariæfolia, S. flagelliformis, Weigela rosea and crimson Weigela Polygonum cuspidatum, Diplopappus chrysophylla, Menziesia (white and pink), Hydrangea paniculata, Leycesteria formosa, Olearia Haastii, Desfontainea spinosa, Escallonia (crimson and white), Azara microphylla, Eulalia zebrina, E. japonica, Andromeda japonica, A. Catesbæi, Veronica (purple) and V. Traversii, Arundo conspicua. The Bamboos and Japanese Maples no garden should be without; their beauty of form and colour surpasses any description. They are quite hardy, so also are all the other flowering shrubs and plants I have named. As I grow the whole of them, and I believe my garden is situated only about two miles from Mr. Northcote's, soil and situation about the same.—K. K., *Taddyforde, nr. Exeter.*

THE KITCHEN GARDEN.

ANIMAL MANURES UNNECESSARY.

My experience of about fifteen years in regard to manures may be of some interest to gardeners generally. During that time my strict orders have been that no animal manure is to be used in the kitchen garden or elsewhere. Leaves, kitchen refuse, sifted cinders, and lime are used, and burnt rubbish. The ground is trenched every other year about two feet deep. The garden slopes to the south-west, a stiff, clay soil, but well-drained. The usual practice with Seakale is to cover it with earthenware pots, and load the plants with manure. For many years I have given up the pots, and cover the plants with sifted ash a week before Christmas. The plants are planted in good earth, but no manure or dressing of any kind is given; with this system I get the very best results. The ash is removed at the proper time, and compact heads of Seakale are cut from five inches to seven inches long, white, and with the most delicate sweet flavour, perfect, and fit to be eaten. With Asparagus I use nearly the same system. The seed is sown in beds, well dug, but no manure or dressing. The third year the Asparagus is fit to cut, but only about six inches of the all-green part is ever used; this is tender and well flavoured, and can all be eaten. A relation of mine spent £16 for manure for two Asparagus beds, determined to have large Asparagus; he had large Asparagus, but spoilt in flavour by the foul juices of the manure. The same system is adopted with Peas. I only use two sorts, Ne Plus Ultra and Veitch's Perfection; no manure is used, but plenty of lime. The Peas are large and excellent. With Celery, Carrots, Onions, Beans, Cauliflower, Cabbage, the same plan is adopted—ground well trenched, but no manure—and I have, I consider, perfect vegetables, not large in size, rather small, but sweet, healthy, delicious —all that a reasonable man could desire.

With Vegetable Marrows and Cucumbers I adopt the same system, and these generally are considered unprofitable to grow without plenty of manure. Marrows are first raised in pots, then planted out under a hand-glass in a good mound of earth. In about a fortnight the glass is removed, and they are left to grow naturally; if the weather is dry, water must be freely given. I have a thorough dislike for the ordinary-grown Marrows—great, large, tasteless, watery vegetables; but grown on my plan I get as nice a vegetable as can be eaten, sweet and firm in the flesh, about nine inches long, rarely longer; very different from the gigantic, two-foot Marrows generally grown. Cucumbers are grown in a frame filled with good earth, no heating materials of any kind, and I get the best-flavoured Cucumbers, about ten inches long, very different from the great two-foot Cucumbers grown at "express-speed," which, as far as I have tasted, have every flavour but the right one. No manure has ever been placed on my Strawberry, Raspberry, or Rhubarb beds, and I get them as fine as I could desire. Of Tomatoes I have had most satisfactory crops, all grown in the open air, planted in earth without any dressing.

I am quite aware that the system of gardening I adopt would not do for market gardeners, or even for the gardens attached to large mansions, or for the purpose of exhibition. In these cases, quantity and size appear the chief matters aimed at; the pocket and the eye must be satisfied; but surely this should not be the first consideration. The chief point I consider to be a healthy and well flavoured vegetable of moderate size, and this you cannot obtain if you charge the ground with gross animal manure. Not long since, I was in a large market-garden, and I saw Rhubarb and Seakale covered in coarse manure, and I said to the owner, "Why, surely you do not eat Rhubarb grown in this manure?" "Oh, no," was his reply; "this is for the market. I have a little patch of Rhubarb grown in simple earth for myself."

As to the digging and dressing herbaceous borders and shrubberies with manure, I consider it an act of the greatest possible folly, and never adopt it. In the conservatory and greenhouse only good earth and peat-earth are used, and I have, both outdoor and in, as good a display of flowers all the year round as need be desired. X. Y.

Devon.

The Lake district.—Last week I took up the produce of a White Elephant Potato, and after being dried and several Potatoes thrown away that were diseased, there was the prodigious weight of forty pounds; the same day I took from the roots of two Potatoes of the same kind fifty-four pounds, thus showing a yield of ninety-four pounds from three Potatoes. For table use, I can speak very strongly in favour of them, as I never tasted better. In the spring of this year I purchased half a pound of Daniels' Red Elephant, and I have now raised twenty-six pounds of good sound tubers.—J. T., *Ambleside.*

Storing Onions.—I find that Onions keep better when "roped," that is, tied round a stick or a wisp of straw, and suspended to the roof of a shed than they do when laid upon a floor or shelf. It is a mistake to store Onions in a warm place during winter. If they could be kept free from frost in a shed open on one side, they would keep better than in a more confined structure. I find the Brown Globe Onion to keep rather better than the White Spanish.—J. C.

REPLIES.

14732.—**How to recognise Water-cress.**—An infallible rule for picking Water-cress is to observe that the stems root at each joint and the little white rootlets push quite up even to the fresh young growths. The poisonous Water-parsnip, so often fatally mistaken for it, is a tap root, and should warn the most unwary by its strong Parsnip smell when the leaves are crushed or bruised.—DORCHESTER.

14983.—**Unsatisfactory kitchen garden.**—I would suggest that possibly "J. T.'s" tilth has not been deep enough; also the advisability of a good lining for the land. If he has had in Cheshire anything like the drought we have experienced in the south-east during the past summer, he cannot be surprised at vegetable crops not being very satisfactory.—K., *Southend.*

14888.—**Mushroom pests.**—"Tyro" asks me how the Mushroom pests referred to on page 421 are to be combated. The only way to deal with them is to carry on a continual and unceasing warfare against them. They must be destroyed whenever destruction is possible, and the greatest aids to their extermination are simple and efficient traps. Mice betray their presence by the prints of their front teeth on the portion attacked, and rats make holes in the beds. The ordinary traps will be found effectual, or "Tyro" may readily improvise one with the aid of a flower-pot. For wood-lice place Potatoes, cut in half and hollowed out, in their haunts. They will congregate on the Potatoes, and a dip in boiling water will soon settle them. The passage of snails may be easily tracked; visit the beds at night, when they can quickly be found, or place here and there little heaps of damp bran or bits of cabbage-leaf. These traps should be frequently examined. The flies are attracted in clouds by the manure; they may be destroyed by placing about a number of pans filled with water, to which a few drops of oil of turpentine or soapy water have been added. They are attracted by the odour, and thus drown themselves. If a floating light is placed in a convenient position, they will fly around it, burn their wings, and fall into the water. Mites may be destroyed by lime-water, and beetles must be hunted for carefully.—T.

OUR READERS' ILLUSTRATIONS.

PURPLE ROCK-CRESS ON AN OLD WALL.

AMONG the most charming qualities of the hardiest type of alpine plants is their tendency to gracefully wreath walls, and to grow freely actually on the face of such surfaces. A great many alpine plants have this characteristic, and among them are a number of little shrubs which are very pretty on banks and walls. None of these plants are better and more hardy than the various forms of the purple Rock-cress or Aubrietia, of which one is shown in our illustration. Some people connect all manner of difficulties with the culture of alpine plants. Now these are true alpines, and we question whether there are many other things so easy of culture. They thrive on every kind of surface and soil, and on the top of a bank wall throw down numbers of shoots covered with flowers in spring and early summer. The photograph, of which our illustration is an engraving, was sent us by the Rev. H. E. Fox, of Durham.

OUR READERS' ILLUSTRATIONS.—Purple Rock-cress (Aubrietia deltoidea) on old wall.

ROSES.

RAISING A STOCK OF ROSES.

THE quickest way of raising a stock of Hybrid Perpetuals on their own roots is by dibbling in strong, well-ripened lengths of growths any time during the latter part of October, November, and even December, and it is also possible to root a considerable number of the March prunings. As a rule, those inserted in October and early in November strike roots with the greatest certainty, and that, too, in a position where many will perfect several blooms during the following season. The best position for these is the open ground, this being manured if at all poor, and thoroughly broken up prior to the insertion of the cuttings. The latter may be of any size—say, from six inches to twelve inches in length — preference being given to those of the largest size, and the harder or better ripened they are the more certain are they to strike. Heels are not necessary, easy to procure, nor advantageous; but the cuttings should be cleanly cut to a joint, and be dibbled in or laid in Box fashion at once, as so much depends upon their being preserved fresh and plump. Only a few minutes elapse from the time ours are taken off the plants till they are inserted, and they invariably strike well; whereas, if allowed to lie about for a few hours they get dry and commence to shrivel, thus completely spoiling all chances of a good strike. We usually put in the cuttings in rows eighteen inches apart and nine inches asunder in the rows. About half their length is buried in the ground, and particular care is taken that each touches the bottom of the hole or trench made for them, the ground about them being made as firm as possible by trampling. We also find that ashes of any kind, well mixed with our heavy soil, suit Rose-cuttings, which also lift with fewer broken roots where it is used than would otherwise be the case. A surfacing of the same material and an occasional trampling also serve to prevent upheaval by frosts, and, in the case of very severe weather being imminent, it is considered advisable to roughly cover the cuttings with strawy litter. Supposing all has gone on satisfactorily, the following winter or early in spring every other plant should be transplanted and blanks made good where necessary. In this manner we have a cheaply and quickly-formed bed of serviceable Roses, which are again replanted or re-arranged when too large for the space allotted to them. M.

Roses that strike readily.—There are some Roses that do not strike so readily as others, and also some that bloom more freely than do others under similar treatment. It is a curious fact that thornless, or nearly thornless, sorts are the easiest to propagate, and fortunately all of these that I am acquainted with are good and useful. Some of the best are John Hopper, Countess of Oxford, Captain Christy, Hippolyte Jamain, François Michelon, E. Y. Teas, Dr. André, Miss Hassard, Paul de Mallcray, John S. Mill, Dupuy Jamain, Mdme. Lacharme, Perle Blanche, Empereur de Maroc, Charles Margottin, Mdme. Chirard, Senateur Vaisse, Célinc Forestier, Marie Finger, Marguerite de St. Anand, and Egeria. Other good sorts that we have also established on their own roots are Duke of Edinburgh, Comtesse de Chabrillant, Marie Baumann, Maurice Bernardin, Charles Darwin, A. K. Williams, Victor Verdier, Etienne Levet, Exposition de Brie, General Jacqueminot, Louis Van Houtte, and Souvenir de la Malmaison.—M.

REPLIES.

14952.—**Best Hybrid Perpetual Roses for pot culture.**—Auguste Rigotard, cherry crimson; Charles Darwin, deep crimson; Comtesse de Serenye, delicate pink; Duke of Teck, crimson scarlet; General Jacqueminot, bright crimson; La France, silvery blush; Madame G. Luizet, rosy peach; Madame Rothschild, clear pale pink; Pride of Waltham, flesh, rosy centre; Princess Mary of Cambridge, pink; Prince Camille de Rohan, dark velvety maroon: Ulrich Brunner, deep rose; Boule de Neige, white. I have named thirteen, all of which may be depended on to grow well and produce fine flowers; all, with the exception of Madame Rothschild, are very fragrant, a quality which, in my opinion, is essential in a Rose for a pot—or, indeed, for any Rose.—R. W. BEACHEY.

—— "Amateur" will find the following selection very suitable for pots:—E. Y. Teas, La France, Edouard Morren, Etienne Levet, Ferdinand de Lesseps, Madame Clémence Joigneaux, Boule de Neige, A. K. Williams, Anna Alexieff, John Hopper, Jules Margottin, and Charles Lefebvre.—J. C. C.

15021.—**Planting Monthly Roses.**—"Cork" may plant Monthly Roses in mild, dry weather at any time from the present to the middle of February.—J. C. C.

15035.—**Climbing Roses.**—You may plant Gloire de Dijon on the wall facing south-east, and Reine Marie Henriette on the one facing south-west. The last-named is a charming climbing Rose with bright red flowers, sometimes called the red Gloire de Dijon, but its resemblance to that variety is not striking; nevertheless, it is a valuable Rose. The Maréchal might probably prove too tender. Your soil does very well, as you are so near the gravel.—J. C. C.

REPLIES RELATING TO HEATING APPARATUS.

14978.—**Heating greenhouse.**—It would be quite possible to heat a greenhouse from an asbestos fire in a room below, by carrying mains along the intervening space of nine feet, and then expanding into four-inch piping in the greenhouse. Care would have to be taken that there was room in the present fireplace for a sufficient body of fire to do the work.—K., *Southend.*

—— Gillingham's Patent Stove answers admirably, and it is very inexpensive; I have used it for two years to warm a greenhouse fourteen feet by eight feet. If the wicks are properly trimmed there is no smell at all.—L. E. C.

—— Get a boiler, like those used for heating water for baths, fixed at the back of grate, leaving a small space underneath and at the back to secure more heating surface. This will raise the water to the height you require it. Fix the flow and return-pipes in the top of the boiler, the return-pipe to go through to within two inches of the bottom of boiler. Use one-inch wrought-iron piping from boiler to second floor, and two or three-inch cast-iron pipes for greenhouse. Place the tank above the return-pipe in the greenhouse. Fix an exhaust-pipe in the flow-pipe, close to the chimney, and carry through the roof.—H. MENDS.

14967.—**Heating small greenhouse.**—The best way to heat a small greenhouse, nine feet by six feet, so as to keep out the frost during winter, would be by means of a small mineral-oil stove, supplementing it with a second stove in severe weather.—K.

—— A petroleum stove is a very good way of heating a small greenhouse; the only disadvantage is that paraffin fumes are injurious to plants.—MOSS JEWEL.

14965.—**Stove for greenhouse.**—This query is answered so often, and yet I still find, week after week, subscribers asking it. Nevertheless, I will endeavour to answer it again, having done so already a few months back. My first greenhouse was a lean-to about twelve feet by six feet. Acting, like most amateurs, on the wretched principle of cheapness, I commenced with an oil-stove, found it did not answer; then tried a gas-stove, which dried the air so much that most plants were spoilt. My next attempt was a brick flue, covered with thick tiles; this did not answer, as there was not enough draught to keep the fire going all night. I then moved away, and took a larger garden, built a span-roof greenhouse, eighteen feet six inches by twelve feet, and heated it with a Wilcox's patent slow combustion coil boiler, and forty-two feet of four-inch pipe; this was at once a success. I kept it going five winters in succession without the least mishap. I again moved away to my present address, where I have about half an acre of garden. I built a lean-to against the house, eighteen feet by eight feet, and heated it with the same kind of boiler (No. 3 size), with fifty-one feet of four-inch pipes; this boiler went well all last winter without any trouble. I may state that it only requires filling with broken coke about 8 a.m. and about 9 p.m. each day, although a No. 3 boiler will go twenty hours without going out, though the pipes would not be very warm. This autumn I had a span-roof house built, twenty-four feet by twelve feet, and have just finished fixing ninety feet of pipes, with a No. 5 boiler, and am quite sure it will be a success. Wilcox, the patentee, advertises in GARDENING every week. This answer will suit "Young Amateur," in query 14967.—BARNET.

—— I presume one of the small slow combustion stoves, without hot-water piping, is referred to here. If so, the advantage of this kind of stove is its inexpensiveness, both in first cost and in consumption of fuel; but against this must be set the disadvantage of its liability to overheating, and, consequently, overdrying the atmosphere; also of a certain inevitable dissemination of dust at the time the stove is cleared out. These are drawbacks, however, which may in a great measure be obviated by a little extra attention when firing, &c.—K., *Southend.*

—— I have noticed several queries in your paper as to heating small greenhouses. I have received a capital plan from C. Crapper, 14, Holttown, Manchester, who charged me a small sum for it. It has cost me 3s. 6d. to make the apparatus, and it burns about a halfpenny worth of coal every night, and heats my greenhouse well. Size, twelve feet by eight feet six inches. He gave me drawings, and I made it in about an hour. This system would apply to 14965, 14967, and 14978.—W. JAMES.

14957.—**Heat radiator.**—I have used a Gillingham heat radiator in my greenhouse, seven feet by seven feet, and was not successful with it, notwithstanding that I carefully trimmed it and wiped the wick daily. The

mineral oil used in these lamps quickly percolates through the tin reservoir or even glass ones, and imparts a disagreeable smell over and beyond the fumes of combustion. The amount of oil burnt is enormous, which makes these stoves very expensive in the end. The amount of heat given off is only sufficient to raise the thermometer one or two degrees, and it failed to keep frost out.—J. L. J.

14896.—**Heating a small greenhouse.**—If "L. E. H." gets one of Herons's, St. Margarets, heating apparatus he will have no difficulty in keeping the required temperature in his greenhouse. I have one, and am well satisfied with it. It is also very economical.—BOB-A-LINK.

14898.—**Gas-boiler.**—My experience may be of some service to "Smith" in his search for a gas-boiler. I have a greenhouse six feet by six, the heating apparatus of which consists of about thirteen feet of two-inch iron pipe and a small saddle-boiler heated by gas. The boiler is of copper, fifteen inches long by five feet wide and five high, the water space varying in thickness from about a half-inch in the bottom of the boiler to about a quarter of an inch on the top. The boiler is placed at one end of the greenhouse, with its open end flush with the end of the house, in which a hole has been cut to receive it. The gas supply-pipe is brought through the house to the outside, then turned into the boiler and attached to a burner which is enclosed in a round iron box, having a wire gauze top and holes pierced round the sides near the bottom to admit air. The gas is lit above the wire gauze. The burner is placed in the boiler just where the flow-pipe rises from the top, so that the water as it is heated goes at once through the pipes. There is a hole in the top of the boiler, near the closed end, on which a funnel is placed to carry the fumes out through the roof of the house to the open air, a cowl on the top preventing any down draught. A small tap is also fitted at the front of the boiler, to admit of the pipes being emptied, and a sliding door is fitted on front of the greenhouse to regulate the draught. I have found this boiler work very efficiently, and the consumption of gas is not large. I do not know how many degrees of frost this apparatus will keep out, but on a recent morning when the thermometer stood at twenty-four degrees outside, the temperature inside the greenhouse was fifty-eight degrees, with the gas not more than three-fourths turned on. I shall be glad to give "Smith" any further particulars that he may desire.—TAM GLEN, *Maryhill, Glasgow.*

A cheap heating apparatus.—There have been several inquiries of late in GARDENING as to heating small greenhouses. My experience may be of use to some of your readers who, like myself, having a love for flowers, have managed to erect a greenhouse at small cost, and who are anxious to protect their favourites from frost and damp in winter, but cannot afford to spend more upon a heating apparatus than the house has cost them. My greenhouse is fourteen feet by seven feet, built against the back kitchen in a town yard. I bought twenty-eight feet of two-inch wrought-iron piping, and four elbows at old iron price, for which I paid nine shillings. This I had cut into two lengths of eleven feet and two of three feet. Then I ordered from a tinsmith a copper boiler, eight inches diameter and nine inches deep, also a galvanised iron cistern eight inches square, the two costing 5s. 6d. One elbow was soldered into the top of the small boiler, into which was screwed my eleven-foot flow pipe, the return pipe coming back into the boiler at a right angle with the flow, and fixed near the bottom of the boiler. The cistern is fixed just above the boiler and connected by a lead pipe with this return pipe. I then bought a small gas-stove usually used for boiling a kettle, for which I paid 2s. 6d. This was fixed as close to the bottom of the boiler as possible. A friendly plumber finished the business for me by connecting this with my kitchen gas-pipe. After filling all the pipes and boiler with water through the cistern, I lit my gas—not without fear and trembling, I can assure you; but my fears were groundless, for in less than fifteen minutes the pipes began to feel warm, and in less than an hour I had to turn the gas down. I have given it a month's fair trial, and find it answers splendidly; not the least smell or dirt, and a nice gentle heat. I have had the top ventilator open (more or less) night and day, and with very little gas on have never had the temperature less than forty-eight in the night. The whole complete cost a little under 30s.; but I have no doubt it could be done for 25s. The heaviest part of the plumber's bill was for cutting and jointing the old piping. Over the boiler I put up a framework for a box of cuttings, and find they root readily. If any readers would like to try this, and wish for further information, I shall be happy to reply to any questions.—W. J., *Manchester.*

THE COMING WEEK'S WORK.

Extract from a Garden Diary, November 9 to November 14.

Potting Lily of the Valley, and shifting herbaceous Calceolarias into six-inch pots. Planting some Cherry and Rose trees. Putting in Asparagus to force, keeping it at from fifty-eight degrees to sixty degrees night temperature. Making hotbed for Rhubarb, Lily of the Valley, and Hyacinths in a dark shed. Putting glass over Lettuces for the winter. Sowing Early Emperor, Little Gem, and Laxton's Alpha Peas. Taking up Salvia patens and getting all Dahlias into a cool, dry cellar. Potting Japan Lilies in peat and sand, and putting them into cold pits. Planting Box edgings. Arranging Heliotropes, Pelargoniums, and Primulas, and keeping the temperature for them at fifty degrees to fifty-three degrees at night, to induce them to flower. Nipping blooming shoots off Calceolaria cuttings. Sowing early Long-pod Beans.

Planting various kinds of Pears, Plums, and Apples. Putting all Cauliflowers not fit to cut in cold lean-to house. Putting in plants for forcing, consisting of Roman and other Hyacinths, Narcissi, Van Thol Tulips, Persian and other Lilacs, Briers, Azaleas, Roses, Rhododendrons, Rhodoras, Deutzia, and Pinks. Tying up Lettuces and Endive in frames to blanch. Protecting Globe Artichokes. Planting a border of Lily of the Valley. Getting Peach-trees in pots into their places; top-dressing them with two parts loam and one part manure, ramming the soil down hard. Tying espalier Pear-trees. Painting Vines and loosely tying them up ready for starting. Fumigating all Orchid houses for thrips and fly. Putting litter over Lily of the Valley in pots. Top-dressing pot Vines with bone-dust, loam and manure. Beginning to manure Asparagus beds.

Getting broken glass repaired where necessary; repairing all verges. Potting Roses, Solomon's Seal, and White Pinks. Putting Seakale in bin on Mushroom shed to blanch. Plunging some Lilies and Hyacinths in bottom-heat. Beginning to nail east and west wall trees. Pruning and tying Raspberry canes. Placing protectors over Lettuces, Endive, Violets, Stocks, young Cauliflowers, &c. Covering up a little Seakale so as to be able to get at it in frosty weather; also Jerusalem Artichokes, so as to enable them to be got up during frost. Washing Gardenias. Giving Cucumbers a top dressing of turfy loam and sand. Soiling over the Asparagus beds. Ridging-up vacant ground.

Glasshouses.

GREENHOUSE HARD-WOODED PLANTS.—Where this important section of flowering plants is, as often happens, scantily represented, much of the pleasure derivable from a greenhouse is lost. Even where no attempt is made at a general collection, there are some that may be said to be almost indispensable, such as several of the smallest growing Acacias, for example, A. armata, and A. Drummondii, Aphelexis, Boronias, Chorozemas, Correas, Croweas, Daphnes, Epacrises, Pleromas, Polygalas, and Statices: these, in small or medium-sized examples, should be grown everywhere. Croweas where properly managed by giving them a little warmth early in spring will, from this time up to the end of the year, be covered with their pink star-shaped flowers. Daphnes will bloom all the better for being kept a few degrees warmer, if possible, than the temperature of an ordinary greenhouse. All the foregoing plants require comparatively little training when used only for decorative purposes, yet the habit of growth of most of them is such that they need some support; whatever staking or tying is wanted should be carried out at once, removing the old sticks, and putting the new ones, so far as possible, into the same holes; by this means much of the root-breakage that follows the insertion of a large number of sticks will be avoided. They should never be thrust deeper into the soil than necessary.

GREENHOUSE CLIMBERS.—In greenhouses and conservatories where many climbers are trained on the roof, their presence is always the reverse of an advantage to the plants that have to be grown underneath them. So far as the appearance of the climbers is concerned, they look the best when allowed plenty of freedom, with comparatively little cutting in; but with a view to the well-being of the plants underneath, which in most cases will be held of greater importance than the climbers, many of the latter should now be moderately closely cut in. It is necessary to exercise discrimination in this work; vigorous, free-growing kinds, like Cobæa scandens, Bignonias, Passifloras, Tacsonias, Plumbago capensis, &c., that cannot after this time be expected to make much more flower, should be well cut back, removing as much of the shoots as will make it unnecessary to prune further before growth commences in spring. To avoid the bare trim appearance that follows the removal of every bit of lateral growth, a few shoots here and there may be left hanging in various lengths. Fuchsias, which are not nearly so much used as greenhouse climbers as they deserve to be, may be similarly treated. Clianthus puniceus, which makes a good pillar-plant, when it has filled the space required, will also bear cutting in annually. Acacias, Chorozemas, Rhynchospermum jasminoides, and plants of a like character, which bloom from the points of the preceding season's growth, must not be cut at all now. Whatever shortening-back plants that flower in this way need should, as a natural consequence, be carried out in the spring as soon as their blooming is over.

LAPAGERIAS.—These climbers, even when planted out in a favourable situation, make much slower progress for several years than the generality of plants that are so used, requiring little or no cutting in until they have occupied the space intended for them. After they have attained this size the ordinary practice is to interfere little, or not at all, with the shoots. To this in some measure is attributable the weak condition Lapagerias not unusually get into when they have reached the desired size. When the whole of the shoot-growth made is retained, even the weakest each year make some effort at extension, though with but little result so far as the production of bloom goes. In this way a good deal of the root power is diverted from the production of the strong sucker shoots, which are mainly to be looked to each year for the crop of flowers. It will be found good practice in the case of large plants of these climbers to each season cut away a portion of the shoots that are too weak to do much more in the way of making flowering growth; by this means more light will be admitted to the house. Now is a good time for layering Lapagerias: if a stout shoot or two from established plants be brought down and pegged to the surface of the bed, then covered over with about an inch and a half of fine peaty soil, to which has been added a little sand, so as to leave the leaves attached to the shoots about half their length above the surface, nothing further will be required for some time beyond keeping the soil in a healthy condition as to water.

HEATHS.—The winter flowering varieties of these are not now nearly so much grown as at one time, yet they occupy a place as decorative subjects in the greenhouse that is not easily filled by other things. Where bought in, as they usually are before coming into flower, from those who make their cultivation a specialty, it frequently happens that they do not bloom so well as desirable. This may be attributed to various causes, but oftener than not it is caused by want of the careful attention which up to this time they have received. Heaths are proverbially plants that require particular care in watering, and where they have been well managed the balls will be one mass of roots that cannot bear being allowed to get too dry before water is given; and though at this season the soil does not dry so quickly as earlier, still care must be taken that they do not get over-dry, otherwise the advancing flowers will most likely perish. Where these Heaths are located with a mixed lot of greenhouse plants the best position as to light and air should be given them. The general collection of Heaths require to be similarly treated in the matter of water; at most they should not be allowed to go longer than every other day without being carefully looked over. On no account crowd them together, for although little growth is now going on, still, more than most other plants, they resent being placed so close as to touch each other.

CYCLAMENS.—Where a sufficient number of these are grown, from this time onwards through the winter they will be found among the most serviceable decorative stock, independent of their use for furnishing flowers for cutting; for bouquets and arranging in small

vases they are most useful. It is necessary to keep the plants well up to the glass, as otherwise the flower-stems get drawn and weak. They should be looked closely over frequently to see that there are no aphides on the under sides of the leaves, where they frequently remain without detection until present in such numbers that they are not easily got rid of. The best course to pursue with a view to keeping up a stock of Cyclamens is to make a sowing every year; seed sown in summer will have vegetated some time ago. If possible, the seedlings should be kept in a temperature eight or ten degrees above that of a greenhouse, standing the pans containing them in the full light, as near the glass as can be, to keep them dwarf and stout, for if at all drawn, especially in their early stages before being potted off, they are much injured.

THOMAS BAINES.

Flower-garden.

GENERAL WORK.—Press forward all alterations and improvements that have been determined upon, while the weather continues open, and therefore favourable to all transplanting operations. Under no circumstances, however, should planting be done when the soil is in a puddled condition, but the work may at that time be advanced by carting the necessary soil and manure to the ground, and getting it ready by deep trenching and draining where needed.

TREATMENT OF BEDDING PLANTS.—Bedding plants now need careful treatment to keep them in good health. All kinds should be watered but sparingly—Pelargoniums more particularly so, or the late-struck plants that have as yet made little root will quickly rot off. Verbenas, Petunias, Ageratums, and others of similar hardiness should be kept as cool as possible; cold pits that can be well covered in the event of frost are the best structures for these. Prepare protection in the way of litter or bracken for protecting plants that are being wintered in ordinary cold frames. Of course, this need be applied only in exceptionally severe weather, as the covering with ordinary mats will suffice at other times.

FLOWER-BEDS should be cleared of all plants that will not withstand frost. Dahlias, Begonias, and other tuberous-rooted plants should be placed in safe quarters—a cool shed—and the roots laid in dry vegetable soil, in sand, or Cocoa fibre, there to remain till February. The beds should then be replanted for the winter, either with bulbs and spring-flowering plants and annuals, or else with evergreen shrubs. Violas and Pansies may remain, for with mild weather they will flower more or less the winter through, so that all that is needed to furnish these kinds of beds for the winter are a few small shrubs, such as Cupressus, Retinosporas, or Aucubas; they should be planted at regular intervals over the beds, the Violas serving as a groundwork, into which may advantageously be dibbled a few Tulips or Hyacinths for early spring flowering. Other beds may be treated in like manner, as, for instance, those that have been carpeted with hardy plants of the Sedum type. Do not remove this, but plant in it Stocks, Wallflowers, Forget-me-nots, &c., as well as suitable shrubs in the larger and more conspicuous positions. By this means the work of refurnishing will not only be less, but the beds will look well at once. I need hardly add that the edgings of beds ought to be neatly trimmed, and bare spots of earth be mulched with fine vegetable mould or fibre. This done, an occasional sweep up and rolling of turf will be all the attention the parterre will need for months to come.

R. S.

Fruit.

LATE GRAPES, particularly Lady Downes, will still be the better for having the temperature kept up to about sixty-five degrees, and the surplus growth on these should now be removed, as light and air are essential as regards the good preservation of the fruit so long as it remains on the Vines. Grapes that have been ripe for some time, and which are keeping but indifferently on the Vines, through the surroundings being damp, ought to be cut with pieces of the wood and placed in bottles in a dry room. In the case of Grapes that are to be ripe in April or early in May, the Vines will at once require to be started; for the present be content with keeping the house closed without applying fire-heat. Prior to starting see that the inside borders are well moistened through with water at a temperature of eighty or ninety degrees, and outside borders should have a thick covering of litter or bracken put on them to exclude frost, and shutters or tarpaulin to throw off wet. If, as is in many instances the case, the earliest Grapes are had from pot Vines, these too should be now started, and though bottom-heat is not essential, a slight warmth such as that produced by two feet or three feet in thickness of Oak-leaves, will assist the earlier starting of the Vines.

M.

Vegetables.

GIVE Globe Artichokes a good mulch with cow manure, and afterwards protect them with dead Bracken. February is the best time to make new plantations. Slipping off the offshoots from the parent plant is a much better system than growing them from seed. Digging, trenching, or manuring, as the case may be, all vacant quarters or borders after the crops are secured, will be the order of the day. The time is fast approaching when Seakale, Asparagus, and Rhubarb will want looking to. Rhubarb, in fact, may be taken up now to force; it is quite ripe enough for that purpose. The present is a capital time to plant Cauliflower plants under hand-lights—five under each light in a warm corner on a south border. In the case of Cauliflowers to plant out in March, I find by far the best plan is to plant them in small three-inch pots. Keep them in cold frames, and expose them fully on all occasions, except when there are heavy rains or sharp frosts. They get nice, stiff, and sturdy plants by March, and if turned carefully out of the pots, and planted out at once, they never feel the effects of the shift.

If Cucumber plants in manure-pits and frames are still giving a supply equal to the demand, keep September-sown plants divested of all male and female blossoms, and train the young growths regularly over the wires. Add more lumps of turfy loam to the roots as they appear on the surface of the hills or pots, but avoid the use of stimulants until they begin to bear fruit. Keep a sharp look-out for mildew, and check it at once by the application of dry sulphur to the leaves, renovation of the fermenting material, and the abundant use of water at a temperature equal to that of the soil containing the roots. Keep succession plants growing by shifting them on before they become pot-bound if the pit in which they are to be planted is not ready for them. Never bury the stems of winter plants, as deep potting or heavy earthing is the frequent cause of their going off before the inexperienced are aware of their danger; but in potting or planting always keep the top of the ball near the surface, and coax the roots away into feeding-ground some distance away from the stems. Where old plants are still doing good service keep them copiously supplied with good warm, generous liquid, mulch the balls with short stable manure, and encourage an extension growth by allowing a number of the most promising Vines to ramble over any unoccupied part of the trellis. In every department keep the foliage free from insects by means of sponging or fumigating.—G.

Triteleias in pots.—I last year tried these in pots and was much pleased with the result. I put them six in a pot, plunged them in ashes with other bulbs in October, and they flowered freely along with Cyclamens and Dog's-tooth Violets, just succeeding Crocuses and Scillas. They cost me 9d. a dozen.—A.

15038.—**Destroying leather-jackets.**—I never found that I could put anything on the soil that would kill the grubs unless it killed the plants as well, and I don't think there is any better plan than catching them and killing them; the simplest way to do this is to lay some pieces of green turf, about the size of a man's hand, on the surface between all infested crops, and to examine them every morning. As they commit their depredations at night, and usually bury themselves in the ground during the day, they get under the turves instead of burying in the ground, and, when the turf is lifted, they may be easily caught and killed. The positions of the pieces of turf should be changed every day.—J. C. C.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

QUINCE.

THIS fruit when ripe is of a rich orange colour. A strong unpleasant smell exhales if Quinces are stored away in any large quantity, but when taken singly the odour is not at all disagreeable. It is very seldom that the Quince is found sufficiently ripe in this country to be eaten in its raw condition; but a variety of wholesome sweets may be made from it, especially marmalade, this being a preserve which has taken its name from the Portuguese word "Marmelo," signifying "Quince." The addition of a Quince, well stewed, affords a pleasant flavour to an Apple-tart or pudding. The seeds of the Quince yield a large amount of mucilage, and are used in many chemical preparations.

QUINCE MARMALADE. — Take some ripe Quinces, peel them very thinly, take out the cores, and cut them into small pieces. As they are thus prepared, throw them into cold water to preserve their colour, and, when all are ready, boil them in just enough water to cover them until quite a pulp is formed. Then weigh it, and allow three-quarters of a pound of good preserving sugar to every pound of pulp, and boil all over a brisk fire for three-quarters of an hour, carefully removing all scum as it rises to the surface. Pour hot into jars, and cover as before directed for jams. *Another way.*—Secure some good, ripe, and sound Quinces, wipe each one clean with a damp cloth, and cut in very thin slices; add two pints of water to every six pounds of fruit, and boil gently for three hours, stirring occasionally to prevent the fruit from sticking. Rub as much as possible of the stewed Quinces through a hair sieve, and add four pounds of loaf sugar to every six pounds of fruit, and boil briskly for half-an-hour. Pour hot into dry, sound jars (or shapes to be used for dessert). In twelve hours the marmalade should be perfectly stiff and gelatinous, owing to the strong mucilage of the pips having been so thoroughly incorporated with the pulp. This will be found a valuable substitute for Linseed jelly.

QUINCE JELLY.—Take some ripe fruit, wipe them with a damp cloth, quarter, core, and cut them into small pieces. Put them into a preserving-pan, with enough water to cover them, and cook them slowly until all the Quinces are quite soft, stirring occasionally to prevent them burning. Pour all into a coarse cloth tied over a chair reversed, and let them drain all night. Next morning, put the juice into a preserving pan, taking care not to pour the bottom or sediment into it, or the jelly will not be clear. To every pint of juice add ten ounces of sugar, and boil briskly until it will jelly when a little is poured upon a cold plate. Then pour the jelly into small pots or glasses, remove any froth or scum, and set aside until quite cold, and cover in the same manner as jams.

PRESERVED QUINCE.—Quinces may be preserved either whole or in quarters in the following manner. Pare some Quinces very thinly, and preserve the shape as perfect as possible, or cut them into quarters, and remove the core. Put them thus prepared into a stewpan, with cold spring water to cover them, and lay the parings over the Quinces to keep them down. Cover the stewpan with a tightly-fitting lid, so that no steam may escape, and cook the Quinces over a slow fire until they are soft and of a fine pink colour. Remove the parings, and drain the Quinces on a hair sieve. Make a thick syrup with the juice and preserving sugar, allowing three-quarters of a pound of sugar to one pint of juice; boil and skim it well. When the syrup is quite clear, put in the Quinces; boil rapidly for ten minutes. Then lift the pan from the fire, and let stand for three hours. Boil again until each Quince looks clear, and then lift it with a perforated spoon into a dry jar. When all are thus removed, boil the syrup until it is thick, and then pour it over the fruit. Set aside to become cold, and then tie down closely. This forms an excellent dish for dessert when served with whipped cream.

A QUINCE CREAM.—Take half a pound of Quince marmalade, half a pint of water, one ounce of gelatine, the juice of one Lemon, and half a pint of thick sweet cream; put the

marmalade, water, and gelatine in a saucepan over the fire, and stir until all are dissolved; strain, and add the Lemon-juice. Whip the cream and mix all lightly. Pour the mixture into a previously-wetted mould. Set aside to become firm. Turn on to a crystal dish, and serve whipped cream around it. This may be made from fresh Quinces, but they must be stewed for some time until they are soft, and sweetened to taste.

QUESTION.

15173.—**Making scent from Roses.**—Will any reader kindly tell me how to make scent from Roses?—AMATEUR, *Cleckheaton.*

14563.—**Cooking Egg-plants.**—The fruit of Egg-plants is used in soups and stews, and, when ripe, may be used in the same way as Tomatoes, with which plant it is closely connected.—E. HORDAY.

Pickled Peaches.—Seven pounds of peeled fruit, four pounds of white sugar, a pint of strong cider vinegar, mace, cinnamon and cloves to taste. Put the fruit into the preserving kettle, with alternate layers of sugar. Heat very slowly until scalding hot, add the vinegar and spice and boil five minutes. Take out the fruit with a skimmer, pack in glass jars, cover with the hot syrup, and make air-tight.—RURAL NEW YORKER.

Utilising unripe Grapes.—Knowing that there are many readers of GARDENING who, like your correspondents 14870 and 14872 (p. 447), are at a loss how to make the most of their Grape-vines, and as it is not very generally known that delicious wine can be made from even the leaves and tendrils of the Vine, I send you the following recipes, which may prove of interest:—*Wines from ripe Grapes.*—Take sixty pounds of ripe Grapes, cut off top part of stalks, and place the Grapes in a vessel; squeeze with the hands, or crush carefully with clean wood; do not break the stones. Strain the liquor into another cask or vessel, and leave it to ferment for a fortnight, well-covered over with bags or lid. Then draw off into cask in which you intend it to remain, leaving bung-hole covered with small plate or saucer until it ceases to ferment; then put in bung tightly. Bottle in six months.——*Wine from unripe Grapes.*—Take eighty pounds of unripe Grapes, bruise with clean wood (that is, wood that will not impart any unpleasant flavour); do not crush the stones; pour on eight gallons of water, stir well, leave for four or five hours, then strain, running two gallons more water through the skins into the other juice; add fifty-six pounds refined sugar, and place in warm room to ferment for two or three days; then put in cask where it is intended to be kept—a cool cellar is best; fill up to the bung, covering bung-hole with small plate or saucer. Keep cask filled up—a little of the liquor should be kept over for that purpose. After a few days the bung may be driven in, and a hole made for vent-peg; this peg must be taken out every day or two till fermentation ceases. Bottle in the spring. The above quantities will make about sixteen gallons of wine. These wines can be made perfectly clear and sparkling by fining; this is best done in frosty weather, in December. Draw off the wine very carefully; thoroughly mix one drachm of isinglass dissolved in a little warm water to every ten gallons of wine. Clean out cask and return the wine; bung closely. *Wine from Vine-leaves, &c.*—Very excellent wine can be made from the leaves, tendrils, and young shoots of Vines. Gather when quite green and clean. Take, say, fifty pounds of leaves, &c., pour on them seven gallons boiling water, and let all stand a day and a night; draw off the liquor and press the leaves, &c., then pour on them another gallon boiling water, press again, and put all the liquor together; add twenty-eight pounds refined sugar, and ferment as in the case of unripe Grapes.—J. SADDINGTON, *Glenfield, Leicester.*

Making use of Pears.—We use our Pears in the following ways:—1. Pare, core, cut them small, and stew, as in making Apple sauce. Allow one pound of sugar to one pound of pulp, a few cloves; boil one hour. We use moist sugar, and have a cheap and delicious jam. The Pears were windfalls, and those unfit for sale. 2. Cut asunder, and dry in a very cool oven. 3. Pare, core, and cut in four or eight, dry in a very cool oven, keep in a dry place. When wanted for use, put them in a stewpan with water enough to allow them to swell. Add sugar and cloves. 4. *Wine.* Bruise them with a mallet, put them in a tub with water enough to cover them, and proceed in the same way as in making Grape wine; flavour with cloves.—IVY COTTAGE.

POULTRY.

QUESTIONS.

15174.—**Floor of poultry-house.**—Will any poultry-keeper kindly inform me of the best material for floor of poultry-house?—M. L.

15175.—**Unprofitable fowl-keeping!**—I have twenty-three fowls, three of which are cocks, fourteen pullets, and six last year's hens. Eight of the pullets only hatched in May—Partridge-Cochins mostly. They lay no eggs, and last quarter cost one pound five shillings simply for their food—meal and mixed corn—without including scraps. Would some reader kindly tell me how much fowls ought to have during the day, and what it should consist of, as they are not worth keeping at this rate? They have a good-sized piece of waste ground as run, but no grass.—BA BA, *Dorking.*

Egg-eating hens.—In a back number of GARDENING (page 236), I notice two paragraphs, "Egg-eating hens" (13930) and "Lice in fowls." I think that the two evils are connected. The hen is restless from the annoyance of fleas, &c.; she fidgets about, the eggs are broken, and she eats them (especially if she is sitting) to get them out of the way. I have found that I save eggs and the hens' characters by putting a piece of camphor (about the size of a horse-bean or less) in the nest. Sal ammonia might do even better, but perhaps it would be so strong as to annoy the hen.—W. A. H., *Dudley.*

Selecting stock birds.—All small, wiry, and unhealthy chicks should be sold, and the strongest and best-developed kept to produce next year's stock; if this were done, although the immediate profit would be less, the return in a few years would be much larger, and there would be fewer "wasters" amongst the stock. The largest specimens are not always the best stock birds. Plump birds, well-developed, and possessed of great spirit, are the best. I always prefer a rather undersized cock, of whatever breed he may be; but I like the hens large and well-developed. The progeny generally take after the cock in fancy points, and shape and size from the hen; or, in other words, the chicks take after the hen from the skin inwards, and the feathering from the cock.—P.

Keeping eggs.—The reason why eggs are hard to keep is because when they remain long in one position the yolks settle down against the shell, and, if there is evaporation of the fluids, the yolk adheres. The object, when preserving, therefore, is to seal up the pores, which may be done with tallow, wax, or any kind of grease, gum, or substance that closes the pores. In fact, there are many different methods of properly keeping eggs. The great point in the matter, however, is to turn twice or three times a week, which may be easily done, if they are packed in a box, by turning the box.—F. G.

Helianthus rigidus.—At page 475, "G. W." describes to us an evidently good Sunflower of some kind under this name. One cannot be quite certain what it may be, but it cannot be Helianthus rigidus, for its flowers are larger than those of the Rudbeckia, to which he compares his flower, but a more positive proof is in the statement that his first flowers are opening in early September, are light golden in colour, and the plant sometimes six feet or more high. H. rigidus is over by the time stated, flowers orange yellow, plant rarely over three feet. I strongly suspect that H. doronicoides is the name of the plant described. It differs from rigidus in being so much later and taller, and the flowers are paler, too, but scarcely "light, golden" with me. They are not quite so good, in form, substance, or colour as rigidus, but the plant has a value in being evidently a fine late-blooming perennial. Should my guess be wrong as to what "C. W.'s" plant is, it would be interesting to learn the name of so useful a Sunflower, and if a flower and leaf were forwarded, doubtless its name could be got at.—J. WOOD, *Woodville, Kirkstall.*

THE VILLA GARDEN.

(*Continued from page* 492.)

FORCING SALADS.

Lettuces.

SOME of the best Lettuces I ever had were forced in a frame on a bed of leaves and manure. They force very easily—scarcely any plant takes to it so kindly. It is only necessary to force Lettuces in winter and early spring. Usually, in most places, good Lettuces can be obtainable till after Christmas, where there are frames to shelter them, or where a good hardy kind is grown and they are protected by coverings of dry Fern or leaves. Any time after Christmas these Lettuce seeds may be sown in heat, and, if pricked off into hotbeds, made of leaves and manure, such as Potatoes and other vegetables are usually forced upon, they will, with the lengthening days, make rapid progress. The seeds may be sown thinly in boxes, and placed in a warm house to grow on whilst the hotbed is made ready; and as soon as the plants are large enough to put out, and the bed with its surface of rich soil, eight inches deep, in a nice genial condition to receive them, select a mild day, and plant them at suitable distances apart, according to the variety grown. The small Cabbage Lettuce, known as Paris Market, is the earliest that I know. Tom Thumb, another small Cabbage Lettuce, is also very early, and a very good kind. The best Cos Lettuce is the London White, when true. The Alexandra Cos is a good successional kind. It is a good plan to plant the small Cabbage varieties alternately with Cos, six inches apart, as the Cabbage varieties will be full grown and cut by the time the Cos requires the space.

Endive.

This is not often forced, because it sometimes bolts when sown early in the open air. But when sown in a mild hot-bed, and grown unchecked, the tendency to bolt is not at all prominent. It requires the same treatment as the Cos Lettuce, and should be tied to blanch when full grown, or when large enough for use. The White Curled is a good variety for forcing; it does not take so long to blanch.

Chicory

Is sometimes used as a substitute for Endive. The seeds are sown early in May, in drills fourteen inches apart, and the young plants are thinned to nine inches or less, according to the sized roots we desire. Some give a preference to roots of only a moderate size, and then the sowing may be delayed a little longer, and less space allowed. The roots are lifted rather late in autumn, and are stored away like Carrots or Beet, and are potted a few at a time, as required. Five or six roots may be potted with the crowns just above the soil in a ten-inch pot, or they may be planted in a bed in the Mushroom house, or in a box deep enough to cover and keep the light from the young growth as it comes up, as, no matter where forced, it must be in the dark in order to have the young shoots of a delicate flavour and free from that bitter principle natural to the family when unblanched. A nice genial temperature of fifty-five to sixty-five degrees will produce good results.

Dandelions

Make excellent salad plants to mix with Lettuces in winter or spring. The roots are best cultivated after the manner of Chicory, only still less space will be required, as the roots will not get so large. The roots found in the pasture field or by the wayside may be carefully taken up, and, if potted six roots in an eight-inch pot, or planted in a box, and placed in a dark place having a genial temperature, a very wholesome salad will be the result. When grown in pots or boxes, it will be an advantage to take an empty pot or box, and invert over those that they are growing in. This tends to keep the atmosphere surrounding the plants close and moist, and make growth more tender and delicate.

Radishes.

During the forcing season early in the year, Radishes are taken as a stolen crop when forcing other things. They are often sown with Carrots

and Potatoes, as they come off before the other crops require the space, and scarcely any harm is done if they are drawn for use as soon as fit. If they grow by themselves, a good many Radishes may be obtained from every small bed. They do not require much heat. If they have a little to start them, just to cause the seeds to germinate quickly and get them fairly into growth, shelter will do the rest. To keep up a succession a little bed should be made up every three weeks or so, from December till the end of March. After that they may be had in the open air by the aid of improvised shelters. In no case should they be sown too thickly, as they draw each other up weakly, and run too much to top. The best varieties for forcing are Wood's Frame, as a long-rooted variety; and French Breakfast, and the early White Forcing Turnip.

Young Onions.

These are sometimes used to flavour salads, and if in demand they should be sown in heat in boxes, and be drawn when quite young. Onion seeds germinate very quickly in a high temperature, and it can scarcely be too high to start them if they are wanted in succession; but as soon as the young plants appear above ground move to a light position, where the night temperature ranges from fifty-five to sixty degrees.

Watercress.

Of late years this has come to be grown under glass for winter and spring supply. Cuttings are obtained which are planted in pits or frames of rich loamy soil. Sometimes pots are used, and the pots are stood in pans of water. The cuttings are planted rather thickly, and are shaded a little at first. A greenhouse temperature will suffice, though, if in a light position more heat than is customary in a greenhouse may be given. After the first gathering, give liquid manure occasionally. The cuttings may be planted in boxes and be brought on in a forcing-pit, and moved to the greenhouse afterwards to flavour and colour; or the cuttings may be inserted in pots like any other soft-wooded plant, and started in the propagating-house or pit, and when rooted potted off, and moved to the greenhouse when established. It should be grown on without checks or chills, and then it will be tender and of good flavour. If cuttings are not available seedlings may be raised by sowing in heat and growing them in the same way that cuttings are treated.

Plain Cress.

This is the variety commonly grown for forcing. It is usually sown in boxes, one or more at a time, according to the demand. The boxes are about two feet long and eleven inches wide, made of half-inch deal, and they are handy and light. A coat of paint tends to preserve them, and make them more lasting. They need not be deep for Cress, but our boxes are four inches deep, as we use them for other purposes. A few half-inch holes are bored through the bottom for drainage, and about two inches of rough soil are placed in as a foundation. On this a layer of fine, light, sandy soil is placed, and pressed down firmly with a flat piece of board. On the surface the seeds are sown rather thickly, and left uncovered. Any warm houses or pit will do for the forcing of Cress, and as Mustard is often required in association with this, it is generally sown at the same time, and under like conditions. If Cress or Mustard is required in larger quantities it may be sown in frames. Market gardeners generally grow it in this way, but in private places it is more important to have a small regular succession than to have a large quantity at any one time. A small sowing every five or six days will keep up a good succession.

Tarragon and Chervil.

Tarragon is constantly in demand for flavouring salads, and a stock should be potted in autumn and brought on in heat to use green. It will be advisable to have a few plants of Chervil under cover for flavouring salads, for it is sure to be required. It may be planted in a pit or frame, or a few plants may be potted and placed in the greenhouse. The plant has an ornamental appearance, and a few pots of it will not take much room.

E. HOBDAY.

(*Concluded*).

Belladonna Lilies planted out.—We have these planted out in the bed of a conservatory and others in a south border in the open air, and in both cases they do much better than when confined to pots. We could never grow them in pots to give us such a long succession of fine flowers from one set of bulbs as we get from those planted out, and in all cases where convenience exists I would recommend the plan of planting them out. They grow freely in any rich, open mixture, and require much less attention than when kept in pots.—CAMBRIAN.

15030. — **Earwigs.**—An empty flower-pot, inverted over the stake to which the flower is tied, with some Moss or hay at the bottom, is one of the best traps for these insects. A bean or reed, with the pith taken out, tied to the stalks of the flower, is a good way of catching them. If a piece of cotton wool is tied just under the flowers of the Chrysanthemums, the earwigs will not be able to get at them. All these traps must be examined once a day, and the earwigs shaken into boiling water or otherwise destroyed.—C. H. B.

——A friend informed me that he has captured an enormous quantity of earwigs by simply hanging on the plants they infest an old woollen sock. They creep in and hide up. The sock (or stocking—anything woollen with a snug corner in it will do) is shaken out in the morning. He has captured hundreds at a time in this simple way.—J. LODER, *Woodbridge*.

15025.—**The She-Oak.**—The Latin name for the She-Oak, or Botany Bay Oak, is Casuarina glauca.—H. B.

—— The Latin name is Casuarina quadrivalvis.—E. B. K. W.

14983. — **An unsatisfactory kitchen garden.**—There cannot be the slightest doubt as to the cause of all the ills of which you complain. You have overdosed your garden with foul animal manure. Now for the remedy. Place no animal manure on your garden for at least two years; as soon as the weather is dry, cover your garden with a thick dressing of lime, and, whilst in a burning-hot state, tread it into your ground, taking care to turn up your soil at least *two* spits deep. Leave it for a time, but before planting, cover your ground again with hot, burning lime. Dig it in at once, one spit deep, and then plant when necessary. A Carrot, three pounds in weight, is all very well to grow for exhibition or for a horse to eat, but is quite unfitted for anyone to eat who values the clean, sweet flavour of a vegetable. Small, sweet vegetables, fit for the table, is what should be aimed at, and these you cannot produce if you use foul animal manure. You should manure with leaves and lime, *not gas-lime*, and *trench deeply*.—X. Y. (A reply to the question will also be found in another column.)

15035.—**Climbing Roses.**—Wandsworth is rather near London for Roses to do really well, and I should doubt Maréchal Niel succeeding well out of doors. Gloire de Dijon would be pretty sure to do well. At East Sheen, where the soil was also gravel, I never could get Maréchal Niel to grow well out of doors, but Gloire de Dijon, Céline Forestier (yellow Noisette), and Climbing Devoniensis did very well on a south wall; while on a wall facing west I found climbing Aimée Vibert (white cluster) very vigorous, and its leaves more nearly evergreen than any other Rose. Gloire de Bordeaux (pink) is a vigorous grower, but not a free bloomer. Charles Lawson (bright pink, but only a summer bloomer) did well on a west well, with little pruning.—L. D.

15034.—**Plants in front-room windows.**—"A Lover of Flowers" does not say whether the room is in town or country, lighted by gas, heated, or not. In a N.E. town window, want of light seems to be the great drawback at this time of year; but in the spring, Hyacinths and other bulbs will do well, and for outside boxes in the summer, Harrison's Musk is very showy. In a room, especially if lighted with gas, it is difficult to keep plants. Aspidistra luxida is the only one I know which is sure to do. I have had one plant on my dining-table under a gas-lamp for months together, and it has grown and flourished. Some hardy Ferns ought to do, but flowers seem to want more light to keep them in health.—L. D.

Big flavourless Peaches.—Among the Peaches sent out of late years are several kinds that have a very poor or even a bad flavour. The Peach varies much as regards climate, position, and soil, but our experience with some kinds is that they are invariably bad. Now, the Peach is so peculiarly delicate a fruit that, if there is any deficiency of flavour in a kind, it is not worth one farthing a tree. The whole charm of this queen of northern fruits lies in its delicate flavour, and a shade in one direction less good than we are accustomed to in the fine old kinds may make a tree not worth its place. Raisers concern themselves far too much about size and appearance, and too little as regards the main point. Do not grow any Peaches but those you know to be first-rate in flavour. Any new ones worth growing should be as good in flavour, or nearly as good, as the Noblesse or Royal George.—F.

Dwarf Furze (Ulex nanus).—This is by no means so frequently met with as the common kind, but of all the wild flowers that bloom in the autumn it is by far the brightest. In this neighbourhood there are large tracts of it, and, owing probably to the hot summer, it is blooming with great profusion. In its highest state of luxuriance it does not attain more than one foot, and in a general way not more than six inches in height; it would, therefore, be just the thing for carpeting a dry sunny bank where perhaps but little else would thrive. In the wild garden, in a suitable position, this little Furze should have a place, for it blooms gaily through the dreary and flowerless months of November and December when fairly open and mild.—SURREY.

Silene Schafta.—When hardly a Silene with the exception of the pretty native S. maritima and its double variety, is to be seen, S. Schafta, like a gem in the wilderness, brightens up dull places with its handsome and graceful cushions of wiry stems and little bright green leaves. Beginning about the end of July, it continues in flower until cut off by the early frosts, and as it grows in the open border with remarkable freedom, no more suitable plant could be used for edgings or near the fronts of borders. On the rockery a position near that of Lychnis Lagascæ may be chosen for it, as it begins to flower just as the Lychnis is over, and thereby a succession of pretty rosy purple flowers may be kept up during the greater part of the summer and autumn. It may be readily increased by division of the roots or by cuttings.—R. K.

To preserve leaves, Ferns, &c.—To preserve the brilliant colours of autumn leaves, their stems should be dipped in melted yellow beeswax. The leaves should be well dried. By piercing the leaf near the stem with thread-wire, they can be woven on a coarser wire, or on large cord, into any description of garland or design. It is of the first importance to select the most beautiful and brightly-tinted leaves. Those leaves, too, which are touched with ripeness and delicately shaded in colour from the upper and broader part to the point are very desirable to interpose with the gaudier ones, although many exquisite specimens may be gathered from the ground. They should be pressed in a book, the leaves of which are of paper of a loosely-woven texture, that the moisture from the leaves may be more readily absorbed. For this reason an old book is preferable, either for this purpose or for pressing flowers. Being well dried and pressed, they can be perfectly prepared for adorning a room by quickly ironing each leaf with a moderately-heated smoothing-iron drawn quickly over a piece of beeswax. The leaves will become limp and soft, like wax ones, and retain their colour and beauty for the whole season. These leaves form, combined with grasses, nice combinations in bunches for vases or wreaths, and garlands and crosses and other designs for ornamenting; or they fill handsomely the various styles of hanging-baskets now so much in vogue. Ferns should be gathered in September or October, and mixed in prettily with autumn leaves. Grasses, which will be found in endless variety, serve to fill in with the leaves and Ferns, and can be coloured or crystallised. To make anchors, crosses, &c., cut the forms out of pasteboard, and sew on the leaves—of course, so that all the stems will be covered—arranging the different colours and sizes with taste, and interspersing bright red berries. The Blackbriar and Bittersweet berries are easily dried, and various grains, as wheat and oats, intermix with good effect.

GARDENING ILLUSTRATED.

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FRUIT.

THE MULBERRY.

15034*a*. — Believing the Mulberry to be neglected, I should like to add a word or two to the excellent remarks of "J. C. C." on page 493. It occupies a small space in books, partly, no doubt, because, as only one kind is grown for fruit—the Morus nigra, or black Mulberry—there is no occasion for long lists with fancy names, partly because it needs so little attention or pruning, and once placed in a suitable situation takes care of itself, growing more like a forest tree than a fruit tree. But it is a somewhat tender tree, growing freely in the alluvial districts in the south of England, but not ripening its fruit in the north, nor, except under very favourable conditions, in the midland districts. Even here it is a mistake to plant it in exposed situations, apart from the injury which wind does to its heavy foliage. On the other hand, it cares little for smoke or fog, which increases its value for suburban gardens. A few years ago I saw a tree with a fair crop of ripe fruit in a small garden or court in Spitalfields, the only drawback to which was, I was told, that the fruit needed washing.

The tree increases rapidly. I planted one fifteen years ago, the head of which was not larger than an ordinary Gooseberry-bush, but which now covers a circle of over thirteen feet in diameter, so that I am removing trees to give it room. This, however, is not so much from rapid growth as from its never having needed cutting back. It does not throw out strong branches, like the Pear or Apple, but an infinity of small twigs, each bearing two or three berries, and many of which die after fruiting. All the pruning it has had has been the removal of small branches when growing across or too closely, which has to be done carefully, as the tree is apt to bleed. But the wood is soft and weak, and if not strongly supported, the tree grows into odd shapes, ugly or picturesque, as may happen. A year or two after mine was planted, I found it one morning with its head on the ground, the fastenings having given way. The stem was not injured, but even now I hesitate to remove the strong ash pole I had made for it. If well grown and supported, the tree forms a fine, regular head, and the pendulous character of the branches and the thickness of the foliage make it a cool, natural arbour, which is made more comfortable by the fact that no insect pests or birds infest the tree, so that till the fruit ripens no droppings need be feared. If "K. A. J." is anxious as to the shape of his tree, I advise him to see it before purchasing; it is not easy to correct an ill-grown shape without a use of the knife which will postpone fruiting, if it does not damage the tree. The last point for which the tree is to be commended many will think the best: it is a large and steady cropper. Mine began bearing two or three years after planting, scantily at first, but soon plentifully in proportion to its size, and for some years I have had an ample supply for myself, visitors, and friends. One year the fruit did not ripen fully, and we had to use it in apple pies and puddings, to which it made a nice addition. I may add that my ground being rather thirsty, I give, on the advice of an experienced florist, the Mulberry and all my other trees ample supplies of water to the roots about once a week in dry seasons, and that, the lawn having several trees on it, I manure every other year.

Clapton. W. M. C.

LATE-KEEPING GRAPES.

THE heavy downpour of rain that we have experienced during the last two months has caused thin-skinned Grapes to go off mouldy and rotten even earlier in the season than usual, and many owners of gardens, who have for some weeks past had abundance of fruit, will soon be reduced to a very limited supply, mainly owing to want of care in selecting varieties to follow each other in succession over the longest possible season. Now, in Grapes there are plenty of varieties to suit all seasons, and there is really no difficulty in having good Grapes, both black and white, at Christmas and for some weeks in the new year; but to attempt to keep Black Hamburgh and other thin-skinned summer Grapes for any length of time, is simply a waste of both time and means, and can only end in disappointment. Yet I find many gardens overstocked with these, and having not a single Vine of the late-keepers; and, fruit of all kinds having been so plentiful, the demand for Grapes has been less than usual. Consequently, many of the summer Grapes are still hanging on the Vines and proving a troublesome crop to keep in good condition, for, with saturated borders and a damp atmosphere, the task of keeping the berries from mouldiness is by no means an easy one, and I am fully convinced that, if many owners of vineries would curtail the number of early Vines, and have a small house devoted solely to the use of late-keeping sorts, they would find it a capital investment, as it is during the winter months, and especially at the festive Christmas season, that a good supply of home-grown Grapes is so much appreciated. After trying various kinds, I can strongly recommend the following as the best of their class:—

Lady Downes Seedling. This is probably the best black Grape for very late keeping in cultivation; it requires the assistance of a little fire-heat to bring it to perfection, and especial care in thinning out all the small berries, so that the large ones stand quite clear of each other when ripe. Gros Colman is a very handsome Grape and good keeper, although the flavour is not first-rate; but it makes such a noble-looking dish of dessert as to be well worth cultivation in the most limited collection. Black Alicante is another most excellent late-keeping Grape, and always colours well, and puts on a beautiful bloom. There are several so-called varieties of the Alicante, but one is sufficient. Muscat of Alexandria is, perhaps, the best of all white, or rather amber-coloured, Grapes. It is of exquisite flavour, and keeps well for a long period. Raisin de Calabre is another excellent late white Grape, that keeps plump very late in the season. I find that an impression prevails that late Grapes require very special means to bring them to perfection, but the fact is that any one who can grow summer Grapes can grow the above. A gentle heat in the pipes to help them to ripen, and keep the berries dry afterwards, is all that is needed, as forcing temperatures are only required for very early Grapes.

Gosport. J. GROOM.

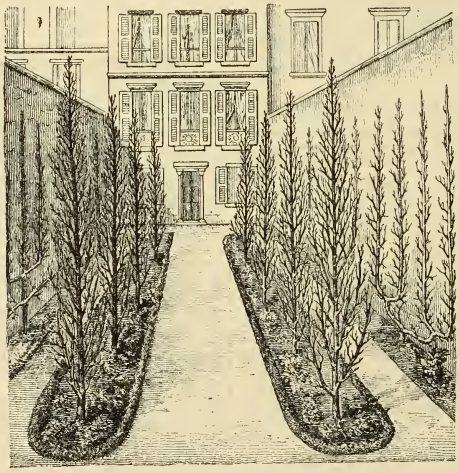
Storing Apples.—I have tried many ways of storing Apples, but have found none so effectual as the following. Gather a quantity of leaves (Apple or other kinds), make a bed on the ground, put the Apples on the bed, and cover thickly with leaves. Put on a little long straw, then cover over about a foot thick with fresh soil, exactly the same as in making a Potato-pie. When opened out in the spring the Apples will be found to be sound, firm, and fresh. I was led to this method from finding, when a boy, that the best Apples were those we found late in the winter close by the box hedge, covered with leaves.—A SUBSCRIBER, *Lincoln.*

Prize Gooseberries.—I was much interested by the paragraph on prize Gooseberries, on page 487, written by "W. B, *Stockport,*" as before seeing it I quite shared the opinion of "W. W." on this subject. I think it would have been useful if "W. B." had given the names of such prize berries as are "the right sorts for cropping," and I should like to be the possessor of prize sorts which are "laden like ropes of Onions on a string." If Warrington Reds or Whitesmiths do not produce fruit of great size this is couterbalanced by their being heavy croppers, with fruit of very fine quality for either eating or culinary purposes. There seems to be a wide difference between the prices of the fruit of the prize sorts and Warrington or Whitesmith, but "W. B." does not say whether they were purchased for exhibition or for consumption; if for the latter the purchaser must possess a very fastidious taste. I shall feel obliged to "W. B." if he will kindly name two or three prize kinds that he would recommend to be planted by a LANCASHIRE LAD.

Mildew on Grapes.—Several correspondents have recently asked questions as to mildew on Grapes, and the following information respecting the fungus may be useful. There are several predisposing causes to mildew, the more common being cold currents of air, a stagnant atmosphere, and lack of water at the roots. Obviously, therefore, the remedy is to avoid these evils. The best treatment to adopt with mildewed Vines is first to decide from which of the causes named the evil arises, and, this being settled and treatment given accordingly, the destruction of the fungus must then have attention; and it is by no means a difficult task, though it frequently entails the loss of a quantity of fruit, particularly if the pest has got a strong hold. Mix sulphur with water to the thickness of paint, and with a brush made of matting apply it to the Vine stems; also paint the hot-water pipes, and syringe the walls and floors with a thinner mixture; this done, keep a gentle heat—not hot—in the pipes, and a little air on all night and more by day, and in a short time the mildew will disappear, and a recurrence will not take place if due regard be had to prevention by avoiding the predisposing causes named above.—W.

FRUIT TREES IN FRONT GARDENS.

Owners of small gardens do not, as a rule, make the most of their opportunities of growing fruit trees, and perhaps the accompanying illustration—one of a type of garden common near Paris—may show them how much may be done in this direction. A mere spot of ground is planted with carefully-selected and choice fruit trees, well trained, and the result is, even from an ornamental point of view, better than it often is where subjects that have only beauty to recommend them are planted. Beneath the trees, Pansies, Pinks, and other hardy flowers grow, and the presence of the trees does not prevent the little garden from being made gay with flowers. In winter, the graceful pyramidal Pear trees and well and simply-formed Peach and Plum trees against the walls, certainly often look better than little gardens arranged with another aim; in spring there is the beauty of fruit-tree blossoms; and in autumn, the crown of trees—good fruit. R.



Fruit Trees in a Front Garden.

Prize Gooseberries.—"W. B." (p. 487) is thanked for his instructive reply to "W. W." The difficulty experienced by the latter is perhaps mainly owing to the fact that his garden, being 600 feet above sea-level, much exposed to winds, and in Staffordshire, the finer kinds of Gooseberries may not have been suitable. The berries themselves have been fine, but they have been few in number, and the bushes do not flourish—dying down, in fact, rather than increasing in size. About half-a-dozen have had to be removed this autumn as worthless. The Warring on Reds, on the contrary, progress every year most satisfactorily. "W. W." had noticed several inquiries as to the best sorts of Gooseberries, and was desirous that others should profit from his own disappointing experience. In more favourable climates, Companions and other fine sorts would doubtless give satisfaction.—W. W., *Staffs.*

A hint to advertisers.—I think it would be a good idea if some fruit grower would advertise to send bundles—say a dozen—of the best small fruit trees assorted and named, *e. g.*, two or three Baumforth's Seedling, and the same of the newest or best Gooseberries and Currants. There are plenty of people whose gardens have no room for dozens of any one kind, but who yet would like to try *a few* of such things. Of course, the seller could fix a remunerative price.—J. H. C.

REPLIES.

14730.—**A barren Fig-tree.**—The presence of what appears to be rust would suggest the presence of red spider. Probably the roots are too deep in the subsoil, and too far away to meet the demand made upon them, under the altered conditions. Lift the roots and place them in some good sound loam, with which a little old plaster has been mixed. By and by, when all the leaves are down, prune sufficiently to allow space to lay in new wood; and, if the tree is not shaded overmuch, there will be plenty of fruit next summer. Little or no water will be required till just before the growth begins: then give a good soaking, with the chill off. I do not say the roots should ever be allowed to get very dry, as that would be injurious, but I expect the opposite is the likeliest condition at present.—E. Hobday.

14815.—**Fruit-trees for N.N.W. wall.**—Plant kitchen Plums, such as Victoria, Goliath, and New Orleans. I have had such late kinds as Golden Drop and Blue Impératrice do well in similar positions. Cherries, such as May Duke and Morello will do well also; and Currants (red and white) and Gooseberries may be planted to fill up all vacancies.—E. Hobday.

14881 and 14885.—**Preserving Filberts and Cob-nuts.**—The methods of "G. S., *South Yorkshire*," and "J. C. C." described on p. 487 are very primitive. It would be a great nuisance to have to dig up your pot of nuts as required. I have had many years' experience in keeping nuts. The great secret is to know when to gather them; this should be done as soon as the nut itself will easily slip from the outside husk, which husk will then be comparatively green with some sap in it. Then gather, not removing the husk, and tread or press into a crock (according to the quantity of nuts you have) as tightly as you can, cover with a lid and keep in a dry place, taking care to replace the lid after taking some out for use. I have kept nuts for two years in this way, and they have been as moist and sweet as when first gathered.—A Grower of Kentish Cob-nuts.

15014.—**Tomatoes versus wasps.**—I have grown Tomatoes in my vinery for the last four years with the express purpose of keeping away the wasps. I have never had to bag any bunches of Grapes, nor found any damage done by wasp or fly. The Tomatoes are allowed to grow freely, not for the purpose of fruiting.—J. C. B., *Essex.*

14715.—**Charcoal and nitrate of soda.**—Nitrate of soda is a powerful manure; 100 pounds of it contains sixteen and a half pounds of nitrate fused with charcoal. The latter should be broken up small, so as the more readily to absorb the nitrate. When used with charcoal, three pounds of the nitrate may be mixed with a bushel of crushed charcoal, and a peck of the mixture be added to each barrowful of soil when the plants are potted. Its effect is to impart a dark green colour to the growth, and add to its robustness. Another way of using it is to give it in the form of liquid manure, either alone or with some other substance. Soot or guano may be mixed with it to form liquid manure at the rate of six of soot to one of nitrate, or two of guano to one of the former.—E. Hobday.

TREES AND SHRUBS.

Abelia rupestris.—One of the most persistent blooming shrubs that we possess is this Abelia; it flowered with me for more than three months. It is a neat-habited shrub, of rather spreading growth, with deep, glossy-green leaves and tubular-shaped, sweet-scented blossoms, borne in clusters on the point of every shoot. The flowers are about an inch long, and in colour white, tinged with pink. This shrub was introduced into England from Japan about thirty years ago by Fortune, and is fairly hardy, except during severe winters. It makes a good covering for low walls. It is a shrub that should be made a note of, for it will succeed under ordinary conditions, and flower well where simply planted in the open ground. Cuttings of the half-ripened shoots root readily enough if kept close till that takes place.—A. L.

The Shrubby Mallow.—Among flowering shrubs, Hibiscus syriacus stands out prominently in early autumn. In hot, dry, sandy places it is not seen to advantage, as the foliage assumes a sickly yellowish tint, so unlike its general appearance when in good health. The most suitable soil for it is that of a fairly open character, which is always moderately moist without being too wet. There are now great numbers of varieties of it enumerated in catalogues bearing both single and double flowers. Amongst these a few of the best are the double white Céleste, a single sort, having flowers with a pleasing shade of blue; totus albus, pure white; purpureus, deep purple; double red; Lady Stanley, cream striped with red; purpureus variegatus, purple mottled with white; Boule de Feu, bright red; cœruleus fl.-pl., bluish; and roseus, pink. The propagation of this Hibiscus is by no means difficult, as cuttings strike pretty well either put in during summer when growing and kept close till rooted, or taken during autumn and wintered in a frame. The readiest way, however, of increasing the different varieties is grafting on pieces of the root, selecting for this purpose, if possible, those with a few attached fibres. This may be done in the spring, when a union is soon effected. Further, the single kinds readily ripen seed, from which plants may be easily raised, by sowing in pots or pans and placing them, if the seeds are few, in a frame, or, if in quantity, in the open ground. —G.

The smooth Sumach.—Although Rhus glabra does not attain so large a size as the common Stag's-horn Sumach (R. typhina), it makes a very ornamental bush or small-sized tree. The leaflets number from eleven to thirteen, are a deep glossy green above and whitish beneath. Both sexes are well worth growing, but the female tree is the more handsome of the two on account of the panicles of scarlet flowers. In some catalogues this goes under the name of Rhus coccinea. The male tree has greenish yellow flowers, but with the exception of this difference, both are alike in habit and in every other particular.—M.

Azalea mollis in autumn. — This Japanese Azalea is generally regarded, and rightly too, as a beautiful spring-flowering shrub, the autumn tints of the foliage not being taken into consideration, though a number of plants raised from seeds here, and now in the form of neat little bushes, have among their number some which have been most gorgeous, while the whole are especially interesting, as showing the great diversity of colour amongst them. This diversity is far greater indeed than when in flower, for most of these under notice bloomed last spring, and the colour of their blossoms was limited to a few shades, while among the decaying foliage some are a bright scarlet, others crimson, and many die off a rich golden hue. Others, again, maintain their leaves in a green state till they are ready to drop. Even when totally devoid of foliage the difference in the hue of the dormant buds is very noticeable. This Azalea is readily increased by means of seeds, though of course to perpetuate any particular variety other means must be resorted to. A good way is to layer some of the branches, which will soon root, and can then be detached from the parent plant, or they may be increased by grafting on seedling stocks of the same species, and even by means of cuttings. A great

measure of success has, however, attended our raising this Azalea from seeds, and those who wish to obtain a stock of good thrifty plants would do well to proceed in the same way. The plants selected as seed-bearers were some that flowered in pots and were used for greenhouse decoration. Being so early in the season, and wishing to ensure fertilisation, the pollen was applied artificially, with the result that a great number of pods swelled and ripened seeds. The pods were gathered just as they were on the point of opening, and laid on a piece of paper in a sunny part of the greenhouse till the seeds were shed. When this took place a bed of fine sandy peat was prepared in a cold frame, and after being thoroughly watered the seeds were sown on the surface, without any soil being sprinkled over them. The frame being kept close and shaded a sufficiently moist atmosphere was maintained to cause the seeds to germinate, and when sufficiently large they were pricked off into another frame prepared much in the same way. Then they grew away freely till, after a time, they were planted in the open ground, in rather a moist spot, in which the soil consisted to a great extent of vegetable matter. Since then they have done well, and now, as mentioned above, are, after three years, neat little bushes bristling with flower-buds.—ALPHA.

14713.—**Chips from horses' hoofs.**—Chips from horses' hoofs are a valuable manure for Grape-vines, and may be mixed with soil at a rate not exceeding one hundredweight to two cartloads. Less in proportion will be beneficial. The chips should be incorporated with the soil.—E. HOBDAY.

14711.—**Gravel lawn-tennis-court.**—Excavate the site one foot deep. There is never any difficulty in disposing of good soil. Cart in enough brickbats to make a bed ten inches thick, level them down, and break up those on the top with a hammer to make a level base to receive the gravel, which should be of good binding quality and three inches deep. Levels should be taken, and stumps for the men to work to driven in at the beginning of the job. This is a good time to do such work, as is any time when labour is plentiful.—E. HOBDAY.

14823.—**Landlord and tenant.**—I am afraid that such a division of plants, into ornamental and useful, as is suggested by Mr. Schumacher's letter (p. 494), would leave the way open to endless difficulties. Is a lawn fruit-tree to be considered ornamental (and therefore removable) or useful, and therefore the landlord's property? My artistic perception may not be keen, but I confess that in my eyes an orchard in spring, with trees laden with bright blossoms, and giving promise of better things to come, is not less beautiful (shall I say it is much more beautiful?) than some of the untidy flowerless shrubs which I so often see "ornamenting" front gardens; and the rosy-cheeked Apples in autumn are more pleasing to me than, let me say, the appearance of some parterres at the same time. Such distinctions would, indeed, be impossible and ridiculous, and I cannot believe that even our legislators would perpetrate such an absurdity. But while I cannot accept Mr. Schumacher's law, I can fully share his sympathy with those who suffer from unfair treatment. Still, I would point out, as a correspondent of GARDENING did a little while ago, that the remedy lies in the hands of tenants themselves. Few landlords would run the risk of losing a good tenant, *before* he enters into possession, by refusing to sign an agreement—which is so fair and just—that he should be allowed to remove his plants, &c., or be compensated if he left them in the ground, when he gave up possession. Few landlords, again, would refuse to consent to such an agreement if proposed by a good tenant before the improvements were effected. But if tenants are foolish enough to go on improving another man's property without obtaining any written guarantee of "fixity of tenure," or compensation for improvement, they have only themselves to blame if the landlord, yielding to the temptation which they deliberately place before him, strains the law to the utmost for his own benefit. There is not, in my opinion, any necessity for special legislation for such a small matter; the real necessity is that tenants should learn to exercise a little foresight, and make use of those ordinary precautions which a little consideration would suggest.—W. Y. N.

ROSES.

THE VARIOUS FORMS OF ROSE-TREES.

"How to Grow Roses," by Mr. Samuel Ryder, jun., of Sale, Manchester, is a cheap and useful little handbook for the Rose-grower. The author plunges at once into his subject, and devotes all the space at his command to practical matter. The book contains chapters on preparation of soil, situation, planting, and manures, pruning, propagation, &c., and a list of the most successful exhibition Roses in the national shows in 1885. One of the chapters on the forms of Rose-trees, is as follows:—

Standard Roses are budded on tall briers gathered from the hedges. At one time they were very popular, and were grown in immense numbers by the leading growers. They are not now grown to anything like the extent they once were; there is not now in the trade *one* standard Rose where formerly there were *ten*. The reason for this is, I believe, that the standard has been tried and found wanting. I shall not deny that sometimes the standard does well and produces a fine display, and that effects can be produced not possible in any other way; but it is undeniable that usually the standard is a failure. If standards are to be grown at all, I advise half standards, or what are called dwarf standards. The exhibitor will find it of service to have standards, as it sometimes happens that show flowers of some kinds can be produced from standards when there are none ready elsewhere. The exhibitor, therefore, may be recommended to grow a few, but the ordinary grower should grow only dwarfs, except for some special position or effect. A standard should have a stout stake attached when it is planted, and should have all the "suckers" removed, and any buds that will produce "suckers." A root tapers from the plant, a "sucker" thickens, hence they are readily distinguished. Any tender variety may be effectually protected by having a handful of dried Bracken Fern tied round the head. The exhibitor should gather his own Briers, and bud them himself, using only young, clean, stemmed stocks, with promising roots. There is one form of standard, however, that may be rendered very effective, and that is the

Weeping Rose.—Tall standards eight or nine feet high are budded with any of the multiflora type of Roses, such varieties as Bennett's Seedling being the best. They form lovely objects when well grown, and are very attractive and effective in many positions. Plants can usually be obtained from any Rose nursery, but the amateur will find no difficulty in budding them himself. This is very interesting work, and there need be little fear of success, providing that healthy young Briers can be obtained. Weeping Roses should be supported by a stout stake immediately they are planted. The pruning should have for its first object the formation of a good head with shoots evenly distributed, so that the foundation may be good at the outset. In order to secure an even and symmetrical tree, a ring of wire will be found serviceable if placed under the head with the shoots tied to it.

The Dwarf or Bush Rose-tree is the most natural and rational form. Dwarfs may be on "own roots," or budded on Manetti or Brier stock, but in every case they are in bush form. This form of plant has many advantages: the plants are not exposed to strong winds and are far safer during the summer than standards. The flowers, too, are seen better. A Rose to be seen to the greatest advantage should be beneath the spectator's eye; this is not possible in a standard. The Rev. S. Reynolds Hole says about tall standards: "Only from a balloon, a bedroom window, a balcony, could we supervise and fully appreciate such sublimities;" and concerning the dwarf form he says that "on it we meet the flower 'face to face,'" It is almost beyond all question that to produce flowers to perfection dwarfs are by far the best. The general method is to grow dwarfs on the Manetti, and though much has been said in favour of the seedling Brier, the largest growers prefer the Manetti. Dwarfs on own roots have advantages over worked plants, and amateurs may raise these themselves. Most nurserymen grow some varieties on own roots, but no nurseryman I know grows a complete collection; hence my advice to amateurs to grow their own. For garden purposes there is no doubt they have very manifest advantages, but it is a question if they will produce the best exhibition blooms. I know of only one instance in which an exhibitor of any note grows own root Roses exclusively. The foremost amateurs cut their Roses from dwarfs on Manetti or Brier. If dwarfs on Manetti are planted well down they soon get on their own roots.

Climbing Roses may be divided into two groups: first, those which are valued for their individual flowers, and secondly those which are of rapid growth, but which bear flowers not individually good. In the first group, the indispensables are Gloire de Dijon, Devoniensis, Maréchal Niel, Cloth of Gold, Bouquet d'Or, and Cheshunt Hybrid. The first and last of these, unfortunately, alone are hardy everywhere, the others needing a sunny south wall in a favourable Rose district. There are numerous other varieties among the Teas, Noisettes, and Hybrid Perpetuals which may be placed in this class, but as no pretence is made here of giving a detailed list, only the foremost kinds are mentioned. Rose catalogues, published annually by nurserymen, give all information up to date of publication. The second section of climbing Roses consists of varieties of the Ayrshire, Boursault, and Evergreen sections. These all grow very quickly, soon covering very large walls, and ultimately blooming in lavish profusion. Add to this the fact that they are quite hardy, and succeed everywhere, and have I not established the claim these varieties have to our favour? The flowers are small, and not very double, but are produced in such abundance that they amply compensate for that defect. Some are very fragrant. Three very popular kinds are—Ruga, a lovely variety, pale flesh in colour and sweetly scented; Bennett's Seedling, a pure white variety, blooming in clusters and very spreading in habit; and Félicité Perpetuelle, creamy white and very free blooming. The effect that may be obtained by training these free-blooming generous old kinds over arcades, archways, old walls, &c., over banks is very charming. An old cottage covered with one of these Roses in full bloom is a sight once seen never afterwards forgotten.

Greenhouse climbers.—The prince of all Roses as a greenhouse climber is Maréchal Niel. It is an ideal Rose for this purpose, its unsurpassed flowers, when fully open, hanging as they do, are seen to perfection from below. Gloire de Dijon is also superb for this purpose, producing many more flowers, but not of such grand quality as the Maréchal Niel. There are several other good kinds, but I recommend none for small houses in addition to the above. The plants put in should be worked low on the briar and planted well down in a border, just as vines are planted. Many growers now offer large plants trained like vines for this purpose. A generous soil should be given, and the plant should be encouraged at once to start strongly into growth. None but vigorous plants should be planted. When growth commences, a lookout should be kept, and as soon as stout shoots start low down on the plants, they should be cut down to there in order that the whole strength of the plant may be directed into those shoots. This, of course, if it is desired in the first case to get the root covered with the foliage. During growth the plants should be syringed constantly, and pruned well in, immediately the blooming season is over. At all times the plants should have any thin shoots cut out, and especially just before the blooming season, when every doubtful shoot should be removed, and the shoots left be shortened a little. The gardener should never be afraid of pruning, and the branches must not be allowed to get crowded. When the growth is well-ripened, air should be freely given and water withheld in order to encourage the leaves to fall. Notwithstanding all this, some leaves will not fall; all such should be removed. This I have found an excellent plan. A gardener who is obliged to produce cut flowers in abundance has an invaluable friend in Gloire de Dijon. I know gardeners who can cut a bloom from one plant any day in the year. The Banksian Roses are favourites for conservatory culture; they

should be grown in large pots and rarely pruned. Probably the best effect to be produced by any form of Rose-tree is to be obtained by

Pillar Roses.—These are strong-growing climbing or semi-climbing varieties, trained to posts eight to ten feet high. Such a pillar covered with foliage and flowers is a magnificent sight. The ground should be well prepared, the soil rich and deep, and the posts, whether of wood or iron, should be well secured. The plants used should be strong, and, the first season, should be pruned but slightly; the following season, however, they should be pruned more closely, in order to secure a pillar well clothed with foliage from base to summit. The shoots should be secured firmly but not too formally, and should be so trained that the pillar shall have clean young blooming shoots all over it. The kinds most suitable are Hybrid Perpetuals of strong growth and free flowering habit, some Bourbons and Noisettes, and several Teas—prominently Gloire de Dijon. I cannot help but say a word or two for those grand old Roses, Charles Lawson, Madame Plantier, and Coupe d'Hébe. These three may almost be said to be the grandest pillar Roses in existence. But, probably, for the purposes of the Rose garden, the most graceful pillar will be formed by the abundant flowering varieties of Ayrshire, Evergreen, and Boursault. These kinds are also the best for covering arcades and bowers.

White climbing Rose scrambling over old Catalpa tree.

CLIMBING ROSES IN THE WILD GARDEN.

A MOST charming effect may be obtained in wild gardens by planting some of the more vigorous climbing Roses in positions where they can take care of themselves. The pruning is so often injudiciously done that it is almost better to let them alone. In any case we have never seen climbing Roses more beautiful than when allowed to grow over some old tree or large shrub, and tumble about in their own way. Our illustration shows a good example of this; the Rose (Félicité Perpetuée) has grown up an old Catalpa tree, and grown down again laden with showers of blossoms. Half-a-dozen free and bold varieties, equally well trained, would almost make a Rose garden of any place.

Ayrshire Rose.—Frequent inquiries are made in GARDENING for climbers which grow rapidly and in bad soil; the Ayrshire Rose is one of the best climbing Roses that can be grown. It is very hardy, and will flourish where other Roses scarcely exist. Where its growth is encouraged it will climb to the summit of the tallest trees, from which its shoots will hang in long festoons. It is easily propagated, and strikes readily from cuttings, or its long shoots, if layered, soon take root. It is very useful for trellis, walls, or verandahs, and soon turns a dreary waste into a flowery bank. It was first grown in the Earl of Loudon's garden in Ayrshire, it then found its way into nurseries in Scotland, and was, in 1811, transplanted to London by Mr. Ronalds, of Brentford. The tradition of its introduction into England is supported by Mr. Reiley, who states in the "Edinburgh Philosophical Magazine" that it was raised from seeds brought from Canada. The Ayrshire, like other Roses, has yielded many hybrid varieties, of which the following are best: Ayrshire Queen (dark crimson), Dundee Rambler (pure white), Ruga (pale flesh colour), Alice Grey (creamy salmon blush). Countess Levin (creamy white).—C. F. DAVIS, *The Grange, Leatherhead.*

REPLIES.

14807.—**Roses for Wandsworth.**—Plant the following Hybrid Perpetuals on their own roots:—Abel Grand, Anna Alexieff, Baronne Prévost, Coquette des Blanches, Dr. Andry, Duke of Edinburgh, John Hopper, La France, Jules Margottin, Madame Victor Verdier, Victor Verdier; Gloire de Dijon, Tea; Celine Forestier, Noisette.—J. D. E.

14811.—**Mice among Oats.**—The best way to keep vermin out of Corn-stacks is to build them on foundations resting on brick piers, eighteen inches or so from the ground. In the present case, run a strip of zinc eighteen inches wide round the base of the stack. The bottom edge should be let in the ground two inches. If taken care of, the zinc will last for a number of years, and will not cost much.—E. HOBDAY.

THE KITCHEN GARDEN.

Pumpkin pie.—We had been accustomed to think this an American expression, as the article itself is so well known in America; but recently we were surprised to hear simple Suffolk people use the word, and it has occurred to us that, like so many expressions that we now call American, it is really an old Suffolk phrase taken to the new country by the early settlers. As the growth of Pumpkins for this purpose is not common in other parts of England, we should like to know the kinds grown, and shall be glad if any of our readers will tell us what they know of the practice.

A useful wall shrub.—Escallonia leucantha deserves a word of commendation as a distinct and useful early and late-flowering wall shrub. It is of very free growth, and equally free as regards bloom. At the present time it is profusely laden with small spikes of white flowers, which contrast nicely with the deep green, glossy foliage.—T. S.

14829.—**Failure with Cucumbers.**—I think if "Cucumis" did away with his pipes under bed, and did not burn the soil, kept his top heat eighty degrees instead of sixty-five, and used loam and good spit-manure instead of leaf-mould, he would succeed much better. I am not an advocate for bottom heat myself, except from fermenting materials, for if there is heat at top the roots will be warm unless planted very deep, to which I strongly object myself. I never allow mine to have more than nine inches or one foot of soil, and I always have good fruit—tender, dark, and in length from twenty to twenty-eight inches. My pipes are all above ground, with no bottom heat whatever. I have two span-roof houses sixty feet long, and mine always do well; but, perhaps, the different kinds of Cucumber may have something to do with it. Mine is an improvement on Rollisson's Telegraph, very dark, straight fruit, three, four, five, and sometimes six at a joint.—C. WILTSHER, *Hertford.*

14818.—**Sawdust manure for Mushroom-beds.**—Sawdust manure from well-fed horses has been used in Mushroom culture, and so have tree-leaves, but these substances have only been used when stable manure could not be had. The sawdust should be from hard wood,, not deal, and it will be better if a proportion of stable or straw manure can be mixed with the sawdust. Of course, the droppings from the animals will be in the sawdust. Rather less drying and turning will be required than with ordinary manure.—E. HOBDAY.

14903.—**Tomatoes not fruiting.**—The large, round, smooth kinds do not fruit so freely as the smaller, wrinkled kinds. Perhaps the plants were started late, otherwise they certainly ought to have fruited. Partial failure may arise from too rich soil. It is best to plant in good, sound loam, and, where extra nourishment is required, to give it in the shape of top-dressings and liquid manure. The best smooth Tomato for pot-culture, especially for winter, is a variety called Criterion.—E. HOBDAY.

15095.—**Artichokes "which have no choke."**—I think I can answer this question, though probably not in the way "L. A." expects. There is a very old story of a man who boasted he had not been thirsty for many years. On being asked how he managed that, he said he "never let it get to that." This was doubtless unhygienic treatment in that case, but it should always be adopted in the case of Artichokes. They should be grown in rich soil. I do not find they have the objection which "X. Y." professes for "foul animal manure," which, indeed, appears to favour quick growth. They should be eaten quite young, when about one and a half inches in diameter. There is then no "choke." The best way of cooking them is to cut each into about eight pieces, and to fry them immersed in boiling oil for a few minutes. They are then worthy of being eaten alone, and should have only a few drops of lemon squeezed over them. This Italian dish is worthy of all acceptation. The directions given, although simple, are not always readily carried out by the English cook, who is often unsound on the subject of frying, or rather boiling, in oil. A little half-melted fat or sprinkling of oil at the bottom of the frying-pan is not sufficient; things soddened in fat are neither pleasing to the palate nor digestible. I beg you, too, Mr. Editor, to try this dish, should you not know it. —R. S., *Surrey.*

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15176.—**Tropæolum Lobbianum.**—I shall be glad to receive information as to the culture of this plant.—R. M.

15177.—**Best Black Currant.**—Will any reader tell me the name of the best Black Currant for exhibition?—NADIN, *Alvaston.*

15178.—**Pruning Gloire de Dijon Rose.**—Should Gloire de Dijon Rose on a wall be pruned at all or not? If pruned, what is the right time and manner of doing it?—MISCHIEF.

15179.—**Tree Pæonies.**—Will any one who has grown Tree Pæonies, tell me whether they divide from the root, and what time they should be lifted?—MRS. L., *North Berwick.*

15180.—**Utilising cellar.**—Will some one tell me how best to utilise a warm, dark cellar in winter? Would sea-kale thrive? If so, how should I proceed with it?—SYBIL, *Northampton.*

15181.—**Drying Pampas Grass.**—Will any one kindly tell me how to dry Pampas Grass so as to preserve it in the white and feathery state in which it is sold in Covent Garden market?—H.

15182.—**Cuttings of Lapageria rosea.**—Will any one be kind enough to inform me how to strike a Lapageria rosea cutting? What soil should I use, and what temperature should be kept up?—J. H. CROSS, *Accrington.*

15183.—**Treatment of Vallota.**—Will some one kindly tell me how I should treat a Vallota which I bought in June potted? It has been kept in a room facing south, without heat or gas.—S. FLETCHER, *Cheshire.*

15184.—**Raspberry-growing.**—Will any grower of this fruit tell me which is the best method to plant Raspberries so as to get the largest crop?—In single canes, or espalier, or tied to upright poles?—C. W. E., *Stirlingshire.*

15185.—**Tan-yard refuse.**—Has any reader used "fleshings" or other tannery refuse in dressing a Vine border? If so, would he kindly tell me how it answered, and what quantity I should use? My Grapes are now ripe; borders inside and out.—J. C., *Leeds.*

15186.—**Culture of large Sunflowers.**—"A. C., *Devon*" has tried for two years to grow the large Sunflower, using rich soil, and raising first under glass; but they have been very small—about quarter the right size. Will anyone who grows these plants well give her any information?

15187.—**Rank foliage of bulbous plants.**—Can you tell me the best way to stop the blades of bulbous plants in pots from growing rank, to the prejudice of the flowers?—A WIMBLEDON COTTAGER. *** *Plant them in poorer—more sandy—soil. It is due, no doubt, to an overrich soil.*—ED.

15188.—**Slugs in vegetable garden.**—Will any reader tell me how to destroy slugs in a vegetable garden? Lime and soot have not in my case had any good effect.—FALKINGHAM. *** *If "Falkingham" has an index to the last volume of* GARDENING, *he can refer to numerous notes on this subject.*—ED.

15189.—**Vines in pots.**—I have a Vine that was raised about February 25. It is a fine plant, about four feet high. I want to grow and fruit it in a pot. Would any Vine-grower give me a few instructions how to proceed, and how long I shall probably have to wait for fruit?—BUCKLAND SWEETWATER.

15190.—**Tecoma radicans.**—I have had a large root of this planted for some years in a sheltered situation, facing S.W. Every year it springs and grows a few inches, and gets no further, and shows no sign of blossom. I shall be glad of explanation of this, and hints as to how to proceed?—E. B. K. W., *Bournemouth.*

15191.—**Foliage plants for conservatory.**—I am going to take a large end out of the conservatory, and want to plant the space with handsome foliage plants. Will any reader tell me what are the best kinds, not too expensive? There is a little heat in the house, which is a very high one.—LINCHEN.

15192.—**Fruit for Norfolk.**—May I ask some experienced friend to recommend a few of the best and most useful kind of Apples, Pears, and Plums to plant as espaliers and pyramids, hardy and profitable? East coast, good soil, but light. Will Plums thrive on such soil, and which is the best form to try for them?—B.

15193.—**A legal question.**—I rent a piece of land for a garden, and pay my rent half-yearly; the land is advertised for building, and the owner's receipt bears the words "Temporary use." Will any one tell me how much notice he must give me before he can turn me out? I grew flowers and vegetables, and have a greenhouse on the land.—AMATEUR.

15194.—**Edelweiss.**—This does not seem to me an easy plant to rear. Out of two packets of seed, sown more than a year ago, we have one very small plant—even now a mere seedling in size. We have lifted it and removed to greenhouse for the winter, as it is too small to winter out. Will some readers who grow it give me the benefit of their experience?—E. B. K. W.

15195.—**Roses for greenhouse.**—Will any grower in this county tell me the names of two of the best yellow Roses (Maréchal Niel excluded) to run up the glass, and the best pink and the best white—all to be climbers; also the best twelve Tea Roses for pots for cutting and for show as well?—CONSTANT READER. *** *Send your other question again, and read our rules.*—ED.

15196.—**Rose-pruning.**—I have a few Roses in greenhouse—Gloire de Dijon and Maréchal Niel—which flowered fairly well last spring, and are now losing their leaves. Will any Rose-grower be good enough to advise me how each should be pruned, if much, and at what time? The Maréchal Niel has thrown up a long, strong shoot from the root. Should this be shortened?—G. J. S.

15197.—**Evergreen winter berrying shrubs.**—I want to plant two small shrubbery plots, each about thirteen yards by seven, with Evergreens which will make a winter show with leaves and berries. Shall feel much obliged for names of most suitable plants, and heights. Also, of a few good ornamental trees for back of plots and for lawn. Must be hardy. Good light soil, sandy subsoil.—EAST NORFOLK.

15198.—**Building house for Roses.**—Being a lover of Roses, I am thinking of building a small house for them, about fifteen feet by twelve feet. I propose to run four plants up the glass, two on each side, and a bed up the centre of the house for Roses in pots. Now, would any Rose-grower tell me the best way to build such a house, and how to supply the necessary heat?—CONSTANT READER, *Bolton.*

15199.—**Alocasia Veitchii.**—"A. C., *Devon,*" will be glad to receive any information as to this plant. A fine one was bought a month ago, and placed in a temperature of fifty-five to sixty degrees at night, being left in the pot it came in; but it drops very much. What is the probable cause?—*** *It is difficult to assign any cause. If the plant is in a moist stove it is either diseased, or perhaps it is not well rooted. Knock it out of the pot and see what sort of a root it has.*—ED.

15200.—**Utilising small suburban garden.**—Having lately taken a new house, with a small piece of garden attached (which, of course, has not before been cultivated), I should be glad to have some advice as to how I should start. I want to grow some vegetables, and also some flowers. Will anyone living in my neighbourhood kindly say what would be best to grow, and when to plant, for a clay soil in an easterly position? I presume it would be best to manure the soil at once.—A BEGINNER, *Forest-hill.*

15201.—**Plants for suburban garden.**—I have a border about a yard wide round two sides of my garden, one side being fifty feet long and the other twenty-five feet long. The soil is clay and in sunny position, in the neighbourhood of Wormwood Scrubs. I have just dug it up and added horse-dung. I should like to cultivate it, and also to plant a few hardy Rose-trees. Would any reader, living in the same neighbourhood, kindly advise me what to do and what to plant, considering the soil?—G. S., *North Kensington.*

15202.—**Thin-shelled Walnut.**—Will any grower of Walnuts kindly give me the benefit of his advice upon the following:—I have a Walnut-tree in vigorous growth, about thirty years old, bearing Walnuts of excellent quality, but the shells are very thin, seldom perfect at the tip. Is this due to soil, or what? Would decayed mortar-rubbish applied to the root, or any other treatment, prove beneficial?—*** *We think that the defect is constitutional, and that no cultural treatment will modify it. Perhaps, however, some of our fruit-growing readers have reason to hold a different opinion.*—ED.

15203.—**Laying out garden.**—I want to plant herbaceous borders:—1. Eighteen feet by six, south aspect, but at west side of house, and does not get early sun. 2. Thirty-six feet by five, against east wall; morning sun and some shelter. 3. Two of twenty-four feet by five, south aspect, against wall, at each side of hall-door. I shall be thankful for advice and directions:—*a.* Suitable plants for perennial bright effect; not very tall; hardy. *b.* Succession in blooming from spring. *c.* Heights and colours, and best arrangement in the ground. East coast; must be hardy.—IGNORAMUS.

15204.—**Cyclamen dying.**—I have several roots of Cyclamen of various ages grown as window plants. Last year they all suffered from the same complaint. The leaves produced were imperfectly developed, and the stems, both of flowers and leaves, became long and straggling, subsequently turning limp and withering away. In this way the flowering of all the corms came to nothing, not more than two or three blossoms surviving. I expected to find wireworms the cause, but could find none upon examination. The same complaint threatens me again this year. Can anyone suggest cause and remedy?—E.

15205.—**Nectarines.**—Will some Nectarine grower kindly tell me the best sort or sorts to grow? I mean best from a gastronomic, not exhibition, point of view. I should be also glad of information concerning soil. I hold the somewhat heretical view that fruit-trees are frequently, if not usually, treated with too much manure. This causes the growth of wood to be so excessive, that root-pruning is necessary. Now, surely this is like producing a plethora by over-feeding, and then bleeding a patient. I should be glad of an expression of opinion on the subject, which I think is one on which some readers may kindly favour me with information.—R. S., *Surrey.*

15206.—**Seeding of Violets.**—Can you tell me the cause of a root of the small yellow Alpine Viola producing, through the summer, seed without any coloured bloom? In the early part of the year there was colour, but since, up to now, seed has been formed without; and this is the case with a dark purple Viola I brought from the Julier Pass. This, since being planted, has borne seed profusely through the summer, but has had no coloured corolla, only a tiny green calyx, from which the seed rises. Is the ground too rich, and, if not, what is the remedy?—M. E. E. *** *It is a curious habit of this plant and others of its race to seed best in this way, without producing showy flowers. It does not depend on cultivation, and you cannot prevent it.*—ED.

15207.—**Peaches.**—From a short note on Peaches on page 506 I judge that "F." is an experienced Peach-grower. Will he kindly answer the following questions:—Is it worth while to grow any varieties besides those named (Noblesse and Royal George)? If so, which? How far apart should young trees be planted? Is a rich sandy loam the best soil for them? I propose to plant some against a fence about 9 ft. high. This is now nearly black; it is made of thick oak posts which formerly lined tan-pits. Should it be whitewashed? There is a prevalent idea that the whitewashed mud-walls of Hampshire and the west are particularly suitable for wall-fruit. Is this a fact? and if so, is this due to the reflection of light by the white surface? What difference is there in the time of ripening of the different varieties of Peaches? The aspect of my fence is south-east, the situation protected.—R. S., *Surrey.*

12508.—**Pruning Pyramid Apple-trees.**—The reply of "J. G. G." (14840, p. 487) is very helpful to us amateurs, as it seems to intimate that for the first year not much pruning is required. The trees in question run from six to eight feet high, not having made much growth as yet, though one of my neighbours has more than a few "little tufts of leaves" at the ends of his branches, there being instead quite little twigs, from a foot to half a yard long, where the branches were cut last year. These, we suppose, ought to be reduced in length. What we wish to find out is the principle which should regulate pruning, for as it is at present it is very much haphazard work with us, and the result, therefore, not likely to be satisfactory. Does the pruning of Pears and Plums resemble in the main that which is suitable for Apples? On this point, a few hints from "J. G. G." or any other authority would be very acceptable.—W. W., *Staffs.*

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15209.—**Sowing Tropæolum Lobbianum** (*C. Gilbert*).—Sow in March, in poor soil.

15210.—**Hardy Ferns** (*C. Gilbert*).—You will find an article on the subject in this number of GARDENING.

15211.—**Unpruned Jasmine** (*A Wimbledon Cottager*).—Prune it; cut it hard back, and that will probably cause it to flower.

15212.—**Insects on Roses** (*M. B.*).—The Rose appears to have been attacked by an insect, which must be destroyed. That is the only remedy.

15213.—**Trees overhanging fence** (*Nemo*).—For information on this point see query 14822 (October 10th), and answers, page 474 (October 24th), and elsewhere.

15214.—**Pear-tree blossoming** (*Enquirer*).—The check caused by the root-pruning has induced the plant to flower at this season. You may get a little bloom on it next year.

15215.—**Sowing Sweet Peas** (*Mischief*).—You may sow the seed now, but we think it would have been better to sow earlier. Seeds should be sown deeper in autumn than in spring.

15216.—**Book on treatment of greenhouse plants** (*J. Paterson*).—The best book for your purpose is Baines' "Greenhouse and Stove Plants," published by Mr. John Murray.

15217.—**Primroses "fruiting"** (*A. Y. Z.*)—If by "fruit" you mean seed—yes; the Primrose, like almost every plant, bears and ripens seed, and the seed vessel is botanically called the fruit.

15218.—**Obtaining Fern spores** (*Alpha*).—We know no one who sells spores of the Ferns. You must buy plants and save your own, or perhaps you can obtain a few fruiting fronds from a friend.

15219.—**Single Dahlias** (*Elsie*).—You can take up all the bulbs—those that have and those that have not flowered—and store them in sand during the winter. You can do the same with the seedling Dahlias.

15220.—**Seedling Pansies** (*E. Smith*).—The Pansies are large and very good for this time of the year. You surely did not mean to ask us the name of seedlings of your own raising? Give them any name you like.

15221.—**Ripening hard Pears** (*Miss Barry*).—No; it will not answer to bury them in earth. Keep them in a cool, darkish room. They will ripen in the course of time; if cooking Pears, they can be used at any time.

15222.—**Forcing Gladiolus The Bride** (*Puzzled*).—Put four large or five small bulbs in a six-inch pot, or, if you prefer it, you may pot singly. They may be potted now. Remember that this Gladiolus is perfectly hardy, and it is best to force gradually.

15223.—**Poultry manure for Chrysanthemums** (*M. S. A.*).—Yes; you can use the manure water for Chrysanthemums. We don't know anyone to whom you could send the blooms for the purpose you mention; we will give you our opinion of them if you like.

15224.—**Treatment of Cactus Dahlia** (*Mrs. L., North Berwick*).—Cut off the stem, lift the bulbs and hang them in a dry, airy shed; replant again in May in a good open position in rich soil. Then there is no reason why you should not have as good results as other growers.

15225.—**Parasite on Cytisus** (*J. Paterson*).—The parasite is Cuscuta Epithymum (Lesser Dodder). It is very injurious to crops, especially Flax; it is also troublesome on Ericas (Heaths) and almost all the leguminous tribes, of which Genista is one. It is common in England.

15226.—**Gladiolus blooming late** (*Westmeath*).—We presume that the tubers were weak from being kept out of the ground in an unsuitable condition. You should lift them before the hard weather sets in, and put them into the conservatory, or hang them in a dry, airy shed and replant again later on.

15227.—**Belladonna Lilies** (*H. L. G.*).—Your Belladonna Lilies ought to have been planted in the summer,

and to be in full growth now. Your best plan now is to coax them into growth as best you can. Induce them to make foliage which shall be well ripened, and then plant out about midsummer in a sunny border.

15228.—**Obtaining chip baskets** (*M., Surrey*).—Punnets such as you describe can be obtained from Mrs. Purchase, 26, Kemble-street, Lincoln's-inn-fields, who will give you the information you desire. Boxes are specially made for sending flowers by parcel post, and they are easily obtainable. Any florist would supply them.

15229.—**Evergreen shrubs for cemetery** (*S. T. J.*).—Use some of the dwarf-growing Conifers—Retinosporas, common Biotas, and some Cypresses, such as Cupressus Lawsoniana (which keeps small for several years). You may grow Hollies, Osmanthus ilicifolius and myrtifolius, Evergreen Privet, Laurels, Junipers, and Yews.

15230.—**Geraniums flowering in winter** (*Sybil*).—Select some of the best zonal varieties, and grow them into strong plants. Do not let them flower in the summer time, and treat them so that they may be in vigorous growth about August and September. Then keep them in a genial temperature in a close greenhouse during the winter.

15231.—**Failure in growing Ivy** (*Eccles*).—Your letter does not enable us to suggest the cause of failure, and if you choose strong plants we see no reason why you should not succeed. Of course, if you put in half-established plants you will find them difficult to manage. Sandy soil suits Ivy, but if it is excessively open you can mix a little stiffer soil with it, and a strong-growing Ivy does not object to a little manure.

15232.—**Obtaining eating Apples** (*A. Z.*).—It is impossible for us to mention any particular tradesman as you desire. There is no respectable nurseryman who would not get you the best kinds of trees, if you ordered them. You should be sure to select the best kinds, and if you are in any doubt as to which are most suitable, we will gladly help you as far as we can. Then, having made the selection, the ordering is a most simple thing.

15233.—**Lamp for greenhouse** (*R. G. Bingham*).—The danger from the use of paraffin is that the lamp may smoke and so injure the plants. Various correspondents of GARDENING, however, have from time to time stated that cleanliness and care will reduce this danger to a minimum, and if you exercise this necessary care there is no reason why you should not succeed. You will find many references to the lamp you mention in back numbers.

15234.—**Treatment of Hyacinthus candicans** (C., *Chidlow*).—If your plants that have done flowering are in pots, let the soil become dry gradually, and then take out the bulbs and see that they are in a sound condition; keep them on a cool, dry shelf until February, when they should be repotted. If you wish to plant them out, do so in April. Bear in mind that in some districts, in warm soil, Hyacinthus candicans lives out of doors for a year or two, and does very well. If your district is mild, and the soil warm, leave any plants you have out of doors alone.

15235.—**Obtaining Plants** (*S. R.*).—1. Geranium Grevillianum may be had in the trade under the name of G. Lamberti or G. Lambertianum. It is a very fine species, and well worth cultivating. 2. Gaura biennis may also be had either under the above name or as Œnothera parviflora, common in botanical gardens. 3. Arabis procurrens is probably meant (there is no A. speciosum). It is a common plant in nurseries, and only recently recommended for pots in decorating the front stage of conservatories; a very useful plant, flowering all through the year and perfectly hardy.

15236.—**Cutting Hydrangeas** (*E. Gordon*).—If the Hydrangeas are good strong plants they will most likely flower next year, in which case the future blossom will now be contained in the large prominent buds. Such being the case, they should be left till after flowering, then cut back to a good plump bud, and when growth recommences potted in rich, loamy soil. If, however, the plants are but a mass of weak shoots they should be cut down nearly to the ground in spring, and then potted as above. In the event of the shoots being too numerous, the weaker ones had better be removed in order to strengthen the remainder.—T.

15237.—**Preserving Ferns for specimen-book** (*W. S. S.*).—To keep the fronds green, all that is required is a quick way of drying them between unsized or unglazed paper by frequent changes, so as not to allow the dampness produced by the evaporation of the sap contained in the tissues to settle on the fronds, as that is what really causes them to lose their colour. Care must also be taken to have them gathered in a dry state, and not pressed too hard.—S. G.

15238.—**Wireworms on Carnations** (*Hoho*).—A dressing of finely-powdered slacked lime will not do Carnations any harm, and may do good by killing slugs, &c., but it will not destroy wireworm. This pest, if it once gets into a bed of Carnations, cannot be destroyed, before many of the plants are killed. A good plan is to put slices of Carrots on pointed sticks. Bury the Carrots two to three inches in the ground, and as they are attached to the sticks they can easily be drawn out and daily examined. Carnations ought to be layered every year, the layers about six or eight inches apart; and in that case they will, with the addition of some fresh mould annually, do well on the same place for many years.—J. D. E.

15239.—**Paris Daisies not flowering.**—The Paris Daisies are, in all probability, losing their leaves from the roots being disturbed when they were lifted for potting. The best thing that can now be done is to keep them through the winter in the greenhouse, and in the spring cut them down, when they will break freely into growth and quickly form good bushy plants. If they are cut down now it is very probable that the plants will die outright. Cuttings can be struck in a greenhouse during the spring and summer months, if put in well-drained pots of sandy soil, and covered with a bell-glass, or, if there is not one to hand, the pot in which the cuttings are can be dropped into a much larger one, and, with a pane of glass laid over the top, a small air-tight frame is thus formed, which can be utilised for striking various cuttings.—T.

TO CORRESPONDENTS.

N. Ballantine.—We know of no book on Brazil Orchids and Ferns that you can purchase. In London, at the Linnean Society's Rooms, you can see a good library of books referring to those Orchids, but we know of no work that treats exclusively of them.—— *Cossack.*—The addresses required are: MM. Délaux et Fils, St. Martin du Touche, Toulouse, France; M. Boucharlat aîné, Russe à Caluire, 30, A Cuire les Lyon, Rhone, France. —— *T.*—We think your gardener, if he does all you say, works very hard; there is, we think, fully enough work for a man and a good strong lad.——*E. D. B.*—No; we should not recommend you to use any very cheap Tobacco-paper for the purposes you mention.——*J. Mandevill.*—Write to some of the Covent Garden salesmen; we cannot give you the information you seek.——*Perplexed.*—It is only natural that differences of opinion should exist as to the value of any particular heating apparatus. We must refer you to back numbers for further notes as to the merits or demerits of the one in question.——*J. B.*—(1) Apply to any good seedsman, who, if he has not got it himself, will probably be able to get it for you. (2) There are several nurserymen, &c., of the name mentioned in the *Garden Annual*, and we do not know which you refer to.——*C. Smith.*—The monograph can be obtained from Barr & Sons, King-street, Covent-garden.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*R. H. Wake.*—Appears to be Vitis Labrusca, one of the Fox Grapes of America.——*E. F. L.*—Nephrolepis exaltata.——*R. T.*—1, Francoa appendiculata.——*F. C. Annery.*—1, Dactylis glomerata variegata; 2, Celsia Arcturus; 3, apparently Eupatorium ageratoides; 4, Saxifraga ceratophylla.——*Whin-Hurst.*—Francoa ramosa (Maiden's Wreath).——*A. H.*—Valeriana Phu.——*C. W. E.*—Lotus corniculatus; there is no remedy but weeding it out.——*Corks, Swansea.*—Sternbergia lutea.——*W. J. O.*—The only crested, or at least forked, form of Cystopteris fragilis with which we are acquainted is the C. fragilis furcans (Moore), in which the point of each frond is more or less forked, and that character has not even always proved constant under cultivation. A perfect and matured fertile frond of your form, which we have every reason to believe to be new or very rare, would be acceptable to us for the sake of comparison or reference. As to the Scolopendrium received, with the exception of No. 1, S. macrosorum, which had its label well stuck on, the other three reached us with their numbers quite loose. Of these, however, the largest is S. cristatum, and the smallest, probably S. ramosum nanum; while the medium-sized specimen is undoubtedly S. digitatum. Varieties of Scolopendrium, especially the crested ones, run so close together that, without knowing the habit of the plants, and from single fronds only, it is very difficult indeed to identify them.——*W. S. S.*—Yours are all greenhouse Ferns. No. 1, Davallia bullata; 2, Lastrea aristata variegata; 3, Polystichum capense.——Others next week.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*Ignoramus.*—1, Doyenné du Comice; 2, Fondante d'Automne; 3, Josephine de Malines; 4, Easter Beurré.——*C. Kilminster.*—1 and 2, decayed; 4, Doyenné Gris; 5, Easter Beurré.——*F. S., High Elms.*—1, Dutch Mignonne; 2, Golden Noble (yellow).——*T. Atkinson.*—Winter Redstreak.——*A. Moverley.*—7, Sturmer Pippin; 8, Dutch Mignonne; others not recognised.——*J. Beddow.*—None of your Apples are recognised; probably all are local seedlings. ——*Hampshire.*—Not recognised.——*C. L.*—1, Golden Pearmain; 2, King of the Pippins; 5, Kerry Pippin. ——*W. F.*—1, Yorkshire Greening; others not recognised — worthless local sorts.——*W. D. Paine.*—Apple is Norfolk Beaufin; 1, Easter Beurré; 2, Bergamote d'Esperen.——*Anon.*—2, Duchesse d'Angoulême; 4, Chaumontel; Apple not known.——*Bill.*—1, King of the Pippins; 2, Beauty of Kent; 3, Lord Suffield (large yellow).——*J. T.*—Bergamote d'Esperen.——*G. A. W.*—Apple, Gravenstein; 1, Beurré Bachelier; 2, Gris d'Hiver; 4, Beurré Diel.——*A. B. C.*—Brown is Verulam; green is Beurré Defays.—*F. Orton.*—1, Beurré Diel; 2, Fondante d'Automne; 3, Passe Colman; 4, Beurré Bosc; 5, Waltham Abbey Seedling.——*Miss Anderson.*—1, Glou Morceau; 2, Beurré Rance; 3, Catillac.——*Selby.*—Query next week; Pear, Duchesse d'Angoulême; Apple, see note below.——*C. W. Fox.*—Echlinville.——*G. T. Whitfield.*—We cannot name them; see note below.——*J. R. M.*—Catillac; 2, Beurré Diel; 3, Duchesse d'Angoulême. Others next week.

*** *We have received several parcels of fruits to name containing only one example of each sort, and that often in a bad condition. We must, therefore, announce that we cannot supply the names in such cases, and the instructions given above should be strictly followed.*

Catalogues received.—*Roses, Fruit, Ornamental Trees, &c.*—Edward Philip Dixon, Hull.—— *Roses, Climbing, and Trailing Plants, Ornamental Shrubs, Fruit Trees, Hardy Florists' Flowers, &c.; also Selection of Bulbs and Tree or Perpetual Carnations.*—Thomas S. Ware, Tottenham, London.——*Forest and Fruit Trees, Shrubs, Climbers.*—John Carter, Holycroft Nursery, Keighley, Yorkshire.——*Fruit, Roses, Forest Trees, &c.*—John Evans & Son, Farm Nursery, Llanymynech, near Oswestry.——*Carnations, Picotees, &c.*—Frank Law, 22, Prince-street, Rochdale.

15027.—**Obtaining Melilotus officinalis.**—I think this can be obtained from Messrs. Vilmorin, Quai de la Mégisserie, Paris.—S. L.

14884.—**Protecting bulbs from mice.**—Cover the surface of the border over the bulbs with coal ashes, and mice will not go near them. The ashes can be removed when the bulbs push through.—E. HOBDAY.

14808.—**Grass turf.**—This may be laid between now and the end of March. The ground is prepared by levelling it and beating it down very firmly. The turf must also be beaten with a wooden turf-beater. It is generally obtained from some old pasture, by permission of the owner.—J. D. E.

14727.—**Utilising Melon and Cucumber-pits.**—Seed-pits might be used for many purposes. Some might be used for forcing Asparagus, Seakale, and Rhubarb; others might be planted with Lettuces for salads next March; others, again, may be planted with Violets to flower all winter. One might be devoted to Mushrooms; a bed made up now will be cleared again in time for Melons. Potatoes, and Radishes, and Horn Carrots may be started by and by. One might be used for bringing on bulbs and other flowers for the conservatory. With heat at command what an excellent place a Melon-pit would be to bring on early forced Roses. In short, with such pits heated one might do almost anything; even if unheated they would be exceedingly useful to shelter many things in the way of half hardy plants. Our pits of like character are always full in winter.—E. HOBDAY.

14735.—**Heating greenhouse.**—It is a good plan to have plenty of pipe in proportion to the work to be done, and then the boiler will not need to be driven so fast. It will be more economical. The house, I suppose, is span-roofed. If it were mine, I should have three rows of three-inch pipes (instead of four inch) on each side of the stove division, and two rows of the same sized pipe in the intermediate house. Three-inch pipes are quicker and cleaner than four-inch, and I like them better for furnace houses, and they take up less space.—E. HOBDAY.

15038.—**Destroying leather-jackets.**—These grubs are very destructive to lawns in sheltered dry places, and also to cabbages and other cruciferous plants. We freely admit that we have never found any perfect remedy for their attacks, and the only two of any service in materially reducing the quantity of either grub or fly are as follows:—Traps. These consist of slices of Potato, Turnip, Wurtzel, or Apple, affixed to sticks, and sunk a few inches under ground. Pull them up every other day and remove the grubs, which will be found firmly attached to them. Rolling. On lawns, as soon as the flies are visible, roll with a heavy roller each evening, and vast quantities will be destroyed. Fowls and starlings will devour large numbers of the flies, and are, therefore, useful. We have never found any preparation that did not destroy the plants have any effect on the grubs. The larvæ of the daddy-long-legs or crane fly generally prefer wet soil, and are killed when deprived of moisture, while many live in the water entirely. The "blood-worms," of a bright scarlet, which are so common in horse-ponds, are mostly the larvæ of a variety of daddy-longlegs.—From "Garden Pests and their Eradication."—CELER ET AUDAX.

15025.—**Worms on rubbish heaps.**—Worms in pots or on lawns are easily got rid of by using any of the following plans:—Add a pound of quicklime to each gallon of water, stir well, and, when settled, water with clear liquid. This will bring all the worms to the surface, when they can be picked up and destroyed. Guano or soot, used in the same manner as lime-water, are equally effective. Applied at the rate of eight bushels to the acre, salt is efficacious in deterring worms. An equal quantity of soot, mixed with the salt, makes a good dressing. Both should be applied in wet weather. Lime-water is, however, the cheapest in the end. —CELER ET AUDAX.

—— If "Sphinx" will water with one ounce of carbolic acid to two quarts of water a few times, turning over the heap, he will soon clear it of worms, &c.—WORSLEY.

Smithfield market, Evesham.—List of prices realised Nov. 6, 1885:—Brussels Sprouts, 3s. 6d. to 4s. 6d. per pot (40 lb.); Carrots, 1s. 6d. to 2s. 6d. per cwt.; Cauliflowers, 8d. to 1s. 6d. per dozen; Celery, 1s. to 1s. 6d. per dozen; Onions, 2s. 9d. to 3s. 6d. per cwt.; Parsnips, 2s. 6d. to 3s. 6d. per cwt.; Potatoes (new), 1s. 6d. to 2s. 3d. per pot (80 lb.); Savoy, 1s. 1d. per dozen; Sage, 2d. to 2½d. per dozen; Tomato, 3d. per lb.; Turnips, 1s. 9d. to 2s. 3d. per pot; Apples, 1s. 6d. to 6s. per pot (64 lb.); Pears, 1s. 6d. to 5s. 6d. per pot (72 lb.); Walnuts, 4s. to 6s. per bushel.

OUTDOOR PLANTS.

A FINE HARDY FOLIAGE PLANT.

Our illustration shows the fine bold effect of an Acanthus isolated on the turf, and may serve to bring still more into notice this noble herbaceous plant. During winter we have often noticed the perfectly fresh glossy green of its foliage, all the more conspicuous for the surrounding bareness. Acanthus latifolius is the hardiest of all the Acanthuses—we mean, in regard to foliage, for all the species in cultivation in the open ground are hardy at the root. It may be used indoors as a window plant; when planted out it blooms best on a warm deep soil—a deep sandy loam—but will grow freely in any soil except clay.

HARDY FERNS.

In dark corners and shaded places generally—as well as in some more favoured spots in shrubbery borders and the margins of water—a free use should be made of hardy Ferns, which often flourish and form a mass of healthy greenery where scarcely anything else would live. We have so frequently had occasion, in replying to queries sent to us, to advise the use of Ferns, that we feel sure many of our readers will thank us for reprinting the following list of the best of the many species of hardy Ferns now in cultivation.

Lastrea Filix-mas cristata.—This is a handsome tasselled form of the common Male Fern, and one of the noblest habited of all the hardy kinds. The fronds, which are rich green in colour, attain under good cultivation a length of nearly three feet. This is a well-known Fern, but it is not nearly so much grown as it might be. Being quite as hardy and vigorous as the typical form, it is capable of holding its own when growing amongst rank herbage, and is therefore suitable for the wild garden or water margins.

Athyrium Filix-fœmina Fieldeni.—A very pretty form of the Lady Fern, having tasselled fronds thickly set together. It is tolerably vigorous, and attains considerable proportions in a cool shady position and in free soil having plenty of organic matter in it. A dry parching atmosphere causes the fronds to turn yellow. Of the many varieties of the Lady Fern this is one of the very best. The red-stemmed Lady Fern is a very ornamental kind; it is rather more robust than the type, and, the stems being strongly tinged with red, it has a distinct and ornamental appearance.

Scolopendrium vulgare crispum.—One of the very finest Ferns in cultivation, and where six kinds are grown this should form one of them. The fronds are regularly and beautifully crisped their whole length, are pale green, and numerously produced, forming bushes of foliage in the case of well-established specimens almost three feet across and eighteen inches high. This variety affords a fine contrast to the type, the one having fronds of the richest hue imaginable, the other being of the tenderest green. This Fern likes good food and plenty of it, not objecting to a little rotten manure in the soil, and, in the case of established plants, an annual top-dressing of the same. Treated generously, a small plant soon developes into a handsome specimen. Unfortunately, it is quite barren, never in my experience producing spores, which may account for its not being so frequently met with as one might naturally suppose it would be. By planting in good soil, however, so as to promote luxuriance, a stock of it may soon be worked up. It is a fine kind for pot culture, being much favoured by exhibitors, and if sheltered under a glass roof will retain its foliage through the winter.

Polypodium vulgare cambricum.—No hardy Fern known to me can excel this in elegance of growth. The fronds are broader and paler in colour than the common kind, the pinnæ being cut and notched in a charmingly irregular manner. They arch, too, very gracefully, spreading one over the other, forming dense tufts of tender green. There is one peculiarity about this Polypody worth mentioning; it is the latest of all the hardy Ferns to grow, strange to say, not starting into growth before other kinds have formed their fronds. It is only by late autumn that these are matured, and, unless the weather should be very severe, they last fresh and green all through the winter. It is quite barren. This Fern, like the type, will do well where many other Ferns would perish, and is a capital plant for dry banks, being quite happy in the full sun, doing best, however, where it gets plenty of light and the sun for an hour or two during the day. It must on no account be planted in dense shade, or it loses its sturdy character and looks weak and drawn. Grown in pots it would be excellent for cold greenhouse corridors, &c., in winter.

Polystichum angulare proliferum.—A much-divided form of the common angulare, growing some two feet high. It is one of the prettiest of hardy Ferns, being very indifferent as to soil. Little bulblets form on the base of leaf-stalks, and if taken off and inserted in sandy soil they make plants.

A fine hardy foliage plant—Acanthus latifolius (Bear's Breech).

Polystichum aculeatum.—A more robust plant than the preceding, and having a fine appearance when doing well. Likes plenty of moisture at the roots and a cool atmosphere. Seems to require shade more than most kinds.

Osmunda regalis.—This must be included in any list of good hardy Ferns; it is the noblest and most ornamental of them all. If any lovers of Ferns want to see this at its best, give it a cartload of good loam and leaf-mould, and there will be something worth looking at in the course of a year or two—that is if strong plants are set out. I have known this Fern to make fronds seven feet long, but they were on an old specimen that had an unlimited root-run. Choose, if possible, a moist situation; near a water margin is a good place. There are several tolerably distinct varieties of the Royal Fern, of which interrupta and cinnamomea are about the best.

Asplenium viride.—This is a little gem amongst hardy Ferns, one of the smallest, forming little tufts of foliage not more than a few inches high and of the loveliest green possible. Unfortunately, this Fern is just a little hard to please, sometimes refusing to respond to the care bestowed on it, at others thriving as well as could be wished. The best plant I ever had was on a stumpery, close to the edge of it, where the drainage was exceptionally good, and where it got plenty of light and a little sun in the morning. Very free drainage, with a good depth of loam material for the roots to go into, seem to be the principal points in the culture of this charming little Fern.

Struthiopteris germanica is not, as the specific name indicates, a native, but is quite hardy. In the course of time it forms a stem six inches or more in height, which carries a plume-like crown of fronds. Grown in light soil, it forms numerous rhizomes from which young plants spring, thus forming colonies in various stages of development.

Cyrtomium falcatum.—This is a native of Japan, and although not quite so hardy as could be desired, is so handsome and totally distinct from all outdoor Ferns, that I cannot pass it by. The fronds attain a length of about two feet, and are of extraordinary substance, and in depth of verdure are not approached by any other hardy, and by very few, if any, indoor, Ferns. The pinnæ are pointed and prickly, and I think that a good name for it would be the Japan Holly Fern. It seems to bear about eighteen degrees of frost very well, but more than this destroys the crown. In very hard weather it can easily be preserved by cutting off the fronds, covering the crown with dry material, inverting a flower-pot over that to keep it in place. It is really worth this trouble, as it affords such complete variety. It is an evergreen kind.

Adiantum pedatum.—Here we have another exotic species, but hailing from North America, and therefore hardy with us. It requires a rather elevated position to keep the crowns dry in winter, and a light soil. Then it grows in good tufts, two feet or more across, and is very attractive, which it cannot be said to be when only doing moderately well. Like the preceding, it is fine for pot culture for cool or cold greenhouses. It is all the better for a little peat in the compost, with some pounded brick rubble.

Onoclea sensibilis.—Also an exotic, but very hardy. It forms a creeping rhizome, from which the very pale green delicate-looking leaves issue singly. They are of peculiar shape, reminding one so forcibly of those of the Oak, that I am surprised it should not have been named quercifolia. I call it the Japan Oak-leaf Fern, and I do not think a better name could be found for it. It likes a free light soil, which it soon occupies with its creeping stems, extending in this way considerably in the course of a year or two. With one exception, the above list contains only kinds of the easiest culture. They are by no means fastidious as to soil, growing freely enough in such as is naturally of a free description. Garden refuse thoroughly rotted is excellent material, mixing with it some loam or some ordinary garden soil. As a rule, these free-flowering kinds do not get all the food they require, and it is astonishing how they thrive with really generous treatment. When they have been a year or two established, a top-dressing of quite rotten manure does a large amount of good. J. C. B.

Crown Daisies.—These certainly give a large amount of pleasure for the labour they incur. Sown in the open ground in April, they come into bloom by August, and are effective all through the autumn months, being especially attractive during September, when the flowers come large and develop their colours better than in very hot weather. Crown Daisies do very well on dry poor soils, but it is a mistake to starve them, as the flowers then come small and are not nearly so numerously produced as when they have good soil. Grown liberally, they form large bushes by autumn and have a fine appearance. Of these annual Chrysanthemums, Burridgeanum is far the best, the combination of colours in it being novel and telling. —J. B.

PANSIES.

For decorative beds and borders in any part of a garden during spring and early summer, and also in autumn, there is no plant, hardy or tender, that can at all compare with the Pansy. An immense variety of colours can now be had, including crimson, pink, buff, golden brown, and all shades of mauve and brownish crimson. These, with lavender, blue, grey, and all the old shades of violet, purple, plum, yellow, orange, and white, render the Pansy one of the most varied and most attractive garden flowers. Until a very recent date, Pansies seem to have been comparatively unknown in the south. The writer of the gardening advices in a London weekly newspaper says that but a few years ago the Pansy was little better than a weed. I cannot remember the purple, blue, yellow, and white Pansies being in the slightest degree inferior in any way to those of the same kind grown now even forty years ago; so that the weedy Pansies must have been confined to England. The fancy kinds of Continental origin are a great advantage to southern growers, as they stand the warm climate better. For the old show Pansies the south of England is almost too warm, so that they require shading in summer. The named varieties of Pansies are propagated by cuttings, and should be carefully cultivated in beds by themselves; they are very beautiful when in flower, but rarely bloom for a sufficiently long period to make them good decorative plants. Those advertised by growers as "bedding Pansies" produce more flowers than the show kinds, and are generally more lasting, and good robust growers, with a neat habit.

For strictly decorative purposes, all Pansies should be grown from seed, which should be sown in August and planted out in September. These seedlings stand the winter well, and produce a great quantity of bloom, both in spring and in the following autumn. Any that are liked should be propagated; but a little trouble should be taken to prevent cross fertilisation by growing a few plants under glass, so as to get a range of true seedlings to form masses of distinct colour. Without this, the distinct crimsons, browns, blues, &c., get muddled into a lot of dirty purples. All the cultivation these seedling Pansies require is a light, rich, friable soil which their roots can easily penetrate, a plentiful dressing of very old hotbed manure before planting, and a little top-dressing of the same after the spring bloom is over, to help the autumn flowering. Where the young shoots that spring up in summer in the centre of the plants are not wanted for cuttings, they should be thinned out, or they will be small and weak, and may rot the crowns of the plants in a wet autumn. Pansy seed should be sown in boxes of light, rich soil, and with expensive seed it is well to take the trouble to plant each seed separately about an inch apart. The seed germinates irregularly, and the first flowers to spring will be strong growers and flower freely, but will not generally be the best of the batch. Thin sowing enables these strong plants to be removed as soon as they are large enough to prick out, and a pinch of good soil to be put in the hole.

An important point in the management of Pansies is the watering; in hot weather this should always be done as late as possible in the evening, after the ground has cooled. If Pansies are watered while the ground is hot they throw out strong straggling shoots, and often die. Strong manure should never be given to Pansies; weak liquor from dissolved cow-dung is the strongest that should be given. I have noticed lately much stronger manuring recommended for Pansies than that advised by the old growers. I have always found this very injurious, even in poor soils. Where Pansies are raised from cuttings, and have only a few weak roots, and never really develop a proper wig of roots, this strong manuring may be beneficial, but seedling Pansies always root with great freedom. A good dressing of leaf-mould I have always found sufficient to produce a fine and lasting bloom. Very good Pansy seed may now be obtained from good seedsmen, and also from growers of good collections. There are also many good kinds scarcely known in this country. On these I hope to be able to report next spring.

J. D.

The Canary Creeper.—Whether covering a trellis, rambling over bushes, or trained round Pea-sticks, this well-known climber is always effective. Were it more difficult to grow, it would probably be more thought of, but it happens to be one of those things which demand no more cultural care than proper preparation of the soil previous to sowing; therefore it is not so often found in large gardens as in small ones.—J. B.

Lavender when young is much more floriferous than when old. I would therefore advise any one having old plants to take them up now and divide them into as many pieces as can be got with roots attached to them and replant them. Bury them right up to the young wood, as they root freely from the old wood. A quantity thus treated and planted in poor stony soil has produced three good crops of bloom, and continued late in the season to send up fresh flower-spikes, while old plants produced but one crop of bloom.—J. H.

Insects and hardy plants.—Many hardy plants suddenly die about this season, though they have been perfectly healthy up to the day on which they collapse. The large, thick-skinned grub which burrows in the surface soil and lodges about the collars of plants is seen to be the cause of much of this mischief. It is well to periodically look over the rarer hardy plants in order to see that they are not eaten. If not looked after now, grubs of this kind can do a deal of harm before they change their state in spring. As the autumnal rains charge the pots plunged in the open with moisture, worms make their way into pots, and often among such things as Primulas commit great havoc; the alpine species cannot endure the pots being clogged. The advantage of sand as a plunging material is felt in nothing more than in that it allows the trowel to cut an inch or two lower than the pot's bottom reaches, so that the vacant space not only helps more perfect drainage, but prevents worms making their way up into the pots. Small worms often get into the pots at potting time, and do mischief. A general overhauling now will pay where there is a valuable collection of hardy plants plunged.—J. W.

The tuberous-rooted Nasturtium.—With the value of Tropæolum tuberosum for garden decoration I was never fully impressed until the other day, when, looking through an old garden, I saw it in quantity; it formed broad panels on walls fully twelve feet high, and was profusely flowered from top to bottom—the flowers scattered freely all over, and hanging besides in huge sheets of twenty or thirty blooms each. How seldom do we see any attempt made to produce effect of a pleasing character on garden walls. The stereotyped plan is to plant fruit trees against them at regular distances apart, and to wait for any returns that in the ordinary course may accrue. In the garden just alluded to, the fruit trees were planted wide apart, and the spaces between filled in with panels of Tropæolum tuberosum, various Clematises, and the better sorts of wall Roses. The fruit trees were fruitful and vigorous—altogether a very happy blending of the useful with the beautiful.—T. S.

Crocuses in autumn.—Few flowers are more beautiful or harmonise better with the "sere and yellow leaf" than the Crocus. Where provision has been made for ample supplies of these, gardens are all ablaze with their charming and delicate shades of bluish-purple and snow-white flowers. One of the best for this purpose is C. nudiflorus, a gem in its way. It is just now opening its pale, purplish flowers, which are set off to good advantage by the exquisitely-fringed, orange-coloured stigmas. This kind has also the recommendation of increasing rapidly under ground. C. asturicus is also a beautiful species, and well worth cultivating in quantity. C. Clusii, which is dwarfer and more compact than any of the above, should find a place where the Grass is short. C. iridiflorus, a handsome, large, bright, purple-flowered species, has also a remarkable fringed stigma. It is useful, owing to its size, for planting amongst the ranker Grass, a position in which it has a fine appearance. C. medius is a charming purple-flowered Crocus, which, although limited in its distribution, has been much sought after, and may now be had in quantity. It commences to flower in October, and is very floriferous. C. Salzmani, a pretty lilac or blue-flowered kind, flowers well into December in mild seasons. C. longiflorus, a pale-blue sort, is also very desirable. Amongst white autumn-flowering Crocuses, C. ochroleucus, creamy white with orange throat, is very handsome; it is remarkable for the length of its flowering season, continuing in bloom often well into the new year, and unless the frost is very severe its flowers escape injury. C. hadriaticus, another pure snow-white Crocus, is distinct enough from the above to deserve a place in every garden, as is also Boryi and vitellinus, both of which are very handsome.—K.

Pampas Grasses.—Gynerium jubatum, in my opinion, is by far the finest of all the kinds of Pampas Grass. Vigorous clumps bearing from twenty to thirty distinct club-shaped panicles of silvery inflorescence, all standing quite erect and about nine feet high, have a striking appearance associated with Rhododendrons, Tritomas, &c., near the margins of ornamental water.—T. S.

The Purple Rock Cress.—Writing with reference to the engraving of Aubrietia deltoidea, published last week, the Rev. H. E. Fox, of Durham, says:—It is one of two or three very large old plants which hang over the low wall of a long terrace walk in the garden of the Rev. G. T. Fox, in this city. The wall faces south, and the plants, together with several bushes of evergreen Iberis, Rock Roses, &c., are a beautiful sight in spring and early summer, sheeted as they are in purple, white, and gold. They have been undisturbed for probably ten or fifteen years. The largest is about three feet six inches long by three feet across. The flowers are not so large as in some of the improved varieties, but are produced in great profusion.

Treatment of Narcissus in pots.—"J. D.," on p. 466, under the head of "Bulbs for spring gardening," says:—"Daffodils are useless for spring bedding; lifting and drying injures them so that they scarcely ever bloom decently till they have been established one year, and generally two. Even moving them about in a garden injures next year's blooms." If the Narcissus family are so sensitive, how are they grown as pot plants, for which purpose they are generally recommended? Are we to understand that Narcissus bulbs bought and potted in the autumn will not, as a rule, give satisfactory results for two years? And, again, is it necessary to keep them in pots continuously? or will they bear putting into the ground for the summer, and putting up again in the autumn, without injury to their bloom? I refer especially to such varieties as Horsefieldii, cernuus, moschatus, &c. An answer from "J. D." or others who grow Narcissus in pots will much oblige.—Lincolnshire Rector.

Sweet-smelling plants.—The seed vessels of Hypericum orientale contain a powder having a spicy fragrance, of which one is sensible a long distance off. Eupatorium Fraseri smells like "new-mown hay." The common Fennel when seedy and yellow has lost its rankness, and then strongly reminds one of the sweet and wholesome smell of Caraway seeds. But there can be few scents more pleasant than that of the sered leaves of the Rudbeckias, especially of R. intermedia. These have been so desirable, that they have been gathered dry and used for winter scent jars. There are other kinds of sweet materials (by which term I do not mean such plants as are naturally scented in their verdant state, as, for example, the Monarda, Cedronella, Santolina, Mimulus, &c.) which are worth growing where there is plenty of room, for the sake of their pleasing exhalations in autumn, and more or less throughout winter.—J. W.

REPLIES.

14729.—**Planting a flower-bed.**—I should be inclined to give this bed two seasons, one its winter and the other its summer aspect. The winter and spring furniture might include bulbs, Pansies, Daisies, and perhaps a few autumn-sown annuals. The bed might be raised, and have a neat Ivy edging round it, and the bulbs might grow out of the Ivy, and the centre be filled with Pansies. This would be a very beautiful bed in spring, and really there is not much in winter, unless we go in for shrubs. I confess I like the tints of such things as Pinks, and large masses of them are always beautiful, and if I wanted a permanent bed I should keep my eye on such things as Carnations, Pinks, Sweet Williams, with a choice shrub or two as a background, so as to reflect all the beauty of the

flowers to the window. Then, as regards the summer, there are Lilies and Fuchsias, and all the usual half-hardy things to select from.—E. HOBDAY.

14816.—**Prickly Comfrey.**—Procure the sets in March, and plant in rows two and a half feet apart, and from fifteen to eighteen inches apart in the rows. When established, the plants will last many years. It should be used as a green crop, cutting it and giving it to the cows. The crop is at its best when just coming into flower.—E. HOBDAY.

14836.—**Salvia buds dropping.**—The buds usually drop off freely in hot weather; it is their nature to do this. The treatment they have received is correct, and no treatment that can be applied to them will cause the flowers to remain on the spikes.—J. D. E.

14838.—**Cactus Dahlia.**—This variety is not a free bloomer, and it makes vigorous growth. In that case it is better not to plant in very rich soil. As the plant flags in the sun, there is probably some decay in the stem underground. It also flowers later than the usual run of Dahlias, but the culture given to single Dahlias will also answer for this.—J. D. E.

14891.—**Prize Pansies.**—Having been a successful exhibitor for a number of years, I can confidently recommend the following varieties for exhibition. *Fancies*—Allan Ashcroft, Wm. Cuthbertson, Miss L. Bowie, Mrs. G. P. Frame, Geo. Ross, Prince Silverwings, Miss E. Schofield, Kenneth Brodie, Lord Glasgow, Evelyn Bruce, Mrs. Findlay, Mrs. Smith, Remo, Princess, Mrs. Sommerville, Medina, Rob. Cowan, The Favourite, Miss Darling, Mrs. Birkmyre, Lucy, Mrs. Anderton. *Show varieties*—Dark Selfs: Walter Shearer, Midnight. Yellow Selfs. Zama, Gold Mine, California. White Selfs: Mrs. Dobbie, Mrs. Cadzow. Yellow Grounds—Wm. Robin, Matthew Pollock, Inspector. White Grounds—Mrs. J. G. Paul, Sunrise, Perfection.—R. M., *Shadwell, Leeds.*

15032.—**Turning playground into lawn.**—We think the best results would follow replacing the gravel with good soil; possibly something would be allowed for it by the man who supplies the soil. If there is good soil under the gravel, it will not be necessary to put much more on the surface, unless it is wished to raise the level. The old soil should be loosened a bit before putting on the fresh. This work may be done at any convenient time during winter, and allowed to settle down well before sowing, which may be done in March if the ground is naturally dry, but if inclined to be wet April will be soon enough. Seed-time having arrived, if the ground is not firm tread it thoroughly well all over, sow a little lawn manure, rub over with a wooden rake, sow the lawn seed, give another light rub with the wooden rake, and finally give a light covering of good mould, previously screened to rid it of all rubbish. If dry, lightly roll, but if it is possible to water we prefer this to rolling, there being less chance of disturbing the seed.—JAMES CARTER.

HOUSE & WINDOW GARDENING.

Indoor decorations.—As the floral display in gardens begins to lose its attraction, people turn to their indoor decoration with renewed zest, and among other things that are now exceedingly popular I may mention large trumpet vases for standing on the floor in corners or recesses of dwelling-rooms. These may be filled with various kinds of evergreen branches, and with but a small amount of attention produce very pretty and lasting results. Among some of the most effective combinations I have seen lately, the following struck me as being worthy of imitation. No. 1 had the centre filled with Berberis Aquifolium, with large bunches of bluish purple berries and its bronzy foliage, and long trailing sprays of variegated Vinca or Periwinkle; and rising well above the Berberis were some tall pieces of Snowberry. No. 2. Centre, Butcher's Broom (which lasts for weeks in good condition), a few tall plumes of Pampas Grass, and some long trailers of the common Blackberry, the foliage having rich autumn tints. No. 3. Aucuba branches and hardy Ferns, with sprays of Wild Rose hips, and a few of the seed-pods of Iris fœtidissima, the stem being entwined with Ivy. The above are only a selection, and a walk in the fields or woodlands will suggest many more pleasing combinations, and even those with most limited gardens may get something to fill a vase, for it is surprising how much townspeople who are looking at buildings all day appreciate even a branch of the commonest evergreen.—J. GROOM, *Gosport.*

INDOOR PLANTS.

CULTURE OF LAPAGERIAS.

FEW plants, certainly no greenhouse climbers, possess so many desirable properties as do the white and red forms of Lapageria. When the red variety was first seen, flowered in a manner that only gave an imperfect idea of what it has since proved to be, all who saw it pronounced it one of the very finest plants ever introduced; but as its requirements became better understood, and it acquired strength and size, its full beauty and freedom of blooming became fully realised, for, in addition to the individually attractive character of the flowers, and their elegant drooping habit, it exhibited the excellent property of flowering over a much longer period than most plants. Indeed, a large well-managed specimen, when planted out so as to have plenty of room for its roots, will continue producing its brilliant campanulate blooms for several months in succession. In general habit the plant has one advantage over most climbers, that it covers a very considerable space, yet is not such an over-rampant grower as to be at all difficult to keep within bounds. Its natural disposition of producing strong underground shoots, which yearly break up from the collar below the surface of the soil, keeps the base continually furnished with young growth in a way that prevents its getting naked at the bottom; another advantage which the plant possesses is, that its stout, glossy, ovate-lanceolate leaves are sufficiently large to be effective, but not too big or numerous to shade injuriously the generality of things grown in conservatories, which often are seriously injured when the roof-climbers are of an over-vigorous character. We have so far only spoken of the plant when grown as a climber, in which position its flowers are best seen, but it is also well adapted for being treated as a trained pot specimen. In this way the red variety has been produced bearing 500 of its deep red, white spotted, or marbled flowers at a time, in which condition few plants could be more effective. The red variety, however, is eclipsed by the new white form, a counterpart of the former in all except that its flowers are pure white. Inasmuch as white flowers of such a character as this are scarce, the white Lapageria is a real acquisition, especially for cutting. When arranged in the natural drooping position, for filling vases or epergnes, both varieties are effective; they are also well adapted for bouquets, where their long-enduring capabilities—they will last for a week almost as fresh as when growing on the plant—have few equals. The plant should be liberally supplied with moisture both overhead and at the roots; it needs shade in bright weather, and will not bear anything that approaches to a hot or dry atmosphere. All the plant requires in the shape of heat is just enough to exclude frost; on the shady end or side of a cold conservatory or corridor it is at home, where it can have plenty of root-room, requiring in this respect more space than many things would bear without being induced to grow too rampant.

The red and white varieties require the same cultural treatment, and when grown as trained pot specimens, must, as they get big enough to need it, have large pots. They will succeed in either peat or loam, or a mixture of both; but where good peat containing plenty of vegetable fibre can be had it should be used. They are strong-rooted plants, and do not require the soil to be broken very fine; but as the character of the roots is such that they do not like shaking out so as to renew the material, it is necessary that whatever is used should be of a description to last long before it becomes adhesive, consequently plenty of sand must be added—one-sixth or seventh, according to the character of the soil, will not be too much; from the quantity of water required it is necessary that the drainage should be ample and sufficiently secured from the soil getting washed down into it by a layer of Sphagnum or turfy fibre. They are early excited into growth, which necessitates their being potted correspondingly soon in the season, for they do not like any interference with the roots when growth is in progress. They are not, however, plants that will show the effects of such treatment as some things would, but when subjected to this usage they do not increase in strength so fast as if managed more in accordance with their requirements.

Propagation.—When these plants were scarcer than at present, and there was usually a reluctance to sacrifice the shoots for layering, propagation from cuttings was often resorted to; but this is a slower method, and layering is now in most cases adopted. The course to pursue is, where stout plants are at hand, to layer all or such portions of the shoots as are required in autumn. All that is needed is to put an inch or two of moderately-fine peat, mixed with sand, on the surface of the bed in which the plant is grown, or, if in a pot or tub, to fill a large box or pot with the peat and sand, standing it near the plant, so as to admit of the shoots to be operated on being bent and pegged down their whole length, so that the stem is covered about an inch with the peat, thus covering the stalks of the leaves and about one-third of the leaf-blade. The shoots can be coiled round on the surface of the box or pot, so as to occupy the whole; keep the soil moderately moist; in this way the buds at the base of the leaves will emit roots and make shoots, which will appear during the ensuing spring. Each of these must be supported with a stick, round which it will twine. During the summer syringe slightly overhead; about midsummer they should be taken off with their roots intact, and put singly in five or six-inch pots filled with soil of a similar description to that in which the shoots were layered. Water must be given as required, and the young plants encouraged to get established before winter, during which keep at an ordinary greenhouse temperature. The weaker plants had better be grown on another season in the pots they occupy; the strongest should be moved about March. Loosen the roots a little; if these are plentiful give a three-inch shift, making the new soil quite firm. It is not yet advisable to put them on a permanent trellis, but they should have five or six good sticks a yard in length inserted in the new soil just inside the rims of the pots, and round these the shoots should be trained. These, as growth extends, should be regularly attended to all through the summer, as if the tender points are allowed to become entangled they cannot afterwards be separated without injury. At all times they require plenty of air, but do not like cold draughts. After potting the plants should be placed in a house or pit where an ordinary greenhouse temperature is kept up. If subjected to more heat than this the growth produced is generally so soft that the young leaves are liable to injury by very little exposure to the sun. After potting do not give water for a few days, but the soil must at no time be allowed to get as dry as would be necessary with most things. As the weather gets warmer give air, and when they have commenced to grow freely a light damping overhead with the syringe in the afternoons will be beneficial. The habit of the plant is such, naturally breaking up from the bottom, that no stopping is required. All that is necessary through the spring and summer will be to attend to training the shoots, giving plenty of water to the soil as the roots begin growing well, to admit air freely in accordance with the state of the weather, and to shade slightly when the sun is powerful. In the autumn discontinue shading and the use of the syringe, giving abundance of air to discourage further growth. Through the winter a night temperature of thirty-five or forty degrees, according to the state of the weather, will be sufficient; reduce the amount of water to the roots, but never allow the soil to become dry. About the same time in the spring again repot, letting the size of the shift be proportionate to the progress the plants have made. If roots are plentiful, pots three or four inches larger will be required; use the best fibrous peat that can be got, and at the same time loosen all the shoots from the sticks, and replace these with others taller, so as to accommodate the increased growth. Treat through the summer as in the previous season, and again in the autumn and winter keep them cool.

By the time of the next shift in spring the plants, if growth has gone on as may be expected, will be large enough to be placed on a wire trellis, not too big, although the rate of

yearly increase in size will now be considerable, as the shoots thrown up from the base will be very much stronger than those which were produced at first; disperse them over the trellis, so as to furnish it evenly, and wind the strong young shoots that rise from the bottom regularly round it. The growth should not be kept trained down, but ought to be run up strings tied to the top of the trellis, and thence in an upright direction to the roof. Up these the shoots should be kept trained, where they will complete their growth and set flowers, after which they can easily be wound round the trellis, where they will expand through the advanced summer and autumn. All now required is to continue the same treatment winter and summer as previously advised. giving more root-room as necessary until they occupy pots or tubs twenty or twenty-two inches in diameter, in which they may be kept in health by the assistance of manure-water during the growing season for several years, when, if desired, they can be planted out in a greenhouse or conservatory border. They are not things that require much use of the knife, but, as the weaker old shoots cease to grow much after the plants get to producing strong sucker growths, the former may be gradually cut out.

When intended to be grown as climbers, or for covering a back wall, one mistake is often committed, and to that are to be attributed frequent failures—that is, turning them out while very small into a large body of soil in a border. Lapagerias are by no means such quick growers as most things of a climbing habit, and the considerable body of soil in the prepared border gets sour and unhealthy before the roots lay hold of it; the consequence is that the plants refuse to grow at all, and remain for years in a state admitting of little progress. If ordinary sized plants are procured it is much better to grow them on in pots for a year or two until they get enough roots to penetrate the soil freely the first summer they are turned out, in which case they rarely fail to do well, provided they are properly treated in other respects. Planting out should be done early in the spring, before growth commences, or the disturbance of the roots, inseparable from the necessary spreading out, will stop growth in a way that would much retard it for the season. The drainage of the border must be ample, and the soil fibrous peat, with enough sand added to it; and as the plants increase in strength it is as necessary to regularly keep the shoots trained as it is when grown in a pot. As the soil becomes exhausted before growth has commenced, each spring an inch or two may be removed from the surface and replaced with new. Manure-water through the summer will also be an assistance. So treated, the plants can be kept growing in a vigorous condition for a number of years. We would advise all who have the red variety to procure the white one; they are fit companions in every way, the attractions of both being enhanced by the contrast in the colour of the flowers. T. B.

ORNAMENTAL CYCADS.

As evergreen ornamental plants, Cycads deserve attention. In some cases they combine the fresh green aspect of the finest Ferns with the graceful habit and permanence of the Palm. Although for the most part natives of tropical countries, they nearly all grow freely in this country in warm greenhouses or conservatories under precisely the same treatment as is desirable for the more hardy Palms. They will be found to grow best in a well-drained compost of fibrous loam, broken up into lumps about the size of a pigeon's egg, and all require a copious supply of moisture during the warmest portion of the year. Encephalartos Altensteinii is one of the best of its class for conservatory decoration, or even for sub-tropical gardening during the summer months. It is not a quick grower, but very permanent in its character, and care should therefore be taken not to injure any of the foliage, as any bruises or broken parts remain blemishes for years. T.

An ornamental Cycad (Encephalartos Altensteinii).

Treatment of Lilies after flowering.—As a lover of Lilies, and one who has grown them for some years in a small way, I have been surprised at the statements recently made in GARDENING as to the immense growth of such Lilies as auratum and lancifolium in pots, under favourable conditions. I have only this year taken up Lilium auratum, and so far have done well. I find, however, that all my Lilies (of all descriptions) under pot culture have active roots after the stems and foliage have died, and consequently I cannot repot in fresh soil at this period without checking the root-growth, and consequently the possible strength for next year's bloom. At the same time, I have not dried the pots off, but allowed the soil to remain fairly moist. Will some one of your readers kindly advise me as to the best period at which to repot, and also state what previous treatment is required? I have not given the question sufficient study to advance any opinion against those who have devoted much attention to it, but, as far as my experience goes, I am of opinion that Lilies of most descriptions, and especially L. tigrinum, L. umbellatum, L. auratum, and L. lancifolium, enlarge their bulbs to a great extent in the autumn after the flowering period, and some time after all signs of life, so far as foliage is concerned, have disappeared; and that, in place of the repotting being performed, as often recommended, when the stems have died down, the better time would be at least a month later; in fact, we may assume that recuperation and increase of the bulb take place after the flowering, and that it would be best to let this reach its maximum before disturbing root-action, deferring the drying-off and repotting to a later period than usually recommended.—H. L. GREVILLE, *Hornsey-rise.*

A beautiful Club Moss.—Among a host of beautiful Club Mosses, Selaginella grandis, a newly-introduced species, stands out prominently as very distinct and handsome. In the broad, flattened, bright, shining green fronds or branches, in the unusual width and closely-set arrangement of its leaves, and in the graceful tassels of long spikelet points which fringe the ends of the branches, S. grandis possesses characters of the most exquisite grace and beauty. In height the branches grow to about eighteen inches, and measure quite a foot across the broadest part; the ends of the branchlets have a slight curve downwards all round the frond. S. grandis is distinctly tropical in its requirements; in fact, it is really a glass-case plant, for we have never seen it thriving very satisfactorily except in a Fern-case or under a bell-glass in a moist, shaded stove. In the tropical fernery at Kew there is a specimen of this plant, which in the health and luxuriance of its growth is all that can be desired. It is planted in a pan in a mixture of peat, leaf-mould, and chopped Sphagnum; this pan is buried under a thick layer of green Moss, the whole being covered with a Fern-case and kept moist to saturation. From the base of the plant, runners are sent out under the Moss for about six inches before pushing up and growing erect, and finally developing into fronds. This habit makes the layer of Moss of great service to the plant. The green of the leaves of S. grandis gives the branches a shell-like appearance, and the likeness to a shell is enhanced by the flattened, smooth surface and the curve of the branchlets.—B.

Useful Bindweeds.—Ipomœa rubro-cœrulea is a handsome and useful Bindwood for the intermediate house or warm conservatory—handsome, inasmuch as it bears all along its far-reaching shoots little bunches of large pale; blue flowers, which remain expanded all day-and useful, because it flowers in midwinter, continuing in beauty for several weeks when properly treated. The cultivated species and varieties of Bindweeds number some hundreds, counting the now numerous forms of I. hispida, or Morning Glory. A good many of these are somewhat too weedy to be classed among plants of real value. In I. Horsfalliæ, I. Thompsoniæ, and two or three other strong growers we have first-rate plants for draping pillars, rafters, and similar positions in the stove, and in I. Leari, I. bona-nox (Moon-creeper), and the species above-mentioned, we have other kinds equally useful for cultivation in the warm greenhouse. Being a strong grower, I. rubro-cœrulea requires a liberal allowance of root-room, a rich soil, and a good supply of water. Its flowers are funnel-shaped, with a spreading limb four inches wide, and are clear porcelain-blue in colour. If cut as soon as they open and placed in a dish of sand and water with a bell-glass over them, these flowers have a novel effect when placed on the dinner-table.—M.

Lantana Louis Benoit.—The Lantanas are pretty tropical weeds, which in some countries, and especially in the warmer islands of the New World, are to be seen covering every bit of available space, in much the same way as Groundsel and the Spurgewort do here in England. A good many of the species are worthless as garden plants; but amongst the many seedlings raised in this country we have some very pretty and useful little plants, both for the greenhouse in autumn and winter, and for bedding purposes in summer. One of the best of these is L. Louis Benoit, which is apparently a descendant from L. crocea, a native of Jamaica. It is dwarf and compact in habit, and when kept pinched back a little the shoots sprout freely, so as to form pretty little shrubs about a foot high, which when covered with numerous globular heads of deep orange-scarlet flowers form neat little ornaments for the greenhouse. A collection of Lantanas might be grown so as to form a brilliant picture, similar to what is done with the Verbenas in

the open ground. Shrubby Verbenas the Lantanas are, possessing, as they do, all the brilliancy of colour and shape of flower-head with which we are familiar in the more herbaceous Verbena. When well-managed—and they are as easily managed as Geraniums—Lantanas flower freely for about ten months in the year. In addition to the above variety, L. La Neige, pure white; L. Globe d'Or, deep yellow; L. Distinction, orange-scarlet; and L. Ne Plus Ultra, rose, pink, and lavender, are good varieties for growing as autumn and winter flowering plants. A strong odour, like that of the scented Verbena, is characteristic of the foliage of all the Lantanas.—B.

REPLIES.

14720.—**Stage for Chinese Primulas.**—The wooden bench will do very well for the Primulas if it be near the glass. A little Cocoa fibre for the pots to stand on will be very well, but the pots should not be plunged in it, and more than a couple of inches would hold too much water, and might in dull weather do harm.—E. HOBDAY.

14741.—**Pomegranate.**—The Pomegranate is too much shaded on the back wall of the cool vinery. The wood does not ripen perfectly; hence it does not produce flowers. If planted out in a light position it should, and I have no doubt would, flower more freely under glass than in the open air, unless the climate of the district is like the south of France, or some sunny, sheltered spot on the south-west coast. —E. HOBDAY.

14813.—**Climbers in greenhouse.**—We are cutting down our climbers now, in order to allow the plants underneath, during the winter, to get all the air and light possible. The work may be done the last week in October. —J. D. E.

14877.—**Best six tuberous Begonias for exhibition.**—Mr. Brissenden, Lady Falmouth (rosy pink), Her Majesty (white-edged pink), Golden Queen, Purity (white), Ernest H. Gough.—J. D. E.

14821.—**Stocking greenhouse.**—The best Vine to plant is Black Hamburgh. The best greenhouse plants to furnish the house are large-flowered and zonal Pelargoniums, Fuchsias, Abutilon Boule de Neige, and Emperor; varieties of Liliums—L. auratum and L. lancifolium are the best; Primula sinensis in variety, Azaleas, and a few of the easiest grown Heaths, such as Erica hyemalis, E. caffra, E. melanthera, &c.; Cyclamen persicum in variety; Genista fragrans. Hyacinths, Tulips, Polyanthus Narcissus and Ixias, in variety should all be grown for spring flowering.—J. D. E.

14894.—**Alpine plants in pots.**—The best six for exhibition in spring would be Androsace sarmentosa, Anthericum Liliastrum majus Aster, alpinus, Corydalis nobilis, Erythronium dens-canis, Mertensia sibirica.—J. D. E.

14900.—**Plants for greenhouse.**—This would be a nice little house for hard-wooded plants if the proprietor understood their wants. A few Heaths, Acacias, Camellias, Epacris, and Azaleas will give more pleasure to one who only wants a few choice things that will be a long time before getting too large than the usual heterogeneous mixture. Very little fire would be required, and abundant ventilation should be given, except when frosty. The chief care would be in watering, to give it just when it was required in sufficient quantity to moisten all the soil, and at no other time.—E. HOBDAY.

14901.—**Wintering Antirrhinums, Picotees, and Pansies.**—All the above will pass through ordinary winters out of doors; but to ensure this, they ought to be well established by October. Seedlings winter much better than propagated plants. As they have not been planted out, it will be better to winter them in cold frames.—J. D. E.

14904.—**Night-flowering Tobacco-plant.** —It is rather late for striking cuttings, either with or without bottom heat; besides, there is nothing gained by it, as seedlings raised in spring make far-away the best plants. Cut away the old flower-stems, and keep the old plants for early flowering. Some of the cuttings will strike in a warm greenhouse if, in spite of what I have said above, it is thought desirable to try them. Have the pots well drained, and the soil made porous with sand.—E. HOBDAY.

Mildew.—When found make a note of. Permit me to call the attention of agriculturists and gardeners to an article on this subject in the *Times* of Oct. 30. M. Prillieux states that a mixture of eight per cent. of sulphate of copper mixed with lime-water wherever applied checked the progress of mildew, and enabled the vines to ripen their fruit. This treatment is simple, easily applied, and efficacious.—CAPT. CUTTLE.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, November 16 to November 21.

Planting out Guernsey Lilies under a warm wall, also Roses, manuring them and giving some of them fresh soil. Planting Horse-radish. Putting some Cinerarias into slight heat; also Seakale, Asparagus, and Rhubarb. Filling up empty frames with Lettuce from under wall. Taking up Schizostylis and Narcissi, also Cauliflower; nailing wall Plum trees. Putting Roses (Tea-scented sorts) into a cool vinery, getting all Violets in pots into frames. Covering up Globe Artichokes with straw, and protecting seed Potatoes; laying all fresh-potted Roses out of doors on their sides and plunging them in straw. Planting Fig and Peach trees and Raspberry canes; planting Anemones, giving them manure and sand. Putting in Hyacinths, Tulips, Dielytra, and Lily of the Valley to force. Finishing all north-wall nailing; potting some Azalea pontica.

Making a pit ready for forcing flowers, keeping it at sixty-five degrees at night and seventy degrees by day, slightly syringing when necessary. Nailing Apple and Pear trees. Putting hand-lights over Cauliflowers, and making a new Mushroom bed. Looking over bedding Pelargoniums, and cleaning them. Shortening Rose shoots a little in order to keep wind from rocking the plants. Sowing Mustard and Cress regularly, and layering some Cucumber shoots in pots for early spring work. Finishing planting old bulbs out of doors. Planting out February Cucumber plants.

Putting in some Indian Azaleas to force for flowering by December 30, and taking the Roman Hyacinths in flower out of heat. Syringing Gardenias with soap-suds once a fortnight. Watering Asparagus just appearing. Stirring the soil amongst frame Violets, potting Lilies in peat and sand, and plunging them out of doors overhead in sand. Planting out Sweet Williams and Wallflowers, taking them up with large balls. Taking up some Anne Boleyn and White Pinks for forcing and potting them. Spreading out seed Potatoes in cellar to keep them from sprouting. Giving Gardenias a top-dressing of turfy loam and Oak-leaves. Earthing up winter Cucumbers weekly, half-inch at a time. Putting in Seakale to force, and pruning all Roses for forcing.

Glasshouses.

HELIOTROPES FOR WINTER FLOWERING.—The perfume of the flowers of these plants is preferred by many people to that of most other things. They are naturally such continuous bloomers that if there is enough warmth to keep them growing slowly, they will produce flowers all the winter, either from large or small plants, in pots or planted out; where they can be trained on the end of a light house, with the roots in a moderate-sized border—say with an area of six or eight feet—this will well accommodate two very large-sized examples. The heat should not be allowed to fall lower in the night than forty-five or fifty degrees — the last-named figure will be found to give the best results. Heliotropes, being free-flowering plants, and where their roots have room to extend, making so much top-growth, the soil soon gets exhausted; to prevent this, manure water should be given from time to time as the condition of the plants may seem to require it.

MIGNONETTE.—Where a continuous succession of flowers of this old favourite is required through the winter, it is necessary to have plants prepared especially for the purpose; the earliest should now be large and strong, for although it will bloom in a small state, still the largest and most vigorous examples will give proportionately the most flowers. The plants intended to bloom first should be kept at forty-six or fifty degrees, with their heads as near the glass as possible, giving air daily, except when unusually cold. Those meant to bloom later on must be well attended to, or the flower forthcoming will be poor; they should, if possible, be kept a few degrees warmer than ordinary greenhouse stock, giving them plenty of light; a shelf along the end of the house is the best place to stand them. Such as are wanted to flower the latest in spring, should now be accommodated where they will be kept moving slowly; if there happens to be a pit with the means of turning on a little heat in severe weather, this will be better than having the plants in a greenhouse, where at this season small stock of this description is liable to get too much crowded by larger plants.

DOUBLE PETUNIAS.—Those whose glass accommodation is confined to small houses, not adapted for the growth of large plants, will find the double-flowered varieties of Petunia very useful in giving a supply of flowers early in spring. Several of the kinds now in cultivation bear flowers nearly as large as ordinary-sized Camellias; not the least of their merits is the enduring character of their flowers. Plants struck from cuttings during the latter part of summer should now be in three or four inch pots, and, if the soil is full of roots, they ought to be moved into others a size larger, using for them, as for other free-growing, soft-wooded stock, ordinary loamy soil, with some rotten manure and leaf-mould added. A warm greenhouse temperature that will keep the plants gently moving is more suitable for them through the winter than one which is just high enough to keep out frost. But, in all cases where the plants are placed under conditions of temperature that will keep them growing, they must be as near the glass as possible, otherwise they had better be in cooler quarters. The undermentioned are a few good varieties:—Concolore, white, blotched with purple; De Candolle, crimson, edged with white; M. Buchner, white; Alex. Figier, crimson, blotched with white; Neptune, white-veined petals; Perfection, deep rose; Beauty of Runnymede, plum colour, tipped with white; Adonis, white, suffused with purple.

IVY-LEAVED PELARGONIUMS.—This section of Pelargoniums has been much improved of late years, both as to habit of growth in the plants, and the character of the flowers they produce. They have few equals for filling hanging baskets, and can be used with advantage in any way where plants with drooping habit and pretty flowers are required; they are equally suitable for being trained in an erect position. Some of the newer double-flowered sorts are particularly adapted for growing in this way, being naturally less straggling in habit than the original kinds. Old plants that have attained a large size may now have their shoots shortened back, but they must not be headed low down so late in the season as this in the way the ordinary varieties admit of in the latter part of summer; and even earlier, when the time of the year is more favourable to growth, it is not advisable to use the knife so freely with these as with the stronger-growing varieties. Young stock of these Ivy-leaved Pelargoniums, struck during the autumn, should, if the means are available, be stood through the winter in a temperature of about forty-five degrees; where so treated they will be much more forward in growth in the spring than where kept almost in a dormant condition.

TROPÆOLUMS FOR WINTER FLOWERING.—Where strong plants of these exist they will give an abundance of flowers all through the winter, especially if they can have a temperature a few degrees warmer than ordinary greenhouse plants require. They do best trained to the roof of a house; if on a wire running lengthways over a path they look very effective; in addition, their flowers stand very well when cut. To keep them moving, so as to give the full amount of bloom of which the plants are capable, manure water must be given about once a week; for, though these, and other things that continue to make growth through the winter, do not require nearly so much in the way of stimulants during the dull season as in summer; nevertheless they must have enough assistance in this way, or they cannot be expected to make the shoot-growth necessary to yield a full crop of flowers. The following are good varieties for winter blooming:—Triompbe de Gand, scarlet; Vesuvius, crimson; Kentish Fire, brilliant orange-scarlet, one of the freest flowerers.

BULBOUS TROPÆOLUMS.—These old-fashioned plants, although now seldom met with, are still among the freest and most distinct of greenhouse subjects. The bulbs will now be moving, and should have pots large enough to support as much shoot-growth as possible, for on this depends the amount of flowers they will be able to yield. Whatever kind of soil they are grown in, peat or loam, a fair amount of sand should be mixed with it; large bulbs should have pots proportionate to their size—say nine or ten inches in diameter. The thread-like twining shoots of these plants require support either in the shape of a wire-trellis, or some twiggy branches such as those of the common Birch, inserted in the pots, round which to train the growths so as to cover the whole.

NARCISSI FOR POT-CULTURE.—Most of the common varieties of the Daffodil answer well grown in pots, in which way they may be had in flower earlier than out-of-doors, as they will bear a reasonable amount of warmth. The single trumpet-shaped varieties will succeed,

grown in this way. The bicolor section, the flowers of which are so beautiful, deserve to be cultivated much more than they hitherto have been in pots; the bulbs of these should be grown, three or four together, in six or seven inch pots, and be treated subsequently in the way that has been advised for the kinds of Narcissus usually subjected to pot-culture.

THOMAS BAINES.

Flower Garden.

TRANSPLANTING TREES.—Every exertion should be made to advance the transplanting of trees, shrubs, and Roses, which, as a rule, do best when planted in autumn; for although in open weather planting may be safely done all through the winter, a comparison of results would soon determine the undecided in favour of autumn planting. If an exception to this rule were made, it ought only to be in those cases where the plastic nature of the soil renders it all but impossible to plant at any season earlier than the middle of February.

WINTERING BEDDING PLANTS.—Dahlias, Gladioli, and all other tuberous plants having been lifted and partially dried, ought now to be planted thickly in boxes, or on the floor of a cool cellar or shed; sifted leaf-soil and Cocoa fibre refuse are the best materials with which to surround them. Lobelias of the cardinalis section, Verbena venosa, and Salvia patens winter best in daylight, and therefore these should be afforded the shelter of a cold pit, but may be heeled in quite as thickly and with similar material as the preceding. Pelargoniums must be kept on the dry side as to moisture at the root, while the atmosphere should be as dry as possible. It is necessary to keep the tender section in strong heat, and the plants at this season must be but sparingly watered. The hardier material in cold frames, such as Verbenas, Calceolarias, and Violas, should be fully exposed in fine weather, and the surface of the soil loosened with a pointed stick to prevent the growth of Moss and fungus. R. S.

Fruit.

HARDY FRUIT.—Planting and the renovation of fruit borders should be finished by the end of this month. Every kind of cultivated hardy fruit, from a Peach to a Gooseberry, resents anything like a stagnant state of the soil; moreover, good drainage increases by several degrees its temperature, and, as a matter of course, this must aid the most perfect development of the fruit. The kind of soil that suits fruit trees generally is a calcareous loam of moderate texture—that is neither heavy nor light—but of necessity this matter must be subject to local considerations, as often the soil best suited for certain trees is not obtainable. Light ground should be trenched very deeply, and, if procurable, heavy loam or clay should be intermixed with it; but, if this be not obtainable, well firming will in some measure atone for its absence. Very heavy or clayey soils should also be trenched, and any sort of material that would render it more porous, such as mortar rubble, charcoal, and cinder ashes, should be added, and it must be allowed to subside naturally, without artificial compression. Unless the soil be very poor indeed, no manure of any kind should be mixed directly with it, for the simple reason that the disposition of all fruit trees, when planted in rich soils, inclines towards the production of wood rather than fruit. It must not be inferred from this that manure is not essential to the production of good fruit, for it most certainly is, but not till the trees have fairly begun fruiting, and then annual surface dressings have the most marked effect. Keep the roots near the surface; deep planting is an error. Above all, let them be well spread out, and the soil worked well amongst them with the hand, and afterwards let the trees be securely staked, for till that is done all fresh roots that may be made will, by the first gale, be destroyed through the swaying to and fro of the tree.

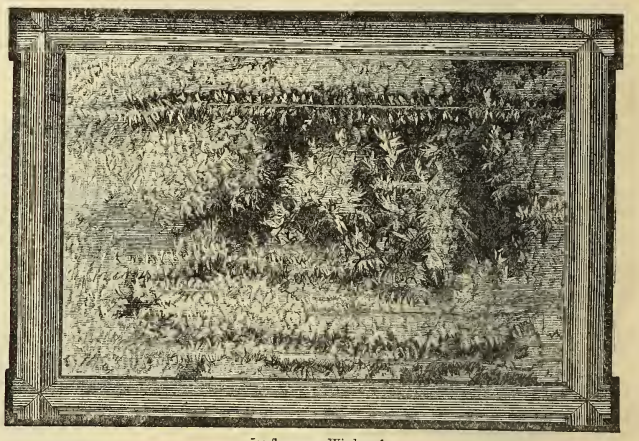
LATE VINES.—If not already done, the internal borders in the late vinery may be well covered with loose, dry Bracken, for the twofold purpose of keeping down dust and absorbing moisture. Outside borders may also be covered with boards to throw off cold rain and snow, from the time the leaves fall until the Grapes are cut, when exposure will again be preferable to getting the roots too dry. Where late Muscats are wanted to keep as long as possible, the houses will require very careful management during the fall of the leaf. Let the temperature decline to fifty degrees in mild weather, and give no more fire heat than is requisite to the maintenance of a dry, cool atmosphere and safety from frost. Remove all plants and evaporating pans, cover the floor with Ferns, and dry out or cover up water cisterns to prevent the absorption of moisture by the atmosphere, which must now be dry and buoyant. As thoroughly ripened Muscats are easily caught by the sun, it is a good plan to strain a piece of netting or thin canvas across the roof of modern houses to protect the shoulders, and to secure an equable temperature through the night. If any late Hamburgs are still hanging on the Vines in houses which were retarded in the spring, they will now keep better in the Grape-room, and in order to thoroughly ripen up the wood, the house may on fine days be subjected to a period of sharp, dry firing, with plenty of air.

EARLY VINERIES from which the first crop of fruit is to be gathered in May may be closed at once. If fermenting material is applied to the internal borders, a temperature ranging from forty-five degrees to fifty-five degrees may be maintained without the aid of much fire-heat, but in the event of the weather becoming very cold, the pipes must be warmed every morning, and the swelling of the buds aided by frequent syringing with warm water. The best material for producing warmth is fresh Oak-leaves and short stable manure, thoroughly worked and fermented before it is taken into the house. The outside borders, hitherto exposed to the elements, may be protected with litter or shutters, but no artificial warmth must be applied to them until the buds begin to swell. After the house has been closed for a week or two the temperature may range about fifty-five degrees, with a rise of five to ten degrees on sunny days. Examine the borders, and if the repeated waterings, little and often, have not thoroughly penetrated to and through the drainage, give a thorough soaking with water at a temperature of ninety degrees and cover up immediately with the fermenting materials. M.

MANURING FRIUT-TREES AND BUSHES.—This is the time to look to the roots of fruit-trees of all kinds, for, as a rule, they have been heavily taxed with crops during the past year, and unless they get some good rich food placed within reach of their roots, they will soon fail either to make new wood, or to produce flowers or fruit. The best plan is to open a trench at about a yard from the stem, and dig down as far as any roots can be found, getting them out from the soil so as to preserve the small fibres or feeding roots as much as possible; then get some fresh soil, such as one collects from the roadside, or, in fact, any place that is free from tree roots, and mix it with manure as the work of filling-in goes on; and lay the roots out carefully in this mixture, and spread the old soil on the surface of any kitchen-garden soil that is lying bare. After the trench is filled in, give a mulching of half-decayed manure over the entire surface, from the stem as far as the roots extend. If this were carried out we should soon see hardy fruits finer than they are, for in many gardens that I look over I find the roots of the fruit-trees struggling for existence with winter greens, or other coarse-growing vegetables, or flowers planted close up to their stems. We hear many saying that we cannot grow fruit as well as growers in the Channel Islands or France; but do we give the trees a chance, for it is useless laying all the blame on the climate?—JAMES GROOM, *Hants.*

Vegetables.

Whenever the weather is dry, get Celery well banked up; a sharp frost coming before the final earthing is most detrimental to its well-being. Continue to lift Carrots, Turnips, and Beet, stacking them outside in small round pits; a cartload in each is plenty; cover up first with dry straw, then put on the soil about six inches thick. Our earliest sowing of Peas we make about the middle of the month. A good site for Peas is a warm south border. We sow them in drills about four feet apart. As soon as the plants show themselves above the ground, cover them over one inch thick with coal-ashes; this wards off their enemy, the slug; and placing four strings of white worsted along the rows, elevated about six inches above the ground, in a great measure keeps off the birds. When the Peas show through the ashes, they should be earthed and rodded immediately. Broad Beans should also be planted; these brave the winter winds better than Peas; still, if earliness is a consideration, protect them, and they will pay for it.



Ice-flowers on Windows.

ICE-FLOWERS ON WINDOWS.

EVERYONE has admired the fantastic floral devices often to be seen on glass through the crystallisation of water during hard frost. These are so very interesting and beautiful that many of our readers will be glad to see in our engraving the result of an attempt to reproduce them. The most exact likeness of the "ice-flowers" has been obtained by means of photography. No great stretch of imagination would be required to believe them to represent a bouquet of delicate flowers and Fern-leaves embroidered on a thin curtain of light and shade. Some years ago M. Haas succeeded in fixing these charming devices on glass. He exposed to the cold a horizontal piece of sheet glass slightly covered with water, on the top of which was put some enamel-powder. The rime formed itself, and when the ice evaporated the floral representation was framed in enamel. He placed the glass thus prepared in an oven, and the enamel, in melting, fixed the crystallisations in a durable and permanent manner.

T. J.

GARDEN BIRDS.—I.

OUR village garden is bounded on one side by the open fields, offering free ingress and egress to the birds of the surrounding district, which visit us in considerable numbers. For some years past I have been a pretty close observer of their ways and habits, and, in the following notes, I have endeavoured to summarise what I have thus learned as to the extent to which the different species are either useful or mischievous in a garden. I shall commence the list with our old familiar friend the

HOUSE SPARROW (Passer domesticus), as he makes his appearance in greater numbers and more constantly than any of the others—in fact, he is hardly ever out of sight from sunrise to sunset all the year round, except at one particular season which I shall mention further on. He is one of the birds which I do not like to see in the garden, as he is almost always doing mischief there, if he sees anything upon which he can operate. His proper place, if he would only confine himself to it, is the house-yard, especially in the region of the rubbish-heap, where he certainly does good scavenger service in removing crumbs and other unconsidered fragments of refuse which are thrown out there, and which, if allowed to accumulate into a heap of putrifying organic matter, would soon prove a serious nuisance; but his visits to the garden are usually disastrous to it, especially when seedlings are coming up, and, if these are not protected in some way, he will pull them up by the hundred. This is apparently done through sheer wantonness, as I have never seen him attempt to eat any part of the plants which he so industriously uproots. Young Onions seem to be special objects of his dislike, and young Cabbages suffer almost as severely from his beak. I have also occasionally detected him in the act of picking off Gooseberry-buds, but I have not been able to discover whether he does so, like the Bullfinch, for the purpose of eating them. I must say, however, that, unlike the bullfinch, he does not regularly or habitually attack the Gooseberry-bushes, and in some seasons I have noticed that he never goes near them at all. He delights also in nipping off the blossoms of Crocuses, Primroses, and other yellow-flowered plants, and scattering them about right and left. One solitary useful action of his in the garden I am bound to record, and that is that he hunts most assiduously over the Cabbages in quest of the caterpillars of the white butterfly, which no other bird that I know of will touch—deterred, no doubt, by their sickening fœtidness. These caterpillars, I rather think, are sought for by him for home consumption by his nestlings, as I have never seen him swallow one of them himself, but he will fly backwards and forwards, from his nest to the Cabbages, many times in an hour, bringing home a caterpillar or two in his beak every time. The number of these vermin which he destroys in a season must be very great; still, the service which he renders in this respect hardly counterbalances the amount of damage which may fairly be laid to his charge. Accordingly, I must set him down as a garden pest, and a very great one in a village garden, where a gun cannot be used without the risk of shooting somebody on the other side of the hedges. I have tried various kinds of traps to thin his numbers, but, with one exception, have found them of no use whatever, so keenly suspicious is he of anything in the shape of springs, nooses, pitfalls, and bird-lime. The exception referred to is the common brick trap, into which, curiously enough, notwithstanding his wariness towards other kinds of traps, he will dive without any hesitation whatever. Half a dozen of these traps placed on the walks here and there through the garden worked admirably for some time, two birds being often caught together in the same trap, until I had to discontinue using them, having found that robins and other useful birds were often killed in them by being caught by the head. When harvest-time approaches, the sparrows desert the village altogether for about a fortnight, and resort in flocks to the cornfields, where, during that period, they have a "good time" of it all day long in alternately gorging themselves with the ripening grain, and dozing away the intervals of digestion in the nearest hedge, where they also bivouac at night. The sparrow is not only a prolific parent, producing three or four broods in the season, but the cock bird also shows himself to be an exemplary paterfamilias. As soon as his young ones leave the nest, he takes them round the immediate neighbourhood, and, by the frequent use of his warning note, "coaches" them carefully as to what they are to avoid. On the first day of their appearance in public, his progeny, like other juveniles unversed in the ways of the world, are rather unsuspicious and prone to confide; but a young sparrow that has been out and about with his father for two or three days is quite as wary and as much "up to trap" as any of his elder relatives. Mischievous as the sparrow is in the garden, I should be very far from pursuing him with the exterminating spirit lately manifested towards him in Cheshire and elsewhere. Kept within due bounds, he renders the services for which he was created; a few yards of netting will keep him off the seed-beds, and I, for one, would prefer even to suffer a little loss in this way rather than miss his familiar presence about our dwelling and his cheerful chirp from eave and housetop, so agreeably relieving the silence and monotony of a country life.

W. MILLER.

POULTRY.

QUESTIONS AND REPLIES.

1524O.—**Breed of fowls** (*Subscriber*).—The birds are Langshans. They are now recognised as a distinct breed, classes being provided for them at all the principal shows.—DOULTING.

15241.—**Insuring against robbery** (*Gosport*).—We know of no company in which you could insure your poultry so as to receive compensation in case of robbery.

15083.—**Spotted eggs.**—The spots in the eggs are probably due to some derangement of the egg organs, or to the fowls being fed on too stimulating food. If the whole of the hens lay faulty eggs, then the feeding is wrong, and should be changed; but if the eggs are produced by one hen only, she should be discovered and killed.—DOULTING.

15084.—**Sneezing pullet.**—The disease from which the pullet is suffering is roup, and it is very contagious, being often conveyed from one fowl to the other through the drinking water. To effect a cure the fowl should be put in a warm place. Then administer half a teaspoonful of Epsom salts and wash the eyes, nostrils, and other affected parts with Jabarrague's solution of chlorinated soda diluted with twice its bulk of water. If the discharge be considerable the dressing should be repeated several times a day. For medicine, take balsam copaiba, one ounce, liquorice, in powder, half ounce, piperine, 1 drachm, with enough magnesia to make the mass into solid pills, and give one morning and evening. Good Barley-meal, given warm and seasoned with cayenne, is the best food during the treatment.—DOULTING.

Indigestion in poultry.—Many fowls suffer from a form of digestive derangement which is simply indigestion, and which may be cured if taken in time, but, like the same complaint in the human subject, if neglected, it is very difficult indeed to find a cure for. The symptoms are an indolent appearance, as if the bird were unable to exert itself, and a bad or depraved appetite—generally the former. The food is hardly touched at all, and there seems no desire for a natural diet. The face, if examined, has generally an unhealthy look, and the feathers lose their brilliancy. The droppings are scanty and fœtid, though there is sometimes an attack of diarrhœa. The breath is usually bad, and this is one of the best methods of diagnosing diseases of the digestive system. The first step to be taken is to give a mild aperient, with the view of removing anything from the bowels or intestines, as sometimes a slight obstruction is the exciting cause. Six hours afterward an ordinary Rhubarb pill may be administered, followed by the same at intervals of two days for a week. I have also known very great good result from the use of homœopathic medicines. The right ones to use for indigestion would be, when there is an apparent sickness, nux vomica, and when there is a dizziness, chamomilla. In both cases the dose should be two drops of the No. 3 tincture in a wineglassful of water, and a teaspoonful of this given three times a day. The food should be limited, and of the plainest nature. It is better cooked. A little green food may be given, and some powdered charcoal can, with advantage, be mixed with the soft food. This complaint is very apt to return, and thus it is very necessary to be most careful in the feeding of birds that have been once affected with indigestion.—*Country Gentleman.*

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.

No. XXVI.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

PEARS.

THE Pear, of which there are many varieties, is indigenous to this country. The fruit, when perfectly ripe and good, is best eaten in its raw condition, and is chiefly used for dessert as a refreshing and digestible fruit; but when hard, Pears are only fit for eating after they have been cooked, which operation may be performed in many different ways. An agreeable and wholesome beverage called "perry" may also be made from the fermented juice of Pears. The small fruit, unfit for other culinary purposes, often makes the best perry.

DRIED PEARS.—Take half a peck of large, hard Pears, peel them very thinly, but leave on the stalk and preserve the original shape of the Pear, and as each one is prepared throw it into cold water. When all are ready, place them in a large jar with three pounds of sugar and one quart of water; cover and stew them in a moderately-hot oven until they are tender, but not soft. Pour off the syrup and boil it for ten minutes, pour it hot over the Pears, and let them stand covered for two days. Again pour off the syrup, boil it for ten minutes, and pour it over the Pears. Let them stand until cold, and then lift each Pear separately on to a dish or tin, so that one does not touch the other, and dry them thoroughly in a cool oven. When cold, store them in tin boxes in a dry closet.

PURÉE OF PEARS.—Take some ripe and sound Pears, wipe them with a damp cloth, cut them in thin slices, and put them into a preserving-pan with one pint of water to every three pounds of fruit, and boil gently until they are soft enough to be rubbed through a hair sieve. Then weigh the purée, and allow equal weight of powdered sugar, and mix thoroughly. Pour into clean, sound bottles, cork tightly, and tie down with string. Place the bottles in a pan of cold water with twists of Hay around the bottles to prevent them from breaking, let the water boil for five minutes, and then cool again before the bottles are removed. Store in a dry place.

TO STEW PEARS.—Take twelve good-sized Pears (hard Pears are the best for this purpose), peel and cut them in halves, leaving the stalk on one half. Remove the cores, and place them in a jar with half a pound of loaf-sugar, six cloves, twelve allspice, half a pint of water, one gill of port-wine. Cover with a lid or strong piece of paper, and stew in a slow oven for six hours; or, if more convenient, place the jar in a saucepan of boiling water, and so cook the fruit, which should be quite soft, but not broken. When this is done, lift each piece of Pear on to a dish and strain the liquor into a clean saucepan, and boil it rapidly for ten minutes. If the colour is not good a few drops of cochineal may be added. Let cool a little and pour over the Pears. When quite cold this dish may be decorated with whipped cream. The port wine may be omitted and the rind and juice of two Lemons substituted for a change.

PRESERVED PEARS.—Secure some sound but scarcely-ripe Pears, plunge them into a stewpan of boiling water for two minutes, cool them in cold water, and drain them. If small Pears, peel each one neatly, and leave the stalk on; but if large, cut each one in halves, and peel each piece lengthwise, with only three cuts of the knife, if possible, putting them into bottles as they are peeled. Make a strong syrup, boiling four pounds of sugar with one pint of water until it is clear. Pour this over the Pears in the bottles, cork, and tie tightly down. Place the bottles in a pan of water, and boil for ten minutes; let cool in the water. Pears pre-

served in this manner will keep good for a long time, and are useful for compôte, &c.

PEAR JELLY, WITH THE PEARS PRESERVED WHOLE OR IN QUARTERS.—Take eight pounds of small Pears, scarcely ripe. Cut off the stalk, peel them (if large Pears are used, peel, quarter, and core them), blanch them by plunging them into boiling water for two minutes, then into cold water, and drain them. Put the Pears into a basin, and pour over them a strong hot syrup of six pounds of sugar and one pint of water; cover to prevent the steam from escaping, and let the Pears steep for three days. Drain the Pears, and boil the syrup for ten minutes with two pounds of sugar, and pour it hot over the Pears. Cover again, and let stand three days longer; then drain the Pears again, and boil the syrup until it will solidify when a little is dropped upon a cold plate. Throw in the Pears, let all boil well once, and pour into small jars. Let the jelly stand for at least twenty-four hours before covering and tying down.

PEAR SALAD.—Select some fully ripe and sound Pears. Peel, quarter, and remove the cores; then cut in thin slices. Arrange a circle of these upon a crystal dish, strew over some powdered Cloves and sugar, then add more Pears and seasoning, until a pyramid is formed. About eight Pears will make a good dish. To this amount whip one gill of cream with two tablespoonfuls of brandy and the juice of one Lemon. Pour this round the Pears. Sprinkle some sugar over and serve at once. This dish should not be prepared until just before the time for serving, as by standing the Pears will become discoloured. In that case, a little pink sugar should be used to hide the defect.

QUESTION.

15242.—**Oatmeal cakes.**—Will any one tell me which is the best way of making Oatmeal cakes?—L. L.

REPLY.

15080.—**Sloe wine.**—"John Morton" asks for a recipe for Sloe wine. I have tried the following, and found it answer. One gallon of Sloes, one gallon of cold water; let them stand for a week, then strain, and to every gallon of liquor add four or five pounds of moist sugar; let it work for four or five days, then put it into a barrel, and bung down when it has done working.—ELSIE, *Leicester*.

Celeriac.—I do not think we make nearly enough use of this root, and some other vegetables in this country; for instance, stewed Leeks, stewed Salsafy, French Beans, Tomatoes, Artichokes, &c. All of the above, when cooked nicely, may be served up as second course dishes, and each vegetable eaten for its own sake alone. Celeriac is something like a rough-skinned Turnip, and when cooked is a very delicate vegetable. The roots may be boiled in stock, milk, or water, and the water will be found excellent for flavouring soups, stews, and sauces, having a very strong flavour of Celery; the roots are more economical than the Celery, as they keep better. The roots vary in size, and I find that the medium-sized are the best. If too large they not only seem to lack flavour, but are very often spongy in the middle, and when cooked are very pappy eating. *To prepare*:—Scrub the Celeriac in water as you would a Parsnip. Put on the stock, milk, or water to boil. Peel the Celeriac, and at once, before it discolours, throw it into the boiling stock, &c., and boil slowly till tender, but on no account make it too soft. When done, at once remove from the stock or water, and keep hot in a basin placed over a pan of boiling water until wanted. Put aside the stock or water. Now moisten a tablespoonful of flour with cream (if possible) or milk, smooth it until free from lumps, then pour over as much of the liquid in which the Celeriac was boiled as will make a sauce similar to melted butter. Stir till it boils, then add to a half-teacupful of sauce a piece of butter the size of a Filbert, stir briskly, but do not boil the sauce after adding the butter; add salt to taste, and throw in a half-teaspoonful of Parsley previously washed, picked, dried in a towel, and chopped up very fine, and at the last moment before dishing add a few drop of Lemon-juice. Place the Celeriac on to a round of toasted bread, or not, as wished. With a knife make a cross on the top of the Celeriac, cutting through the root half-way only. This makes four divisions, as it were, and yet by cutting only half-way through the root keeps in form as if whole. Cover it over entirely with the sauce, and serve up hot. Another way is to peel, thin slice the root, boil till tender, and serve up as above. A good salad may be made of cold boiled Celeriac sliced, boiled Potatoes sliced, boiled Beetroot sliced or chopped, and sliced hard-boiled eggs, if liked. Oil and vinegar to taste is tossed among the whole. It seems to me a strange combination of flavours, but I am told that in Germany the above salad is served with pancakes. The above quantity of flour and butter is for one root only; more must be used according to the quantity of Celeriac required, and, if liked, a blade of Mace and a few whole white Peppercorns may be put to the milk or water while cooking. The stock will not require this latter to be added.—P.

Goldfish.—(See p. 494.) Great care must be taken of goldfish, as they are very sensitive; and hence a loud noise, strong smell, violent or even slight shaking of the vessel will sometimes destroy them. Small worms, which are common to the water, suffice for their food in general; but the Chinese, who bring goldfish to great perfection, throw into the water small balls of paste, of which they are very fond. They give them also lean pork, dried in the sun, and reduced to a very fine and delicate powder. Fresh river water must be given them every day. Care must be taken to collect the spawn, when seen floating on the water, as otherwise it will be destroyed by the fish themselves. The spawn is put into a vessel, and exposed to the sun, until vivified by the heat. Goldfish, however, seldom deposit spawn when kept in vases. In order to procure a supply, they must be put into reservoirs of a considerable depth, in some parts at least, well shaded at intervals with Water-Lilies, and constantly supplied with fresh water. — From "Enquire Within."—CELER ET AUDAX.

—— A friend of mine, anxious to flower some delicate water plants, passed a tube of hot water from his hot-house through his pond outside, in which the plants were, and in which were also gold fish which had never increased. The very next year his gold fish spawned wonderfully, and the increase was very great; he sold pailfuls of young fry.—O. FOSTER.

The value of leaves.—A distinct illustration of the value of leaves was presented to me many years ago in the loss of all the leaves of a Plum-tree near midsummer, by what was termed leaf blight. The Plum was a small and very sweet variety, known as the small Yellow Gage. When the leaves dropped, the Plums were about two-thirds grown, and they had not acquired any of their sweet flavour, the taste being bitter and immature. The heavy crop of small specimens were conspicuous on the bare branches, and the fruit remained stationary in size and unchanged in quality for about three weeks, when a new crop of leaves came out. The young green Plums then resumed growth, gained their naturally rich, golden colour, and their sweet honeyed flavour. A less pleasing instance occurred in a thrifty vineyard of several acres, which had just come into fair bearing. The owner, pleased with his success, resolved to have an uncommonly fine crop by removing the leaves so as to let in the sun on the growing and ripening grapes. He accordingly cut off all that portion of the shoots immediately above the bunches. The grapes, thus deprived of the food which the leaves had furnished, ceased growing. They were small in size and destitute of flavour. But the loss of the crop was not all. The check given to the vines nearly ruined the vineyard, and it was subsequently neglected, and came to nothing. Such facts show the importance of caution in summer pruning, or in cutting back the shoots of newly-transplanted trees after the buds have opened.—*Country Gentleman*.

Destroying wasps' nests.—I have destroyed thirty-eight wasps' nests this season in a most effective and economical way, all within a radius of 300 yards. At one time they seemed to threaten the destruction of all Plums, Pears, and Grapes; in fact, everything that came in their way. Hanging bottles up and other traps is worse than useless; they get full of butterflies, moths, bluebottle flies, &c., but few wasps. My plan is to search for their nests and destroy them by means of boiling water. Do not pour the water down the hole or the entrance to the nest, but simply stop the hole up and probe with a spade until the nest is found; then empty about two gallons of hot water on the by this time savage foe. Wasps, grubs, and everything will be thus scalded in an instant. A little stratagem must be used even in storming a wasp's nest, for they are at times most determined opponents. I have taken or destroyed, as I have said, thirty-eight nests, and received very few stings indeed. In one nest I had the curiosity to count the mature wasps, and found the total to be over 4,000, besides the young grubs or brood in all stages of growth from the egg upwards.—H. D., *Norwich*.

15030.—**Earwigs.**—Disliking moisture, these are more common on hot, dry soils than on damp ones, and plants that are often syringed are more free from earwigs than those which are not. There is no destroying agent which gives really good results, and, therefore, the cultivator must resort to the traps. These are many, but for all practical purposes the following are sufficient. In all cases, the insects should be thrown into boiling water when caught. Bean or other stalks, cut into lengths of from six inches to nine inches, and placed in the plants, or crumpled newspapers used in the same manner, will catch a large number. They should be opened or shaken out every other morning. Flower-pots partly filled with Moss, and regularly examined, also make good traps. Towards the end of the season, if pots partly filled with Moss or hay be set in dry places, under thatch, in Apple stores, &c., vast numbers will be caught. (From "Garden Pests and their Eradication.")—CELER ET AUDAX.

—— If "A. O." procures a ripe Pear, and cuts it in slices, putting one or two in a flower-pot or drain-tile, laying them on their sides, he will soon clear his green-house or garden, as there is nothing that earwigs are so fond of.—WORSLEY.

14895.—**Utilising frame.**—How a frame can be best utilised now, would depend upon what class of plants are valued most. Some people would fill it with Neapolitan Violets. I have a friend who would be certain to fill the only frame he had with Cos Lettuce for the winter. Another might prefer Carnations and Picotees. Cold frames are used for all classes of plants that do not stand the winter out of doors. "Ignoramus" should say whether he prefers flowers or vegetables.—J. D. E.

14967.—**Heating small greenhouse.**—Will "H. A. R.," who, on page 484, describes an arrangement of pipes attached to stove for heating small greenhouse, kindly tell me the number of the stove in question?—VERNIA.

15065.—**Slugs and snails.**—Slugs and snails wander in the night to feed, and return at daylight to their haunts; the shortest and surest direction is, "Rise early, catch them, and kill them." If you are an early riser you may cut them off from their day retreats, or you may leave Cabbage-leaves about the ground, especially on the beds which they frequent. Every morning examine these leaves, and you will find a great many take refuge beneath; if they plague you very much, search for their retreat, which you can find by their slimy track, and hunt there for them from day to day; lime and salt are very annoying to snails and slugs; a pinch of salt kills them, and they will not touch fresh lime; it is a common practice to sprinkle lime over young crops, and along the edges of beds, about rows of Peas and Beans, Lettuces, and other vegetables; but when it has been on the ground some days, or has been moistened by rain, it loses its strength. Snails are particularly fond of bran; if a little is spread on the ground, and covered over with a few Cabbage-leaves or tiles, they will congregate under them in great numbers, and by examining them every morning, and destroying them, their numbers will be materially decreased. To kill slugs take a quantity of Cabbage-leaves, and either put them in a warm oven, or heat them before the fire till they get quite soft; then rub them with unsalted butter or any kind of fresh dripping, and lay them in places infested with slugs. In a few hours the leaves will be covered with snails and slugs, which may then be destroyed in any way the gardener may think fit. Slugs are very voracious, and their ravages often do considerable damage, not only to the kitchen garden, but to the flower-beds also. If, now and then, a few slices of Turnip be put about the beds in a summer or autumnal evening, the slugs will congregate thereon, and may soon be destroyed. From "Inquire Within."—CELER ET AUDAX.

GARDENING ILLUSTRATED.

Vol. VII. NOVEMBER 21, 1885. No. 350.

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PRIZE HERBACEOUS PLANTS.

To beginners in growing hardy flowers, the selection of kinds and time of planting present difficulties which nurserymen's lists do not simplify very much, as the choice there is too varied and all are highly praised. Beginners are just wishing for a dozen or two dozen of the very best kinds, so to betake themselves to flower shows and note the names of the prize-winners is an easy way out of the maze, they think. Sending for these prize sorts, it may be at an unsuitable time, and planting them in a bad site, they wonder next season why they cannot compete, as all their bloom is an odd, ragged specimen; and hence, many declare hardy flowers a fraud, and give up the cultivation of the true flowers of the garden, and remain lop-sided florists all their lives, slaves to annuals or bedding-out. Novices should remember that any hardy border requires at least two years after planting ere yielding much flower. Often a very small bit is planted, which may not send up a spike the first year, or such a "wee miserable" as to give no idea what a big plant of it in full beauty is like, after some years' growth. Take Spiræa palmata as an instance of this; from a first weak flower, no one could conceive the beauty of a large clump.

Again, most good things are very slow growers and often shy in blooming, beyond other herbaceous plants that are not prize-takers. Any-one sending to a nursery for a dozen of the best plants, and expecting to be able to cut twelve spikes from them the following year, will be wofully disappointed. It takes a few dozen varieties well grown to enable a competitor to cut a first-class dozen spikes for any day in August or September. A wet week, or a windy one, may work ruin to many promising spikes of bloom; while a season of drought is equally trying. Hence, the necessity for many species, and many varieties of the best species, being grown. If this is true of any one show-day, the florist who would compete at many shows from June till September must, therefore, have

A COLLECTION OF A RATHER EXTENSIVE KIND. Sometimes the prize schedules say that exhibits are to be "twelve border herbaceous, *genera*." Now, beginners in competition must note this, and, if they have the double white Lychnis and the double scarlet in good bloom, only one of these can be staged, as these are but varieties of one genus, and only one of each genus, or class, is to be allowed. It is, of course, wise to grow both of these first-class plants, as one may be out of flower, while the other is at its best on show-day. If the weather is hot, it may be necessary to put a shade of some dark material over one plant, while watering the roots well at sunset, lest the flowers wither away at the bottom of the spike, ere the buds higher up have expanded. Or, in dull wet weather, a good plant may need a close glass over it, so as to keep it dry, and add to the little heat there is, in order to get it in bloom by a certain day The way to regulate this shading and glassing is not to be learnt from books, but by practice, and even adepts are deceived on occasion. In bunching or making-up the show-stand, it is well to observe that too many are not of one colour, but a harmony of contrast prevails, and that these are placed so as to help the general effect of the stand, while the size of each lot is about equal, and the height of each is not too marked—but the tallest place at the back always. The supply of water should be ample, as in crowded rooms in hot weather a fine stand may so droop as to be "cast" entirely by the judges. The tubes, therefore, of the stand should be rather deep and wide and filled to the brim. In staging Liliums, great care must be taken that the dust from the anthers is not speckled over the petals. Fine cotton neatly packed around the centre of the bloom will prevent this in carriage, but the stamens must not be broken in unpacking the cotton. Some florists are so enamoured of competition that they only obtain those plants which flower during the season of shows. This may pass if a garden is very small, and the aim of the owner is simply to gain prizes. But if a garden is to be any good to a man at all, it must be always showing a flower alike in December and January as in June and July. If there be any language of flowers at all, one of the first expressions of the baby bud is, "Love me for myself alone." To grow them and show them from love of them, and to help others in the world to do so also, is the true florist's pleasure, —"give and take." The man who grows them out of love for his own vanity, or to spite a brother of the craft, lives in a garden full of the vile weeds of worry, hearts-dis-ease, and such-like, which cut at the very root of true floriculture. Flowers should not be made the ministers of evil passions, but ought to soothe by colour and perfume as Roses and balm to a weary heart and Pansies or Heartsease for delight. Better not to exhibit at all, if strife is propagated thereby. When malice is struck and the seeds of ill-nature sown, flowers have failed of their mission; and, the soil being unkindly, rake and work it no more, but leave it to the Mosses and Grasses of time. In spring last, in a hospital, I saw a blind girl actually radiant with pleasure over a bouquet of flowers fresh plucked, and her face shone like a lamp new lit, so that I had to be re-assured as to her being stone blind. With her speaking fingers she felt out each leaf and petal's beautiful secret, now expressing one kind of joy and now another, till some of us were not quite sure who were the really blind ones or who saw the most after all. The flowers had accomplished their mission here, at any rate, and would always do so, if we would let them, and why shouldn't we? Let us grow the best for the best purposes, and open exhibition and personal inspection in the cool evening are not in rivalry, but exercise a good influence in the world. What are really, then,

THE BEST HERBACEOUS PLANTS to grow is a problem which I will endeavour to solve, but which every florist solves every season anew to his own satisfaction. No two men agree, and I have tried many on a list of twelve; so, after all, a few additional must be enumerated, for varying sites, soils, climates, and seasons from Cornwall to Caithness. Of one thing I am sure, let a new sort come in, and, though we differ as to its value, we all seek to get a plant and pay big prices, too, for it. To have what is common is floral poverty; to have what is rare, though in itself not so good as some that are common, is to possess an herbaceous Koh-i-noor, which, set on a stand, casts a glamour over a judge's eye. These finds are rare, and of all the very excellent stands at the Glasgow show in September, none were new; as a wag put it—"the whole of them could come to the show themselves, they knew the road, being there so often." For an

EARLY JUNE SHOW, a dozen from the following first-class sorts would do:—

Anthericum Liliastrum major	Lychnis Viscaria splendens plena
Asphodelus ramosus	Ononis rotundifolia
Camassia esculenta	O. Natrix
Chrysobactron Hookerii	Ourisia coccinea
Cypripedium spectabile	Primula japonica
Dodecatheon Jeffreyanum	Pyrethrum Princess Alexandra
Erigeron aurantiacum	P. Kleinholtz
Iris (Florentine)	Saxifraga pyramidalis

Any competitor growing these can have no fear of the judge's decision, and all are true hardy plants. If a duplicate of some of them be put in a shadier or sunnier corner, it prolongs each plant's bloom season, and affords choice in cutting and a margin for accidents. The law used to be, only one spike of each. Now, bunching many together in round clusters, set in leaves, allows very great latitude indeed, and gives a very showy look to many common things. This lets a big grower dominate the "one plant of each man," who prides himself on having no duplicates, as he can cut a bunch while the other can only cut one spike, which looks thin. In cold Junes, many are grown under glass, which, though of hardy sorts, are not hardy grown, and of all these the novice must consider. If he wishes only to deal fairly—open borders and no protection—he will be outrun assuredly. Either follow the fashion, or be ostracised from competition, as the allowance nowadays is so great in regard to what are truly or not truly herbaceous and hardy. For a

SHOW EARLY IN JULY, we have a burden of riches in flowers to choose from; "one dear charmer" after another comes before the mind's eye. To give variety of colour, form, and habit, the following are reliable anywhere:—

Astragalus alopecuroides	Gaillardia grandiflora Admiration
Anchusa italica	Geum coccineum fl.-pl.
Aquilegia glandulosa	Iris germanica alba
Bupthalmum salicifolium	Lilium Martagon album
Campanula persicifolia fl.-pl.	L. pardalinum
Centaurea aurea	Lychnis chalcedonica fl.-pl.
Dictamnus alba	L. vespertina fl.-pl.
D. fraxinella	Morina longifolia
Delphinium cardinale	Orchis foliosa
D. (Madame Henri Jacotot)	O. maculata superba
	Potentilla Dr. André
	Spiræa palmata

Though varieties only, and not genera, are in the schedule, it is better not to have two Liliums or two Aquilegias, &c., as this does not look so well as an exhibition of more varied sorts. The bloom that is just coming to its best is to be preferred to the one just going past it. It is a kindly rule and a wise, "to hold out a helping hand to the young and rising generation."

IN AUGUST we have no lack to select from, yet in many gardens, herbaceous plants and

Roses are not in bloom—round Glasgow at least. The following, however, are mostly available:—

Achillea ægyptiaca	Lilium Szovitzianum
Aquilegia chrysantha	Mimulus cardinalis rubra
Campanula Hostii alba	Onosma taurica
Dracocephalum speciosum	Pentstemon barbata
Gentiana gelida	P. Torreyi
Gladiolus cardinalis	P. Cameroni
Harpalium rigidum	Scabiosa caucasica
Liatris spicata	Statice eximea rubra
Lychnis Haageana	Stobæa purpurea
Lilium chalcedonicum	Tricyrtis macropoda
L. giganteum	

For SEPTEMBER the competition is keenest. Some of the finest sorts bloom about the first week, and many that have been late in flowering from previous lists, for August especially, send up grand spikes very often at this time. With these we can select the following:—

Anemone Honorine Jobert	Lilium auratum
Aster Amellus	Montbretia crocosmæflora
Coreopsis lanceolata	Phygelius capensis
Disa grandiflora	Statice latifolia
Helenium pumilum	Senecio pulcher
Helianthus major	Tritoma Uvaria glaucescens
H. multiflorus fl.-pl.	Tritonia aurea
Hyacinthus candicans	Veronica longifolia subsessilis
Lilium speciosum roseum	Yucca filamentosa
L. tigrinum fl.-pl.	

In the foregoing lists, no repetition of plants occurs, but in many districts some will be in flower in July which are detailed in the list for August, and so on; but what is to be aimed at is to get plants as here given, or others worthy and reliable as they are, ere attempting to compete at flower shows. At Glasgow in July, a magnificent spike of Lilium giganteum was shown in a herbaceous stand, but "cast," I believe, by the judges, as not hardy. Now it is quite hardy, though the one in question may not have been border-cut. On the coast this glorious Lily blooms freely every three years, so, to have it yearly, several bulbs must be grown. Now in September, Lobelia cardinalis was shown and passed, and it is not hardy by half. Such are the freaks of our "Daniel's come to judgment." Yet there is no appeal, so "what can't be cured must be endured."

There is one piece of advice that I would earnestly press upon beginners in old hardy flowers, whether competitors or those who wish to grow them for the love of them—and that is, get by all means the best kinds, most of which are here detailed, but in collecting do not, if you have space at all, refuse anything at first. What may look weedy at one season may turn out very choice at another. What this year is discarded in prize stands may, a few years hence, be the lauded prize-winners and sought-after plants when the fashion changes. Grow everything is my practice, and of course to fastidious critics a grievance, as my borders are never flowerless, and in the commonest sort beauty lies and often great charm. While the "severe taste" is waiting weary weeks until a pet kind condescends to appear, and, once its brief reign is over, waits another while, until the next highly-desired Queen ascends the throne (which is without even a Regent in the interval), my love-all and grow-all taste is in daily excreise, with the crowding, gay confusion around. The

TIME TO PLANT,—"Ay! there's the rub," say the beginners. To an old hand, any time that is convenient, except for bulbs—which are mostly to be planted in autumn—is satisfactory enough. An Ayrshire man says the rule for cutting walking-sticks is to cut them whenever you see them, for the chances are that when you come again they are away or lost in the wood! However, in autumn, spring flowers transplant best and all early-blooming bulbs. Then for autumn flowers, and generally all else, shift as soon as the leaves wither and blooms are quite past. If March is not cold, with east winds, but mild and showery, the great majority of plants are just coming up and transplant well. If October is not too wet, I find it a first-rate time to transplant also. Always protect newly-planted things if the weather is severe, either in spring or autumn, by putting those that come in pots into a frame, as the indiscriminate planting of all out is sure to help trade, by a fresh order, for the lost loves to be restored. Many put themselves to great trouble in planting, but if the soil is at all fit to grow Potatoes in, it will do well. Manure, peat, sand, lime, leaf-mould, clay, &c., can be applied where the ground is lacking in these materials, or to the plants that specially need them, but in ordinary earth, well dug and cleaned most herbaceous plants will grow very well. Once established, extra feeding can be given, but to begin with, poverty is better than riches. For Liliums, peat, sand, and well-rotted mould and yellow loam is good, and put the bulbs at least six inches deep; for Iris and Orchis heavy soil and wet situations are best; for, Aquilegias, shady spots and poor soils will do; and for Campanulas, any place is welcome. Deep strong soil for Delphiniums, Asters, and Potentillas. Do not keep shifting plants about, but if doing well, let well alone. If Radical in politics, the less you bother the roots of flowers the better; be Conservative of the spade's use, but a true Liberal in raking, hoeing, and weeding. If you have boxwood, you will have slugs, and will need a lantern in April and May, to wander like a will-o'-the-wisp over the borders, in moist evenings, till you have slain all your enemies. If birds, cats, mice, moles, or thieves abound, exercise your ingenuity in restoring the balance of Nature. If your garden is very sunny, crowd your plants and get a few shrubs and big plants for shade and shelter. If exposed and lying cold, plant wide apart to let what sun there is all round them, and stake carefully every one you can. The last, but not least, rule is, not to allow yourself to be swayed by every critic's opinion, and alter beds, plants, &c.; this is a very common error, and brings only labour to your hands, not flowers.

So far as regards prize herbaceous I have endeavoured to keep to the "golden mean" of common sense, and to what is possible to ordinary amateurs. Once started, much that looks hard or confusing on paper will come clear enough, and the man who begins to grow for competition will, I trust, not stop there. In every plant there is pleasure; the leaf, form, colour, height, or time of flowering will be found useful even in small gardens. Every year it can be gone over, and if any is too large in clump, curtail it; if any are to be discarded, introduce something new, so as to increase knowledge and pleasure at once. Thus, a constant stream of Flora's lovely children, from the stately and tall, to the modest and small, can be marching in gay procession from the garden-gate to the furthest wall. In the van we have that company of innocents, the Snowdrops, while the bee-enticing Crocuses fill their cups at the fountain of February's tears, just as the winds of March fall to a whisper and we come out to "consider the Lilies." With April come Primroses and Pansies between the showers and sunshine, while, as we linger beneath the "May," and hear the voice of the water falling in unison with the notes of the mavis, we see the dark-eyed Hyacinth and satyr-like Orchis flirting beneath the shade. The soldier-like Irises, erect and brilliant in all colours, wave their leafy lances as they guard the Queen Rose in flowery June to her throne; while Delphiniums, Foxgloves, and tall Campanulas, floral Grenadiers, bring up the reserves. These mass in big battalions by the side of the fast-falling shadows of autumn. Asters in stars of lavender colour, Sunflowers in black and gold, Phloxes like snowy peaks, appear in far September's clear air. The tawny Tiger Lily and golden-banded Lilium auratum stand strong in October's fluttering fall of leaves. November just gives light enough for Helleborus altifolius to prophesy of coming winter's storms and pitying snows, that hide the ruin made by the "bands of Orion."

The summer is past, we have seen it all, and surely learned of it too, noting the analogies between flower life and human life, from the fair youth and baby blossom to full maturity and beauty of perfect form and fellowship. All come and go to the quiet grave under the snows of Time, which falls on man and flower alike, until by fresh contact with our mother earth we rise, Antæus-like, to a stronger vitality in a new summer and new life. A. SWEET.

15115.—**Procuring Gooseberries.**—All the Gooseberries mentioned in your list may be obtained from Messrs. Richard Smith & Co., St. John's, Worcester.—F. MARTIN.

—— Mr. Bottomley, Greetland, Halifax. — NADIN ALVASTEN.

—— Samuel Birchenall, Heaviley, Stockport.—F. B., *Davenport.* [No doubt many other fruit houses would get the plants for purchasers, and they can be obtained from the large Sheffield and Yorkshire nurseries.—ED.]

TREES AND SHRUBS.

SHRUBS FOR ROCKWORK.

IN very large arrangements of rockwork there is scarcely any limit to the shrubs that can be employed in the planting of it; but in many places the rock-garden, unless more than usually extensive, if furnished with shrubs at all, is generally reserved for those that do not succeed under ordinary conditions, and such as are of so miniature a growth that they would be lost among their stronger neighbours in a mixed border, or are too small to form a feature by themselves, unless grouped together in a spot especially reserved for such things. The shrubs that are evergreen in character possess the great advantage of being attractive at all seasons, even during the winter, when the majority of herbaceous subjects are below ground. A few good distinct shrubs for such a purpose, many of which are of quite a miniature style of growth, and by no means likely to outgrow the space allotted to them, are included in the following list:—Genistas in variety, of which the best for this purpose are the Spanish Furze (G. hispanica), a dense hemispherical bush, which is quite a mass of golden blossoms about May; and Genista sagittalis, triquetra, tinctoria fl.-pl., and ephedroides, the two first being procumbent shrubs, with curiously winged stems, and clusters of yellow flowers. The common Dyer's Broom (G. tinctoria) is so well known, that its double-flowered variety needs no comment, except to say that in common with most plants, the blooms of the double kind remain a longer time in perfection than do those of the single. G. ephedroides is a good example of plant mimicry, as, except when in flower, it bears the greatest resemblance to an Ephedra. These latter plants also do well on the rockwork, and form clumps or masses a good deal like the common British Horse-tails. All the above do well in a sunny spot; and in the case of the Genistas this is necessary, if it is intended to flower them as well as possible. Some kinds of Berberis, especially stenophylla, are very beautiful when crowning a knoll, or in some such spot, as the long, graceful branches are disposed to advantage; but a considerable space is needed to ensure its full development. Such cannot be said of B. empetrifolia (by the way, one of the parents of stenophylla) a small growing bush with narrow leaves, which, in a nook or corner where partially shaded, will thrive for years without attaining undue dimensions. The little Himalayan B. concinna, with small round leaves of a beautiful silvery whiteness underneath, is very pretty, but somewhat liable to be injured during severe winters.

Another desirable class are the low-growing Cotoneasters, such as buxifolia, microphylla, and especially congesta, which three are arranged according to the vigour of their growth. They are attractive at all times in foliage, and additionally so when in flower or fruit. Some of the Daphnes are very suitable, and where situated that the roots are never allowed to become too dry, they do well, especially if the compost be at least partly of a vegetable nature. Special mention may be made of the reddish-coloured D. Cneorum, and the white D. Blagayana, both of which have highly fragrant blossoms. The green and variegated forms of Euonymus radicans are good rockwork plants, besides which there is another kind — viz., E. nanus, a low-growing shrub with linear leaves, and long, slender, gracefully-disposed shoots. Hypericums of all sorts may be included in the list, and of these many kinds are especially valuable from bearing their golden blossoms at the end of summer, at which time flowers are getting scarce. Ilex crenata, or Fortunei, and its variegated variety, is a little, compact shrub, with dark green, sharply-pointed leaves, always bright and cheerful. In the variegated kind, the ground colour of the leaf is mottled more or less with gold. This variegation is especially effective if the plant is grown in the sunshine. So slow in growth is this, that it is quite exceptionable to meet with a specimen much more than a foot high. Hymenanthera crassifolia is a low-growing shrub, without any very attractive features, except when in fruit. The berries, being freely produced, and white in

colour, serve to render it during the autumn rather attractive. To fruit well, it needs a sunny spot. For all the varieties of both the major and minor Periwinkle spaces may be found, as they will thrive almost anywhere, and flower for a long period; besides, the variegated forms have their markings well defined.

The golden-leaved Ribes, upon which is saddled the long name of Ribes alpinum pumilum aureum, is a low bush, the foliage of which during the early part of the summer is of a bright, golden hue (if grown in full sunshine), but as the season advances it becomes almost green. It is eminently suited for rockwork. For sunny spots, the Sun Roses (Helianthemum) are very bright and showy, besides which they will thrive in a dryer position than most things. There is an immense number of varieties of Sun Roses, of all shades of white, yellow, and red; these, when seen in a mass, are very conspicuous even at a distance; but to see them at their best, the early morning is by far the most favourable time. Ivies are good rockwork plants, but in planting them it should be remembered that, at least among the stronger growing kinds, when they once obtain possession, few subjects can hold their own against them. Some of the weaker sorts can, however, be planted almost anywhere without injuring their associates. The clustered Ivy (conglomerata) is quite distinct from any of the others, forming, as it does, a sort of spreading bush, with thick, stunted branches closely studded with dark green crimped leaves. Cassina fulvida, also known as Diplopappus chrysophyllus, is a Heath-like shrub, with foliage, especially when young, of a bright golden colour. It forms a neat, pretty little bush, less attractive, however, when studded with blossoms than at any other season. The flowers are of a dirty-white colour, and borne in composite heads on the points of the shoots. The Muhlenbeckias are curious New Zealand plants, nearly allied to the Polygonums. Their principal characteristics are long black wiry stems, and small round leaves of a light greyish green tint—nothing particular, perhaps, yet when undisturbed they form a large tangled mass of shoots and are then far from unattractive. The peculiar climbing Hydrangea scandens is seldom seen to such advantage as when allowed to attach itself to a large stone over which it will ramble and frequently bloom. A couple of beautiful miniature flowering shrubs come next, viz., Philadelphus microphyllus, which is an exact counterpart on a small scale of the common Mock Orange, and Spiræa bullata, a perfect little gem among shrubs. It forms a dense mass only a few inches high, which, towards the end of summer is thickly studded with clusters of deep rose-coloured blossoms.

The order Ericaceæ is largely represented among plants suitable for rockworks, and in their case peat soil or, at all events, compost largely of a vegetable nature, is necessary to their well doing. All the low-growing Heaths, of which there is so great a variety, may be used for this purpose, as well as the creeping Gaultheria Shallon, which will soon cover a considerable space, and flower freely even in a heavily shaded spot. The pretty bell-shaped pinkish-tinged blossoms are at their best in May and June. Gaultheria procumbens is also a neat little plant, requiring a cool, moist position for its well-doing. The smaller Vacciniums are also well suited for spots in the rock garden, as well as Pernettyas, Menziesias, Cassiope, &c. Some of the alpine Rhododendrons must be added to the list, among them being R. ferrugineum and hirsutum from the European Alps, and anthopogon and lepidotum from the Himalayas.

Of Coniferæ a great many of the miniature kinds do well on the rockwork, and are less liable to injury than if grouped with other larger and more vigorous shrubs. Of Lawson's Cypress there is a variety—nana—that forms a small globular bush of very slow growth, while several of the Junipers, from their habit, are effective rock plants. As examples may be mentioned the Savin and varieties, J. procumbens, which creeps along quite close to the ground, J. hemisphærica, a little dense mass, sometimes called the Hedgehog Juniper, and J. squamata, a peculiarly greyish-coloured creeping kind. Several of the dwarf Retinosporas are pretty little bushes, especially leptoclada, obtusa nana, and pygmæa, with R. filifera, and R. tetragona aurea. Thujopsis lætevirens is a miniature form of the popular T. dolobrata, and, as such, always bright and cheerful. The antipodean Podocarpus alpinus is a low-growing, pendulous-branched, Yew-like plant, for which a situation can be readily found, as also for the distinct habited Fitzroya patagonica. The dwarf variety of the American Arbor-vitæ, commonly known as plicata dumosa, is a small globular bush of a light-green colour, of very slow growth. The numerous dwarf varieties of Abies excelsa are all fitted for planting where miniature shrubs are desired, as they are slow in growth, and never attain the character of anything but dwarf bushes. The above by no means exhausts the list of shrubs that may be employed for rockwork; but it serves to point out some of the many that are available for that purpose. ALPHA.

DOUBLE-FLOWERED PEACHES.

THERE is a strange effectiveness about these which makes them very precious for the garden landscape, although our climate does not in all parts allow them to make good growth and

A Double-flowered Peach.

bloom. In the London district they are sometimes very handsome, both in bud and blossom. The curious suddenness of the effect, so to say, of a brilliant double Peach running out of a group of shrubs is such as cannot be got from anything else. Anyone having artistic ideas in planting would find such trees most useful. Some pretty specimens may be seen in Kensington Gardens, and doing fairly well; but they are mixed up with the mean undergrowth, which spoils the good effect of all the things in our shrubberies. Such plants should be allowed to tell their our story, not only as regards the colour of the flower, but as regards freedom from mean and shabby surroundings, which confuse the eye and prevent it from realising the full beauty of these valuable trees. There is a good variety of colour, deep and bright crimson, and also a pure white, which comes in to help the many white-flowering trees of early May, and yet it is quite distinct from all. Warm, well-drained soils appear to be essential to the healthy growth of double Peaches. If such good results are attained near and within the circle of smoky London, naturally far better would be attained in country gardens in favourable situations. G.

REPLIES.

14954.—**Daphne Mezereum.**—If cuttings of this plant are given a twist about an inch from the base, and the lower part doubled up, loop-shape, and thus inserted, they will grow readily. Seedlings, however, grow faster, and make better plants than cuttings. Spread a little leaf soil around an old plant, as far as the branches extend, and allow the seed to sow itself in this, leaving it undisturbed till the young plants are fit for removal.—J. MARTIN.

15197.—**Evergreen winter-berrying shrubs.**—The Arbutus or Strawberry-tree, the Aucuba japonica or spotted Laurel, Taxus, or Yew in variety, Box in variety, Hollies in variety, and Laurustinus are all good evergreens to plant. None of these grow very tall except the Yews, which can be bought pretty large, and will thus prevent the appearance of flatness to the beds. I would suggest that among all these evergreens some taller deciduous trees be planted, such as the Mountain Ash, the flowering Currant, purple Beech, white Broom, Dogwood, twigs red, and Guelder Rose. This would take off the funereal aspect such a bed would have. If very low plants are wanted for covering the ground underneath those already named, use the Cotoneaster, berries red, Carpet Juniper, and St. John's Wort.—C. F. DAVIS.

FRUIT.

SEASONABLE NOTES FOR AMATEURS.

NOW is the time, while the soil is still warm, to plant all kinds of fruit trees. Do not have anything to do with those two most terrible words "too late." These two words have sealed the fate of hundreds of amateurs and hundreds of gardeners. I propose now to give you a short list, but I hope a good one, of those varieties which have served me well for a number of years:—

APPLES.—Kitchen: Annie Elizabeth, Baldwin, Frogmore Prolific, Grenadier, New Hawthornden, Wellington, Dutch Mignonne, Warner's King, Barnack Beauty, Mère de Ménage, Northern Spy, Lord Suffield. Dessert: Blenheim Orange, Duke of Devonshire, King of Pippins, Cox's Pomona, Red Juneating, Cox's Orange Pippin, Maltster, Bess Pool, London Pippin, Court Pendu Plat, Golden Harvey, Ribston Pippin. If I had room for only two varieties of Apples, I should without hesitation name Barnack Beauty and King of the Pippins. If room for four, I should add Grenadier and Annie Elizabeth; and if for six, Dutch Mignonne and Warner's King. In these six varieties you have the cream of my collection. In planting Apples—in fact, all fruit trees—keep the roots well up to the surface. The finest and clearest Apples I ever saw were at Dale Park, Sussex,—bush trees planted on the surface, and moles of earth raised round them.

PEARS.—Our best Dessert Pears we grow on double cordons trained to south walls, and find this system of training *the* system to cover walls quickly. The varieties we grow on all aspects—barring north—and we find the following the best:—Dessert: Bon Chrétien, Fondante d'Automne, Thompson's Pear, Louise Bonne of Jersey, Marie Louise, Bergamote Esperen, British Queen, Beurré d'Esperen, Passe Colmar, Glou Morceau, Josephine de Malines, Beurré d'Amanlis. The most delicious Pear in the collection (Thompson's) grows well on west walls. And here I may state that my lamented friend Robert Thompson, when describing this Pear to me at the Royal Horticultural Gardens, mentioned that Van Mons sent it to him as a seedling, and, on visiting the Gardens some years afterwards, made inquiries about it. Mr. Thompson gave it a most excellent character. Speaking as to its name, Van Mons suggested it should be called Thompson's Pear. The next in point of flavour is Fondante d'Automne, which is as rich as that fine old Pear, Passe Colmar, which, in the sunny south, is superlatively good. Of very late Pears, I must not forget Beurré Rance; but here—Northamptonshire—it seldom becomes melting, while in the south, where I have tasted it in March, it is simply unique. For standard Pear trees, there is nothing here that is so good as Beurré Hardy, although we grow Bon Chrétien and Beurré de Capiaumont. For stewing, Catillac is the best.

PEACHES AND APRICOTS.—The Peach—a noble fruit—is not grown extensively by amateurs, I shall therefore only name two varieties Royal George and Late Admirable.

Apricots amateur gardeners manage remarkably well—in fact, I have seen in amateurs' gardens very large crops of this delicious fruit. The two I should recommend to be grown are Moor Park and the Royal. I am aware that, where quantity is looked for to preserve, the variety named Breda is the best.

CHERRIES.—Everybody likes Cherries, and a Cherry tree in an amateur's garden is indispensable. My favourite Cherry is Black Circassian; Bigarreau and Elton form a nice succession. But of all Cherries for usefulness the best is the old Morello. It gives us Cherry brandy for Christmas, makes the very best of all Cherry pies, and just now (November 2) we are picking them off north walls; they are relished to the full as dessert fruit.

GOOSEBERRIES AND CURRANTS.—These useful fruits do not get one half the attention paid to them that they deserve. For two varieties of Gooseberries my pick is Red Warrington and Whitesmith. For Red Currants, Cherry Red and Red Grape. Two whites are White Dutch and White Grape. Two blacks, Black Grape and Black Naples.

PLUMS.—Here we find Plums a most useful fruit, and the long season in which they last renders them doubly valuable. We began to gather Rivers' early in July, and from that time until now (November 2) they have been daily used, either for dessert or kitchen purposes. In fact, at this moment we have Coe's Golden Drop still hanging, and these may be described as bags of sugar. The following varieties we grow here:—Kitchen: Victoria, Prince of Wales, Pershore, Diamond, Magnum Bonum Red, Pond's Seedling; Dessert: Greengage, Coe's Golden Drop, Jefferson's Plum, July Greengage, Reine Claude de Bavay, Shropshire Damson. Among the dozen enumerated above, old Greengage is number one, followed by Coe's Golden Drop and Jefferson. But perhaps the most useful for preserving purposes is Pershore. Although it is nothing in flavour when eaten as dessert, the jam stands only second to Apricots themselves. It is a sure bearer, and an excellent pie Plum. Victoria and Prince of Wales for general purposes are all to be wished for, but the preference we give to Pershore for preserving. In conclusion, I may add that the Shropshire Prune-Damson bears here most excellently. It is by far the best for preserving purposes, although we grow Farleigh Prolific Cluster, and we have many young trees of the Kent varieties on trial. R. GILBERT.

Stamford.

Tomatoes v. wasps.—I have for several years past grown Tomatoes in vineries,—not just one plant, but a number of plants,—and my experience of the plants being obnoxious to wasps is identical with that of "J. C. C." (see p. 493). The wasps in your Yorkshire correspondent's neighbourhood must indeed be merciful, or of quite a different breed from those in this part of the country.—SOMERSET.

The best Apples—a suggestion.—The last two weekly meetings of the Astwood Amateur Gardeners' Society have been devoted to discussing the merits of Apples grown in the neighbourhood, and a large collection of sorts was shown. This is a practical way of obtaining information as to suitableness for a particular locality, and as this is the planting season, this is followed by practical lessons on the subject with small trees grown from pips. If this hint were followed generally, it would be useful and interesting. If I named one Apple only to recommend, it would be Cobham or Pope's Apple; it is of the Blenheim Orange type, but with me it is better looking, better flavoured, a sure bearer, and bears young. If I named two, the next would be the good old Keswick Codling, and for a third Worcester Pearmain.—J. HIAM, *Astwood Bank, Worcestershire.*

The best cooking Apples.—There is a good deal of truth in what Mr. Ingram says on page 493 with regard to the best cooking Apples—"tastes differ"—for here, in Somersetshire, Tom Putt is the favourite cooking Apple. So highly is it esteemed that many families will have no other while it is in season. The Tulip Apple is the next favourite, and not a bad one either, for it requires even less sugar than Tom Putt. To a certain extent they are local varieties, and they appear to suit the district very well, for they both invariably bear well, the trees as standards making compact heads. In Surrey and Sussex, the Old Forge is a great favourite, and very properly so, for the flavour is fairly good, and the trees bear pretty regularly; but in Somerset it proves to be a very unsatisfactory grower. The notes by the Editor preceding Mr. Ingram's remarks deserve the attention of all interested in fruit-culture, especially that part of it which refers to the practice of planting a lot of different sorts in our gardens, for in nine cases out of ten it would be better policy to plant half a dozen trees each of three or four sorts, than to plant one each of twenty different kinds. The proper way to set to work is to ascertain from a reliable source the names of a few varieties that are known to be reliable bearers in the district in which they are to be planted, and then to plant several trees of each sort, having regard, of course, to the selection of both early and late kinds. What is further said about having Apples in our gardens that the gardener knows nothing about is but too true, and this state of things will continue all the time so much indifference is shown by the planters of trees about preserving their names. My own opinion is that this state of things need not be, for it would not be a much more difficult matter for our nurserymen to send with the trees labels of an imperishable nature, than it is to have to write out the cardboard scraps now used. The imperishable labels made at Stratford-on-Avon would do if there are no better to be had. I have had these labels in use for twelve years, and they are as legible now as they were when I first had them; but I am not in favour of any particular label—if there is a better, by all means let us have it. My plan is that our nurserymen should supply an imperishable label with the trees, and that the purchaser should pay for it, for surely no one would object to pay a penny each more for his trees if he could get permanent labels with them; that is all the smallest size cost, and these I have proved to answer very well. If any one does object, he need not have them; but I am fully persuaded that there are many of both amateurs and gardeners who would be glad to get the labels in that way, as to get them in any other way involves extra trouble and expense.—J. C. C.

REPLIES.

15034*a*.—**Mulberry-tree.**—I should like to give my experience as to how to get a Mulberry-tree to bear quickly, as I think the plan is not generally known. I once had a very large arm of a tree given me which required several men to move it. I sawed it in four parts, cleaned off the cuts with a knife, dug holes about three feet deep, filled in the holes with some nice soil, and all four of them grew, and I had Mulberries in abundance in three years. This is the quickest way to get a tree. The sun should be kept from the branches the first summer before the sap begins to rise, and their growing would be almost a certainty; this might be done by winding straw or hay bands round them, and damping them now and then.—D. C., *Hounslow.*

15100.—**Kentish Fill-basket Apple.**—I do not see why the Kentish Fill-basket Apple should not succeed near Glasgow. My garden is situated high, and we have very severe winters. The soil is ordinary garden soil, with a substratum of blue clay; but these trees never fail, and the Apples are an enormous size.—GREY FRIARS, *Staffordshire.*

15126.—**Caterpillars on Gooseberry-trees.**—Apply no gas-lime at all to your trees. It is a kind of "kill-or-cure" remedy, therefore have none of it, at least for this purpose. Remove now three inches of the surface-soil from around your trees as far as the spread of the branches, and replace it with fresh. Take the old soil away, as it contains your enemy in the chrysalis state. Mix the gas-lime with it, and spread the compost on your Potato-plot in the spring.—J. MARTIN. *** *On page* 305 (*Aug.* 8) *and in previous numbers "H. W." will find this subject fully dealt with.*—ED.

—— I would advise "H. W." to take soot with a little lime in it early in the morning, while the dew is on the leaf as soon as the caterpillars appear, and well throw it into the trees; if one application does not kill them, repeat it. This I have proved to be effectual, but it must be done as soon as they make their appearance. Gas-lime is a nasty, dangerous thing to put to trees, and I would not recommend it.—D. C.

THE KITCHEN GARDEN.

White Elephant Potato.—I can quite confirm "J. T.'s" observations (p. 501) regarding this Potato, both as to quality and quantity of produce, having grown it two years. With me it grows very regularly as to size, there being very few small ones, and it has the great advantage of being ready for lifting early in the season, while, having a comparatively small top or haulm, the rows can be set closer together than would be possible with many other kinds. It appears to be very free from disease.—W. B., *Whitehaven.*

A lady's gardening difficulties.—I have a large garden, good south walls, very few trees to impede sunlight, good soil, and yet I am not successful, as a rule, with any vegetables except Asparagus, Seakale, Peas, Onions, and Scarlet Runners. I have a slate-roofed greenhouse recently erected by Messenger, sixteen feet by eleven feet—a little gem, quite a model, with every new appliance, and heated by their own apparatus. I have a hot bed with a flue under the earth; it is eight feet by six feet, and three and a half feet deep in centre; and a small Cucumber-frame. When I got my greenhouse, which was a very expensive one, and had a flue made to my hotbed, I told my gardener that I must pay interest on the money expended by growing Tomatoes, Cucumbers, and Mushrooms for my own consumption. He seems dubious as to Tomatoes now he has got these conveniences, though he did not express his doubts before I got them. Can you help me to ensure success? Firstly, as regards Tomatoes, I see by my gardening papers that Tomato plants are, this week, being potted in eight-inch pots, and plunged into Melon-frames or Cucumber-frames. I have none to pot at all. Do not you think I should have had? Please tell me when to sow seed, and when I may expect my first crop. My gardener says I can't grow Tomatoes in my greenhouse, because "they won't do with the plants," by which, I suppose, he means the same heat won't do. I keep my greenhouse about sixty degrees in the daytime. He always, before I had the house, talked as if I could have Tomatoes there, and so did my friends. And now as to Mushrooms. I have good out-buildings, pig-styes, cow-sheds, &c. I have had one Mushroom-bed made in a good pig-stye and another out of doors. No success at all. My man says it is defective spawn; the seedsman says it is first-class spawn. Can I not try a bed in a warm, though empty, cow-shed now? I see by your publication that Mushroom culture is most easy, but *I* can't manage it. I have two horses, and, therefore, good manure for the purpose. Last spring I planted plenty of Tomatoes against a south wall. The border was a rich one, having been rather heavily manured for years. I planted them in the soil, not in pots. They all went to leaf and grew quite beyond management. We were always taking off growths and leaves; we had very little fruit, and what we had did not ripen, and yet a neighbouring clergyman had plenty of ripe ones in his garden. Do you advise plunging the pots in the border and poorer soil? My man says I can't grow Melons in my hot-bed. Why not? I might choose to try Melons one year and Tomatoes another. My gardener is most desirous of doing all I wish, and very anxious for success, because he wishes to please me and give satisfaction. I have read this letter to him. He will be glad of any advice on the two subjects—Tomatoes and Mushrooms; also, he would like to know if he is correct in saying it will be no good trying to grow Melons. —S. M., *Derbyshire.*

Turnip-rooted Celery.—I am sending you a sample root of my Celeriac which I have grown for the first time this year. I shall be much obliged if you will give me your opinion of it; it will be a guide to me in growing it another year, when I hope to obtain better results. I have mainly followed the instructions given in Vol. VII. of GARDENING, top of page 72, but did not sow till April 2. I also omitted to take off the side roots as directed, feeling rather timid about too much meddling. I now see why it should be done. Our soil is a very light loam, but the ground was heavily manured for the planting out, and watering was well attended to. We have had some delicious dishes of it,

sometimes dressing the roots whole in butter and a little water, and sometimes sliced. The thick sauce is made from what remains in the stewpan, by which means we lose nothing. This method of cooking vegetables was shown to us by a Parisian friend of ours.—ELIZABETH, *Reigate.* *** *The root is not what we should consider a well-grown one, and not much more than half the size of well-grown German specimens, but we have no doubt that it would be very nice well cooked.*—ED.

REPLIES.

14983.—**Unsatisfactory kitchen garden.**—There appears to be no room whatever to doubt that "J. T.'s" garden has been overmanured, and that the soil has become rank and sour. Such strong clay soils do not need nearly so much manure as light or poor staples,—a good maiden clayey loam will grow splendid crops for seven or eight years without any manure whatever, if it can only be got into a proper condition for the roots to penetrate the soil, which is only to be done by working it, and by the admixture of some lighter material, such as leaf soil, spent hops, road-grit, burnt ballast, or even clean house ashes, in default of anything better. Strong stable manure is about the worst dressing for such ground—at least for some years; there is plenty of nourishment in this kind of soil, and all that is needed is to render it available to the plants. In this case, I should recommend ceasing entirely to apply any manure for some years; to thoroughly clear the ground, and proceed at once to turn a large portion of it—particularly the heavier part—in heaps with wood or small coal (slack). Spread this evenly over the ground, with any burnt stuff or ashes that may be available as well. Now throw the whole up in ridges for the winter, and early in spring give a rather heavy dressing of lime. If obtainable, use quick or builders' lime in preference to gas-lime; I believe it is more effectual in cases of this kind. "J. T." says he has already applied some gas-lime, but if this has not had the desired effect, use more, and, if possible, try the fresh this time; there is nothing like it for the destruction of all kinds of grubs, for sweetening sour ground, or for rendering available the latent richness of the soil. When it has lain a little while, dig it in well and deeply, and if good crops are not obtained afterwards I shall be very much surprised. Just such another case came under my notice some time ago. A large garden had been manured too liberally, and the soil had become sour, and literally swarming with all kinds of grubs and vermin, with the result that nothing would grow—nine-tenths of the brassica clubbed, and so forth. Well, we gave it a good dressing of gas and fresh lime, half-and-half, and the next year not a clubbed cabbage was to be seen, scarcely an insect, and more vegetables were produced than could be consumed. I have not the least doubt that the treatment indicated will prove equally effectual in "J. T.'s" case.—B. C. R.

15092.—**Drying Pampas Grass.**—Cut the flowering stem when ready to burst into bloom, peel off the grass carefully and hang up head downward till dry. Prepared in this way, it has a fine silky texture, which it loses if allowed to mature on its own roots.—P. P. G.

—— The best way is to gather the Grass before it is quite open, and then shake the heads before a fire every day till they have fully expanded, when they will be of a beautiful silvery white.—M. R., *Falmouth.*

Open-air November flowers.—I send you a gathering of flowers from open air, to show you how very mild we are in Ireland from a floral point of view. The flowers, in small box, are things out of season; in fact, you have spring, summer, autumn, and winter represented, all from open air. I also send you lovely blooms of Gentiana acaulis from rockwork.—W. BAYLOR HARTLAND, *Cork.* *** Among the flowers sent us by Mr. Hartland are Belladonna Lilies (very good), single Dahlias (good, considering the lateness of the season), Gaillardias, annual Chrysanthemums, Pyrethrums, and Schizostylis coccinea, which, by the way, are all capital flowers, and well worth the attention of those who desire autumn bloom. There are also double Daisies, and among shrubs Ceanothus Gloire de Versailles, and Escallonia montevidensis.—ED.

ROSES.

Marechal Niel Rose in pot.—I venture to forward you a line on my success in growing Maréchal Niel Rose under glass in this neighbourhood. I potted a Maréchal Niel worked on the Manetti stock in February last, with turfy loam and half-inch bones, into a twelve-inch pot, and placed it on the stage in the corner of the greenhouse, where the sun could shine on the pot, and pruned it back to the angle of the roof. I started it off with three leads, and trained it along the roof of the house. To-day (November 2nd) I measured the rods, which are stout and short-jointed, with the following result: the main rod twenty-three feet; second, nineteen feet; third, fifteen feet; total, fifty-seven feet. Ultimately, in February, I mean to prune it back to one-third of its length, when I hope to have the pleasure of seeing it bloom from nearly every joint. I may add that I gave it liquid manure once in ten days, and that it has not shown flower.—A. THORNBURN, *The Gables, Buxton.*

REPLIES.

15178.—**Pruning Gloire de Dijon Rose.**—This Rose should not be pruned unless absolutely necessary; and, if done at all, should be pruned in the spring.—C. F. DAVIS, *Leatherhead.*

15021.—**Planting Monthly Roses.**—You can plant these now. If you are unable to do so before the present month is out you had better defer it till February.—E. T.

15089.—**Roses for Lancashire.**—The best sweet-scented dark Roses are Sénateur Vaisse, Duke of Teck, Camille Bernardin, Empress of India, Duke of Albany, Harrison Weir, Jean Soupert, Mrs. Jowitt, Pierre Notting, and Xavier Olibo. The best light Roses are Catherine Bell, Duchess of Sutherland, Heinrich Schultheis, La France, Marie Ducher, Marquise de Castellane, Monsieur G. Tournier, Pierre Carot, and Violette Bouyer. The best white are Boule de Neige and Louis d'Arzens. All these should succeed very well in Lancashire.—J. C. C.

15104.—**Roses for severe climate.**—It would have been easier to answer your question if you had given any clue to where you reside. However, you cannot do better than grow the hybrid perpetuals on their own roots, and then there will not be so much risk of losing them from severe frost, as, if the branches are killed back, the crown and roots will survive, and they will send out young growth from below the surface. The best dark-coloured Roses of this section are Alfred Colomb, A. K. Williams, Madame C. Wood, Glory of Waltham, and Mrs. Laxton. The best light flowers are Jules Margottin, John Hopper, Magna Charta, Paul Neyron, and Mademoiselle Emile Verdier. Of white and other shades of colour you may select Violette Bouyer, Perle Blanche, Boule de Neige, Baroness Rothschild, Louis d'Arzens, and Jules Finger. These are selected for their hardiness; but if you do not care to risk the Hybrid Perpetuals, you had better select from the Provence and China sections. From the Provence you may secure the old Cabbage Rose, and also White Unique; these are both very hardy. From the Chinas, choose Brennus, crimson; Chénédolle, bright crimson; Madame Plantier, white; Madame Rivière, pink. There are also a few Bourbon Roses, very hardy; the best are Charles Lawson, rose, Coupe d'Hébe, pink; and Paul Ricaut, carmine. As you want Roses in the autumn, I should advise you to make an effort to get the perpetuals on their own roots.—J. C. C.

15116.—**Treatment of Roses in pots.**—You must shift your Roses at once into eight-inch pots. The best compost is a good turfy loam, made very firm about the roots. Train the growth of Maréchal Niel round some sticks; any of the others which have shoots six feet long may be shortened back to four feet early in January, the part left to be trained to some sticks; any shoots that are only four feet or less in length should not be cut back at all. Tea or Noisette Roses do not like severe pruning, and more injury is done to this class of Roses with the pruning-knife than in any other way.—J. C. C.

15113.—**Marechal Niel Rose in pot.**—The Maréchal Niel does not make a good pot Rose, if it is wanted to make a handsome specimen. If you do not object to see it rambling about, and do not submit it to hard pruning, you may expect a fair number of flowers upon it. The growth it has now made would flower grandly if you could train it up under the roof in some way without cutting it back; but if you must have growth from below, you must cut the branches back at once to within one foot or thirteen inches of the pot, but by so doing you will sacrifice some flowers next year. The plant will have root-room enough for another year or two, and, if well sustained with stimulating liquid, it will do fairly well for several years. If you cannot train it to the roof or a pillar, you must train the growth to some sticks.—J. C. C.

15121.—**Decaying Marechal Niel Roses.**—Your Maréchal Niel is afflicted with a disease known as canker. You cannot do anything to it to restore it to a vigorous state of health. The best thing you can do is to root out the old plant, take away as much of the old soil as you can, and put fresh in its place, and then put in a young plant. In future use a lighter description of soil, for some loamy soils that contain much iron favour the spread of canker; also keep the surface as dry as you can round the collar of the plant. It is a good plan to pack some knobs of charcoal round the stem or some small pebbles, as anything that will admit the air will assist to dispel any excess of moisture. You must not, however, keep the soil round the crown of the plant so dry that the roots will suffer; but after the plants have had one season's growth, you need not let any water go nearer than one foot from the stem.—J. C. C.

OUTDOOR PLANTS.

Purple Gromwell.—With us Lithospermum prostratum grows most freely; we have a plant of it more than a yard across, and so dense as to quite hide the ground over which it runs, and lies close, sending up its fine twiggy shoots abundantly, and flowering profusely for several months in the year. The situation is in full sunshine, and though some peat was given to start the plant with, the roots must long since have got through that and into the clay below, which may account for its fine health and vigour and the way in which it endures dry weather, as it never gets water or other attention beyond keeping it clean. As to propagation, we often find some of the slender branches self-layered and rooted, and cuttings taken off and put in under handlights in sandy soil, where they can have natural shade, like that of a wall, root readily, although they sometimes take a long time to do so. When once established they transplant badly, and therefore should not be moved if it can be avoided. Even young plants should be potted first, in order that they may be kept close for a week or two to give them a start. Where Lithospermums show themselves off best is trailing over rocks or elevated ground, positions for which they are specially adapted. There they exhibit their lovely deep blue flowers to advantage, and look quite at home along with such things as Arabis, Phlox Nelsoni, and similar plants.—S.

Autumn-sown annuals.—Let no one be discouraged by the remarks recently made upon this subject from sowing their annuals in the autumn. It is Nature's time for sowing them, and therefore the *natural* time. I have never found seeds bought in the previous spring, and properly kept, fail to germinate when sown in autumn. On the contrary, it is the only season when I can rely upon their coming up with certainty. For some reason or other, whether the lightness of my soil or the weather, I find that spring-sown annuals come up much worse than autumn-sown, and yield less satisfactory results in every way. For instance I sowed annual Coreopsis this spring, which came up very thinly, and the plants have not yet (Nov. 3) vouchsafed to blossom; whereas others sown last autumn, and singled out to three or four plants in a clump, have made really magnificent growth, and have been a mass of blossom the whole summer. Leptosiphon, Silene, Godetia, Sweet Pea, Nemophila, and the bright hardy American Nemophila, as it is called here (Limnanthes Douglasii), all succeed admirably when sown at the beginning of September and pricked out two months later. Sweet Pea may be sown in November, where

it is to bloom. You may, of course, lose some in the winter and early spring, but the survivors will repay your trouble. And, as the saying is, "It is a hard battle where all are slain.—LINCOLNSHIRE RECTOR.

OUR READERS' ILLUSTRATIONS.

TULIP-GARDEN AT THE CASTLE, DINGWALL.

AMONG the delightful types of gardens that one seldom sees nowadays is that of such a plant as the Tulip, finely grown and in glorious variety in the open air. Such gardens may be seen here and there in the case of enthusiastic amateurs, but they are not so common as they used to be. Dr. Bruce, of The Castle, Dingwall, N.B., sent us during the recent illustration competition a photograph, which we have done our best to reproduce well, and his notes respecting it will be interesting to our readers. He says:

There is not, perhaps, so much in the beds themselves as in the fact that they have been growing and flowering every season for at least forty years. In my time—*i.e.*, during the last fifteen years—they have only been once lifted. The stems are simply pulled up after flowering and a certain amount of ripening of the foliage, and their place is taken by some half-hardy annuals, generally Chinese Asters. This year there are also French Marigolds. The soil in which the Tulips have been grown is a strong clayey loam of a somewhat unctuous character. I may mention that a bed of Strawberries continued to bear, I am credibly informed, in the same garden for more than twenty years, and I have still beds of my own planting — President and Garibaldi—ten years old. I must confess, however, that they are condemned for next year. These Tulip-beds were really a sight to see for luxuriance of bloom and wealth of colour this year. I saw nothing to fill the eye like them 'twixt the North of Scotland and Aix-les-Bains, in Savoy.

Tulip garden at The Castle, Dingwall, N.B., from a photograph sent from Dr. Bruce.

I do not read your excellent and welcome paper so closely as I might. (Let me tell your advertising friends that, like another medical—a friend of mine—I invariably read all the advertisements, and occasionally order plants.) If I did I could speak more decidedly, but I think no one has drawn the particular attention it deserves to the fact that this has been a wonderful year for blossom of all kinds, both in gardens and fields. Such seasons, every good observer must have noticed, recur once only in a cycle of years. Apple and Pear, Gorse and Broom, frequently present a wealth of "flourish" as we say in Scotland. Such has been the case in this year of grace 1885. But the rarer result is the wonderful bloom on the Horse Chestnut, the Plane, the Mountain Ash, the Service tree (very marked), and on the Lime. The Clover fields have been a sight to see, and a smell to smell. I never saw the Brier festoon the rocks and banks with such wonderfully rich garlands; and at the time I write we have the common yellow Ladies' Bedstraw, in beautiful rich masses on the top of many an otherwise baked and bare wall. I must add one word in praise of a real field of cloth of gold of the yellow Iris such as has never been seen here, at least, before; literally acres in extent. I might speak of Roses on the one hand, and Elder in all its grand massive richness of white and dark green on the other, but I am sure I have said enough. I only wish I could speak of Nature as she deserves. It would require the pen of a Burroughs to do that. W. B.

REPLIES.

15094.—**Plants and Ferns for a rockery.**—The Convolvulus will flourish very well in a rockery; the seed should be sown in the spring. I have found that the smaller kind of wild Geraniums do very well in a rockery, and look very nice; you could procure them from the woods. Others that will do are Primroses, Periwinkles, Cowslips, and Sweet Peas; a few Strawberry plants look well if you do not allow them to spread too much. Nearly all the commoner sorts of Ferns will do very well, such as Lady Fern, Hart's-tongue, Beech, Polypodium, &c. Ivy also might succeed.—MOSS JEWEL.

14748.—**Laying out herbaceous border.**—As "A Beginner" is leaving in a year, the best way would be to trust wholly to annuals and such plants as would flower the first year from seed. In Devonshire, Pansies might still be sown in a box in a sunny window, and planted out as early as possible. Some clumps of border Pinks, such as the old red and the old white—Ascot, Nellie, and Anne Boleyn—may be planted near the front. In the last week of March, or earlier if mild, sow in boxes indoors, Indian and Japanese Pinks, Phlox Drummondii, and Portulacas; plant out the Portulacas, when one inch high, close to the edging of stones, and in the full sun, and the other two annuals farther back. The Phloxes and Pinks are various shades of pink and crimson, and the Portulacas are white, yellow-orange, crimson, and scarlet, which will contrast well with them. A pretty dwarf white annual is Omphalodes linifolia. Very early in spring sow patches of Leptosiphon roseus, and L. aureus, Nemophila insignis, and Silene pendula, and later Bartonia aurea. Sweet Peas should be sown as early as possible, and each colour should be kept separate. A few clumps of Poppies should be sown very early. The French double Corn Poppies are the best, and after these the Chinese Poppies. Clumps should also be sown of the following annuals of medium height:—Crimson Flax, annual Chrysanthemums (single and double of all kinds), Godetia the Bride, Godetia Whitneyi, G. Duchess of Albany, and G. Lady Albemarle, Centaurea cyanus (the blue Cornflower), Stock-flowered Larkspurs, and Lupinus atrococcineus, L. Menziezi, and other good kinds. Sweet Sultan should be sown as early as possible in spring, as it is best treated as a biennial. Sweet Scabious may be treated in the same way. A few Phloxes would be useful for flowering in August, and clumps of Gladioli are conspicuously showy. Good blue annuals are Convolvulus minor, Whitlavia gloxinioides, and Phacelia campanularia. Verbenas, Petunias, and florists' Pentstemons are advertised cheap in GARDENING, and will help the autumn bloom. To get a good effect in colour in a mixed bed is not difficult. The simplest way is to separate colours as much as possible by white, and avoid placing yellow beside red, or orange, pink, or purple beside blue. Pale primrose may be placed beside lilac or blue. Stocks should do well in a Devonshire garden, as they can be grown in the open air. The Ten-week kinds should be sown in a richly-manured patch by themselves, five inches apart, and thinned out to eighteen inches apart, or so, as they show for bloom; the single ones show bloom first. The bordering of stones I recommended takes at least a year's growth to come to perfection; but an edging of upright stones only requires to be firmly set as an edging of tiles is usually done. I have forgotten to mention that Antirrhinums can be sown in May and will flower in August and September.—J. D.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR OF GARDENING, 37, *Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15243.—Culture of Allamandas.—Will some one who has grown Allamandas kindly give me a few simple hints as to their culture?—O. S., *Clevedon.*

15244.—Sowing Briar Roses.—Will any one kindly tell me the proper time to sow seeds of these, and when they will be ready for budding?—AMATEUR.

15245.—Medlars.—I should like to know how Medlars should be preserved, and when they are fit for eating?—F. G. E.

15246.—Making Tobacco-paper.—Can any reader tell me what is used to make Tobacco-paper and cloth?—C. WILTSHIRE.

15247.—Iris (Wagga-wagga).—Does any one know an Iris called Wagga-wagga? If so, will he kindly tell me under what name I can buy it?—S. A. B.

15248.—Propagating Bouvardias.—Will any grower of Bouvardias kindly tell me the proper time and method of propagating them? I have a warm greenhouse.—C.

15249.—Azaleas and Camellias.—Will any reader inform me on what kinds of stock Azaleas and Camellias are grafted or budded, and what time they should be worked?—P. M.

15250.—Ferns for cold greenhouse.—Will any reader kindly furnish me with the names of Ferns suitable for a greenhouse from which the frost is kept out by an oil-stove?—FERNS.

15251.—Size of lawn-tennis court.—What should be the length and breadth of a full-sized lawn-tennis court? Will any lover of the game please give me information?—ALPHA.

15252.—A home-made stove.—"W. James," page 502, mentions a heating stove which he has made for himself. Will he kindly say if it requires a chimney to carry off the smoke?—S. B.

15253.—Early-flowering Chrysanthemums.—I shall be glad of the names and colours of some good early-flowering Chrysanthemums. Will some grower kindly give me a list?—Mrs. R.

15254.—Roses on their own roots.—Will any Rose-grower tell me if Roses on their own roots will produce as good blooms for exhibiting as on stocks of any sort.—A FRIEND OF THE ROSE.

15255.—Draining lawn-tennis ground.—Will any reader of GARDENING inform me of the best and cheapest way of draining a lawn-tennis court? Subsoil is clay, and there is a good fall lengthways of court.—L.C.C.

15256.—Growing Tacsonia from seed.—I have just had some seeds of Tacsonia van Volxemi given me, and I shall be obliged if anyone who has raised this plant from seed will give me some instructions as to growing it.—E. E. G.

15257.—Growing Pelargoniums in rooms.—Will any reader who, like myself, unable to grow his Pelargoniums in a greenhouse, kindly give me a few hints as to their culture in rooms—if it is possible to grow them well in this manner?—T. J. G.

15258.—Creeper for Fernery.—I should like to know what would be the best kind of creeper to cover the walls of a Fernery, heated in winter up to fifty degrees? I planted some climbing Ferns last spring to cover the roof, and they are doing very well.—AMATEUR, *Strabane.*

15259.—Right of removing potted Roses.—I planted a number of Rose bushes in unoccupied ground in the garden which I now am tenant of, three years ago. I had them potted about a month ago, and will give up my tenancy on Dec. 25 next. Can I take the Rose bushes (potted) with me?—B. C. S.

15260.—Growing tuberous Begonias.—Will any correspondent kindly give me some hints as to the growing of tuberous Begonias—what soil they require, at what temperature the house should be kept, and generally as to their treatment? I have some at present which look very miserable.—E. E. G.

15261.—Plants for growing beneath stages.—Having a small greenhouse, heated with hot-water apparatus in the winter, I am anxious to utilise the space under the stages, and shall be glad if any reader can give me the names of a few plants, ferns, or mosses that would grow there uninjured by the "drip" from the stages.—C.

15262.—Growing Palms in Fernery.—I have a small Fernery, measuring twelve feet by nine, facing north. It is heated in winter by a small oil-stove, by which I can keep up a temperature of fifty degrees on the coldest nights. Would any kind reader inform me if I could grow Palms in it with success, and, if so, what would be the best kind, and also what treatment they should receive?—AMATEUR, *Strabane.*

15263.—Raspberries.—In a publication by Mr. D. T. Fish, "The Raspberry and Strawberry," after the statement that "the Raspberry is perennial, the stems biennial," is the following passage, referring to the stems:—"The leaves are pinnate, and differ in the fruiting and sterile stems, having three leaflets on the fertile and five on the sterile ones." Is this statement correct? Are not three and five leaves found on the same branch?—OAK.

15264.—A neighbour's dispute.—Having a hedge growing the whole length of my garden, dividing my land from my neighbour's, I have been in the habit of trimming my side and top (as the hedge is planted on my property and belongs to me), whilst my neighbour has till lately trimmed his side; but having, I suppose, tired of it, he wants me to go on his ground and do his side, and has threatened to take legal proceedings unless I comply. Will some reader kindly tell me if I am obliged by law to go on his property to prevent my hedge growing out on his side?—NORFOLK.

15265.—List of hardy herbaceous plants.—Why are Campanula pyramidalis alba and Coreopsis Atkinsonii omitted from the list of hardy herbaceous plants given on p. 430? They are very hardy plants, with beautiful blossoms, and remain bloom a long time.—MRS. R. ⁂ *In part because we could not pretend to embrace every good thing in such a list. The plants "Mrs. R." recommends are excellent, but the list was strictly confined to perennials, whereas Campanula pyramidalis, though long-lived in certain soils, is not generally considered a true perennial, and Callipsis (Coreopsis) Atkinsonii is an annual. We may thus see the enormous resources of our outdoor flower-garden, when so many fine things can be got from one section only—the true perennials. An equally important list might be made of biennials and annuals.*

15266.—Making small greenhouse pay.—I have just bought a little greenhouse made by an amateur. It is about six feet in height, breadth, and width. Two sides are formed by the angle of a stable wall. The cost of it was, in the first place, thirty shillings; but, with fittings and a double layer of bricks as a foundation, and the joiner's wages, I find that the cost of the whole is nearly fifty shillings. I should be very grateful for any suggestions. Would it be possible to make the little house pay off its own expenses, and how could this be done? What kind of heating apparatus of a simple, inexpensive kind should be used, and, if a lamp, what oil is not injurious to plants?—C. H. A., *Guildford.* ⁂ *We wish we could tell you how to make the greenhouse pay its own expenses, but we fear greenhouses belong to the class of goods and chattels for which the owner has to pay. For some pleasures of life people must be willing to pay, and though market gardeners may make their greenhouses productive, we think a great many people find their only return in the pleasure they derive from them. Perhaps some of our readers may, however, be able to tell you how to make your greenhouse pay from another point of view.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15267.—Ixoras (*Old Subscriber*).—The note on another page will give you the information you seek.

15268.—Shark's-tooth Aloe (*M. Collins*).—The botanical name of the Shark's-tooth Aloe is, we believe, Aloe ferox.

15269.—Transplanting bulbs (*Beginner*).—Yes, you can remove bulbs from one bed to another; take up a good body of soil with them.

15270.—Potting Brunsvigia Josephinæ (*T. S*).—This bulb, when potted, should not have more than one third part covered with soil.

15271.—Compost for Spiræa japonica (*Beginner*).—This plant requires the usual mixture—loam and leaf mould and peat, with a little sand.

15272.—Asteriscus maritimus (*S. A. B.*).—This is a hardy perennial plant in light soils, and we have never found any difficulty in growing it in an open position.

15273.—Temperature for a mixed collection of plants (*Beginner*).—Keep up a gentle heat continually; do not let the temperature fall below forty-five degrees.

15274.—Dressing for Grass lawn (*A. H. E.*).—You may put a surfacing of soil on now, but do not apply any manure. Wait until spring comes before you sow any Grass seed.

15275.—Moving Sedum Sieboldi (*T. C.*).—Your plant is Sedum Sieboldi. You had better defer moving it from pot to hanging basket until spring, and then put it in light sandy loam.

15276.—Acacia losing its leaves (*Novice*).—The shedding of the leaves is not natural. There are few, if any, Acacias that lose their leaves, and there must be some fault in treatment in your case.

15277.—Schizostylis coccinea (*Mrs. R.*).—The English name of Schizostylis coccinea is Crimson Flag, or Caffre Lily. You will find Miller's "Dictionary of English Names of Plants" most useful in these matters.

15278.—Gloire de Dijon Rose not blooming (*Dijon*).—Your Rose, fourteen years old, makes no new wood and produces very few flowers. We should advise you to start again with a vigorous young plant.

15279.—Crimson Flag (*E. W.*).—Schizostylis coccinea, or the Crimson Flag, can be obtained from or through any good seedsman, nurseryman, or bulb merchant. Plant it whenever you get it in ordinary garden soil.

15280.—Paraffin-stove in greenhouse (*Portobello*).—By all means put a vessel containing water on the top of the stove; but we think that a pan or trough from which the vapour would be given off gradually would be better than a kettle.

15281.—Selaginella Mertensi (*C. R.*).—We think there must have been some mistake. S. Mertensi is a tender plant, but what is called S. denticulata will succeed out of doors. Send us a good specimen, and refer to this query when you do so.

15282.—Protecting roots of Chrysanthemums (*Mrs. R.*).—We never knew Chrysanthemums to require any protection at the roots out of doors; but if under any circumstances they should need it, coal-ashes or any waste material would do perfectly well.

15283.—Coleus and Begonias losing leaves (*Miss Jewel*).—We think you have kept your greenhouse too cold (45 deg.), if you wanted to get these things in vigour; but they must rest at some time, and they may look bad without being seriously injured. Let them rest as they are with the present temperature, and, when spring comes round, increase it and encourage growth.

15284.—Vines in pots (*G. W., Ayr*).—If you had left fewer bunches on your pot Vines you might have had good fruit; fifteen bunches are too many. It would be more profitable to strip the berries off. You had better let the leaves drop, and then cut back to good sound wood. The buds ought to be dormant now, if not excited by heat, and we cannot understand their starting as your describe.

15285.—Propagating Chinese Primulas (*C.*).—Chinese Primulas, which we suppose you mean, are propagated easily from seed—at least, all the single types. The double forms are propagated by cuttings in nurseries where these plants are grown. It is hardly worth while for amateurs to attempt their propagation, although, no doubt, many of them may do so successfully. Questions as to two different families of plants are best answered separately, and you will see that we have inserted your query as to Bouvardias elsewhere.

15286.—Wintering Pelargoniums (*T. J. G.*).—You have for wintering your Pelargoniums the use of one of two rooms—one in which there is a fire every day, but which is not well ventilated, and another, unoccupied, from which you can keep out frost. We should advise you to use the one in which there is not a fire every day; but you must be careful in the use of the paraffin stove. At this season you should not be potting your Pelargoniums at all. If they have no roots, you must leave them until spring, till they get roots. You will see that we have asked for you a general question, replies to which may assist you.

15287.—Leaves with large black blotches (*S. E., Trinmore*).—The blotches are caused by a fungus named Rhytisma acerinum. It grows on different sorts of Maple and Sycamore.—W. G. S.

15288.—Pears diseased (*Selby*).—The disease on the skin of the Pears sent is, doubtless, caused by cold winds in the spring. Some varieties are more tender than others, and these suffer by the skins being injured, and as the fruit swells during the summer the skin cracks in all directions. Subsequently the black fungus appears, and causes further injury to the damaged fruit. The fruit will also crack when the roots run into an unsuitable subsoil; in that case the roots might be lifted by doing half on one side of the tree one season, and the other half the season following. Place some good loam amongst the roots. The soil ought not to be too rich.—J. D. E.

15289.—Stage Auriculas (*W. B. Leek*).—Stage Auriculas and Show Auriculas are names usually given to garden varieties of Primula Auricula, a plant found wild in the mountainous districts of the South of Europe. The leaves of this wild species are more or less dusted with a white powder; the flowers bright yellow, with a white centre, also dusted sparingly with farina. The garden varieties are now divided into four classes, which, for the convenience of cultivators, are arranged in the following order:—Green-edged: These comprise all the flowers with the outer edge quite green, or very sparingly dusted with farina; inside the edge is the ground colour, usually maroon of different shades; a few have violet grounds. Inside the ground colour is the centre, white, very thickly dusted with farina. The best green-edged varieties at present in the trade are Rev. F. D. Horner (Simonite); Prince of Greens (Trail); Colonel Taylor (Leigh); Freedom (Booth); Champion (Page); Talisman (Simonite). Grey-edged varieties are those with the edge green, but dusted so thickly with farina that the green is almost hidden and the colour is greyish. The best in this class are George Lightbody (Headley); Lancashire Hero (Lancashire); William Brockbank (Mellor); Mrs. Moore (Douglas); Silver Edge (Douglas); Alexander Meikle John (Kay). White-edged: Acme (Read); Conservative (Douglas); Frank (Simonite); Smiling Beauty (Heap); John Simonite (Walker); True Briton (Hepworth). Self: Pizarro (Campbell); Blackbird (Spalding); Negro (Mellor); Sapphire (Horner); Ringdove (Horner). It is not desirable to give the names of varieties that have been exhibited, even if they have been certificated, unless they are in the trade; because it is certain that some of them have been not to cultivation and others will certainly not be sent out. It is also very uncertain as to any of the new varieties will be placed in commerce. The Rev. F. D. Horner has the best seedling varieties in his possession; his dark self Heroine is unsurpassed by any self; and Greyhound, exhibited in April last, promises to be the best grey edge. Monarch will probably occupy the highest position in the green-edge, but I fancy the last two will not be sent out for many years. Of Heroine, Mr. Horner has a good stock of plants, but it is, of course, at his own discretion whether he will have it sent out or not. When any new varieties are placed in commerce they are then public property, and I shall be pleased to pass my opinion upon them. Rev. F. D. Horner and Sapphire are now being sent out by Mr. Simonite, Rough Bank, Sheffield; Conservative and Mrs. Moore by Mr. Charles Turner, of Slough. They are all acquisitions in their various classes; all of them have obtained first-class certificates, and Conservative, besides, gained the prize as the best Auricula of any class at one of the National Auricula Societies' exhibitions.—JAMES DOUGLAS, *Ilford.*

TO CORRESPONDENTS.

F. A. Harrison.—Would it not be better to give the information to readers generally?—*W. S. P.*—The stoves are advertised in GARDENING ILLUSTRATED; see last week's paper. The makers will supply the information you require.—*G. M. N. C.*—Many diagrams relating to laying out grounds have been published in GARDENING lately; you must describe more particularly which you refer to, and please address the publisher.—*Miss Peake.*—There is no charge.—*Amateur, Hammersmith.*—You do not tell us what Cactus you wish to grow, and so we cannot help you.—*F. S. Palgrave.*—We cannot give you the information you ask for.—*H. Edgar Wild.*—We thank you for your note, but it could only be inserted as an advertisement. You will probably remember that improvements by the same maker have already been described and illustrated in GARDENING.—*Elizabeth.*—We shall be glad to see your note on the subject.—*A. H. Wilson.*—In the "Garden Annual," there is the name of "J. Vick, Rochester, New York, U.S."—*Cork.*—See answer on page 502, Nov. 7.—*J. Jordan.*—We will give you the information you seek as to the classi-

fication of Roses at an early date.——*Mischief.*—Your question as to pruning Gloire de Dijon Rose was inserted last week, and is answered in this number.——*E. W.*—We cannot recommend a salesman to whom you can sell your Chrysanthemums. Try at the nearest flower-shop in your neighbourhood.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

**** Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, 37, *Southampton-street, Strand, W.C.*

Names of plants.—*F. T. W.*—Helianthus is H. giganteus; leaf that of White Poplar; we cannot name Daisy from the other leaf.——*C. B.*—Helianthus giganteus.——*Fern.*—1, Pteris cretica albo-lineata; 2, P. cretica cristata; both green-house varieties.——*T. C.*—Sedum Sieboldi.——*L. C., Bradford.*—1, Send another specimen; 2, Selaginella arborescens; 3, Pteris tremula; 4, Nephrolepis exaltata.——*J. P.*—We do not name varieties of Chrysanthemums or florists' flowers generally.——*R. V.*—We do not name Roses, but in any case ir would be impossible to name from your specimen. ——*G. M. N. C.*—Cypripedium venustum, a fairly good sort; it would do best in a pot in the warm house.——*Tweedie.*—Not an Orchid, but an epiphytal Lycopodium—L. phlegmaria, from Manilla.——*Matthews.*—1. Adiantum pedatum. 2. Lygodium scandens.—— *M. Collins.*—1. Onychium japonicum. 2. Adiantum Capillus-Veneris. 3 and 4. Adiantum gracillimum in different stages. 5. Pteris serrulata.

NAMES OF FRUIT.

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*Clover.*—E. Dumelow's Seedling; F, Dutch Mignonne; G, Yorkshire Greening; H, Manks Codlin (yellow).——*G. A.*—You must send specimens as directed in our rules; we cannot name your fruit.——*Yorkie.*—11, Beauty of Kent (labels of others detached). ——*Charles E. Cockin.*—1, Colonel Vaughan; 2, Mother. ——*E. Grose.*—1, Keswick Codlin; 2, not recognised; 3, Catillac.——*T. C. A.*—1, Beurré Clairgeau; 2, Beurré d'Amanlis; 4, Beurré Diel.——*R. B.*—Beurré Clairgeau. ——*O. K. T.* (*Castle Upton*).—1, Bedfordshire Foundling; 2, Hawthornden; 3, Striped Beaufin.——*G. B.*—1, Duchesse d'Angoulême; 2, Glou Morceau; 5, Fondante du Comice.——*Kenley.*—Beurré Hardy.——*W. W.*—Blenheim Orange.——*E. W.* (*Middlesex*).—Althorpe Crassane.——*W. H. J.* (*Brough*).—Wareham Russet.——*G. R.*—The large one is Small's Admirable; small one not known.——*E. D. B.*—3, Triomphe de Jodoigne; 6, 4, Beurré Diel; 5, Vicar of Winkfield.——*T. C.*—1, Cox's Pomona; 2, King of the Pippins; 3, Golden Noble; 4, Dumelow's Seedling; 5, Alfriston; 6, Emperor Alexander.——*H. T. E.*—Large, Catillac; long, Uvedale's St. Germain.—*G. H.*—The Melon Apple.——*Amateur* (*Northampton*).—2, Triomphe de Jodoigne; 4, Beurré Diel; 6 and 9 (numbers not distinguishable), Catillac aud Marie Louise.—— *Great Bookham.*—Will the correspondent writing from Great Bookham, who does not mention his name, kindly send us fresh specimens?

**** We have received several parcels of fruits to name containing only one example of each sort, and that often in a bad condition. We must, therefore, announce that we cannot supply the names in such cases, and the instructions given above should be strictly followed.*

Catalogues received.—*Grapes, Raspberries, and American Specialities.* Viccars Collyer & Co., Central Hall, Leicester.——*Forest and Ornamental Trees, &c.* F. & A. Dickson & Sons, Upton Nurseries, Chester.

Outdoor Chrysanthemums.—Mrs. Reid, Bridport, sends us a small collection of Chrysanthemums, very varied and bright in colour and fair specimens of outdoor culture. The outdoor Chrysanthemum deserves much more attention than is now given to it. Even in districts not favourable to it, charming effects may be got by putting plants against sunny walls and fences. Besides, raisers of new plants are coming to our aid by producing varieties that flower just a little earlier than the greenhouse kinds. Such will be invaluable in enabling us to get good bloom out of doors, and in prolonging the blooming season. The small, early-flowering summer kinds we never cared for, but those that bloom just early enough to escape the hard weather will be invaluable.

15193.—**A legal question.**—Without knowing the precise arrangement under which "Amateur" took possession of the land, it is difficult to say under what tenancy he holds. If he accepted it for "temporary use," as the words on his landlord's receipt would imply, it would seem that he is a tenant at will, liable to have his tenancy determined immediately by notice from his landlord, who, on demand of possession, could bring an action of ejectment against "Amateur" in the event of his declining to give up the land. Under certain circumstances the tenancy might be construed as one from year to year, liable to be determined at the end of the first or any subsequent year by a six months' notice to quit.—LAWYER Y.

15120.—**A meteorological question.**—I fear it would be a difficult matter to give precise rules that would enable one unaided to inform himself at all times when a frost is to be expected. The old meteorological maxims were many of them based on fallacies, especially those that recognised the moon's agency in producing states and changes of the weather, it having been proved from the results of fifty years' careful observations at the Royal Observatory that the moon exerts no appreciable influence on the weather. Modern meteorology requires for its successful working the co-operation of a number of observers over a considerable extent of country. It is now but in its infancy, and before it can be brought to maturity it will require the zealous co-operation of the whole civilised world. It has now enlisted in its service many hundreds of observers, both by sea and land, in every quarter of the globe. Every individual observer stands at his instrument at the same instant of time. He daily takes cognisance of the force and direction of the wind, the state of the barometer and thermometer, &c. These data are transmitted to New York, where they are collated, and reports deduced therefrom, one of which is issued daily. The following hints, which are in accordance with my own experience and observation, might be of service to a beginner. I must premise that my experience has not extended beyond the South of England. After the middle of October, if the wind is north, and the night calm and clear, a frost may be expected. As the winter advances, if the above conditions obtain, frost may be reckoned upon, the wind being in any point from west to south-east. Frost sometimes occurs on a very clear calm night with the wind south. Other things being equal, cold increases in intensity from sunset to sunrise. If the atmosphere be above freezing point, and the sky is beclouded, although the air is quiet and the wind in the right direction for frost, frost might not occur. When the sky is clear and the wind in the right direction for frost, but blowing with some force, and the air is above freezing point, there is little danger of frost. The weather often repeats itself for several nights in succession. The reason frost occurs on clear nights is that the heat from the ground radiates into space, thus lowering the temperature. Why this does not happen if the sky is overclouded is that the clouds intercept the heat rays and reflect them back to the earth. Why, when the wind is blowing, frost is averted is that the air on the surface of the ground is constantly being interchanged. When the atmosphere is below freezing point and the wind is blowing, the frost is very searching, and extra precautions should be taken. The reason why frost seldom occurs when the wind is south or south-west is that it blows over the Atlantic, the waters of which in winter are warmer than the land. As air increases in weight as its temperature decreases, there is during the night no rising and interchanging of air as there is in the daytime when the sun is shining, which accounts for the rapid decrease of temperature near the surface as the night advances. If towards evening the wind is observed to be veering around from south-west towards north, and the weather is getting quiet and clear, although the temperature of the air be many degrees above freezing point, precautionary measures should be at once resorted to. Our maxim is, if there be one chance for a frost and three against, take the safe side. If during the night a change indicating frost is noticed, no love of ease should prevent one from getting up to attend to the safety of his plants.—L. C. K., *Newport, I.W.*

—— Perhaps a word or two of my observations will be found useful. From November onwards, when the air is cold, with a cloudless sky (or clear one) at night, and wind in quarters varying from W. to E. frost may be expected, and in early spring hail is generally followed by frost at night. I have always noticed these signs, and am always prepared to battle against this enemy to plant life, as I have never lost a single plant by having recourse to this rule, so that "E. G." need never complain of losses if this advice is taken. In the case of summer bedders they ought to be housed before November fogs are upon us. Of course the advice in GARDENING not to put too much fire in ought to be closely followed by amateurs, who are so apt to coddle their plants too much, which induces a weekly growth while they ought to be at rest until the turn of the year.—A. CLARKE, *Cambridge.*

—— Frost during the winter months may always be expected when the sky is tolerably free from clouds, and the wind from any point of the compass north-west or south-east. Even with an overcast sky, with the wind in the quarters just mentioned, it sometimes freezes, but then the weather is altogether cold, and the frost does not come unexpectedly. We seldom get frost, even with a clear sky, when the wind is south-west or south-east; but sometimes after a wet day, with a strong south-west wind, towards evening the wind shifts to the northward, and the sky clears. Under these circumstances, the temperature falls rapidly, and in the winter-time a sharp frost is the probable result. The clouds at night-time act as regards the earth much in the same way as our clothing does to us—that is, by preventing the heat from radiating or passing away, as they are by no means such good conductors of heat as the air is.—G. S. S.

Grass of Parnassus.—I think there is no more beautiful wild flower in Great Britain than the exquisite Grass of Parnassus. Why do not lovers of flowers try to establish it in their gardens? It is hardy, and grows in the most exposed situations; all it seems to require is plenty of moisture, as I know by experience from the soft spongy wet ground which I have tramped over for the sole purpose of enjoying its beauty. In such places it thrives luxuriantly, and puts forth numerous lovely star-like creamy-white flowers, which are alike a marvel and a study. The golden fringy nectaries, the exquisite tint and curious habits of the anthers, the enormous ovary rising in the centre, and gradually increasing in size until it seems a perfect little mountain—everthing is interesting and wonderful about it. In these days, too, when it is so easy to improvise artificial bogs or swamps in gardens, I feel quite sure it might be cultivated with success; of course, it would be necessary to rear the seeds and young plants under glass, and judge judiciously when the plants are strong enough to be planted out in what is to be their natural home for the future. —H. P., *Bakewell.*

Gillingham's heat generator.—In reply to various querists as to the use of a suitable stove for a small conservatory, my own experience of the above for three seasons is quite satisfactory. I am speaking of it only as a means of creating a gentle heat at times, when it is desirable to do this without having recourse to a more elaborate apparatus. Unless the house were very small indeed, I should not rely upon it to keep out frost in severe weather, still less to keep up a steady heat throughout the winter. For supplementary purposes, however, it is most useful. But it requires careful management. Strict attention must be paid to a few simple rules. Cleanliness, and care in trimming and lighting the lamp are the main points. Those who are able and willing to manage it personally may be recommended to try it; but if the care of it has to be left to servants, avoid this or any other paraffin stove, or the result may be a dense cloud of smoke in your greenhouse, followed by a copious sprinkling of oily soot upon your plants. But this need not happen with proper care.—LINCOLNSHIRE RECTOR.

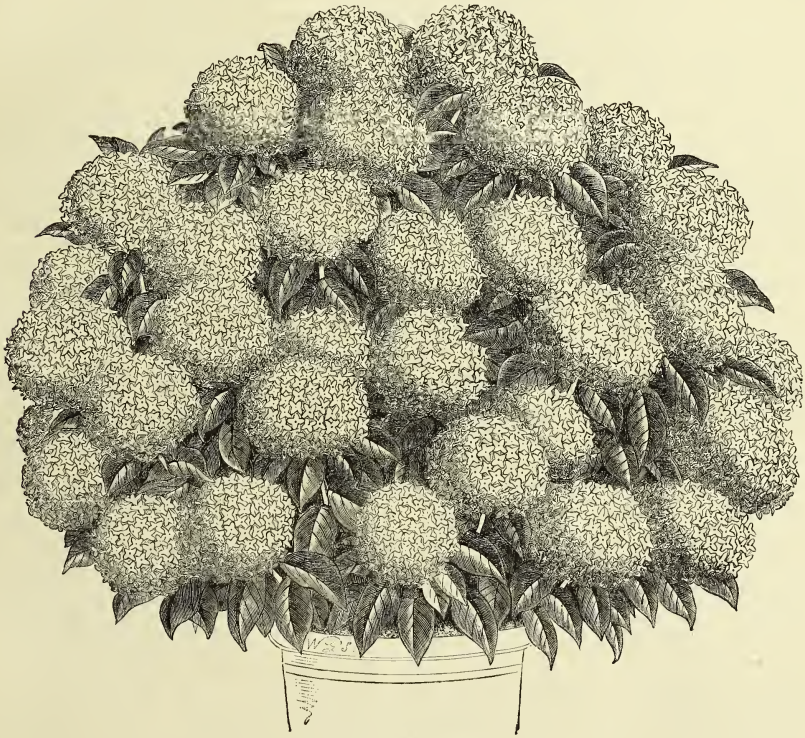
15186.—**Culture of large Sunflowers.**—Having been very successful for the last two years with these flowers, I give "A. C., Devon," my method. Plant the seeds in the open about March, and, when large enough to transplant, move them where required. Give plenty of water, and they will be strong enough to do without stakes. My garden is an old one that was quite wild and neglected till two years ago, when it was well dug over and dressed with stable manure; it is quite a town-garden, with water-works and lead-works close by, but has been very showy and bright with plenty of flowers of hardy sorts. Many Sunflowers measured eleven inches across, and the plants, six to eight feet high, were so strong that only one was blown down by the October winds.—B. B. B., *Chester.*

Smithfield market, Evesham.—List of prices realised Nov. 13, 1885:—Brussels Sprouts, 2s. 9d. to 3s. 3d. per pot (40 lb.); Carrots, 1s. 5d. to 2s. per cwt.; Cauliflowers, 8d. to 1s. 2d. per dozen; Gillyflowers, 2d. to 3d. per dozen bunches; Onions, 2s. 3d. to 3s. 3d. per cwt.; Parsnips, 2s. 6d. to 3s. 3d. per cwt.; Potatoes 1s. 6d. to 2s. per pot (80 lb.); Sage, 2d. to 3d. per dozen bunches; Turnips, 1s. 2d. to 1s. 9d. per pot; Apples, 2s. 6d. to 5s. 9d. per pot (64 lb.); Pears, 2s. to 4s. 6d. per pot (72 lb.); Walnuts, 3s. 6d. to 5s. 0d. per bushel.

INDOOR PLANTS.

A WELL-GROWN IXORA.

If we were asked to point to a genus of stove-plants that combines the showiest of flowers with the finest evergreen foliage, we should have no hesitation in naming Ixoras, and the freedom with which their great trusses of bloom—ranging in colour from deep red, through all the shades of scarlet and orange and white—are produced, entitles them to the first place in any collection of stove-plants where there is sufficient heat to maintain them. Heat is indispensable—in fact, they will bear as much of it as any plant in cultivation, and although they may exist in a temperature not sufficiently high, we should not recommend their cultivation where there is not the means of keeping them hot enough. They strike freely from cuttings taken off at any time of the year, when young half-ripened wood can be obtained. Ixoras are naturally such free-flowerers that they will bloom while small, in which state they are useful for the decoration of the stove; a large-sized specimen will require a pot eighteen inches or twenty inches in diameter. To facilitate their blooming early in spring—say by the beginning of May—all potting that is necessary should be carried out about the beginning or middle of September, and a month previous to this any cutting-in that is required should be effected. They will bear a free use of the knife, even to the extent of reducing them to one-half their size. We have cultivated individual plants for twenty years, and have had them as strong and vigorous then as during the earlier portion of their existence. I. Fraserii, here illustrated, is a free, strong grower. The flowers, which are produced freely, are of a deep salmon colour, and contrast finely with the glossy-green foliage. T. B.



A well-grown Ixora (I. Fraserii).

Shy-striking cuttings.—The facility with which some plants strike compared with others is well known to everyone accustomed to propagation from cuttings. Some kinds of plants broken up and thrown on the rubbish-heap will take root and grow vigorously; while others, again, can scarcely be coaxed into growth, even when assisted with every possible care. Various expedients have at one time or other been resorted to with a view to induce these refractory subjects to assume a more tractable disposition. I remember reading an article on this subject thirty years ago, in which the writer stated that he knew an old lady who always made a slit in the base of each cutting, and inserted therein a grain of wheat, for the purpose of furnishing it with roots! This, it will be said, is pure nonsense, and so, of course, it is, so far as the supposed office of the grain of wheat is concerned; but might not the slit facilitate the production of roots, and the grain of wheat be useful in keeping the slit open? Phillips, in his "Flora Historica," relates that Dr. Robertson, after repeated failures to propagate the double garden Rocket from cuttings in the usual way, at last adopted the plan of making three longitudinal slits half an inch in length around the base of the cutting, so as to allow him to loosen and turn up the bark as far as the slits extended. Inserting the cuttings in this state he met with great success—"not one in twenty failing to grow." This bark-slitting, however, must be a very tedious process, and, if many cuttings had to be operated on, would occupy a considerable amount of time. The following plan, which I have practised successfully in a small way for many years with shy-striking subjects, is not open to that objection, as it may be effected almost instantly. The cutting, after being prepared in the usual way, is held at the second joint between the forefinger and thumb of the left hand, while the right, applied in the same way to the lower joint, gives the cutting a sharp, half-circular twist, and then, doubling it, brings the lower end up to the left hand, by which it is secured while a hole is made, and then inserted and fastened in the soil, the turned-up joint being buried at least half an inch. The twist given to the cutting is, of course, to keep it from breaking. Many plants, however, are too brittle to be thus treated, but all that will bear the operation root much more readily, and every cutting inserted in this way may be at once counted as a plant, as I do not remember ever having experienced a single failure.—J. Martin, *East Worcestershire.*

Ivy-leaved Pelargoniums on wall.—May I add to the notice by Mr. Baines (page 517) that, having in spring more pots than I had room for, I set out some of the plant against my south wall, between fruit trees, and that they have run up and made a beautiful cover for the wall, being occasionally aided by a rail.—W. M. C., *Clapton.*

REPLIES.

14887.—**Geraniums for exhibition.**—The orthodox method of producing exhibition zonals is as follows: First select the healthiest and most vigorous plants you have of suitable varieties and varied colours. You should pot on at least twice the number of plants you intend competing with, and, if possible, three or four times as many, as a few of them may go wrong, and they will probably not all be in good condition at one time. Say they are in forty-eights (five-inch pots), they should be shifted into thirty-twos almost immediately, and early in the spring into twenty-fours (the usual size for blooming the plants in), or, at the outside, small sixteens, as most schedules will not admit larger than nine-inch pots. In these pots the plants are grown through the summer, encouraging the production of a number of shoots of as far as possible equal length and strength. Do not endeavour to obtain during this season any great amount of bloom;

indeed, the less the plant is allowed to expand the better its chances will be next year: and by no means use any manure or stimulant of any kind, but aim at producing a firm, healthy, well-ripened growth throughout, which is ensured by plentiful exposure to sun and air, particularly during the late summer and autumn. I should have said that the soil for this, the final potting, should be the best fibrous or turfy loam, not broken or rubbed too fine, with a small proportion, say a fourth, of old decayed hot-bed stuff, and a little sharp sand, calcined bones, charcoal, and some good fertiliser. Ram this into the pots tolerably firmly, almost hard, getting as much into the pot as you can, and if the compost is as porous as it should be, only five or six smallish pieces of crock will be necessary for drainage, with a handful of the rougher stuff over it. Winter the plants in a dryish greenhouse, keeping the soil almost dry, and allowing no bloom to develop itself. Very early in spring construct a framework to each, by wiring two crossed sticks across the top of the pot, down to a wire-ring beneath the rim, and on to these fix a couple of strong hoops, or rings, also of wire, one inside the other, the outer one being two or two and a half feet in diameter. To these rings the shoots must be fastened, drawing them down gently and gradually, usually in a circular or spiral fashion, till the framework is equally covered with branches. Four or five months before the plants are desired to be shown, encourage growth by the application of a gentle warmth, frequent syringing overhead, and a little more water at the root. Attend almost daily to the training, and if any gap or inequality occurs, fill it with the nearest available shoot. Pinch out all flower-buds till within about a month of the show, and you may then, or even before, commence feeding with soot-water, guano, sheep-dung, or the like, in a liquid form, using a little solution of sulphate of ammonia twice a week as the blooms are rising. The result should be an evenly-flat head (or "pancake") of rather small but healthy foliage, almost covered with a profusion of moderate-sized heads of bright, stiff bloom, and if the plants are healthy and even you are almost sure to obtain a prize. Such plants as these will last for several years, increasing slightly in size every year, though they do not grow very much as a rule, and it will be noticed that each season the blooms become smaller, but more abundant. They need not be repotted, only top-dress annually with rich soil when starting into growth, and feed liberally with liquid manure. We much prefer, however, more naturally-grown specimens, and our own practice is to shift some of the best Zonals (in forty-eights or thirty-twos) into eight or nine-inch pots, either in autumn or very early in spring, judiciously stopping luxuriant shoots, and tying these out from the centre, by degrees, to plain deal sticks thrust in the soil at a considerable angle—the outermost row having, of course, the greatest inclination. With good cultivation, these become in a few months perfect bushes of luxuriant growth, of a semi-globular form, and at the right time we stop the strongest shoots just beyond a strong bud, "feed up" liberally, tie up the heads to slight sticks, shade a little when expanding, and obtain plants with a dozen or two of trusses of fine overlapping pips, each as round as an Orange, and the size of a Cocoa-nut—often eight or ten inches over. Such plants as these are, in our opinion, vastly preferable to the distorted and half-starved specimens usually exhibited.—B. C. R.

14975.—**Deciduous climbers for greenhouse.**—Ampelopsis Veitchii will suit "Trinette" if it is wished to cover a back wall or other similar place in a greenhouse, whether cold or moderately heated. I planted one in a lean-to house some three years ago, and the back wall is now nearly covered with it—the space being nearly eighteen feet long and ten feet high. It requires hardly any attention, and as it comes into leaf early in the season, and lasts until October, it is very suitable for this purpose, its rapid growth being another recommendation.—W. B., *Whitehaven.*

14982.—**Clianthus Dampieri and C. puniceus.**—My experience in wintering Clianthus puniceus may be useful and interesting to "M. L. E. T." Two years ago I received seed from New Zealand, from which I raised a number of strong, healthy plants of Clianthus puniceus, most of which have up to the present time been kept in an unheated greenhouse situated at some distance from a dwelling-house. One of the plants, about eighteen inches high, in a seven-inch pot, flowered beautifully this year, and another, which I planted in a small bed inside, against the back wall of the greenhouse, has thrived so well that it now reaches to the roof, and has strong, thick stem and branches. I expect it will flower next spring. I think, therefore, that "M. L. E. T." need have no fear of safely wintering her Clianthus in her greenhouse, when she considers the difference of climate between these islands and England.—K., *Shetland Islands.*

15182.—**Cuttings of Lapageria rosea.**—Lapagerias are usually propagated by layers, not cuttings; the red Lapageria can be grown from seed, the white only from layers.—C. F. Davis, *Leatherhead.*

15107.—**Plants for hanging-baskets.**—"C. M. P." can furnish the hanging-pots and baskets in his greenhouse tolerably well with the following plants, all of which are quite hardy and easily obtained:—Creeping Jack (Sedum acre), Gold-dust plant (Sedum acre variegatum), Dwarf White Stonecrop (Sedum anglicum), Wandering Jew (Saxifraga sarmentosa), Mossy Saxifrage (Saxifraga hypnoides), Stag's-horn Saxifrage (Saxifraga ceratophylla), Spreading Rock-cress (Arabis procurrens), Snow-plant or Snow-in-summer (Cerastium tomentosum), Mountain Avens (Dryas octopetala), Rock Strawberry (Fragaria indica), Twin-flower (Linnæa borealis), Gentian Gromwell (Lithospermum prostratum), Creeping Jenny (Lysimachia Nummularia), and its variegated variety (L. N. aurea), Creeping Phlox (Phlox reptans), American Moss Pink (Phlox subulata), Cornish Moneywort (Sibthorpia europæa), and its variegated variety (S. e. variegata), Horseshoe Vetch (Hippocrepis comosa), Yellow Rock Indian-cress (Tropæolum polyphyllum), a very effective plant, requiring a good-sized pot; Black Briony (Tamus communis), three or four plants of which, in a six-inch pot, will depend over the side in a very graceful manner, if not allowed to climb on the strings by which the pot is suspended; Kenilworth Ivy (Linaria Cymbalaria), and Bird's-foot Trefoil (Lotus corniculatus). A well-grown plant of the last-named in a four-inch pot, over the edge of which all round it hung to the depth of four or five inches, and nearly covered with golden blossoms, was one of the most charming pot-plants I have seen. All the above-named plants may be had without any difficulty from almost every well-established plant-grower.—W. M.

NOTES ON DIFFERENT MODES OF HEATING.

A CHEAP HEATING APPARATUS.—I, and doubtless others of your readers, were much interested in the relation of "W. J.'s" (*Manchester*) efforts to warm his greenhouse (on page 503), and I beg to congratulate him on his success. As he kindly invites inquiries, I should take it as a favour if he would answer the following questions:—1. What are the two three-feet lengths of pipes used for? I suppose to complete the circuit. 2. Are the ends of the circuit vertical or horizontal? 3. Upon what do the boiler and pipes rest, and how high from the ground? 4. Are there any holes in the boiler except for the flow and return-pipes? 5. The cistern, I suppose, is merely a feeder requiring to be kept full? 6. Is the gas-flame naked or confined, and is any and what provision made for the escape of the products of combustion? 7. What control is there over too much heat, so as to avoid a blow-up during the night-watches?—F. C. G., *Peckham.*

—— As "W. J.," *Manchester*, has so kindly promised to answer all questions relative to his heating apparatus, I shall take the liberty of asking him a few. I am, unfortunately, one of those who have no money to throw away upon fine things, and, like "W. J.," must content myself with some sort of rude structure. My green-house is not so large as "W. J.'s," being only eight feet by six. I have at present a small furnace nine inches square and two feet deep. I burn coal and cinders. At the top of the furnace I have four-inch glazed pipes running once through the house and out at the back. But, as my smoke annoys my neighbours on washing days, I have resolved to make something of the same sort as "W. J." Now, my house being less, as I have before stated, I wish to ask him if he would recommend as large a boiler as his? 2. Would not the flow and return pipes act just as well inserted in the sides, say two inches from the top, and two inches from the bottom, or, I would say, similar to the hot-water boilers? I would not have the stove inside the house for fear of the fumes, but make a small house outside and let the pipes into the house. If "W J" will answer the above he will greatly oblige.—SMOKE NUISANCE, *Accrington.*

HEATING BY GAS.—There is in this week's number some interesting information on the heating of greenhouses, and "Tam Glen" describes a gas-boiler, and says that the consumption of gas is "not large." But can he or any of your readers inform me what is the approximate consumption of gas for keeping a given length of pipes fairly heated through a night, say, of six degrees of frost, or what is the comparative cost of heating with gas and with coke and ashes? In some cases, *e.g.*, where an ordinary boiler and flue cannot be erected near a dwelling-house, and so the pipes would have to be conducted through some distance, the primary cost of laying pipes for a distance, together with the loss of heat occasioned thereby, might be sufficient to counterbalance the extra cost of gas as fuel. Having myself a greenhouse so situated, I should be glad to have some statistics to calculate from.—BORDERER.

15124.—BUILDING BRICK FLUE.—Perhaps my experience may be of service to "J. W., *Cheshire.*" I have had a greenhouse now for about ten years heated by brick flue, and have had great success in plant-growing. My present one is span-roofed, twenty feet by ten feet, with brick flue all round, furnace and chimney at same end. The furnace is twelve inches wide, with ordinary furnace-bars and door, eighteen inches long on bars, and fourteen inches high. It is covered with fire-clay blocks four inches thick, and I have outside, fixed on face of wall, a sheet of iron with handle to slide in two pieces of wood grooved for the purpose. This answers well to regulate the draught, and also prevents the flue from getting cold when the fire goes out. The flue is formed on brick bottom, with sides two bricks deep on edge, that is, nine inches deep and nine inches wide inside, and covered with red flue covers twelve inches by ten inches, and two inches thick. It is kept about two inches from outside wall to obtain all the heat. It is on same level all round; but I believe it would be better to rise six or nine inches. The chimney is nine inches square inside, and eighteen feet high. It will burn anything in the shape of slack. I should think that the cause of "J. W.'s" failure is that his chimney is not high enough.—W. E., *Glenfield, Leicestershire.*

STOVE FOR GREENHOUSE.—Being interested in horticulture, and a constant reader of GARDENING, I have read with interest the correspondence on the subject of heating, and as I have got so much valuable information from time to time through the paper, I shall be glad if my experience should prove useful to other readers. Two years ago I purchased a greenhouse with stove and hot-water pipes complete, a coil of one-inch pipe going round inside the stove four times, and connected to sixty feet of three-inch piping, being a flow and return round the house, with the exception of the end where the door is. I used coke, also coke and slack; but I could not put a sufficient quantity of fuel on to last the night, usually finding the fire out and some of the water boiled away, as, when the top was on the stove, it caused too much draught. About this time I saw a stove with an extra feeder, and the gardener said it would last two or three days when filled up, being a large size. I got a twenty-eight pound yard bucket (zinc) and cut the bottom out, taking care to hammer it smooth. I then placed it on the top of my stove, and it dropped in a little way so as just to leave a space round the bottom. I filled it up to the top of the bucket with coke broken small, placing a piece of tin on the top to form

a lid. (I may say the chimney is not directly over the stove, but connected by an elbow.) It checked the draught, and had fuel enough to last twenty-four hours; also it keeps up a regular heat, and the only attention it requires is that of stirring it in the bottom of a morning. I have not had the least difficulty with it since I adopted this plan, and it is, besides, a great economiser of fuel.—ECONOMY.

THE ADVANTAGES OF THE DIFFERENT SYSTEMS.—The frequent inquiries in GARDENING ILLUSTRATED as to the best modes of heating greenhouses show that a question especially important to the amateur is not as yet satisfactorily solved. Having had opportunities of studying various modes of heating, from the old rushlight in a garden frame to elaborate hot-water apparatus in extensive establishments, I will, with your permission, give the results of my experience. Perhaps, should it not prove of service as to what ought to be done, it may show what ought not to be done. Rushlights and bricks heated over the kitchen fire were the first attempts at artificial heating that I met with, and, although the frost was kept out, it never was by any means certain to what extent the mats and rugs piled upon the glass contributed to the result. The next in simplicity that passed under my notice were the flower-pot and brick arrangements figured in the first volume of GARDENING ILLUSTRATED, and with such simple contrivances, worked with a mixture of peat and cinders, I saw many plants carried safely through a very severe winter; nor were there many that showed the ill-effects of the escaping fumes inseparable from inside stoking—a drawback that I found perhaps reduced to a minimum in America, where I saw several extensive houses heated by their ordinary house-stoves, no doubt by the use of anthracite fuel; nor was there—owing to the continuous feeding of stoves as manufactured there—any excessive or ungenial heat. I have known small houses heated by independent slow-combustion boilers and pipes with the best of results. When once the working of such boilers is understood, they may be kept alight for three months together without intermission, but they are not without their drawbacks. The expense in the first instance is great for the results. They require either a mechanical amateur or a "professional" to fix. Owing to the small heating surface, a very large percentage of the fuel is wasted, and if, in anticipation of a severe night, the draught is increased, it is by no means improbable that the supply cistern and top row of pipes will be found empty in the morning. As they stand, too, on the outside of the house, much heat is lost. This, however, has been obviated in some of the recent makes. Should the fuel be at all bituminous, or, if coke, be not broken sufficiently small, and "hang up," the fire will surely be found out in the morning, and, the boiler and pipes containing but a small body of heated water, the house will have rapidly cooled. The length of time, also, before the proper circulation takes place after the lighting of the fire—and it must be remembered that it is only in very continuous cold weather that its services are required except at night—is, I well know, oft voted a nuisance by an amateur who may be belated. These remarks apply only to small apparatus, for where there is a large extent of glass, and the distant parts require the same heat as those near the boiler, nothing can compare with a well-designed and well-fitted hot-water apparatus. Some are more economical and more easily managed than others, but it is not my intention to recommend any particular make. However, the best among them do not so fully utilise the fuel as they might had they more heating surface. Gas and oil apparatus, though much improved, and showing much ingenuity in the arrangements for their use, may for their general utility be classed as superior rushlights and hot bricks, not everywhere available, never to be depended upon, and at all times expensive, and so not to be recommended as a desirable means of heating to the economical amateur. The only other form of heating with which I am practically acquainted is the old-fashioned flue, which, although by no means perfect, for small houses possesses several advantages not found in other systems. With the Editor's permission, I will refer to these again. —CALORIC.

GARDEN BIRDS.—II.

The BULLFINCH (Pyrrhula rubicilla) only visits our garden regularly during the early spring months, when he does so daily, the attraction being the young buds of the Gooseberry and Currant bushes. He always attacks the Gooseberry buds first, and, if they are not protected, he will strip every bush perfectly bare, after which he applies himself to the Red and White Currants, and, when he has finished these, winds up with the Black Currants. When he has got all he can in this way from every garden in the village, he turns his attention to the buds of the Hawthorns which form the garden hedges, and on these he appears to subsist entirely as long as he can find any that have not burst into leaf. Any one who has not seen them at work would hardly credit the rapidity with which a pair of bullfinches will entirely denude a large Gooseberry-bush of its buds. This they do in a most methodical manner. Commencing at the lower part of a branch or shoot, they quickly traverse its whole length, like a pair of Parrots, rapidly shearing off the buds in succession as they go; and in this way they go over every branch and shoot until not a single bud is left. Although the whole of each bud is removed by the broad, powerful beak of the bird, he only swallows the small tender heart or central part of it, rejecting all the rest. The peculiar formation of the tongue of the Bullfinch enables him to extract the heart from a bud almost as soon as he closes his beak upon it. The tongue, which is exceedingly narrow in its lower part, is tipped with a short joint bearing a broad, horny, pointed scoop, which is worked vertically by two strong muscles. When the bird closes his beak on a bud, the sharp, horny scoop of the tongue is instantly thrust into it, and the heart is at once extracted and swallowed. So quickly is this done that the bird hardly seems to pause a moment in his work of detaching the buds from the shoots. This is what causes the Bullfinch's visits to be so speedily and severely disastrous to fruit-bushes, as, a small portion only of each bud being devoured by him, a vast number must be sacrificed before his appetite is satisfied. Of the truth of this any one may convince himself by examining the ground under a bush on which Bullfinches have been at work, when he will find it to be thickly strewn with the rejected portions of the buds. The only effectual method of saving the buds from this destructive bird, which would be more appropriately named the *Bud*finch, is to cover the fruit-bushes with netting, which can now be had at a very cheap rate, and, with a little care, will last for years. Old herring-nets answer the purpose well, and one may often be bought for a trifling sum. This is a far better plan than shooting the birds, as, when the bushes are once securely netted, there is no further trouble with them; whereas, if a gun is used, the shooter must be constantly on the watch from daylight to dark, otherwise the Bullfinches will pop in whenever he leaves the ground, and, in localities where these birds are numerous, they will do an enormous amount of damage, even in half an hour. Besides, every discharge of the gun at a Bullfinch in a fruit-bush is certain destruction to a great number of shoots and buds that are shot away. Except in extreme cases, when birds become troublesomely numerous, as Sparrows often do, I rather think it a mistake to shoot small birds. The Bullfinch, for instance, although a pest in the garden when the buds are showing, is at other times a great consumer of the seeds of various wild plants which come under the denomination of "weeds," and of the seeds of two of the most troublesome kinds of these, namely, Docks and Knotweed (Polygonum), he is particularly fond. Last autumn a small forest of Docks, growing on a piece of waste ground close by here, was visited daily by numbers of these birds, until they had quite cleared them of every seed—at least, I was unable to find any on examining the plants immediately after the birds had ceased coming to them. When caught and caged, the Bullfinch becomes tame and domesticated sooner than any other bird that I know of, and shows himself to be of a most gentle and docile disposition. He is by no means a brilliant songster, having no great compass or variety of notes, but his trilling melody is very pleasing, being "low and sweet," like the voice of "Annie Laurie." The hen bird also (an unparalleled case, so far as I know) sings quite as well as the cock. Lastly, the Bullfinch, like the Dove, affords an example of conjugal fidelity rare amongst birds, as the cock and hen, when once mated, never part from one another until separated by death or the bird-catcher.

The ROBIN REDBREAST (Erythacus rubecula) visits our garden daily all the year through, and spends a great deal of his time in it. Indeed, I may almost term him a resident, as he very frequently makes his nest in an Ivy-covered corner. He is one of the useful garden birds, and destroys immense numbers of grubs and insects. Notwithstanding the sentimental feeling with which he is almost universally regarded, and the confidence which he reposes in man, he is really a most pugnacious and autocratic bird towards those of his own species. He is very jealous of his rights over his hunting-ground, allowing his own young ones to remain about the garden only for a week or two after they leave the nest, when he drives them off to seek other quarters for themselves, and he will not permit a strange Robin to poach on his domain if he is able to put him to flight. So, except during the nesting season, he lives alone in the circuit which he has parcelled out for himself, and which he retains only as long as he is able to hold his own against all comers. In his feeding he does not confine himself to any particular form of insect life, as some other birds do, but devours, indiscriminately, winged insects, worms, and all kinds of larvæ. He is especially fond of a white grub with feet (the larva of some kind of beetle), and both old and young birds have often taken a grub of this kind from my hand. In the fruit season, he will help himself to a few Red Currants, to which he is always welcome, in consideration of his very great services during the rest of the year; but, excepting these, he does not meddle with anything else in the shape of fruit. I do not know whether he is the earliest bird on the wing in the morning, but he is certainly the latest of diurnal birds in going to roost, and I often see him flitting about the garden walks in a mysterious manner when the twilight is deepening into darkness. The country about here abounds with Robins, which appear to live altogether in the fields, except in severe winter weather, when they come about the houses. In late autumn I have often stopped to listen to the song of these birds echoing from almost every hedge, and caught up and repeated from field to field in every direction around me to a distance from which only the faintest indications of the songsters reached the ear. At this season all the rest of our wild singing-birds are mute, and the plaintive song of the Robin, harmonising so well with the fall of the leaf and the incipient decay of the summer glory of the vegetable kingdom, has a most soothing and tranquillising effect, for which the listener, if he cares for such a thing, is bound to entertain no small amount of gratitude to "the last lone songster of the fading year."

The HEDGE-SPARROW (Accentor modularis) is another useful garden bird, and one of our constant visitors. The name "sparrow" is erroneously applied to this bird, as he belongs to quite a different section, namely, that of the soft-billed birds, whose food chiefly consists of insects and their larvæ, varied in some cases by wild berries and small garden fruit. In his feeding habits (except that I have never known him to meddle with any of our small fruit) the Hedge-sparrow quite resembles the Robin which also belongs to the same section; but, unlike the Robin, he is rather shy and retiring, generally keeping out of sight under the cabbages or other plants when he is seeking his prey. In frosty weather, however, he often makes his appearance, in company with the Robin, at the back-door, where he finds many a good meal of crumbs and scraps during the winter.

The BLACKBIRD (Turdus Merula) and the THRUSH (Turdus musicus) visit us chiefly when the small fruit are ripening, and do a great deal of damage if the bushes are not netted. The Blackbird is especially fond of the pulp of the Gooseberry, which he will squeeze out from the fruit as they hang, leaving nothing but the empty skins suspended. He is also very partial to young peas, and shells the pods as dexterously

as any cook. I look upon him as a more generally destructive bird in the garden than the Thrush, who appears to confine his depredations to the Cherries and Red Currants. The Thrush, moreover, does some good in thinning the numbers of the snails. The Blackbird does not eat snails, and I do not know of any service that he renders in a garden, as, although I have watched him closely, I have never seen him devour any insects or larvæ, or, in fact, anything in this way except earth-worms, the utility of destroying which is, to say the least of it, very doubtful. As for slugs, which are very plentiful here, I have never known either the Blackbird or the Thrush, or, indeed, any other birds except ducks, even attempt to touch one. On the whole, I have to say that the Blackbird and the Thrush are two birds which I have found do more harm than good in our garden.

W. MILLER.

BEES.

15290.—**Earwigs** (*Lazenby*).—These are not pleasant looking things about bee-hives, though they do but little harm. They appear to congregate about hives, generally between the coverings of the frames, for warmth. They may be caught by placing little boxes containing pieces of empty comb in places frequented by them; in these they will take up their quarters, and can be shaken out into boiling water.—S. S. G.

15291.—**Young Bees** (*Elsie, Leicester*).—Yes; all young bees are lighter in colour when they first leave the cell. The workers, however, do not go forth for the first two weeks, but remain within the hive to act as nurses to the larvæ, ventilate the hive, build comb, and cap the cells. The older bees gather the honey, collect the pollen or bee-bread, bring in the propolis, and defend the hive from all its enemies; and, when there are no young bees, will act as nurses, which they otherwise refuse to do. The fact that you have seen so many young bees on the wing proves your hive to be in a good and prosperous condition. These young bees will outlive the trials of winter and work for you next season.—S. S. G.

15292.—**Wax-moth** (*Lazenby*).—The wax-moth (Galeria cereana) is a great pest to bees, and to weak colonies especially. When it gains admittance to a hive, it deposits large numbers of eggs in cracks and crevices, and on combs not covered by the bees. From these eggs soon hatch tiny gray caterpillars, which at once commence to eat comb, pollen, and sometimes brood. To protect themselves from the bees, each one spins a silky film in the direction of its movements, remaining in this tunnel of silk during its growth, enlarging it as it eats. In about three weeks the caterpillar attains its full growth, when it spins its cocoon in some crevice about the hive, to undergo its change and emerge a perfect moth in about two weeks in hot summer weather, but in winter remains in its pupa state for months. If your hive has a movable floor board the grubs underneath frames and between bottom of hive and floor board can easily be destroyed by scraping and cleaning; otherwise the combs and bees should be transferred to a clean hive. Keeping stocks strong is a sure guard against the attacks of moth.—S. S. G.

BIRDS.

QUESTION.

15293.—**Treatment of Budgerigars.**—I should be glad if any of your correspondents could give me particulars of the breeding of Budgerigars or the grass parrot of Australia. I want to know how long they sit, what food should be given the young birds, &c., and the month they breed in in England? Any hints would be acceptable.—S. H. B.

POULTRY.

15174.—**Floor of poultry house.**—Bricks make as good a floor as anything, and can be quickly laid even by an amateur. Such a floor can be washed without difficulty, should the necessity for doing so arise; and another thing to be said in its favour is that rats cannot easily make their way through.—DOULTING.

15175.—**Unprofitable poultry keeping.**—The appetites of fowls differ so much, and the conditions under which the birds are kept vary so widely, that no quantity of food can be named that will exactly meet all cases. The most satisfactory plan is to give the birds just as much as they will pick up eagerly, and as soon as they appear indifferent to the food when it is thrown to them, discontinue the supply. In my opinion, "Ba-Ba's" fowls have not been very expensive, seeing the outlay in purchased food amounts to only about a penny per head per week. True, many of the birds are young, but it does not pay to starve pullets if good hens are desired. Those hatched before May of the present year should be laying, and the May birds ought soon to begin. The hens will probably not lay until the spring. To get plenty of eggs during the winter, when they fetch the best price, "Ba-Ba" must hatch the pullets in March and April, feed liberally, and keep them warmly housed at night.—DOULTING.

—— Cost of fowls ought not to be more than 2d. per week per head, pullets 1d., as corn is so cheap now. Daily allowance: three ounces per head, excepting in September, October, and November—this is the time to be careful, feed well, giving a warm feed in the morning; altogether supply food three times a day. In December, January, and February give bullock's liver and Potatoes boiled up and mixed with meal. Get some turf and lay down. Mind give your fowls green food if possible all the year round, as they want it as much as rabbits do. The absence of this explains why so many never lay.—C. G. D.

A GARDEN HORROR.

MANY people have funny ideas about their gardens and the mode of decorating them, but of all the curious forms of the "picturesque" in small gardens, or large, perhaps the most offensive and ridiculous is the glittering Mirror-globe. There is a garden in the north of London in which there is an avenue of these glittering spheres. How deeply nature is preferred to art in such cases is very evident. We are sorry to say that we have seen some of these in public gardens, and we sincerely hope that this illustration is the only globe of the kind that any reader of GARDENING ILLUSTRATED will ever see.

A Garden horror: the Mirror Globe.

15126.—**Caterpillars on Gooseberry bushes.**—I should recommend "H. W." to remove the earth from under his Gooseberry bushes to a depth of two inches, and replace it with fresh soil; for when the grubs are full grown they bury themselves under the bushes and become chrysalides within a small, dark-coloured cocoon. The earth which has been removed should be buried at least eight inches below the surface—the parent saw flies when they emerge from the chrysalides would not be able to make their way through that depth of soil. I do not think it would be of any use putting the gas-lime on now, as it would not affect the chrysalides; but if the earth be not removed as suggested, it would be very serviceable in the spring, when the saw-flies are making their appearance. Turning up the soil during the winter is very useful, as it exposes the chrysalides to the weather and the birds; quite a lump of the cocoons may sometimes be found all joined together.—G. S. S.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, November 23 to November 28.

PRUNING old Apple trees. Cleaning Violets in frames. Planting Peach trees. Moving a good-sized Apricot tree. Cleaning herb beds. Digging flower borders. Sowing Radishes in orchard house. Taking up some Jerusalem Artichokes, and stering them in soil to be ready in case of frost. Stubbing up useless fruit trees, and pruning, tying, and painting trees in orchard house. Clearing Asparagus beds. Weeding beds of Lily of the Valley. Shifting some old plants of Calceolaria aurea floribunda into eight-inch pots for spring flowering. Putting batches of Asparagus and Rhubarb into heat, and covering Strawberry plants in pots from frost and snow. Putting some litter over Parsnips, Seakale, and Artichokes. Packing some Parsnips, Carrots, Salsafy, &c., in ashes in root house, so as to get at them easily during frosty weather. Pruning pillar Roses. Beginning to prune Vines generally; also espalier Pears. Taking up and re-planting over-luxuriant Plum trees in order to induce fruitfulness. Putting in Roses and Pinks to force. Taking up, dressing, and re-planting Briars. Making up hotbed for Carrots and Radishes. Securing the necessary quantity of Chrysanthemums for cuttings.

Work in the Town Garden.

CHRYSANTHEMUMS.—With the exception of a few slight early frosts, which did not do much damage in sheltered positions, the present autumn has been so mild and genial—so far, at least—that Chrysanthemums out-of-doors have opened well, as a rule, and make a very good display, while a slight protection, if only of canvas or calico, has sufficed to ensure comparatively clean and well-developed blooms. Those under glass, however, are, of course, very superior in finish and size to all others; indeed, we do not think that the incurved forms especially can ever become properly developed without this aid. Late-flowering varieties must have all the light, air, and sun possible, in order to enable the buds to swell up and expand properly. A weak solution of sulphate of ammonia may be given twice a week to any that seem to require a little stimulant; but remember that everything of this kind forces the flowers on considerably, so that where blooms are wanted as late as possible the less they have the better, and in any case strong manures of any kind are not admissible at this time of year. One of the very best and latest Japanese Chrysanthemums is Dr. Masters, a large-flowering variety with long sword-like petals; colour bright yellow, or orange, and red; this can be had in full beauty at Christmas without any trouble. Other late Japanese are Baronne de Prailly (lilac), grandiflorum (bright yellow), Ethel (white), Fair Maid of Guernsey (white), and Meg Merrilies (creamy white). The latest incurved variety is Princess Teck (syn. Christmas Number), and Empress of India, Queen of England, Hero of Stoke Newington, with others of that class, may also be had in bloom very late by allowing the terminal buds to develop. Several of the Anemone-flowered kinds are also late flowering, and the white pompon Snowdrop, with a bright yellow pompon Anemone (the name of which I am not sure of), are much cultivated by market growers for late cutting.

CHINESE PRIMULAS should be just bursting into full beauty. They should have all the light and sun possible, a shelf near the glass being the best position for them. Some growers keep them in quite a cool house to bloom, but to encourage the fullest amount of flower a temperature of forty-five to fifty-five degrees is more suitable; but whatever plan is pursued it must be adhered to throughout, for frequent or violent changes of temperature are fatal to the Primula, as are also alternations of wet and dryness; one even state, of a moderate amount of moisture and regular temperature, is by far the best preventive of the "shanking off," so common among these plants. In the red or "scarlet" shades we have found nothing to approach the "Chiswick Red" strain in brightness and intensity of colour.

CAMELLIAS AND CYCLAMENS.—Camellias swelling their buds will be much benefited by a few doses of clear soot-water, or of a clear and sweet decoction of cow or sheep manure, especially if cramped at the root, which, by the way, Camellias should always be to a reasonable extent, to be really healthy. Give Cyclamens coming into bloom a gentle warmth to encourage the development of buds, and afford an abundant supply of water. Cyclamens in growth and bloom should never be allowed to become

anything like dry. Plants two or three years old, if repotted and started in August, usually bloom during the early part of the winter, while seedlings raised last autumn or early in spring will come in during February, March, and April; so that it is a good plan to sow a little seed every year, and always have some young plants coming on. If not done already, sow a little seed now, and place on a shelf in warmish greenhouse temperature. It is much better sown now than left till spring.

PROPAGATING SHRUBS.—Young plants of Euonymus, both green and gold and silver variegated, and Aucubas are always useful in a moderate-sized town garden, either for filling up spaces in borders, for potting, or window-boxes. Cuttings of any of these, making them about four inches long, trimming off the lower leaves, and inserting them rather thickly in well-drained pots or boxes of sandy soil, will strike readily about this time, if placed in a cold pit or cool house—or rather, they will "callus" during the winter, and emit roots in the spring. Dibble these out, when fairly in growth, in a bed of good soil in an open situation, and they will soon make neat, bushy little plants, that may be potted or removed to any position. Strong Aucuba shoots may be cut up into pieces with an eye, a leaf, and a small bit of stem to each, which will make plants as readily as cuttings. Put in cuttings of choice Chrysanthemums at once, to make large specimen plants next season. B. C. R.

Glasshouses.

STOVE.—It is necessary now to consider what should be done to keep up a succession of flowers through the winter with a view to regulating the supply so that there may be a regular quantity equal to the demand. The different varieties of stove flowering plants that bloom during winter, and that require the most heat, should, unless there happens to be a forcing-pit, be stood at the warmest end of the stove. Among these may be included Euphorbia jacquiniflora, Poinsettias, Eranthemum pulchellum, Plumbago rosea, Dichorisandras, Thyrsacanthus rutilans, Dipladenia Boliviensis, Jasminum gracillimum, Scutellaria Mocciniana, Sericographis Ghiesbreghtiana, Glonera jasminiflora, Gardenias, &c., giving little air at the end of the house where they are stood. Respecting Gardenias, it is useless expecting them to flower through the winter unless the plants are well-furnished with bloom-buds that have attained considerable size; in addition to this, they require a brisk heat and as much light as can be given them. Care must also be taken with them in the matter of water; if too much is applied it usually has the effect in the winter time of causing the buds to drop.

Winter-flowering Begonias, Tydæas, Pentas carnea, Meyenia erecta, and other plants that will bloom with less heat, should be stood at the coolest end of the house, along with the bulbs that are newly brought in. More Roman Hyacinths, Tulips, and Paper-white Narcissi should be put in once a fortnight. Where the large-flowered Hyacinths are required to be in bloom early in the new year it will be necessary to at once put them in heat. Lily of the Valley should also be at once potted and put in the warmest place available, as it will stand a high temperature; if a bottom heat of eighty or eighty-five degrees can be given for a fortnight it will come on much quicker, especially if the crowns are darkened by an inch or so of leaf-mould or Cocoa-nut fibre placed over them.

EUCHARIS AMAZONICA.—This old kind is still the most useful, as none of the other sorts flower with the regularity and freedom that it does. Plants that have been subjected to a month or six weeks' drying process by keeping the soil only slightly moist, may now be well moistened, and where means exist for giving them bottom heat this will accelerate their flowering. In some cases difficulty is found in getting this plant to bloom with anything like the regularity that it does in the hands of many. Where anything of this kind is experienced where the plants are strong, shaking out and repotting will be almost sure to have the effect of inducing them to throw up flower-spikes. Any of the stock of Eucharis that are being rested with a view to preparing them for flowering later on, should not be kept in so low a temperature as they are sometimes subjected to, a course of treatment which generally induces a diseased condition in the plants. As already indicated, all the rest that is needful can be brought about by a slight reduction in the heat, and allowing the soil to get into an all but dry state—that is with no more moisture given than will keep the plants from flagging.

ROSES.—The Tea varieties of Roses are so naturally disposed to keep continuously growing, more or less, that little heat is needful to keep them moving; but they are not all alike in this. Niphetos, one of the most general favourites of all Roses for forcing, requires five or six degrees more than most of the others to get it to bloom well in the winter season. A temperature of about sixty degrees is not too much for it, providing it is in a house that affords plenty of light. This, needless to say, is an element the presence of which is never more necessary than in the winter, when bringing plants into flower that are of a hardy nature. Where Roses have to be forced in houses where there are mixed collections of plants, it is impossible to do justice to them. It is sometimes supposed that in the winter-time, when, even under the influence of heat, less growth is made, Roses do not require much, if anything, in the way of manurial assistance; but this is so far a mistake that if not helped by manure-water, or by surface-dressing with some or other of the highly-concentrated manures the strength of which gets washed down to the roots in the operation of watering, the growth will come weak, and the flowers produced will be proportionately small and fewer in number. On no account should the plants be stood near where air is admitted, for if anything approaching a cold current comes in contact with the tender foliage, it is certain to produce mildew. In forcing Roses, even in the winter, it is necessary to guard against red spider to an extent that would not be requisite with other plants. The large market growers find it necessary to use the syringe, even through the dull months, to keep this pest in check. There is an absence in the Tea varieties of the high-coloured sorts which many people admire. The hybrid, General Jacqueminot, is one of the best for forcing; it will come in earlier than any other high-coloured variety I have ever tried. Where forced Roses are wanted early in the year with high-coloured flowers, a considerable number of this kind should be grown, so as to give an opportunity of introducing a few plants at a time into heat. Like all other Roses, this gives a better return in the shape of quantity and size of flowers when the plants have been for several years subjected to pot culture—that is, when well cared for, not only during the time that they are being forced, but equally so through the summer season. If hybrid Perpetual varieties, intended for forcing so as to bloom further on in the spring, are not already taken up and potted, no further time should be lost in thus getting them ready, cutting them back as far as necessary. It may be well here to remark that with Roses that are to be forced in the way under notice, it is not well to subject them to such close pruning as is frequently practised, as this tends to weaken them. When the plants are potted, they should at once be stood in a cold pit, or frame: if the pots are plunged in coal-ashes it will be all the better, as should severe frost come they will not be liable to injury.

THE CHRISTMAS ROSE (Helleborus niger).—Few hardy-flowering plants are more serviceable for winter blooming than this; it is especially adapted for use where the stove or forcing-house is such that only a comparatively low temperature can be kept up, as it does not require strong heat to bring it into flower.

THOMAS BAINES.

Flower Garden.

HERBACEOUS BORDER.—Many of the plants in the herbaceous border have outgrown their positions. Some have spread to the injury of adjoining plants; some are too tall for their present places; and so we are lifting them all, and this will enable us to prepare the border thoroughly by trenching out all the old roots and adding liberally both fresh loam and manure. For the most part the tall growers will be in groups of three plants at the back part of the border, but there will be here and there a group nearer the front, as uniformity either as to height or position seems out of character with this class of plants. In the front part of the border will be arranged the weaker growers; these will be in groups also, and vary in number from three to nine according to the varying height and spread of the plants. This done, so far as plants and time to do it will allow, the more naked spots both between and over such plants as Lilies, Pæonies, and Funkias will be carpeted with evergreen Sedums and other suitable plants; and those portions of border not so treated will be surfaced either with finely sifted leaf-soil or Cocoa fibre. If there is likely to be a scarcity of herbaceous subjects, small evergreen shrubs, disposed at regular intervals throughout the border, may be used with excellent effect, and of course can be moved at any time that the herbaceous plants need additional space. R. S.

Fruit.

VINES.—Follow up pruning as the leaves fall, always bearing in mind that a long rest after pruning is in favour of strong, compact bunches. Remove all inert surface soil quite down to the roots, and replace it with fresh turf and bones immediately after the houses are cleansed. If inside borders have been allowed to get very dry they should be well watered before the top-dressing is applied, and old Vines from which heavy crops have been taken may have a little good rotten manure added to the compost; but young ones will be best without it until the fruit is set and beginning to swell. The month of November, particularly when the weather is mild and damp, is the worst in the whole year for ripe Grapes in general, and thin-skinned kinds like the Hamburgh in particular. Fortunately the foliage is now ripe, and in many cases cleared away, and with its removal the worst cause of damping has disappeared. In very late houses the main leaves may not be ripe enough to part from the Vines, but where this is the case a great deal of light and air may be let in by cutting away all laterals and shortening the fruit-bearing shoots to within two or three joints beyond the bunch. A little fire heat will be required for keeping out damp, but great judgment will be needed in its application, as sudden changes are injurious to ripe Grapes.

UTILISING A PIT.—We are just now lifting Rhubarb and Asparagus for forcing. The former forces best when kept quite dark, but the latter must have air and light if flavour is wanted. We are provided with a capital place in which to force this delicacy, viz., an old Pine pit just emptied of Tomatoes. This pit will again be planted with Tomatoes in January and February; therefore Asparagus just fills up the blank. We have Mint in shallow boxes, Tarragon, Mustard and Cress, and a host of other little things, including most kinds of spring flowers for forcing, also in this pit; therefore it is a most useful and accommodating structure.

Our site for Onions next season is just cleared, having been cropped with Snow's Broccoli, which is now laid in a spare border. To this ground we give a thorough manuring, dig it deeply and roughly, and in the meanwhile we mix up old night-soil with ashes and wait for frost; then we give a good top-dressing with this mixture, and as we never sow our Onions before the end of March, ample time is given for all to be mixed and worked together—a little trouble, I admit, but fine crops are the result. Cos Lettuce should now be lifted and protected. G.

A hint to manufacturers.—I think a good profit might be reaped by a firm who would invent and sell at a moderate price small portable awnings to save Chrysanthemums, Dahlias, Christmas Roses, &c., from being damaged by rain. All that would be required would be some cheap calico, oiled; laths, and iron uprights to fasten into the ground. When not in use, they might fold flat and go into a narrow compass; and if the rods were sharpened, any lady could easily set up the frame as required. Will not some one, for his own benefit, and for ours who love flowers, issue this desirable shelter? It is pitiable to see the washed-out beauty consequent on the rain of the past fortnight.—AQUARIA, *Berks.*

HOUSEHOLD.

THE CHEMISTRY OF COOKERY.*

THE importance of good cookery in its relation to health is so apparent to all, and the absence of it so conspicuous in many public restaurants as well as private establishments, that it is a marvel that the science of which Mr. W. Mattieu Williams treats in the volume now before us has not received greater attention. The author in his preface deplores the neglect of the subject by modern chemists, and expresses regret that in consequence of this neglect he has in his work been compelled to put forth his own explanations of familiar phenomena, and his own speculations, instead of, as would be the case with most other matters, being able to found his remarks upon a basis of acknowledged facts and received principles. We have glanced through the book with much interest, and regard it as a step towards the systematic study of a subject which heretofore has apparently been considered unworthy of scientific investigation. Mr. Williams's work is not a "cookery-book" in the ordinary sense of the word; it is not a compilation of household recipes with directions for the use of so much pepper, salt, &c., but it is an attempt to explain clearly the various chemical changes which articles of food undergo in their preparation, so that the housewife, who devotes thought to her work, may know *why* any particular course is necessary, may reason what is the best course to adopt when alternatives present themselves, and may, in short, by the exercise of a little deliberation and study, be made to some extent independent of Cookery Books, or, at any rate, learn how to avoid the errors which they contain. Mr. Williams, while not committing himself to support of vegetarianism, says that "the fact that we use the digestive and nutrient apparatus of sheep, oxen, &c., for the preparation of our food, is merely a transitory barbarism, to be ultimately superseded when the present subject is sufficiently understood and applied to enable us to prepare the constituents of the vegetable kingdom, to be as easily assimilated as the prepared grass which we call beef and mutton."

The following are the author's views of Tea and Coffee, stated in a chapter on Count Rumford's substitute for those beverages:—

"Take eight parts by weight of meal (Rumford says 'Wheat or Rye Meal,' and I add, or Oatmeal), and one part of butter. Melt the butter in a clean *iron* frying-pan, and, when thus melted, sprinkle the meal into it; stir the whole briskly with a broad wooden spoon or spatula till the butter has disappeared and the meal is of a uniform brown colour, like roasted coffee, great care being taken to prevent burning on the bottom of the pan. About half an ounce of this roasted meal boiled in a pint of water, and seasoned with salt, pepper, and vinegar, forms 'burnt soup,' much used by the wood-cutters of Bavaria, who work in the mountains far away from any habitations. Their provisions for a week (the time they commonly remain in the mountains) consist of a large loaf of Rye bread (which, as it does not so soon grow dry and stale as Wheaten bread, is always preferred to it); a linen bag, containing a small quantity of roasted meal, prepared as above; another small bag of salt, and a small wooden box containing some pounded black pepper; and sometimes, but not often, a small bottle of vinegar; but *black pepper* is an ingredient never omitted. The Rye bread, which eaten alone or with cold water would be very hard fare, is rendered palatable and satisfactory, Rumford thinks also more wholesome and nutritious, by the help of a bowl of hot soup, so easily prepared from the roasted meal. He tells us that this is not only used by the wood-cutters, but that it is also the common breakfast of the Bavarian peasant, and adds that 'it is infinitely preferable, in all respects, to that most pernicious wash, *tea*, with which the lower classes of the inhabitants of this island drench their stomachs and ruin their constitutions.' He adds that 'when tea is taken with a sufficient quantity of sugar and good cream, and with a large quantity of bread-and-butter, or with toast and boiled eggs, and, above all, *when it is not drunk too hot*, it is certainly less unwholesome; but a simple infusion of this drug, drunk boiling hot, as the poor usually take it, is certainly a poison, which, though it is sometimes slow in its operation, never fails to produce fatal effects, even in the strongest constitutions, where the free use of it is continued for a considerable length of time.

"This may appear to many a very strong condemnation of their favourite beverage; nevertheless, I am satisfied that it is sound; and my opinion is not hastily adopted, nor borrowed from Rumford, but a conclusion based upon many observations, extending over a long period of years, and confirmed by experiments made upon myself. I therefore strongly recommend this substitute, especially as so many of us have to submit to the beneficent domestic despotism of the gentler and more persevering sex, one of the common forms of this despotism being that of not permitting its male victim to drink cold water at breakfast. This burnt soup has the further advantage of rendering imperative the boiling of the water, a most important precaution against the perils of sewage contamination, not removable by mere filtration. The experience of every confirmed tea-drinker, when soundly interpreted, supplies condemnation of his beverage, the plea commonly urged on its behalf being, when understood, an eloquent expression of such condemnation. 'It is so refreshing;' 'I am fit for nothing when tea-time comes round until I have had my tea, and then I am fit for anything.' The 'fit for nothing' state comes on at 5 p.m., when the drug is taken at the orthodox time, or even in the early morning, in the case of those who are accustomed to have a cup of tea brought to their bedside before rising. Some will even plead for tea by saying that by its aid one can sit up all night long at brain-work without feeling sleepy, provided ample supplies of the infusion are taken from time to time. It is unquestionably true that such may be done; that the tea-drinker is languid and weary at tea-time, whatever be the hour, and that the refreshment produced by the 'cup that cheers' and is *said* not to inebriate, is almost instantaneous.

"What is the true significance of these facts? The refreshment is certainly not due to nutrition, not to the rebuilding of any worn-out or exhausted organic tissue. The total quantity of material conveyed from the tea-leaves into the water is ridiculously too small for the performance of any such nutritive function; and, besides this, the action is far too rapid, there is not sufficient time for the conversion of even that minute quantity into organised working tissue. The action cannot be that of a food, but is purely and simply that of a stimulating or irritant drug, acting directly and abnormally on the nervous system. The five-o'clock lassitude and craving is neither more nor less than the reaction induced by the habitual abnormal stimulation; or otherwise, and quite fairly, stated, it is the outward symptom of a diseased condition of brain produced by the action of a drug; it may be but a mild form of disease, but it is truly a disease, nevertheless. The non tea-drinker does not suffer any of the five-o'clock symptoms, and, if otherwise in sound health, remains in steady working condition until his day's work is ended and the time for rest and sleep arrives. But the habitual victim of any kind of drug or disturber of normal functions acquires a diseased condition, displayed by the loss of vitality or other deviation from normal function, which is temporarily relieved by the usual dose of the drug, but only in such wise as to generate a renewed craving. I include in this general statement all the vice-drugs (to coin a general name), such as alcohol, opium, tobacco (whether smoked, chewed, or snuffed), arsenic haschisch, betel-nut, coca-leaf, thorn-apple, Siberian fungus, maté, &c., all of which are excessively 'refreshing' to their victims, and of which the use may be, and has been, defended by the same arguments as those used by the advocates of habitual tea-drinking. Speaking generally, the reaction or residual effect of these on the system is nearly the opposite of that of their immediate effect, and thus larger and larger doses are demanded to bring the system to its normal condition. The non-tea-drinker or moderate drinker is kept awake by a cup of tea or coffee taken late at night, while the hard drinker of these beverages scarcely feels any effect, especially if accustomed to take it at that time.

"The practice of taking tea or coffee by students, in order to work at night, is downright madness, especially when preparing for an examination. More than half of the cases of breakdown, loss of memory, fainting, &c., which occur during severe examinations, and far more frequently than is commonly known, are due to this. I continually hear of promising students who have thus failed, and, on inquiry, have learned, in almost every instance, that the victim has previously drugged himself with tea or coffee. Sleep is the rest of the brain; to rob the hard-worked brain of its necessary rest is cerebral suicide. My old friend, the late Thomas Wright (the archæologist), was a victim of this terrible folly. He undertook the translation of the 'Life of Julius Cæsar,' by Napoleon III., and to do it in a cruelly short time. He fulfilled his contract by sitting up several nights successively by the aid of strong tea or coffee (I forget which). I saw him shortly afterwards In a few weeks he had aged alarmingly, had become quite bald; his brain gave way and never recovered. There was but little difference between his age and mine, and but for this dreadful cerebral strain, rendered possible only by the stimulant (for otherwise he would have fallen to sleep over his work, and thereby saved his life), he might still be amusing and instructing thousands of readers by fresh volumes of popularised archæological research.

"I need scarcely add, that all I have said above applies to coffee as to tea, though not so seriously *in this country*. The active alkaloid is the same in both, but tea contains weight for weight above twice as much as coffee. In this country we commonly use about 50 per cent. more coffee than tea to each given measure of water. On the Continent they use about double our quantity (this is the true secret of 'Coffee as in France'), and thus produce as potent an infusion as our tea. The above remarks are exclusively applied to the *habitual* use of these stimulants. As medicines, used occasionally and judiciously, they are invaluable, provided always that they are not used as ordinary beverages. In Italy, Greece, and some parts of the East, it is customary, when anybody feels ill with indefinite symptoms, to send to the druggist for a dose of tea. From what I have seen of its action on non-tea-drinkers, it appears to be specially potent in arresting the premonitory symptoms of fever, the fever headache, &c."

* *The Chemistry of Cookery.* By W. Mattieu Williams. Chatto & Windus, Piccadilly.

Constructing Melon-pits.—I am about to construct three Melon-pits on the principle given in GARDENING, p. 456, but I cannot get about here "kiln tiles," as described. Is there any objection to my using slates, and would it be necessary to punch holes in the slates, or would their thinness permit sufficient heat to pass through them into the upper chamber without holes? Again, if the manure-chamber is built one brick thick, would half a brick thick for the upper chamber be sufficient? I have any amount of stable-manure.—W. THOS. JENNINGS. *** There would be no objection to the use of slates for the floor of the Melon-pits, except on the score of their brittleness, and it would be quite unnecessary to perforate them. If the "kiln-tiles" are not procurable, however (though, as thousands are used by maltsters in and near London, they are undoubtedly to be had if one could only find the right place to go to), I should recommend substituting sheets of corrugated galvanised iron, of a rather heavy gauge, as being stronger and more lasting than slates. The fact that nothing of this nature will permit the genial steam from the fermenting material below to ascend into the upper chamber is certainly a drawback, but a few narrow spaces might be left between the sheets for this purpose, which could be easily closed, either wholly or partially, if found desirable. A thin layer of turf, spent Hops, tan, or even ashes on these sheets would, if kept moist, have a beneficial effect, and would prevent the transmission of too much heat. Regarding the thickness of the brickwork, four-and-a-half inch work would doubtless be sufficient for the upper part of the pit, if put together strongly with cement.—B. C. R.

GARDENING ILLUSTRATED.

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FRUIT.

STRAWBERRY GROWING FOR AMATEURS.

The present is the proper time to prepare the ground where Strawberries are to be planted in the spring. It is necessary to do so now, as all ground that is to be occupied requires to be dug up deeply some time before the plants are put out, to allow it to settle down, because if the preparations are delayed until the spring, the ground will be so open and light that, should a dry time follow after planting, the plants would probably suffer for the want of root moisture. Apart from this, the Strawberry prefers a firm soil to a light one. Respecting the quality of the ground for Strawberries, it is pretty well known that a deep loam resting on gravel is the sort of land that suits them best, and, where there is any choice, land of that character should be selected in preference to that of any other description—but I must not forget that I am writing for amateurs, and that they are so situated that they have to make the best of the soil they have. Such being the case, the necessary preparation should begin at once. Where the soil is of fairly good quality to a depth of two feet the ground may be trenched up in the ordinary way—that is, the bottom spit may be brought to the top, but where the lower stratum is of an inferior quality it should not be brought to the surface. In such cases, the proper way is to have a rather wide trench when digging, and to dig up the bottom, and allow it to remain there, but before the next spit of top soil is placed upon it, a good layer of rotten farm-yard or hot-bed manure should be laid over it; this will enrich the bad bottom soil, and it will also afford a rich feeding-ground for the roots of the Strawberry plants and induce them to strike down out of the way of an ordinary drought. After the trenching is done, and when the surface is moderately dry, a dressing of manure should be placed on the surface and then forked in. Manuring the top soil is quite as important as manuring the bottom, because the young plants require something kindly that they can lay hold of quickly and establish themselves. As these remarks are intended to apply to plants put out in the early spring, I need not stop to discuss the respective merits of autumn and spring planting. Some prefer the former; but my opinion is that there is very little difference in regard to the extent of the crop secured the first year, whether the plants are put out in the autumn or the spring, providing always that well-prepared plants are available for the spring. I mean by well-prepared plants those that are taken off the old plants in the month of August, as soon as they have made a few roots, and planted out a foot or so apart in a well-prepared piece of ground, properly cared for through the autumn by having the runners they make cut off, and by being kept free from weeds. Plants so treated, and carefully lifted about the middle of February, and as carefully planted where they are to fruit, will bear a fair crop of fine fruit the same season; but I am quite aware that it is useless to put out plants in the spring and expect them to fruit well the same year if they have not been prepared in some such way as I have suggested. Plants brought to the garden in bundles with but few roots and leaves will be sure to disappoint in this respect. If the plants should be obtained in pots they must have the greater part of the soil shaken away from the roots and the roots disentangled before they are planted. In regard to

The best sorts to grow, it is pretty well known that there are some sorts that do not thrive in all descriptions of soil. The least particular in regard to soil and climate are Vicomtesse Héricart de Thury, Sir Joseph Paxton, and President, while in some gardens British Queen, Sir Charles Napier, and Keen's Seedling never do well. The three first-named will not disappoint anybody as regards flavour and productiveness, and they are less likely to fail than any sorts I know. I have not made a long list of sorts, because a longer one would only confuse the minds of those unacquainted with the merits of the many different varieties, but, should another kind be wanted, Dr. Hogg may be selected with confidence.

Planting.—There is a great difference in the growth of Strawberries in some soils. In a strong loam they grow much more vigorously than they do in a lighter medium; these considerations should determine the distance at which the plants should be planted—the stronger the land the more room the plants require. In some cases the rows should be thirty inches apart and in the row the plants should be two feet from each other, but in a general way two feet apart each way will be ample room, and in naturally poor land two plants should be put in instead of one, allowing a distance of about four inches between the two plants. In all naturally light soils all the space between the plants should be well-trodden with the feet every spring; a dry time in March is the best to select for this work, and then the ground can be made firm without getting into a compact mass, for there can be no doubt that Strawberries do better in a firm than in a light soil. In regard to removing the runners from Strawberries, amateurs are in the habit of showing more anxiety to have them cut off as they appear than the case merits. Many years' experience, both with cutting them off at different times and allowing them to remain upon the plants until the end of August, and even later, has convinced me that if the runners are left on until the end of the summer they do not weaken the old plants nearly so much as some people suppose. In fact, I have failed to see that they weaken them at all; therefore, in my own practice, I allow them to remain upon the plants until we give the plantations a general clean out early in September, and I grow good crops that way, and the plants last in a vigorous condition quite as long as they did when I cut off the runners at different times during the summer.

Dressing for Strawberries.—I find if a good layer of rotten manure is laid on the surface and very lightly forked in between the rows once in two years, this is quite enough; anything like digging between the rows I object to, but it certainly does no harm to prick the soil up an inch or two to bury a portion of the manure, and I have great faith in spreading on the surface early in April a mixture of equal parts of soot and fresh-slaked lime at the rate of half-a-peck to a square yard of ground, for I think it helps to check the depredations of the slugs and the soot acts as a stimulant to the roots. To keep the fruit from being made gritty by the rain, I find nothing better than long litter from the stables laid on about the end of April. Short Grass from the lawn I consider about the worst material that can be used, as it hangs about the fruit.

J. C. C.

CANKER IN APPLE-TREES.

If I remember aright, I made a promise some time last spring that I have not fulfilled, on the subject of canker in fruit-trees. In reply to a suggestion I made, several readers were good enough to send me specimens of cankered Apple-tree wood for examination, and I promised to let your readers know the result. Fortunately, they came from very distant localities—viz., from Guernsey, Ireland, and different localities in England; and in *every case* I found the same minute insect, which I persistently state to be the cause of canker. I answered each writer separately, explaining my views, which they, of course, were open to receive or reject. I ask nobody to believe me in preference to other writers, neither is it in a presuming manner I write, as I like reading better than writing; but I do believe that, in every case, if writers on this subject had given as much time and close application to minute details as I have, they would come to the same conclusion that others have, and agree with me. Here is an instance I recollect quite well. When the subject was introduced at our Amateur Gardener's Society's meeting, one of the most practical fruit-growers, and probably the most successful in the neighbourhood, attributed canker to the effects of the frost. I gave my opinion, which he said was quite new to him. Discussions and dissections of many specimens followed, and with the aid of the microscope every one was enabled to see for himself the insects in the fresh cankering places. Our friend next "thought there was something in it," and he would try it. Nearly two years have passed since then, and I have placed a recently-written article of mine on this subject in his hands, and I marked quietly his observation when he had read it, and this was it:—"Yes; I quite believe in it. I have tried it, and proved it, and it's a great success." I could give case after case from observation where bad drainage is not the cause, nor sour cold clay subsoil. Some of my worst attacks have been on trees directly over the main drain in my garden and orchard, which I have cured without disturbing a root; in other cases small fresh-grafted trees have been killed before the roots have even touched the subsoil, while large badly-cankered standards on high banks, in hedgerows, and on the borders of dry marl-pits hereabout are struggling for existence with canker. Take a piece and examine it, and there are innumerable insects eating the life out of the trees; yet we must not believe these little things do the mischief, but that they are

come—from where?—to eat up the decaying wood. Let every reader enjoy his own opinion, say I—"Pay your money and take your choice," and get rid of canker by drainage—if you can.
Worcestershire. J. HIAM.

Unheated fruit-houses.—In GARDENING, August 12, 1882, are described some unheated fruit-houses, which are to be seven feet wide on the floor and three feet at the roof. How is the three-foot space at the roof to be filled in?—W. D. PAINE. *** It is evident that the opening along the ridge of the house should be covered by a glazed span or ridge-shaped framework of some kind. This might be made solid, in lengths of six feet or so, and arranged to lift up bodily by means of levers, as is sometimes seen in old-fashioned houses or pits; but I should recommend the use of ordinary glazed sashes, about three feet in length, hinged on a central ridge-bar or rod, as as to lie at a pitch of about forty degree when closed. For a fruit-house, the whole of these should be made to open to as great a width as possible, by means of the ordinary levers and gearing, abundant ventilation being a point of the greatest importance in such structures.—B. C. R.

The Kieffer Pear.—Messrs. Veccars Collyer & Co. send us a specimen of the Kieffer Pear, a very showy kind, with a strong odour. The fruit, as they remark, is not in good condition, but it seems to us none the less of an interesting and distinct flavour. It is impossible, however, to judge of the qualities of the Pear from an English point of view except from English-grown specimens. Considering the enormous number of fine kinds that we have or might have, the advantage of the addition of any new Pear, except of the most distinct character, is somewhat doubtful.

REPLIES.

15177.—**Best Black Currant.**—Carter's Black Champion is certainly the best for exhibition.—J. D. E.

15207.—**Peaches.**—If "R. S." is reduced to half a dozen trees, I should advise him to depend solely upon the two kinds he has mentioned—Noblesse and Royal George. If, however, he has many more trees, he might, with advantage, try two others. Bellegarde is good, and so is Violette Hâtive; earlier kinds are Hale's Early and Early Grosse Mignonne.—D. T.

14979.—**Peaches and Nectarines for outdoor culture.**—The best varieties are Alexander, Hale's Early, Early Rivers, Grosse Mignonne, and Bellegarde. I would not advise whitewashing the fence where the trees are to be planted, for this reason: it will be necessary to syringe the trees to destroy the red spider, which will certainly attack the leaves during hot weather in summer. The syringe will bring off the whitewash every time it is used, and make a sad mess of both the leaves and fruit. I would advise painting with light stone colour; it would not be very expensive, and it would have a much neater appearance than whitewash.—J. D. E.

14955.—**The Irish Peach Apple.**—This Apple is to be found growing in many places throughout Ireland, especially in orchards where the fruit is grown for sale; it is seldom found in gardens of recent formation, being considered inferior to better-known sorts. Although the Apple is not of a large size, the flavour is good; the trees are very good bearers, particularly the old ones. As to its origin, that is a difficult matter to determine. Old Apple cultivators have informed me that in their memory and that of their ancestors, this Apple was grown in Ireland; in what locality it first originated I am unable to ascertain. I have seen trees, bearing large crops of fruit, which seemed as if two centuries had passed over their heads.—M. C., *Cork.*

15014.—**Wasps in vineries.**—This wasp nuisance would, I think, bear, with advantage, further ventilation, in order, if possible, to get at a real remedy, as the repetition of such quack ones as the Tomato cure cannot lead to any good result. Like your correspondent "J. C. C.," I have repeatedly tried Tomatoes in vineries, with no good effect, and I think it worth noting that here, this season, among a number of bottles containing sour beer and sugar (which we find a very good bait) hung about on the open walls one happened to be overhung by a Tomato branch, the leaves of which were actually touching the mouth of the bottle, notwithstanding which there were quite as many wasps trapped therein, in a given time, as in any of the others in various positions amongst Peach and Plum trees, &c. I have never seen wasps thoroughly excluded from vineries by muslin, or fine mesh netting over the ventilators. It is doubtless a very considerable help, but when these insects are very numerous, they find their way in by the doors, &c., in spite of great watchfulness. "J. C. C." is doubtless right however in saying that the plan is better than putting the bunches in muslin bags, as these are certain to destroy the bloom of the berries. Can none of your correspondents recommend with certainty *from experience*, anything which will repel wasps from a house or tree, by its smell or otherwise? It has lately been recorded by some one that coal tar, placed about in open vessels, will do this. Who can bear testimony to this from ample experience, or to the virtues of any "wasp destroyer"?—HORTUS, *North Perrott.*

THE KITCHEN GARDEN.

Pumpkins.—I grew Pumpkins—or rather Squashes, which are a small variety—for many years at Forest-hill, and Pumpkin-pie was a common winter dish with us. The friend who sent me seed advised me not to grow the very large sorts, which were considered coarse, and required more heat than the smaller kinds, being grown mostly in the Southern States. Of the various sorts sent me, one called the "Ohio Squash" did best, and ultimately I grew no other. This grew to eight or ten pounds weight, was round in shape, with slight flutings, and from the first was of a bright yellow colour; we grew it like Vegetable Marrow, but it required little artificial heat, and each plant produced three or four Squashes for keeping, besides small ones which we used as vegetables. My land there was a rich loam on clay, with a strong southerly leaning, and grew all Cucurbitaceous plants very freely; but they do not thrive as well here, and I gave up the Squashes; but I can strongly recommend it to those who have purer air and more sun than we get so near London as here. The term "pie" is not generally used in America, as with us, to imply a dish with a cover of pastry (which, in some of the cookery-books, they call "English pie"), but is applied to what we should call an open tart or baked pudding. Pumpkin or Squash-pie is made by stewing or baking the flesh of the fruit till it is soft enough to pass through a sieve; and the pulp thus obtained forms the basis of the pie, with the addition of milk or cream, eggs, sugar, and flavourings as wished, and the whole is baked in a shallow dish, with an edging of pastry. We liked them, but I confess that I always thought that the flavouring was the best part of the pie; but we liked far better fritters made with the pulp, a device of my cook's which I found to be unknown to my American friends.—W. M. C., *Clapton.*

REPLIES.

15180.—**Utilising cellar.**—In a warm, dark cellar "Sybil" may grow very good Seakale. In fact, I have quite given up forcing on the beds with manure in the old way. The roots are dug as soon as they lose their leaves, all side roots are cut off, and they are then packed thickly in boxes filled with leaf mould or any light, rich soil, with the crowns just level with the surface. The soil is kept fairly moist, and when water is required it is given warm. Old tea-boxes, which are loose enough in the joints to allow superfluous water to drain through, are used. By keeping part of the stock in a cold shed for a time, a succession is obtained. After the Seakale has been cut the roots are thrown away, as I find the best plants are obtained from root cuttings. For these the best side roots cut off at taking-up time are reserved. The upper ends are cut straight, and these roots are packed upright in a box of sifted coal-ashes in the cellar. Very little water is given, but they are not allowed to get quite dry. In due time a number of shoots will appear at the top of each cutting. All should be removed but one (the best), and the cuttings are then (about March) planted out in rows on well-manured ground, where they form strong roots for next season. No further care is required than to keep free from weeds, and if any throw up more than one shoot to remove all but the best. "Sybil" might also, I should say, grow Mushrooms; but I cannot give advice from personal experience as to these. Lilies in pots, and other bulbous plants, may be wintered in a cellar, but must be removed as soon as growth appears.—JAMES SNOW WHALL, *Worksop.*

14958.—**Mushroom spawn.**—Fresh Mushroom spawn is best, because it may have been injured by being kept in a damp place. It ought to be kept dry and cool, but I do not care that it should be exposed to frost. It is much cheaper to purchase the spawn than it is to make it, and it can be obtained from any respectable seedsman. It can be obtained at any time, and the beds may be spawned in any month of the year.—J. D. E.

14983.—**An unsatisfactory kitchen garden.**—I think it is possible that "J. T." might find his garden improved if, instead of applying any more manure this season, he gave it a liberal supply of sawdust (if this can be obtained from some stable, all the better), soot, fresh-slaked lime, salt, and sifted ashes. For his further benefit, allow me to cull from page 299, Vol. II.:—"In Hull, there is a vast quantity of timber cut, and the poorer class of horsekeepers use sawdust to make the horses' beds. . . . I had some thrown on a piece of vacant land, and let it lie to rot. I afterwards scattered it about very freely as far as I could throw it with a shovel; the other parts of the land were well manured, and had plenty of riddled ashes; but in taking up the Potatoes, I could tell by the beneficial results where the sawdust had reached. The Potatoes turned out finer and cleaner, the land is drier and easier to work, and there is an absence of the thick, long earthworms so plentiful over the rest of the plot.—Roadside Cottager." Also page 352, same vol.:—"It (sawdust) tends greatly to loosen the soil and make it work easier, and such vegetables as Potatoes, Radishes, &c., are finer and cleaner, and also less affected by disease in wet seasons. I also think that it is the resin in sawdust which keeps the long, thick earthworms away, as I have always found them very scarce where it is used.—Boronia Megastigma."—FERNDALE THE FIRST.

OUTDOOR PLANTS.

LIFTING AND DRYING DAFFODILS.

THERE seems to be a good deal of misapprehension about this (see p. 514 and *ante*), some correspondents stating that bulbs of Narcissi are injured by being taken out of the ground and dried, but it is not the case. I may mention that I have at least twenty thousand or thirty thousand Narcissi flowering every spring in my garden, belonging to about two hundred or more distinct varieties. These are all managed by myself, and I have tried all kinds of experiments with them. All the Narcissus tribe have a period of rest in summer, longer in light and dry soil than in strong and wet soil, but lasting at most from the middle of June to the middle of September. The time to dig Daffodils up is just as the last bit of green disappears from the leaf. At that time they may be lifted without any damage, and may be kept out of the ground for two or three months without injury. I have proved this by careful experiment over and over again, and, furthermore, in the heavy soil of this garden they are better for the treatment, and I often spread Daffodils above ground under a south wall to give the dry bulbs the benefit of all the sun this capricious climate can afford. Some kinds are much improved by this, and I never found any the worse for it. I do not recommend digging up Daffodils every year. It is needless trouble, but when a clump produces many flowerless pairs of leaves, they want replanting, and should be marked for the purpose when in flower, and lifted as soon as all the leaves are dead. It greatly damages all the Narcissus tribe to move them when they are growing; when not kept out of the ground they begin to grow, if the soil is wet, in August, and continue active from that time till the last green disappears from the leaf in the following June. But those which are lifted in June grow all the more vigorously than those left in the ground, and if not planted till the middle of September, flower no later, and quite as well. It is quite true that if Daffodils are used for spring bedding and lifted to make room for other plants while the

leaves are still green, they will do no good. As a general rule, true in ninety per cent. of instances, if a Daffodil is lifted while in flower, or a little before or soon after flowering, and the roots allowed to dry, that bulb will not flower next year; but I can confidently assert that no Daffodil bulb is any worse for being out of the ground during the months of July and August.
Edge Hall. C. WOLLEY DOD.

—— My remarks about Daffodils referred only to those grown in the open ground. The best time to move them is when the leaves have died down completely. The growth of the following season begins with the first autumn rains. I have always noticed that newly-planted Daffodils flower badly, producing a large proportion of small and misshapen blooms, and it is often two years before the doubles produce perfect flowers. The singles are not so much injured—ill-usage makes the doubles bloom almost single. Plants in pots can have attention which cannot, as a general rule, be given to plants in the open ground. Recommendations to grow things in pots should, however, be received with caution. Pot-plants as a rule, if hardy, are poor, miserable things compared with the same plants grown in the open air in beds. I often think if garden-pots were twenty shillings each, it would be all to the advantage of gardening, as it would compel people to make gardens under glass, with beds and walks, the only difference from open-air gardening being the glass roof and apparatus for heating. J. D.

Flowers for cutting.—Where cut flowers are in demand I can strongly recommend the following, which will furnish plenty of flowers in the autumn, besides looking well in the hardy flower-border. These are Chrysanthemum maximum and Pyrethrum uliginosum. Both have large white flowers with yellow centres. The Chrysanthemum is very strong-growing, and forms quite a bushy plant; the flowers are borne erect on stout stalks in great abundance for over two months in the autumn, and for cutting this plant is a gem, for it will grow in almost any soil. The flowers, when cut, are very well suited for mixing with single Dahlias, &c. I should also mention that the plant grows about three and a half feet high, and requires plenty of room. A small specimen, if planted now, would make a fine clump or bush by next autumn. Pyrethrum uliginosum is one of the finest perennial plants grown, and should be in every collection, great or small; growing to a height of four feet, it is, when in flower a truly grand sight, forming a beautiful bouquet of pure white flowers which droop most gracefully in autumn; this plant is one of the best and most useful for cutting, and if only once seen will become a general favourite. It is not at all fastidious as regards soil—any ordinary garden soil suits it. After the plants get to a large size they should be divided, and when grown in company with Michaelmas Daisies, either as single plants or in masses, they make a really grand sight.—W. C. LEACH, *Clopton Gardens.*

Colchicum maximum is, perhaps, the most effective of this genus of naked flowering bulbs. Its strong points are stoutness, great size, reddish-purple colour shading off to lilac inside the perianth, and to wallflower or mahogany on the outside of the tube. It dies erect, measures four inches or more across in sunshine, lasts in good form a fortnight, and flowers a long while in succession from the same bulb. It is one of the latest, and conveniently adorns the little corner left dark by the "gone-out" lights of C. speciosum.—J. W.

THE GIANT COW PARSNIP.

THERE is scarcely any plant that exceeds the Giant Cow Parsnip (Heracleum giganteum) in the power of conveying to the beholder perfect ideas of exuberant health. Its gloriously cut and plaited foliage, raised on massive stalks, mottled with shining dark spots and crisp with rigid hairs, its flower-stem rising erect to a great height, its noble terminal umbel of flowers expanding in all their symmetrical regularity—all these combined mark out this plant as one of no ordinary merit. Its proper place, however, is in the wild garden. The myriads of progeny that spring up around the parent plant, and the vigour and rapidity with which they grow, are something surprising. Those who admire it, and introduce it into their gardens, must beware of this propensity, and should not have more than two or three plants. An admirable place for this Cow Parsnip would be a small island, where its roving might be arrested by the water, and where its tall spectral stems might even remain during the winter.

Giant Cow Parsnip (Heracleum giganteum).

Michaelmas Daisies.—These grand old flowers, which bloom from August to December, should be grown in every garden, large or small, flowering as they do at a time of year when flowers are scarce, and lasting in a cut state a long time in water. Many of them, particularly the dwarf sorts, are also very useful when grown in pots, and, thanks to the energy of those who love our hardy flowering plants, many fine sorts have been added to the above. Yet, in spite of their usefulness, many people do not grow them—in fact, many are unaware that there are such fine kinds. For masses, or to plant with other border plants, these Daisies at this time of year produce a charming effect, bearing flowers in abundance from light to dark blue, white, and bright rose; and at this time of year, when flowers are scarce, these Daisies are one mass of bloom. To all who require cut flowers, I would strongly recommend the above as most useful, and no time should be lost in planting at once these charming flowers, which by this time next year would make fine plants and give a good return, besides being sure to please. All of the sorts are beautiful, but I will mention a few very fine ones—namely, Amellus, large violet flowers; Amellus bessarabicus, very fine, height two feet; Amellus roseus, rosy purple, good; dumosus, bright purple; ericoides, white, small flowers, but yet a very beautiful plant; lævis, lilac, large flowers, very fine; Novæ-Angliæ, bright rose, a lovely flower; novæ rubra, extra fine; salsuginosus, large flowers, white, blooming for three months in the autumn; ver sicolor, small flowers, but fine and effective.—W. C. LEACH, *Clopton Gardens.*

Hardy Ferns.—May one who has taken, for many years, much interest in growing hardy Ferns add a few words to "J. C. B.'s" article on the subject in GARDENING, page 513?—Asplenium viride. I am astonished at any one succeeding with this charming Fern without the one prime requisite, abundant limestone. I have seen it growing in its true home in the water-worn rifts, in limestone, on the Yorkshire hills, in company with Polypodium calcareum, and that was when I learnt how to grow it. My experience has been uniform failure without abundant limestone for the roots to run in, and uniform success where this was supplied. Athyrium Filix-fœmina Fieldeni. This is a very quaint form which I have not seen for many years. When a boy a fruiting frond was sent to me, and from it I succeeded in raising a large number of plants, most of them intermediate between the type and the extreme form, which were very interesting, but in the course of many removes (worse for a gardener than as many fires) I long ago lost it. Polystichum Lonchitis, our own native Holly Fern, grows with me here most freely, and is one of the ornaments of my alpine garden, remaining green throughout the year. I put it in with a quantity of peat round the roots, and some big lumps of slag round it to secure moisture, and it has wanted no further care for about five years. Polypodium Dryopteris, Phegopteris, and calcareum are all of exceedingly easy growth, the last, like viride, requiring limestone to run in, and all doing better for loose stones or rubble, among which the rhizomes run freely. When well grown they are all lovely objects—dense masses of delicate foliage two or three feet across. Polypodium alpestre.—This Fern grows with me side by side with Holly Fern, receiving much the same treatment, and not only grows vigorously, but fruits more abundantly than I have ever seen it doing in its native habitat either in Scotland or Norway. Cystopteris fragilis, Dickieana, alpina are all delicate Ferns, quite hardy, and of the easiest growth with me. They increase every year without any trouble or care. C. alpina has a hankering after limestone. Woodsia ilvensis is a very distinct Fern, of easy growth, very beautiful, with its rather curious venation while the fronds are unfolding in the early spring, and always a striking variety with its hairy fronds. Ceterach officinarum is another remarkable Fern, and not at all, as some suppose, very shy. I have it planted in limestone which has a sloping surface, to throw off superabundant moisture, while the individual pieces are set in the bank in such a direction that the water finds its way to the roots. All the above are native species of great beauty and interest, which could be grown anywhere, except in the centre of a town, with the most ordinary care. My limestone (as I am far removed from a limestone district) consists only of such fragments as a friendly stonemason is always willing to let me have from his refuse-heap for the carting away.—L. C., *Rugby.*

Hedychium Gardnerianum.—As evidence of the comparative hardiness of this plant, I may mention that I planted out a tuber this spring in a sheltered corner on the south-east side of my house, and that it is now in flower, or rather just passing off, having had one good spike of bloom.—BORDERER, *Tunbridge Wells.*

REPLIES.

15167.—**Tropæolum Lobbianum.**—This requires exactly the cultivation of the common Nasturtium, save that it is a trifle more tender. A poor soil suits it best, and prevents the stem growing thick and fleshy.—J. D.

15226.—**Gladioli blooming late.**—I have observed the same thing this year. I planted mine in the autumn of 1883, and have not disturbed them since; they are only just in flower, but they are very fine.—SOUTH DEVON.

15186.—**Culture of large Sunflowers.**—My experience on this point is that the plants and flowers grow finer if the seed is sown where they are to grow. I have tried sowing the seed in a cold frame and transplanting in seed pans and in separate pots, but I have found the best results from sowing the seed in the open ground and covering with bell-glasses, and if more come up in a clump than were required, simply pull them up and throw away.—FERNDALE THE FIRST.

—— In Devonshire Sunflowers can be grown perfectly from first to last in the open ground. Transplanting may check the plants. The Sunflower requires plenty of water, but a rich soil will produce large leaves rather than flowers. Helianthus giganteus, or the Giant Sunflower, is the very large kind, but a much more beautiful thing is the lemon-coloured variety of the common Sunflower; the centre of this is not nearly so large in proportion to the petals as in the large kind.—J. D.

14725.—**Dwarf Evergreen plants.**—"Spbinx" should procure a selection of these from a good nursery, and plant them all out in experimental beds, so as to become acquainted with their habits. Some spread fast and kill the others if planted near them, while others spread but little. The plants I find most useful are the Aubrietias (especially the kind named Eyrei grandiflora), Arabis albida variegata, the various Thrifts, the dwarf spring-flowering Phloxes (especially the varieties of setacea), Erinus alpinus (a very dwarf plant easily raised from seed), the Sempervivums or Houseleeks, the Sun Roses or Helianthemums, and the dwarf perennial Candytufts. To these may be added tufts of Iris olbiensis and Iris pumila, and the hardy Heaths, Pansies also do well if placed so that their roots can ramble under stones, and Gentiana acaulis is useful if the soil is moist and rich. Border Pinks may also be used if well fed; clumps of bulbs may be placed in pockets in the rockwork—Scillas, Jonquils, and Snowdrops look well.—J. D.

15194.—**Edelweiss**—Possibly you may have had badly-ripened seed, but a far more likely cause is unsuitable soil. Leaf-mould rotted to powder, mixed with a little sharp sand, and fine silky loam, which feels smooth when rubbed between finger and thumb, make the best soil for sowing seeds in. Try again in a pot of such soil in spring, and cover the pot with a bell glass. A good way would be to purchase a strong plant in spring and grow it in a pot under glass, and save seed, sowing that as soon as ripe. I have noticed that the real flowers—the little Daisies without rays in the centre of the head of white bracts—do not stand wet weather well, which would prevent the seed from being fertilised.—J. D.

15119.—**Bulbs for spring flowering.**—Hyacinths require the same cultivation as they receive in the Dutch bulb farms, and are not suitable for permanent plants in ordinary gardens. Narcissus of all kinds are easily managed; all the long trumpet kinds like a rich moist soil, and all the cultivation they seem to require is a top-dressing of withered leaves or leaf-mould in autumn; where that cannot be given, an inch or two of old hotbed manure in autumn will be beneficial. The most important point with all bulbs is to avoid injuring the leaves until they are withered. Tulips are greatly improved if, in planting, a turf with the grass side under is placed in the bottom of the holes that the bulbs are planted in; dig out the hole a foot deep and lay the turf in the bottom, covering it with two inches of light soil; set the bulbs in that, and fill in the soil up to the level of the ground. The improvement which this simple procedure produces is great. The flowers are large in size, brilliant in colour, and last well; and, when the bulbs are lifted, they will be found quite as large as when planted. I have not tried the plan with the late, or florists' Tulips; but, as the compost recommended for these by the old growers for show was turfy loam, sand, and old hot-bed manure, planting them so that the bulbs could root into a turf would most likely be equally beneficial. I am afraid artificial manures are not suitable for bulbs. Stable and cowshed manure are easily procurable in London; and every garden, even the smallest, should have a corner set apart for the manipulation of manures and soils, and for a hot-bed for rearing young plants.—J. D.

15200.—**Utilising small suburban garden.**—The whole of Forest-hill, except the top, is London clay. The best way with a new garden would be to dig it up in rough ridges for the winter, and keep turning it over immediately on a thaw occurring, and before rain falls, mixing coal-ashes, soot, vegetable refuse, and manure with it; sand will also do good. The object should be to get two feet of good workable soil. All the Cabbage family do well in heavy soil, also Lettuces, and Beans and Peas of all kinds. The roots are the difficulty. Parsnips should be tried first, and Carrots last. Jerusalem Artichokes do well if the soil is well broken up and manured, and mixed with burnt earth and vegetable refuse; they improve greatly in flavour with good cultivation, and should be more grown. Rhubarb does well, as "A Beginner" may see in the market gardens of the neighbourhood, if they are still in existence. I have not been in his neighbourhood for some years. For flowers see answer to query 15201.—J. D.

15201.—**Plants for suburban garden.**—The south-east wind being the most rare in London, and the air in North Kensington rather pure, "G. S." may attempt a few bush Roses with some prospect of success. The borders should be thoroughly broken up to the full depth of two spades, and well manured in the bottom spit. Horse-dung is not so suitable as mixed farmyard manure, as the straw in the latter helps to lighten the soil and keep it open. The best Roses would be Gloire de Dijon, Anna Alexieffe, Baronne Prévost, Jules Margottin, John Hopper, Victor Verdier, Madame Plantier, Common Cabbage, Maiden's Blush, Madame Zoetmans, and Aimée Vibert; these should be bush Roses on their own roots, or dwarfs on the Manetti or seedling Brier. If "G. S." can procure a barrow-load of lime rubbish, such as plaster from an old building, and will dig that into a patch or two of soil, he may plant there Lathyrus latifolius and L. latifolius albus, which will make a fine show on the sunny fence. Two Honeysuckles would also be useful, the common kind, in a half shaded spot, and the early white Dutch in the full sun. In the long border plant a few good perennial Phloxes—Virgo Maria, Boule de Feu, Comtesse de Castries, Mons. Bazeille, Splendour, and Mons. Raffarin would be a good selection, but there are many others quite as good. Of Chrysanthemums a good selection would be Madame C. Desgrange, Delphine Caboche, Frederic Pelé. Mr. W. Piercy, nanum, Précoccité, and Aigle d'Or. Pyrethrums should be planted near the front of the border, and where they only get the morning and late afternoon sun. Good kinds are Mont Blanc, Solfaterre, Capt. Nares, Madame Munier, Mons. Barral, and Haage et Schmidt. One or two good Delphiniums will give a bit of blue; good kinds are elatum, very tall blue, and formosum. A few good strong-growing Carnations may be placed in the sunniest parts. One or two clumps of German or Bearded Iris have a good effect; I. pallida is a good kind, with broader leaves and larger flowers than the well-known Blue Flag. I. germanica alba, or florentina, is a good white. There are many yellow kinds, and many with the upper part of the flower yellow and the lower part brown, crimson, or purple. Iris orientalis is a fine purplish blue Iris with grassy leaves. A few clumps of Anemone japonica alba and A. j. rosea should be planted in half shade; these Anemones require special treatment; plant them in eighteen inches of turf sods with the living grass just peeled off the top of them: chop the sods up small and mix them with a third of sharp sand; less, or no sand, will do if the turf is cut from sandy soil. Top-dress the plants in autumn with plenty of withered leaves; only cut the flower-stems off, and do not fork, hoe, or dig near them, but allow the leaves to wither on the plants and decay about them. With this treatment the plant becomes the fine-habited, stately thing which has several times been illustrated in GARDENING, and keeps a tufted habit, sending up a mass of a dozen or more tall stems crowned with flowers. When it begins to send out runners, it is time to lift the plants and renew the soil. If planted in ordinary soil, and treated in the usual manner of herbaceous plants—that is, starved and chopped about the roots—it spreads rapidly, is difficult to eradicate, and sends up stems of varying heights in small numbers. If "G. S." can get good manure, and rot it to a crumbling, mellow state, he should grow two or three patches of double florists' Ranunculus. They are very showy, and a heavy soil suits them. German Scabious do well, and are very showy when well grown. Polyanthuses and border Auriculas are also suitable. Sweet Williams do well, but should be planted out in September. Double Daffodils do well, also Scillas. Gladioli can have the soil specially lightened. Tritomas or Torch Lilies are very fine on clay. Pentstemons, Stocks, and Verbenas do well, also half-hardy annuals of all kinds. Ivy-leaved Pelargoniums grow in the most rampant fashion, and can be used to cover fences.—J. D.

THE COMING WEEK'S WORK.

Extract from a Garden Diary, November 30 to December 5.

Sowing Radishes and Carrots on a leaf-bed. Manuring and rough digging vacant ground. Beginning to dig flower garden borders. Putting show Pelargoniums into their flowering pots, and sowing Nemophila in pots. Protecting Celery ridges with litter when frosty, hoeing among Strawberries and other crops, such as Cabbages, Lettuces, and Onions, and planting Raspberry canes, giving each two forkfuls of manure. Putting herbaceous Calceolarias into their flowering pots. Trenching border for Roses; finishing the planting of fruit trees. Planting a new Mint bed, and making a new Mushroom bed. Sowing Mignonette in pots to come in in April and May; also Cucumbers, Mustard and Cress regularly, and French Beans in pots. Shifting some late Primulas into their flowering pots. Planting Yew trees and Junipers in the pleasure ground and guarding them with wire protectors to keep off rabbits. Plunging some Hyacinths and Lily of the Valley on bottom heat. Putting in more Asparagus to force, which, if kept at sixty-five degrees by night and seventy degrees by day fire-heat, will be ready for use in from sixteen to eighteen days. Nailing and pruning Plum trees on walls. Taking up Ghent Azaleas for forcing. Giving Lilacs and Briers in pots a top-dressing of manure. Pruning and tying up pillar Roses. Pruning espalier Pear trees, and saving grafts of any kinds that are required.

Work in the town garden.

THE GREENHOUSE.—Chrysanthemums being now pretty well over, with the exception of a few late sorts, the chief dependence for gaiety in the greenhouse must be placed in Solanums, Primulas, Epacrises, Roman Hyacinths, and a few late scarlet Geraniums. In the town greenhouse the Epacris, though not perhaps quite so graceful in habit as the Ericas, are far before these latter in general usefulness. The Erica, however well grown, will never bloom satisfactorily, or even moderately well, while the Epacris only needs to have its young wood properly and thoroughly ripened to produce an abundance of delicate and lasting flowers. Roman Hyacinths, of course, only need bringing in, once the pots are filled with roots, to a temperature of fifty to sixty degrees, to expand their sweet and exquisite blooms perfectly in from three to six weeks' time, according to the amount of sunshine prevailing and the warmth of the house. Some of the earlier Camellias, whose buds were set in good time, will be expanding gradually about this time; the old double white is one of the earliest and best still, and we have plants of this valuable variety now opening their first blooms, that will continue to supply flowers up to next March, at least. The Correas (C. bicolor, C. Brilliant, and a few other varieties) are very useful additions to the town greenhouse. In growth they are slow but sure, and both buds and flowers are quaint and pretty, and very freely produced. They do well in sound peat, with a fair proportion of sand, a little loam for large plants, and good drainage in all cases. Habrothamnus elegans is a grand scandent shrub, either in a large pot or planted out in any decent soil. It will succeed in either sun or shade, in a moderately high temperature or a reasonably low one, and there are very few weeks in the year when a few trusses of the pleasing carmine-pink coloured flowers cannot

be cut. This is one of the most accommodating plants I know, and should find a place in every greenhouse. There are other varieties, of various shades of colour, but I think elegans is about the most useful.

MYRTLES.—Look well to the Myrtles; there are no sweeter or better plants grown than these, and if they do not succeed it is because they are starved and poked away in odd corners, instead of being potted-on properly and afforded a light, prominent position, which they well deserve. The question, "Why don't my Myrtles flower?" is often asked, and the only answer is, because they are starved and neglected; for we have had Myrtles literally covered with bloom close to London Bridge—plants raised from cuttings and grown entirely in the midst of the London smoke. But they must be regularly potted-on in good sound loam, with a little leaf-mould and sand, a vigorous growth encouraged by every means, and this thoroughly ripened by exposure to light, sun, and air. The present, or February, is a very good time to pot-on healthy young plants, keeping the soil comparatively dry for some time afterwards, until the roots begin to work in it. Cuttings may also be put in, in well-drained pots of sandy soil, and stood on a shelf in a cold greenhouse. Put in any quantity of Calceolaria cuttings (shrubby) in sandy loam in a cold frame. These will come in for bedding, and a few inserted in largish pots and kept in the greenhouse will be more forward and fit to make flowering plants in forty-eights next summer. B. C. R.

Glasshouses.

ABUTILONS.—Although these plants never bear so many flowers at any one time as some things do, they are very useful in winter, either for decorative purposes in the intermediate house, or for the production of cut flowers for bouquets, or arranging in small stands. The continuous habit of blooming natural to the plants is such that, where kept in a growing state, they go on flowering all through the winter; they will do well in an intermediate temperature. Among light coloured varieties, the white Boule de Neige is one of the most useful; Golden Gem (yellow), Charmer (rosy crimson), Scarlet Gem (red), Firefly (red), and Eclipse (orange), will be found good growers and free bloomers. Like all plants that make soft, free growth, they must be well exposed to the light, or they will run more to growth than flower. There are few better plants than these Abutilons for occupying a wall in a warm greenhouse or intermediate house. In such a position they yield quantities of flowers in the dull months; and when it becomes necessary to cut them in, they bear the knife better than most things. They require rich soil, and when confined to pots must be assisted with manure-water, as they are free rooters and soon exhaust the soil.

BULBOUS STOVE PLANTS AT REST.—It will be well now to see that such things as Gloxinias, Achimenes, Caladiums, and summer-flowering Gesneras are in a condition to keep until the time comes for starting them again. They frequently bear a lower temperature when at rest than might be supposed, judging from the countries from which they come, but it is not advisable to subject them to this where it can be avoided, and whenever they are to be wintered cool, care must be taken that the material in which they are stored, be it sand or the soil in which they have been grown, is quite dry. Caladiums do not like so low a temperature as the others will do with; I have known them go rotten if kept for any length of time at fifty degrees.

AMARYLLIS.—More attention has of late years been given to these plants, and very fine varieties have been raised, nearly all of which are deciduous, and consequently while at rest must be kept nearly dry at the roots, although there is nothing gained by allowing the soil to get into that dust-dry condition that many consider necessary. The evergreen kinds must not be allowed to get so dry as to cause the leaves to flag, or they will suffer much through it; the object with both the deciduous section and those that retain their leaves is to stop all growth and to ripen up the bulbs, but not to punish them by over-drying.

BASKET-PLANTS.—Nothing tends to improve the appearance of a plant-house more than well-managed basket-plants. For the stove there are no better subjects for using in this way than the different kinds of Æschynanthus; their natural drooping habit of growth and free-flowering disposition makes them deserving of more attention at the hands of cultivators than they now receive. Plants that have bloomed during the autumn, if not already cut back, should now have their shoots well shortened, as, if not yearly subjected to this treatment, they get into an untidy straggling condition. The soil should be kept dry enough to discourage any disposition in the plants to grow; but water must not be withheld so as to cause the leaves to flag.

ANTHURIUM SCHERZERIANUM.—This plant is very often kept in much too high a temperature, the result being that its growth is completed in the autumn; it does best when not submitted to more than an intermediate house warmth, in which case it keeps on flowering through the latter part of spring and the summer, after which it begins to make growth which does not get completed until the close of the year or later. The leaves formed at this season are generally much finer, and produce larger flowers than when the growth is made in summer. A temperature of about fifty degrees through the autumn and onwards during winter is quite enough. The soil must be kept well supplied with water, as it is a swamp plant, and requires to be kept much wetter whilst growing than most things. Plants that have been grown hot in the way abovenamed, and have finished up their growth some time back, should now have less water, but never be allowed to get so dry as most things should be when at rest.

VALLOTA PURPUREA.—This fine old summer and autumn-flowering bulb is one of the best plants grown, either for greenhouse or room decoration. It is an evergreen plant, and requires no drying-up at the roots. If this is attempted, even so far as to cause the leaves to flag, it will be injured. All that it needs is to have the soil in a half-dry state, and be kept out of the reach of frost. The same remark applies to the different varieties of Zephyranthes, which also are evergreen, and are alike injured if the soil is allowed to become too dry.

CAMELLIAS.—These plants often cause disappointment by the buds falling in the winter. This not unfrequently occurs to such an extent with individual plants that few remain to open. In many cases it is attributed to the atmosphere of the house being too dry; but it is much oftener traceable to the plants being in a weak, unhealthy state. In this condition they frequently set more buds than when strong and vigorous. The white varieties usually are more inclined to throw off their buds in this way than the red or mixed coloured sorts. Plants also that have made late growth, and have their buds yet small when the growing season is over, usually cast them to a greater extent than such as had their buds further developed in autumn. The best course to take with any that are weak in the way described, is to thin the buds freely, and if this has not already been done no time should be lost in thinning them. Wherever Camellias have to be stood through the winter in a greenhouse or conservatory, where a mixed collection of plants is kept which require the use of more or less fire-heat to expel damp and keep out frost when the weather is severe, care must be taken to have enough moisture in the atmosphere to prevent the Camellias suffering in the manner spoken of. In houses where roof-climbers are planted out in a bed, the moisture that rises from the soil will usually do much to prevent the air getting too dry, but where the whole space included is laid with flags or tiles, then water must be used on them to correct the dry condition of the atmosphere.

THOMAS BAINES.

Flower Garden.

HARDY FLOWERING PLANTS.—All lovers of our beautiful hardy border plants, who wish to grow them successfully, should lose no time in making them comfortable for the winter by thoroughly cleansing the border of all weeds by hand-picking. Where there are any bulbous plants, by no means use the spade, but should the surface have become hard it may be carefully forked over two inches deep, no more, afterwards mulching with well-decayed manure or leaf-soil. Of course, if you wish to add other plants, or if others have become too large, they should be divided and planted before mulching, for we may expect frosts at any time; therefore all planting should be finished at once, for this is a much better plan than leaving it until spring. In particular would I recommend a good mulching instead of forking in the manure, for then tender plants are protected from frost, and the goodness in the manure is washed down to the roots of the plants, which are much benefited thereby; for bear in mind, that although many plants in the border are not seen above ground now, for all that their roots are active, even in winter, and should be well provided for, not hacked and cut about with the spade. Many people, gardeners included, use the spade among plants in the border at this time of year as if the plants needed their roots cut off, or as if they needed none at this time of year; and when spring-time comes round they wonder why their plants are so backward and shabby-looking compared with others of the same kind in a neighbour's garden, but which have not been cut, and have not bled to death. Depend upon it, all plants are like ourselves—they want neither to be bled nor starved to death in winter, but need the best attention and nourishment, and by paying attention to their requirements we may look for a good return in the way of healthy plants with fine foliage and flowers in quantity, and of the finest quality. Every number of GARDENING brings before us so many beautiful hardy plants that if they were only grown and well cultivated, they would gladden the eyes and hearts of all who know how to appreciate a flower. W. C. LEACH.

PLANTING.—Anemones should be largely grown where a succession of handsome hardy flowers is held in estimation, the plants, from their compact habit and the continuous brilliant-coloured blooms which they produce, being almost without a rival; the single scarlet variety is most effective, commencing to flower in a mild season during the first month in the year. Anemones like a moderately rich, free soil, and if grown in clumps in the herbaceous border should occupy a front position on account of their dwarf habit of growth. A very pleasing effect may be produced in spring by planting large masses of Snowdrops, Crocuses, and Daffodils in the Grass in different parts of lawns, in Grass-plots in out-of-the-way corners, or in front of shrubbery borders and under trees. These may be either planted in patches or dispersed six inches or eight inches apart over the available ground. The places chosen for plants of this kind should not be in too close proximity to the dwelling, as the tops ought not to be removed in the spring until after they are dead, which, in a very prominent position would be unsightly. Where any of the above plants are to be so arranged they should be planted immediately. Hardy kinds of Ranunculuses, such as the Turban varieties, may now be planted in situations where the soil is dry; but the more valuable sorts should not, except in very favourable positions, be planted yet, as they are apt to suffer from wet by lying too long in the ground. Crocuses and Snowdrops may be put in by making holes with an ordinary dibber, covering the bulbs with a little loose soil; for Daffodils, holes must be made with a spade, but whatever way the planting is effected it can with ordinary care be done even on Grass without causing an unsightly appearance.

Fruit.

ORCHARD HOUSES.—It is now time to get all pot trees standing outdoors well plunged to protect the pots from injury by the expansion of the soil during frosty weather. When thus taken care of, the general stock may remain out in the open air until the middle or end of January, when they will be the better under glass. Meantime steps must be taken for cleansing, painting, and preparing the interior of the house, particularly where it is or has been used for soft-wooded plants like Chrysanthemums, which sometimes leave an unwelcome legacy behind them. The general pruning having been performed early in the autumn, shortening back, and washing will, as a matter of course, be deferred until the time arrives for housing

but on no account allow the last named operation to be neglected, as the work is quickly performed, and careful washing with strong soap water is quite as beneficial to young wood, be it ever so free from insects, as sponging is to plant foliage. A few words may be said with regard to shortening back, as serious mistakes are sometimes made by cutting the dormant trees into shape, when shy kinds like the Noblesse Peach, which only make terminal wood buds, lose some of their most promising shoots by their removal. Practical men who know that it is always safe to prune to a triple bud can make no mistake; but the amateur, whose great delight is centred in the performance of his own knife work, will do well to wait until the buds begin to swell, or if he leave it until the fruit is set no harm will be done.

HARDY FRUIT.—Where Pears are quite free from scale, they may be nailed in without delay. When pruning old trees it is a good plan to thin out the spurs and to scrape the Moss and Lichens off the branches, for the twofold purpose of letting in warmth and air to the fullest extent, and increasing the size and quality of the fruit. Trees on the Quince stock soon become one mass of spurs, and, unless annual attention is paid to this operation, the fruit on many of the kinds becomes small and gritty; further, the root run being limited, mulching with good rotten manure is an important factor in the production of fine fruit; but as this annual dressing would soon raise the borders inconveniently high, the difficulty may be got over by casting the old mulching over the border to be forked in for vegetable crops and by replacing it with fresh from the frame ground. The best time to do this is early in autumn, and if within reach, the remains of an old Melon bed, soil included, will be found a suitable material for the purpose. Get Raspberries staked and tied ready for mulching, but defer cutting off the tops until the buds begin to swell in the spring. Untie Figs, rub off the half-swelled fruit, and tie the shoots together in bundles.

Vegetables.

PEAS.—In favourable districts, where the soil is of a light nature, a few early Peas may be sown now, for the chance of having some a little more forward in the season than by later sowing. Choose a situation sheltered from the north and east winds, with the ground, if possible, sloping to the south. Dig it well, and mark out the rows four feet apart; in opening the ground for sowing do not go above two inches in depth, for if the Peas are put in deep at this season they are liable to rot. Sow considerably thicker than would be required in spring to make up for such as may not vegetate, or that suffer from the attacks of slugs; cover with the soil in the usual way, and over the top put a couple of inches of fine coal ashes. This will not only act as a protection from frost, but also prevent slugs from penetrating the ground and devouring the young sprouts as they are pushing up through the soil.

OUR READERS' ILLUSTRATIONS.

CEDAR ON LAWN AT ALLESLEY PARK COLLEGE, COVENTRY.

No words of description are necessary, we are sure, to show the beauty of the Cedar an engraving of which we this week publish as one of our readers' illustrations. The picture speaks for itself. The graceful sweep of the branches and the symmetrical proportions of the tree are apparent, and the plant-covered wall in the foreground adds to the beauty of the whole scene. Miss Nellie Wyles, who sent us the photograph, says of it:—

"This tree is certainly one of the most beautiful in England. It stands upon a sloping and mossy old lawn, and stretches its huge branches over a considerable part of it. It is almost perfect in shape and symmetry. The circumference of the trunk is fourteen feet five inches, and the branches (we counted ten), starting from about three feet from the base, are trees of themselves, four of them measuring sixty and seventy inches round, the lower ones drooping and sweeping the lawn. We walked immediately round the branches and tree, and found it measured 201 feet. The foliage is in good condition; in its new leaf it has a lovely blue-green hue. The tree is supposed to be 300 years old. For twenty-six years this Cedar has been a source of admiration and pride to the students of the College, who have no greater delight than to revisit their school-haunts and again admire the great beauty of the house and park.

OUR READERS' ILLUSTRATIONS:—Cedar on Lawn at Allesley Park College, Coventry, the residence of Mr. Thomas Wyles, F.G.S.

15251.—**Size of lawn-tennis court.**—A lawn-tennis court for the four-handed game should be seventy-eight feet in length and thirty-six feet wide; a single court is of the same length but only twenty-seven feet in width. Outside the court there should be, if possible, twelve feet clear space at the sides and fifteen feet at the ends, without any obstacle.—G. S. S.

TREES AND SHRUBS.

15179.—**Tree Pæonies.**—"Mrs. L." is advised not to attempt to divide her Pæonies even if they are large plants; there is a risk attending it, and they are such slow-growing plants, even when kindly treated, that any serious disturbance at the roots would interfere with their growth for two or three years. Surely it is a mistake to wish to do so, for I never knew them get too large, and a large specimen is such a glorious sight when in flower that I should consider it an unwise step to interfere with them in any way.—J. C. C.

Cotoneaster frigida is just now one of the most effective of all our berry-bearing trees, and to see its coral clusters of fruit as they stand out against a fleecy sky on a sunny day is a pretty sight; indeed, it is so distinct and effective that the wonder is that it is so rarely seen in good gardens. C. Simonsi is also very pretty trained on walls with the golden Japanese Jasmine (J. nudiflorum) for company, and the Pyracantha is brilliant on some soils. I saw a bush of it the other day on a sunny wall growing amongst golden-leaved Ivy, and the effect was really so cheerful and pleasing, that I shall try the combination for myself; but all these are only shrubs, while the subject of my note, Cotoneaster frigida, really forms a good-sized tree.—V.

The Dove plant.—I saw a question relating to this plant (Peristeria elata) in GARDENING recently. It should be given a liberal supply of heat and moisture, and when it has completed its growth allowed a rest in a cooler and dryer house than the stove that it has occupied. Water at the roots should not be withheld so long as to cause the bulbs to shrivel.—E. T.

To obtain good specimen Chrysanthemums.—In the spring I plant around the edge of a four-inch pot six rooted cuttings, rooted slips, or suckers. As soon as the ball of earth is well filled with roots a larger pot is used from time to time until about September, when the final potting takes place, the last pot being seven to nine inches in diameter. When the six plants are removed out of the four-inch pot the training commences by tying down the growing stems to six sticks, which are stuck around the inner edge of the pot; the stems are bent in the direction in which the sun seems to move, and as they grow on are trained spirally around the six sticks until September; then they are tied upright to the same sticks, and by this means I have the foliage so as entirely to hide the top of my pot, and, of course, there are no naked unsightly stems, but a symmetrical handsome plant.—JOSEPH WEAVER, *Enniskillen.* *** *The photograph which Mr. Weaver sends us of the plant is not a good one, but it shows the foliage brought right down and actually falling below the edge of the pot.*—ED.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton Street, Covent Garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers (*which, with the exception of such as cannot well be classified, will be found in the different departments*) *should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15294.—**Grobya Amherstiæ.**—Will some one kindly tell me here I can procure a plant bearing this name?—M. C., *Cork.*

15295.—**Gladioli for competition.**—Will any exhibitor of Gladioli kindly tell me the names of the best twenty-four sorts for competition?—AN AYRSHIRE READER.

15296.—**Dahlias for exhibition.**—May I ask some experienced grower of Dahlias for the names of the best twenty-four, show or fancy, for competition?—AN AYRSHIRE READER.

15297.—**Procuring old-fashioned Bullace.**—Can any of your readers tell me where I can get the old-fashioned Bullace-tree? I have tried my nurseryman in vain; he cannot even get it for me.—N. P.

15298.—**Peas and Beans for autumn planting.** Will the writer of the article headed "Vegetables" (on page 518) kindly say what sorts he sows, or will any reader tell me the best kinds?—S. E. C., *Surrey.*

15299.—**Plants for gas-lighted rooms.**—Will any readers who use gas in their houses tell me what plants, flowering or otherwise, are most suitable for rooms and halls where there is gas? Also what ferns will grow in similar places?—F. H. M., *Bicknoller, Bath.*

15300.—**Creepers for planting in pots.**—What are the best creepers (evergreen, if possible) to grow in pots placed on a little wooden platform outside a ground-floor window, to cover some iron balustrade about four feet high, western aspect?—F. H. M., *Bath.*

15301.—**Bouvardias.**—Would any reader kindly give me a few hints as to the culture of Bouvardias? I have a few cuttings, and they do not seem to grow. I have them in sixty-degrees of heat. Is that too much, and what is the best soil to grow them in?—YOUNG BEGINNER.

15302.—**Heating conservatory.**—Would any correspondent inform me how best and most economically to heat a tiny conservatory, six feet by eighteen, composed entirely of wood and glass, a lean-to against my house, so as to prevent damp and keep out frost?—J. C. M., *Southampton.*

15303.—**Unproductive Vines.**—I have come into the possession of a vinery in which the Vines are old—how old I cannot say. This year, after some attention, they have been wholly unproductive. What would any of your readers advise in this case—treat them or cut them out?—X., *North Kensington.*

15304.—**Border for Vines.**—Lately I got a greenhouse containing two apparently well-matured Vines; but I think the border requires renewing, as it is in a bad condition. Would it be injurious to the Vines to cut all or any of the old soil and put in the Vine compost? The Vines are not for forcing.—NEW IRISH SUBSCRIBER.

15305.—**Amateur's town greenhouse.**—Will any one tell me, an amateur, what plants are best for a town greenhouse (unheated, except in time of frost) in the Kensington district? There are a number of young vines in the house, which have not as yet made much growth. The house is a span-roof, about sixteen feet by twelve feet, in a sunny, sheltered situation.—J. E. W.

15306.—**Pampas Grass.**—May I ask if this will thrive on a small lawn of clayey nature, with tall trees on the south side? There is plenty of light, but sun is obstructed by the trees.—J. C., *Leeds.* *** *Yes, you can grow Pampas Grass very well in such a place, but don't plant it in clay. Make a large hole and mix some light soil with the stiff. Then there will be no difficulty.*—EDS.

15307.—**Imantophyllum not flowering.**—I have a very large Imantophyllum miniatum, with one strong offset. The plant did not flower this year with me. I am anxious to induce it, if possible, to bloom, and want to know whether it would be better to remove the young plant, or let it alone.—W. W. F., *Portlaw, Co. Waterford.* *** *Leave it alone until the spring, by all means.*—EDS.

15308.—**Maiden-hair Ferns.**—Will any reader kindly give me a hint how to heat Maiden-hair Ferns? We have a small house, heated with pipes. The Ferns are in pots on a bench, with soil around them and tubs of water below; but they do not do good, although the pots are well filled with peat and silver sand. They are shaded at the top, and there is clear glass at ends.—THOS. FERGUSON, *Newcastle-on-Tyne.*

15309.—**Chrysanthemums after blooming.**—I should be much obliged if any growers of Chrysanthemums would give me a few directions respecting their treatment. I have forced them, and cut the blooms; what had I better do with them now? I wish to take some cuttings, and grow them for next year. When should I take the cuttings, and what treatment should I give them?—YOUNG BEGINNER, *Isle of Wight.*

15310.—**Roses in pots.**—I have the following dwarf Roses; would "J. C. C.," or other readers, kindly tell me if I could grow them successfully in pots in greenhouse? Baroness Rothschild, Prince Arthur, Prince Camille de Rohan, Countess of Oxford, Duke of Wellington, Madame Knox, Victor Verdier, Emperor of Morocco, Prosper Laugier. Also, what sized pots and kind of compost should be used?—R. V., *Clapham.*

15311.—**Training regal and show Pelargoniums.**—Will some reader who has grown these well kindly give some practical hints about them? I have a large number of plants, and want to hear of the best and most expeditious way of tying out the shoots and making nice specimens.—W. W. F., *Portlaw, Co. Waterford.* *** *You will find an article on growing Pelargoniums for exhibition on page 529 in last week's number.*—ED.

15312.—**Geraniums withering.**—I have a lot of Geranium plants, which I have worked up all the summer for winter use. There seemed promise of plenty of bloom, but before they were fit to cut the stems became soft and pale, and then the petals withered away. I have a flue in the house, and the temperature is from fifty-five to seventy degrees. Would some Geranium grower kindly tell me the cause, and how I should now treat the plants?—G. W., *near Bristol.*

15313.—**When do Pear-trees begin to bear?**—Will "J. G. H.," whose article on page 471 has interested me, kindly tell me whether the statement there made, with regard to the age at which Apple-trees bear fruit, applies to Pears as well? We had some young trees put in in carefully-prepared soil, and they have been regularly manured, and in dry weather watered, but, while abundance of blossoms are produced, only a little fruit is formed, and that does not mature.—MRS. R.

15314.—**Propagating Hart's-tongue Ferns.**—I should feel extremely obliged if any readers of GARDENING would give me minute information as to the propagation of Hart's-tongue Ferns. I have the spores on the dried fronds, and also on the fronds still growing on the Ferns. I have tried two years and failed. The Fern I have now is a very fine plant, and I am anxious to renew it. Does it need a greenhouse for propagation, or what is the best place at first; how long is it before any growth shows, and what is the best time to try?—MULGRAVE WOONS, *Manchester.*

15315.—**Hedgehogs and slugs.**—I have turned down in a walled garden of a little more than half an acre a hedgehog, in the hope that he will exterminate the slugs. He does not appear to feed on any of the roots or vegetables, and I am apprehensive that the range is too limited to furnish him with sufficient insects for his subsistence. Will anyone oblige me by informing me whether I should provide him with any and what food, and how often, and also say if during any and what part of the winter he will be dormant, and not require food? I see so many inquiries in GARDENING ILLUSTRATED as to the best mode of destroying slugs, and my gardens have suffered so severely from their ravages, and soot, lime, and handpicking are such ineffectual remedies, that I and many others of your readers will be interested in any information that can be given us with a view to their destruction.—A CONSTANT READER.

15316.—**Culture of Onoclea sensibilis.**—I was much interested in the article on "Hardy Ferns" by "J. C. B." (page 513), and should like to ask him if I have not grown my Onoclea sensibilis aright. I have several plants, all had lovely fronds, twelve inches high, but all have gone ere this; the crowns have plenty of frond-buds. Mine is a cold greenhouse, and Ferns are planted in boxes in a mixture of ordinary mould and bog peat. My plants of Adiantum pedatum have all succumbed to the damp, cold weather—they went off yellow; in summer, fronds, fifteen to eighteen inches high, and sprays, nine inches long, looked splendid. A. cuneatum is going same way. There are Selaginellas planted amongst them, and I find in some places a film of white fungus growing on surface of the mould, almost like a layer of wadding. Does that mean bad drainage? I find the bog-mould most subject to this white fungus.—W. S., *Southsea.*

15317.—**Gladiolus Saundersii and G. purpureo-auratus.**—(1) I planted twelve bulbs of G. Saundersii last autumn. I have just taken them up. I got thirty-two fine bulbs, besides many non-flowering ones. I divided them, and planted them immediately. Did I do right? (2) I planted G. purpureo-auratus last autumn, and they flowered well. I have just taken up two roots, and they do not seem to propagate as the others do. Instead of being close to the roots, they send up bulbs, one or two inches from the original bulb, connected by a sort of thread—seven in all from the two roots. Shall I take the rest up or leave them in the ground?—SOUTH DEVON. *** (1) *No; you ought to have kept them and planted in the spring. You had better take them up again and keep in sand or dry earth until the spring.* (2) *This is hardier than G. Saundersii, and may be left in the ground; but it is well to protect it in some way during severe frost. If the off-sets are not large enough, you had better leave them on for another year. It is characteristic of this species to be stolonferous.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15318.—**Seedling Pear** (*B.*).—The Pear was in poor condition and beyond its best, but it promises well.

15319.—**Azalea leaves dropping off** (*Mrs. Gillingham*).—Probably they have been given too much water.

15320—**Propagating Red-hot Poker** (*F. K., Hilton*).—You can propagate Tritoma Uvaria by dividing it in spring.

15321.—**Worms in flower-pots** (*W. W. F.*)—If the lime-water is diluted very much there would be no danger in its use.

15322.—**Carnation Souvenir de la Malmaison** (*Cotare*)—You will find a note on the subject in this week's number.

15323.—**Seaweed in gardens** (*S. L. Jacob*).—Yes; this is useful in gardens. You may burn it and use the ashes, or use it when well rotted.

15324.—**Dahlias not blooming** (*A Subscriber*).—We are sorry that we cannot suggest any reason for the want of bloom, except that there may be something wrong with the roots.

15325.—**Treatment of Pelargoniums** (*W. S., Southsea*).—You have, so far, treated your Pelargoniums rightly. Do not keep them too hot, and ventilate the house whenever you can.

15326.—**Standard Currants and Gooseberries** (*C. Johnson*).—Your best plan would be to get young plants and train them as you want them.

15327.—**The Creeping Myrtle or Boston Vine** (*Mrs. Cobb*).—You must apply for this under the name of Myrsiphyllum asparagoides. From your note we presume you need the English name.

15328.—**Azalea mollis** (*E. F. L.*).—Yes; Azalea mollis is deciduous. It is a tender plant, but may in mild districts, like many other tender things, be kept alive against a wall in the open air.

15329.—**Growing Pezizas or Jew's Ears** (*H.B.*)—Your query was inserted some time ago (see 15,022, Oct. 31). We have never heard of anybody cultivating these, and the object of most people is to get rid of them.

15330.—**Stripping bark from Vines** (*J. Hanway.*)—Strip off any bark that is loose, but do not scrape the Vines. Repeat your question as to giving air, and tell us what you mean to do with the Vines. Are they to be forced?

15331.—**Sowing Walnuts** (*C. A. H., Norfolk*).—Lay the Walnuts in a heap, and, when the outer skin naturally peels off, you should sow the nuts—spring is the best time. Do not place the nuts where mice are likely to get at them.

15332.—**Boiler for heating vinery** (*Boiler*).—We could not recommend any particular makers' goods. On the general subject of heating you will find in our last and previous numbers several articles which will probably help you.

15333.—**Rabbits and young fruit-trees** (*C. M. B.*)—Mix tar and cow manure together and paint the bottom of the trees with the compost. This will prevent rabbits from injuring the trees. Another preventive would be bushes tied around the trees.

15334.—**Heating greenhouse** (*A Subscriber*).—You should have sent us your name and address. See "Lincolnshire Rector's" note on page 528, and no doubt the other articles published in the same number, and on page 502 (Nov. 7), will assist you.

15335.—**Maiden-hair Fern** (*Mrs. Gillingham*).—You must let us know what Fern you refer to, and tell us something of the treatment you have heretofore given it. You do not tell us even where it is growing or in what condition it is. If you do not know the name, send us a frond.

15336.—**Gardenia buds not developing** (*B. B. B., Chester*).—Your cool house is not warm enough for the culture of Gardenias, and to this fact is due the falling of the buds. Gardenias are essentially stove plants and want plenty of rich food, heat, and moisture.

15337.—**Forcing bulbs without glass** (*S.E.C.*)—It is of no use to attempt to force your Hyacinths, Tulips, Narcissi, &c., early, unless you are an expert particularly as you have no glass. If you bring them in at the beginning of the year, you will probably succeed in growing them.

15338.—**Cycads and Palms** (*One who wishes to learn*).—We do not think we should be edifying readers if we described at length the botannical differences between Cycads and Palms. No one who knows anything of them could make any mistake in respect of the two families of plants.

15339.—**Watering Camellias and Chrysanthemums** (*Mrs. Gillingham*).—You must use your own judgment in watering your Chrysanthemums and Camellias, as no fixed rule can be laid down in this matter. They must not be kept excessively dry, nor should you keep them too wet during the winter.

15340.—**Naming Chrysanthemums** (*Amateur, Burton-on-Trent*).—Send them to some nurseryman, who will probably name them gratis if you are a customer, or make a charge if you are not. We do not attempt to name florists' flowers, and this can only be done properly where there are means of comparing the blooms.

15341.—**Climbing Roses for trees** (*A. J. Smith*).—You can obtain the climbing Roses you mention from any good Rose nursery, or, indeed, from any nurseryman. You may plant them soon as you get them. Give the young plants a chance in an open, sunny part if you can, and once started freely they will run through the trees.

15342.—**Treatment of Camellias** (*T. Ferguson*).—Give them a thorough watering when they want it, and that you must find out by the state of the soil. It is impossible to say how often this or any other thing should be watered. In dull wet weather they would want very little, and in bright weather they might want a good deal. Keep them in a genial temperature, excluding frost, and all will go well.

15343.—**Training plants to galvanised iron wires** (*Borderer*).—Yes, you had better paint the wires. It is a common occurrence for plants trained to galvanised wire to become unhealthy, and this seems to be due to some chemical action. If you paint the wires or varnish them, we think you need have no fear. As you ask for the experiences of readers who have used these wires, we have no doubt they will be forthcoming.

15344.—**Unsatisfactory Lapageria** (*George Openshaw*).—The condition of the plants indicates that they are not in good health. It is a bad sign to see the leaves turn brown, and if the Lapagerias were in good health they would, at this time of the year, be sending up new shoots. We fear you expect too much when you use the greenhouse as a smoking and business room; plants want a pure atmosphere, and Lapagerias especially want a well-ventilated house. We can give you no further advice from the data with which you furnish us.

15345.—**Treatment of Marechal Niel and Cheshunt Hybrid Roses** (*Rosalind*).—Cut the Roses down at once to within two feet of the ground. This will cause a larger number of growths to be produced, and will furnish the bottom of the wall as well as the top. If the Roses were growing out of doors, it would not be right to prune them until the spring.—J. D. E.

15346.—**Pruning Plum trees** (*L. D. N.*).—These do not require much pruning when they have arrived at the fruit-bearing age. Any young wood that grows so far out from the tree as to ultimately cause a straggling habit, should be shortened. Where the old bearing wood has become too much crowded, it ought to be thinned out. Many people prune all classes of fruit trees in such a manner that they produce an annual crop of stout willow-like shoots. This can be avoided by judicious summer pruning; it is never productive of good results.—J. D. E.

15247.—**Saddleback boilers in limekilns.**—"Y. Z." asks if saddleback boilers are used in limekilns for heating hothouses, &c.? We have heard of such an arrangement. In this case it was a steam-boiler that was heated by the kilns, but there is no reason whatever why the same means should not be employed for heating water. We should say, however, that a cylindrical or globular boiler would be more suitable for such a position than any kind of saddle. "Y. Z." wishes to know where one can be seen; perhaps some readers can give information on the subject.—B. C. R.

15248.—**New varieties of Chrysanthemums** (*J. H.*).—New varieties are produced in two ways:—1. From seeds sown on a hotbed in February. They will, if grown on in pots, flower the same season. Seeds are not produced in this country, but can be obtained from any of the principal seedsmen. They are saved in Algiers. 2. New varieties are also produced from what are termed "sports." That is explained in this way. Mrs. George Rundle is a white incurved variety, which was grown for some years until a branch on a plant in some one's possession produced primrose-coloured flowers. This branch was propagated from and a new variety was the result. Ultimately this primrose variety produced a golden-coloured "sport," and another new variety was added to collections. The first was named George Glenny, the second Mrs. Dixon. Other incurved varieties have been produced in the same way.—J. D. E.

15249.—**Treatment of Vines** (*A Learner*).—In making a vine border, it is not a good plan to make it too rich; and placing the manure in layers, instead of mixing it up so that it should be incorporated with the loam, is also bad management. Four inches of manure to six inches of the loam, or, in all, eight inches of manure to eighteen inches of loam, is too much, when it is taken into account that there is also a liberal proportion of crushed bones. In a border made up of turfy loam, one cartload of manure to eight of loam is quite enough; a bushel of bones may be added to it. The growth made by the vines is not at all satisfactory. They ought to have formed stock canes the entire length of the rafters in one season, and should bear a light crop of, say, nine to twelve pounds of Grapes each the following season. The heating apparatus seems to be satisfactory. The main point to consider in the successful culture of Grapes is to lay the foundation in a good border. The manure ought to have been mixed up with the loam; it has also been made too rich, but it will be better not to alter it now. We would cut the weak vines down to near the base, and encourage them to make stronger growths next year.—J. D. E.

TO CORRESPONDENTS.

E. M. Johnson.—We should be glad if correspondents would bear in mind that we can make no use of notes that are written on both sides of the paper.——*Sphinx.*—Your question relating to dwarf evergreen plants is answered in this week's number.——*Yorkshire Lad.*—We cannot insert the request, but in any case the correspondent referred to would be unable to communicate with you, as you do not send us your own name and address.

NAMES OF PLANTS.

Naming plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

**** Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Alpha.*—1, Pteris serrulata cristata; 2, P. serrulata; 3, P. argyrea; 4, P. cretica albo-lineata.——*B. J. Black.*—You must send us specimens in a box; the flowers were, in transit, crushed beyond recognition.——*R. M. J.*—Chrysanthemum coronarium.——*C. J. Lincoln Field.*—The Strawberry tree (Arbutus Unedo).——*X. Y.*—1 Not in flower, and we cannot name it. 2. Dracocephalum canariense (Balm of Gilead). Others next week.——*Vulcan.*—Sparmannia africana (figured in GARDENING, Nov. 7).——*R. D.*—1. Pteris semi-pinnata. 2. Adiantum Lawsonianum (very much shrivelled). 2. Adiantum æmulum.

NAMES OF FRUIT

Naming fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*J. S. Udal.*—1, Marie Louise; 2, Brown Beurré; 3, Duchesse d'Angoulême (small); 4, Marie Louise.——*Miss Pasley.*—Nonsuch.——*Periwinkle.*—1, Mank's Codlin; 2, Hawthornden; 3, French Crab; 4, Emperor Alexander.——*L. C.*—1, Apple, White Calville; Pears, 1, Winter Nelis; 2, Beurré Clairgeau; 3, Swan's Egg.——*T. D.*—Your fruit was quite rotten when it arrived.——*J. Thornton.*—1, Norfolk Beaufin; 2, Cellini; 3, Easter Beurré; 4, not recognised.——*Anon.*—Cellini; 2, Duchesse d'Angoulême; 3, Beurré Diel; 4, Flemish Beauty.

Catalogues received.—*Forest-trees, Conifers, Fruit-trees, Roses, &c.* Little & Ballantine, Carlisle.—*Chrysanthemums, with Directions as to Cultivation.*—H. E. Boyce, 87, Yerbury-road, Upper Holloway, N.

15253.—**Early-flowering Chrysanthemums.**—In answer to "Mrs. R.," the following notes may be useful:—Early-flowering Chrysanthemums are becoming great favourites with amateurs and others who depend upon plants that are planted-out for a display of bloom. Although they can be had in bloom in July (and, in fact, earlier), I think September quite early enough, as it is then we are able to appreciate their great value, and any grower can keep up a supply of bloom from the beginning of September till the end of the year. There are now a great number of varieties (early-flowering), and this year we have some splendid new Japanese varieties, that cannot fail to be largely grown. The first variety that I will name is that splendid white variety, Madame C. Desgrange. This is a very free bloomer, and largely grown for market; as is also its golden sport, G. Wermig. Other good varieties are: Mr. J. Laing, dark crimson-red, shaded brown; Isidore Feral, rosy lilac, golden centre; Mandarin, a splendid new variety, and very free, pure cream colour, changing to very delicate milk-white, shaded with rose; Roi des Précoces, rich deep crimson, shaded with red, dwarf and full; Mons. Roux, deep bronze-red, shaded with crimson, reverse nankeen yellow; Mons. A. Dufour, bright rosy purple. The above are all Japanese varieties. Of the Pompone class the first to be mentioned is La Petite Marie, pure white and very dwarf; Pomponium, deep yellow—a very pretty and compact flower that should be in every collection; Surprise, pure rose—a very free-flowering variety; Salter's Early Blush, rosy blush; Frederic Pelé, crimson; Late Flora, golden yellow, very free; Lyon, bright rosy purple, a very fine variety; Mrs. Cullingford, white; nanum, creamy blush; St. Crouts, rosy pink. Of the above, Mandarin and Pomponium received a first-class certificate from the Floral Committee of the National Chrysanthemum Society this season. Besides the above, there are now several varieties that are semi-early—*i.e.*, commence to bloom about the middle of October—a few of which are, Frizou, canary yellow; Fernand Feral, rose, shaded crimson; Colibri, deep crimson, shaded bronze; L'Or de France, golden yellow, shaded; Mdme. de Sevin, rosy lilac; Souvenir du Japon, deep red, shaded with yellow; L'Africaine, rich crimson; L'Or du Rhin, bright yellow; and James Salter, clear lilac.—W. E. BOYCE, *Holloway, N.*

Treatment of Acacia suaveolens.—Would any readers kindly tell me how to treat this plant? I received a little packet, named as above, from New Zealand last April. I sowed the seeds in small pots on the 23rd of April, but they made no sign for so many weeks, that, finally, I concluded something must be wrong with them, and that they would not germinate; so pot the pots away on a spare window-sill, and forgot them. The beginning of October, to my surprise, I found two tiny plants showing in one pot; and a few days later a third one came up. All three have now developed a very "wee" leaf, and I should like to know how they ought to be treated to make them thrive? They are still in the 3-inch pot in which they were sown, in sandy loam, and I have got the pot on the window-sill of my bedroom, where no frost will touch them; but I have no means of giving them heat. Any information concerning them would be esteemed a favour.—M. L. E. T., *Norwood.*

15260.—**Culture of tuberous Begonia.**—The culture of tuberous Begonias does n t present any difficulty to anyone having a fair knowledge of ordinary greenhouse plants. Their season is now over. During winter the tubers may be stored under the stage of the greenhouse. Lay the pots on their sides to prevent drip from above saturating the soil. During the early spring months they ought to be watered, and as soon as it is seen that some growth has been made, shake out the tubers and pot them in any good soil, such as is frequently recommended for Pelargoniums, Chinese Primulas, Cinerarias, &c.—good loam four or five parts, decayed stable-manure one part, leaf-mould one part, and some rough sand added to it. Mr. John Laing, a celebrated Begonia grower, showed me the potting-soil his firm use for their prize Begonias, and it was very similar material to that which I have described. Do not give the plants very much water in the early stages of their growth, but as the pots become filled with roots they require a liberal supply. Place the plants near the glass in the greenhouse, where they have a free admission of air without being exposed to cold draughts. They are really greenhouse plants, requiring greenhouse treatment, but may be started in a forcing-house early in the year to give an early bloom. J. D. E.

Landlord and tenant.—I have so frequently seen in GARDENING questions relating to the removal of greenhouses, plants, &c., by outgoing tenants, that I send an epitome of the law on the subject:—An ordinary tenant upon leaving premises is not entitled to remove or take away any tree or plant of any kind whatsoever which to that time may have been growing in the soil of the freehold, whether originally planted by him or not; for it has been clearly and emphatically laid down that a tenant upon leaving premises has no right to uproot any plant, not even the most fragile shrub or flower-root; and Box borders and other systematically-arranged shrubs, together with Evergreens and other trees which serve for screens and general ornament of the premises, are expressly exempt from any depredations upon them by an outgoing tenant, though they may all have been put in solely at his expense; the extreme doctrine has been judicially laid down, that a tenant upon leaving premises has no abstract right even to pluck the flowers of plants growing in the soil of the freehold, though the plants may have been put in by the tenant and at his sole expense; and if a tenant upon relinquishing premises plucks the flowers and plants which he has planted and grown, in such a manner as to savour of depredation or plunder, such tenant may be visited by the landlord with restraint, or an action for damages. Fruits and vegetables growing in the occupation of a private individual carry no rights as emblements, and it would appear doubtful whether an outgoing tenant is entitled to gather or take away any unripe fruit or vegetables which are far from maturity; but ripe fruit and vegetables at maturity may be gathered and taken away by an outgoing tenant. As to permanently-built conservatories and other considerable structures in the nature of buildings for the gratification of a tenant, though erected at his expense, in all ordinary cases fall into the hands of the landlord, though it has been decided that a tenant is entitled to remove conservatories and other buildings which merely rest upon the earth without penetrating it; and though the foundation of a building may be deeply fixed in the soil, and irredeemably attached to a freehold, yet if the foundation be finished at the top with an even course or coping, and the superstructure simply rests upon such coping, or is merely attached to it by means of screws without the aid of any kind of cement, then the superstructure may be taken away by the tenant. I will willingly answer any questions relating to the above. These answers in no way relate to florists, who make their living by trading in flowers, vegetables, &c.—TORO.

15120.—**A meteorological question.**—Please let me make the following correction to my reply on page 528. I am there made to state that "when the sky is tolerably free from clouds, and the wind from any point of the compass, north-west or south-east;" but it should read, "any point of the compass, north of west or south-east." And again, a few lines further on, "when the wind is south-west or south-east," should read "south of west or south-east." "L. C. K." in his reply, says "the wind being in any point from west to south-east." I presume he means north of those points. A. Clarke is also ambiguous, for he says the wind in any quarter from west to east.—G. S. S.

Goldfish.—(See p. 520.) The reservoir shaded by Water Lilies, and "constantly supplied with fresh water," cannot be a necessity for breeding Goldfish, for they multiply in several mill "coolers" about Belfast. These coolers are receptacles for the water returned from the engine-house while warm, and I suppose this warmth suits the fish, as O. Foster's friend found. I have observed that the fish congregate where the warm water flows in, where they are so numerous as to make the spot appear quite red.—PAT.

Smithfield market, Evesham.—List of prices realised Nov. 20, 1885:—Brussels Sprouts, 3s. to 3s. 9d. per pot (40 lb.); Carrots, 1s. 6d. to 1s. 9d. per cwt.; Cauliflowers, 3d. to 1s. 1d. per dozen; Celery, 9d. to 1s. per dozen; Onions, 3s. to 3s. 6d. per cwt.; Parsnips, 3s. to 3s. 6d. per cwt.; Potatoes, 1s. 6d. to 2s. per pot (80 lb.); Savoy, 10d. to 1s. per dozen; Sage, 2½d. to 3d. per dozen bunches; Turnips, 1s. 4d. to 1s. 9d. per pot (70 lb.); Apples, 3s. 6d. to 6s. per pot (64 lb.); Pears, 2s. 6d. to 5s. per pot (72 lb.); Walnuts, 4s. to 5s. per bushel.

INDOOR PLANTS.

GROWING FERNS ON POROUS JARS.

THE following particulars respecting the mode of growing Ferns on porous jars will form an answer to those who have lately sent us inquiries on the matter, and will, perhaps, be interesting to others of our readers:—The jars are in shape something like an earthenware crutch, with a loop handle at each side and a hole in the top. Water is poured in daily, and the clay of which the jar is made is sufficiently porous to allow it to percolate through it gradually. Ferns are placed over the outside of the jar, which is afterwards suspended to the roof, and they must of necessity almost entirely subsist on the water that oozes through from the inside. I once saw some of these jars that had been brought from Malta, where they must have been grand, as seen suspended in porches outside the houses, and forming globular balls of Fern three feet or more in diameter. We afterwards had some new jars that had been specially sent for to cover in a similar way. Thinking that some soil would be necessary, and knowing it would be difficult to fix it to the jars, some fresh turf was cut thinly, and the vitality of the Grass destroyed by placing it on a warm flue. With this and other methods we did not succeed satisfactorily in all cases, although a few afterwards did well. An examination of those imported ready furnished showed that only a small portion of a yellow tenacious loam and plenty of copper wire had been used for fixing purposes. We then obtained some tempered clay, and proceeded on the same lines with strong little plants of Adiantum Capillus-veneris, the same variety we observed that had been used on the others, and which is best suited for the purpose, on account of its mode of spreading on the surface, and the means thereby afforded for tying it on the jar. We turned the jar upside down, and having fixed it on three inverted empty pots, we began on the lower part, placing alternately a plant and a lump of the soft-tempered clay. This adhered sufficiently to the jar to hold the Ferns, and when the surface was covered so far as possible we reversed the jar and finished the upper part; it was then suspended. Rather large copper wire was then bound round in all directions, crossing the rhizome-like roots of the Ferns, and by drawing it rather tightly it became hid in the clay, while at the same time it held all firmly together. The jars were then filled with water and suspended to the roof in a stove temperature. I have no data to which I can refer respecting the season at which this experiment was performed, but believe it was either in winter or early in spring. Nearly every plant grew admirably, but those that were strongest when put on succeeded by far the best. In twelve months, speaking from memory, the clay was nearly hidden by the Ferns. A more immediate effect might have been obtained by placing them closer together at first, but then a considerable number would be required, the surface being much larger than it appears to be at first sight. The spores from the Ferns employed grew in large numbers on some parts of the clay; but I do not think it practicable to furnish the jars by these alone, as it would take much too long a time. Again, the spores appear so thickly together that it would be impossible for them to grow satisfactorily without being pricked out. It is advisable to withhold water for a few days occasionally, but not long enough to allow the clay or soil to crack through dryness. The process of covering and the after-treatment for some time require considerable attention to accomplish all properly. When once established and become balls of Fern, these jars at least represent a novel mode of cultivation, and are, in addition, certain to prove a source of much interest to all who may have to do with them. J. K.

Some good Chrysanthemums.—I have been a very successful grower of this popular autumn flower, and my plants have just been in their full beauty in the conservatory, having been secured under glass before the rough weather came. Among the best are, of this year's novelties, Maid of Athens, pure white, large blooms, very attractive; Cullingfordii, bright crimson, splendid flower, very showy; Beauté des Jardins, deep reddish crimson tinged with violet; Belle Alliance, deep red, shade maroon; Blanche Neige, pure white, very large; Etoile du Midi, orange red; F. A. Davis, a fine large double flower, very long petals, dark crimson, with golden bark; Frizon, bright canary yellow; La Géante de Valence, shaded with violet, long tubular petals; L'Alsace, deep reddish violet dotted with white; Mdlle. Lacroix, sulphur white, extra good; Mdlle. Antoinette Brunel, pale rose, suffused with white; William Robinson, centre petals ligulate, bright sulphur yellow, a superb large flower; Mdme. de Sevin, deep rosy lilac, very effective; and Talfourd Salter, bright red shaded carmine, a good showy variety (reflexed). Among the older favourites are some splendid specimens of Duchess of Manchester, Glenny's Golden Beverley, Virgin Queen, Empress of India, Prince Alfred, Mrs. Todman, rosy mauve, incurved notched florets, reverse silvery, splendid globose flower, very distinct and attractive.—J. MACMICHAEL, *Spike House, Hammersmith-road.*

The true Maiden-hair Fern (Adiantum Capillus-veneris).

TRUE MAIDEN-HAIR FERN.

THIS pretty hardy Fern (Adiantum Capillus-veneris) is admirably suited for cool houses. I have seen it thrive luxuriantly on walls on either side of such a house, and it is admired by all who see it. In a plant-house at Hammersmith it is grown on a wall about three feet high, which is thickly clothed from top to bottom with its beautiful fronds. Being a surface-rooter it is better adapted for this kind of ornamentation than most other varieties, and when grown in this way it is, in addition to having a fresh and dressy appearance, most valuable for cutting for bouquets, &c. If the fronds, when they begin to get shabby here and there, are cut off, a constant succession of fresh young fronds may be obtained. W. Y. N.

REPLIES.

15183.—**Treatment of Vallota.**—Vallota purpurea never needs more than a greenhouse temperature at any time of the year; in winter the soil in the pot should be kept drier than when the plant is in bloom, but never become quite dry, or the foliage will suffer. It should never be over-potted.—J. B. B.

14969.—**White scale and red spider on Ferns.**—Red spider can be destroyed (or kept under, at least) by syringing with rain water. The scale must be removed with a pointed piece of wood, and wash over the places where the scale has been with soft soapy water. It is a grave error to purchase Ferns with thrips, scale, and red spider upon them.—J. D. E.

15190.—**Tecoma radicans.**—Tecomas being allied to Bignonias, and coming from the Cape of Good Hope and New South Wales, want a conservatory or greenhouse temperature; from your query I presume yours has not had this—hence its failure.—J. B. B. *** *Tecomas will succeed best in a cold greenhouse, but are hardy against a wall in the southern parts of this country.*—ED.

15182.—**Cuttings of Lapageria rosea.**—Peat is the best soil, but the cuttings take a long time to form roots. They should be kept under bell-glasses until they are rooted. A greenhouse temperature is best. The plants are propagated by layers, in preference to cuttings. A strong shoot ought to be pegged into the ground with the leaf at each joint protruding; roots and shoots will grow from each eye in the course of twelve months.—J. D. E.

14981.—**Naturally-planted ferneries.**—As it does not seem to be convenient to fix the hot-water pipes either on the path or close to the walls, I would suggest that two rows of two-inch pipes be fixed to the rafters about a foot from their base. They should run across the rafters from one end of the house to the other. These pipes keep the frost from the glass, and none of the fronds of the Ferns would be injured by damp. The flow-pipe should be furthest up the rafters, and the return about six inches lower.—J. D. E.

14977.—**Greenhouse facing north.**—As the house is already partially heated by a flue, the addition of an oil-stove would be sufficient to keep out severe frosts in such a small house. It would not receive any sun-heat during the winter months, and will not be well adapted to grow ordinary greenhouse plants. Camellias will do well in such a house, and Ferns. Calceolarias would do well, either the shrubby or herbaceous kinds. Fuchsias, Pelargoniums, Chinese Primroses, Paris Daisies, &c., would do fairly well. Bulbs of various kinds will develop their beauties in such a house; so also will the pretty Lily of the Valley.—J. D. E.

15112.—**Culture of Carnation Souvenir de la Malmaison.**—Some years ago, in the eastern counties, I grew a large quantity of this fine Carnation, with considerable success; and, as the means used were very simple, perhaps my experience may be profitable to readers generally. We grew them both in pots and in the open ground, the latter being in the kitchen garden, where the soil was a very heavy loam approaching to clay. Our pot plants, after they had done flowering, were kept growing on in a frame for a short time, until the grass which springs from the bottom of the flowering stalks was of a convenient length for layering, which would be about the middle of July, when a piece of ground was dug over, working in some well-decayed hot-bed manure, and the plants were carefully knocked out of their pots and planted in the ground; every available shoot was layered as the plants were put in the ground one by one until the bed was full. The plants were all thoroughly well watered before putting out, and when all was finished the bed itself had a good sprinkling overhead from a pot with a large coarse rose. I may add that, although the soil was very stiff and adhesive, no sand or opening material was used, and scarcely one layer failed to root well. Some time in September the layers were looked over, and the strongest and most promising plants were severed from the parent and lifted with a good ball of roots. These were put two in a six-inch pot, using perfectly clean, well-drained pots, and a handful of rough leaf-mould over the cracks; the soil used was some of the heavy loam out of a neighbouring orchard, enriched with some rotten manure and a sprinkling of coarse sand from a gravel pit. The plants were then kept in a cool, airy place under glass until the turn of the days, when they were placed in a warm greenhouse on a shelf close to the glass, and encouraged by gentle heat and moisture. Their stems soon began to lengthen, and show their flower-buds, after which they were assisted by weak liquid manure; and when the bright days of spring were come we were rewarded by their magnificent heads of bloom, which, for size, delicacy of colour, and delightful perfume, are unsurpassed by anything I know. The remaining stock were planted out in beds, three feet wide by twelve long, and protected by

leaves from the lawn, the leaves being put between the plants and close up round the collar; these were removed when danger from frost was over; and as soon as the flowers began to show themselves, a light frame-work of hazel rods was erected and covered with some light shading, or, what is better, oiled calico, to protect their delicate flowers from sun and rain. By these means we were able to have a succession of these beautiful flowers from early spring until late in autumn. If some of the pot plants had been grown on, and trained on trellises in a warm house, I have no doubt they might be had in bloom all the year round. I may add that the flowers are apt to burst their calyx, but this may be prevented by tying a thin piece of raffia round the flower-buds just before they open.—HORTULANUS, *Cheltenham.*

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XIV.

Nicotiana affinis, or the Sweet-scented Tobacco, is one of those plants that anyone having but an elementary knowledge of plant-culture may hope to grow well. It is almost as easily grown as its near relative the common tobacco, and combines purity of colour with delicious fragrance and remarkable continuity of bloom to an extent that will in all probability retain for it the considerable popularity to which it has attained in the short time which has elapsed since its introduction to our gardens. Under the most liberal culture it attains a height of three feet, but if confined to four-inch or six-inch pots eighteen inches is the maximum development. This plant is easily raised from seed, and I think the best time to sow is in June, getting the young plants established in some parts by autumn. Shift them into larger pots in April, and they will commence to bloom early in summer, and will continue to do so until November; in fact so freely does this Nicotiana flower that if the summer were nine months long I believe it would produce bloom the whole time. Very few things bloom so continuously and naturally. Those who have room for but a limited number of plants like to grow those which are attractive over the longest period. I think it, however, right to mention that the blooms close during the day—that is to say, from about ten a.m. to five p.m., and that the delicious perfume which distinguishes them is not perceptible during the lightest hours of the day. It is towards evening that the fragrance is so pronounced, and then in the balmy summer eve a plant standing on the window-sill will fill the room with its powerful but not sickly perfume. Nicotiana affinis is so nearly hardy as to render much confinement fatal to its welfare. It merely demands the shelter of a cool room in winter, with abundance of light and air when growing. The only formidable enemy is damp, which is apt to seize the plants at the collar, so that in midwinter they are apt to die off suddenly from this cause. The remedy for this is very careful watering, allowing the soil to quite dry out, and then giving only just enough to moisten it through. In very damp or cold weather the soil may remain dry for quite a week without causing injury to the roots—that is, if kept in a quiet, cool place, where perfect rest is imposed upon the functions. In summer, when growing freely, water abundantly, especially when the pots get full of roots, and give a little weak liquid manure twice a week.

Coronilla glauca.—This is quite an old plant, and one which was once in greater favour with window gardeners than it is nowadays. It is a very satisfactory plant to grow, covering itself every spring with bright yellow, Pea-shaped blooms, if only treated with ordinary care. I recommend this Coronilla to those who, from causes beyond their control, are not able to accord their plants the attention they would wish to, for, if it is occasionally a little neglected in the matter of watering, it does not suffer to the extent that many things do under similar circumstances. It takes a lot of hard usage to kill or even seriously maim Coronilla glauca; and, being almost hardy, no great care is required in winter. It is, in fact, a plant that yields a large amount of pleasure for a modicum of care. Its natural habit is that of a compact little bush, and it does not require annual pruning to keep it shapely or within bounds. Still, however, the best results are obtainable when the strongest shoots are cut in rather hard after blooming, at the same time thinning out the small and fraying-like shoots, that only obstruct the free circulation of air, and the entry of light, and which themselves yield little or no bloom. Another point in favour of this plant is that it may be kept in the same pot for several years, only requiring plenty of water when growing, and liquid manure, which it will take stronger than most things, pretty frequently. An unheated room through the winter, where it is just screened from severe climatic changes, is the right place for it, and during the summer it should be in the open air, in a fairly sunny position.

The Cytisus or Genista is another well-known yellow-flowered plant which I have often seen in good condition under window culture. It is a more showy flower than the Coronilla, and is a favourite market plant. To get good blooms it should be hard cut back every year after blooming, and be liberally fed when making its growth. In other respects, the treatment should be identical with that recommended for the Coronilla. BYFLEET.

Floral decorations.—A pretty arrangement may be made for the dinner-table without either the aid of épergne or any kind of glass-stand whatsoever. Select an appropriate plant for a centre-piece; Cocos Weddelliana, Geonoma gracilis, Areca aurea, or Chamædorea glaucifolia are especially adapted for this purpose, being elegant in growth and graceful in outline. Having fixed on a plant, turn it carefully out of its pot—*i.e.*, if larger than a three-inch one; then set it in the centre of a soup-plate and surround it with sand, covering the latter with Moss. After this has been done, suitable foliage should be selected to form a margin, resting on the table-cloth. The variegated leaves of several kinds of Begonias make an excellent change for this purpose in place of Fern fronds or other material. Of the latter, Davallia Tyermanni or elegans would make a durable edging. Insert a few fronds of the common Maiden-hair Fern over the Moss, and then some flowers may be dotted over the surface. A good selection could now be made from the various sorts of Primula sinensis interspersed with a few spikes of white Roman Hyacinth. These will arrange well together. Bouvardias in divers colours would look well, adding a spike or two of scarlet Salvia. If larger and bolder flowers are desired, use those of Eucharis in conjunction with a few blooms of any coloured Chrysanthemum. If flowers are scarce, foliage only will make a beautiful effect arranged as a base, choosing such as that of Fittonias, Peperomias, or the points of bright-coloured Coleus, with the addition of a small growth or two of Pandanus graminifolius or a few points of high-coloured Croton. Full use should be made of Chrysanthemums for specimen glasses, and of the leaves of late Vines for dessert decoration, until the Vines ripen and drop their foliage. Blooms of Indian Crocuses (Pleiones) look well in a flat glass dish in a little Moss and water. Flowers of Tree Carnations also look well arranged (a few only) in a specimen glass with their own foliage.—J.

Walks.—On reading the article on the above subject in your issue of Oct. 31, p. 492, I was surprised at not finding any mention of what is considered about here (Belfast) the best material for walks, on account of its property of preventing the growth of weeds or Grass. I refer to shale, as obtained from quarries in Co. Down. It is similar in appearance to the shale from which paraffin is extracted, being of a dark slate colour, but is quite hard; I have seen it used as a border, next the Grass, where Grass seed usually germinates so freely, the centre of the walk or drive being common gravel. Used thus it is remarkable how perfectly clean the shale remains, while the gravel constantly requires attention. If a similar material is not to be had in England, this should be worth importing, especially as I understand it costs only about a shilling per load at the quarries. I should have said it was laid down two or three inches deep wherever I saw it used.—PAT.

ROSES.

PROPAGATING ROSES BY CUTTINGS.

THE long growths on Roses are now of no further use on the plants, and, as a matter of fact, the latter will be benefited by having them shortened back, so as to reduce the size of the head and give the wind less power to blow them about. The shoots thus obtained may be turned to profitable account by converting them into cuttings, which, by careful planting, may in due time be made into plants. There are two ways of dealing with the cuttings, from which a fair proportion of plants may be expected. In our own case, having an odd light to spare, we have made a temporary frame on a warm border, and, having mixed some sand with the soil, have dibbled in the cuttings pretty thickly, and put the light over them. The latter we shall cover up during very severe weather, and once or twice during winter we shall get a short thick stick and ram the soil firmly between the cuttings, as I find they root better in a firm soil than in a loose one, and the worms will be sure to work amongst them and loosen the earth. Another way is to plant the cuttings on a warm border in the open. The best way of doing this is to cut a inch or four inches deep with a spade, then put in some road grit or sand, an inch thick, to receive the base of the cuttings. Let the rows be one foot apart, and the cuttings three inches asunder in the rows. Press the cuttings firmly into the sand, so that they may have a firm bed on which to rest, and then press the earth firmly with the feet about them, so as to securely fix them in the soil. In securing the cuttings, no attempt should be made to prune the Roses, but on most established plants there will be long shoots, which, as before suggested, may be advantageously reduced in length. It is from this surplus growth that any number of cuttings may be obtained, and, as has been already stated, it will do the plants no harm if these long shoots are shortened back to within six inches of where they will have to be cut back to in spring from the hardest of the shoots. Thus obtained, the cuttings may be made, rejecting the soft tops, as they will be sure to die. For this purpose, a rather long cutting is desirable, as it enables the operator to fix it more securely in the soil than a short one. As nearly as possible, every cutting should be eight inches long. It is not of much importance whether they have leaves on them or not; although those that have two or three leaves above ground will be likely to form roots sooner than such as have none.

I find that when the cuttings are put in at this time, whether under glass or in the open, it is best to let them stand one year before being moved, as by that time they will have made a sufficient number of roots to bear removal with safety. Some like to take them up in spring just as they have formed a callus, and pot and place them in heat; but, unless they can be dealt with in a careful manner, great risk of losing many of them will be incurred. Those put in frames will require an occasional watering as spring advances, and the lights should be tilted in warm weather to admit air. At the end of May the lights may be removed altogether, and as summer advances many of them will begin to grow vigorously. The strongest may have their tops cut off when they have reached a height of eighteen inches. If left to themselves, some will flower during the summer; but if strong plants are wanted they should not be allowed to do so. By the time they have been twelve months in the ground they will be ready for potting, or for any other purpose for which they may be required.

J. C.

REPLIES.

1513.—**Pruning Gloire de Dijon Rose.**—If there is plenty of young growth to fill up the space, you may cut away any shoots which have flowered this year, not otherwise, but shorten them and the young branches back one third of their length. Prune at the end of February.—J. C. C.

— It ought to be pruned about the end of February or early in March. The shoots ought not to be cut back much; and where the wood is crowded, thin it out.—J. D. E.

1512.—**Decaying Marechal Niel Rose.**—The disease described is canker, so common in this Rose. Earth up the stem so as to cover the knot mentioned to the depth of three or four inches, when it will make new roots and recover for a few years. At the same time, it would be advisable to plant a young tree to take its place, as this variety is seldom long-lived.—PAT, *Belfast.*

15196.—**Pruning Roses.**—As you do not say whether your Roses are in pots or planted out, we cannot answer you definitely. If the Maréchal has its roots in a border it does not want any pruning unless the branches are very thick; then they may be thinned out. If in a pot, shorten the long growth back to half its length. Gloire de Dijon may be treated in the same way.—J. C. C.

15195.—**Roses for greenhouse.**—The best yellow Roses are Céline Forestier and Triomphe de Rennes. The best white are Climbing Devoniensis and Gloire de Bordeaux; but if you have not a large space of roof to cover, Niphetos and Marie Acary are beautiful white Roses. The best pink is Reine Marie Henriette. This is rather a dark pink in colour, but is a good climber, and a charming Rose. The best twelve Teas for pots are Adam, Catherine Mermet, Devoniensis, David Pradel, Etoile de Lyon, Madame Falcot, Safrano, Reine Maria Pia, La Boule d'Or, Madame Lambard, Marie Van Houtte, and Niphetos.—J. C. C.

15198.—**Building house for Roses.**—Assuming that you intend to build a span roof house you should have brickwork raised to one foot above the surface, and above the brickwork upright glass lights four feet high. On these, of course, the roof will rest. As the width is only to be twelve feet you should have a walk in the centre which will give a bed of soil for the roots of the Roses. In this case you can have a door at both ends, or only one. If you do not want the Roses to flower before the end of April it is not necessary to heat the house; but if you decide on heating it, two rows of four-inch pipes along each side and one end will afford all the heat you want. The pipes can be placed close to the low brick wall. The ends, excepting where there are doors, should also have the brick-work the same height, but the upright lights at the ends may have the sash-bars reaching from top to bottom. The great secret of growing Roses under glass is to give them all the light possible; hence the necessity of having the glass down nearly to the ground. This will enable you to grow low bushes in the border, so that you may have them under the eye as you pass through the house. You will find, if you can shade the glass with roller-blinds on bright sunny days after the beginning of May, that your Roses will last much longer in flower. All the side-lights should be made to open, and ample means for giving air must be provided at the top, but if I were building such a house for myself I should have it constructed in such a way that all the top lights could be taken away after the end of May, and I would not put them on again until the beginning of August, as even the most tender of Roses will do better without the glass roof than with it during the three hottest summer months. You ought to provide a border for the roots two feet deep, and the best soil for them is a good fibrous loam. If you heat the house, it had better be done with hot water pipes, using a very small boiler fixed at one end outside; the house will be more conveniently heated if you have only one doorway.—J. C. C.

—— If "Constant Reader," *Bolton*, who sends this query, will call at my address—I am only four miles from him—I will show him my house, and give all the information possible. My house is twenty feet by eleven feet six inches, span roof, top ventilation all the length, no outside painting or puttying, as glass is laid on T iron, forming one solid sheet, edge to edge, and seems to be a good house for Rose growing indoors in smoky Lancashire. I have all my Roses planted out, as I do not believe in pot Roses for amateurs who have to work during the day, it requiring a man with plenty of time and a love of the work to manage pot Roses well. My house is built for a cool house, as again I believe that taking year for year the Roses will do better in a cool house than when forced. I am speaking now for amateurs, and not for growers for the trade, &c., who must force to be up with the market. I have grown and flowered Tea Roses very well this summer, and am now waiting to see if they will stand a cashire winter in a cool house.—JOHN PEARSON, 191, *Ainsworth-road, Radcliffe, Lancashire.*

14964.—**Dissolving bones.**—If the bones have been broken up fine, it is better not to dissolve them any further. Large bones can be dissolved by pouring sulphuric acid over them, but no one wants acid in their Vine borders. The small pieces will decay, slowly doubtless, but in that state they are of most value to the Vines.—J. D. E.

GARDEN BIRDS.—III.

THE WREN (Troglodytes parvulus) is one of the soft-billed birds which live exclusively on insect food and have no taste for fruit of any kind. This lively little bird is one of the gardener's best friends, being a large consumer of all kinds of insects and larvæ, and especially of moths, with their caterpillars and pupæ. He seems never to tire, all day long, hunting among the fruit-bushes for caterpillars and rummaging about old walks and rubbish-heaps, where he finds numbers of moths (which are asleep in the daytime), and where, later on in the season, he picks up many of their pupæ or chrysalides. In search of the latter he explores every nook and crevice in a wall, running in and out of holes like a mouse, for which he might often be mistaken. In the thick Hawthorn hedges which surround our garden a couple of pairs of Wrens make their nests every year, and I can testify, from my own observation, to the enormous number of caterpillars, &c., which they daily convey to their nestlings. It is a singular fact that the Wren is in the habit of building two or three nests before the hen bird commences to lay. Only one of these nests is ever used for the purpose of incubation, and I was long puzzled to ascertain the object of building the others until I discovered that they serve as roosting-places in the winter, when the Wrens crowd into them in great numbers. I have known as many as seventeen full-grown Wrens to be taken from one nest on a winter's night. How they managed to avoid suffocation is a mystery; but there they were, warm and snug in the domed nest, while the country around was covered some inches deep with snow. The Wren is a prolific bird, producing two or three broods every season, each brood numbering from six to eight birds, sometimes even more; and it is not improbable that some instinctive foresight leads the parents to construct these extra nests to provide a warm winter shelter for their numerous progeny. At other times a retiring and undemonstrative bird, in the pairing season the cock Wren exhibits a total change in his demeanour. Instead of silently creeping about old walls, timber-heaps, hedge-bottoms, and such places, he will then mount to the top of a tree, a house-top, or other elevated position, from which, with ruffled feathers and quivering with emotion, he boldly sings out his loud, clear notes of challenge. Although puny in body, at such times he appears to be animated by a mighty spirit, reminding one of Homer's description of Tydeus, and, when his challenge is accepted, as it almost always is if another cock bird happens to be within hearing distance, the combat is long and fierce before either of them gives way. Some years ago it was, and may still be, the custom in some parts of Ireland for the village and country lads to form parties on St. Stephen's Day (Dec. 26) for the purpose of "hunting the wran." Armed with sticks and stones, each party scoured an allotted portion of the Furze-covered ditches in the neighbourhood until they had secured all the wrens they were able to slaughter. These they then tied on the sprays of a large branch of Hawthorn, which was also decorated with ribbons of various colours. All the sportsmen then formed in procession, bearing the branch in front as a standard, and visited every house for a considerable distance round, singing, when they came before the door, a song, part of which I remember was—

> The wran, the wran, the king of all birds,
> On St. Stephen's Day was killed in the furze.
> Though he is small, his family's great,
> So come out, good man, and give us a thrate!

On such occasions, a trifle of money was generally given to the party to get rid of them. I was informed that this is a very ancient custom, dating back to the times of the Danish invasions of Ireland, and that the hostility shown towards the Wren on this particular day is due to the circumstance, handed down by tradition, that a party of Irish, who were about to surprise their sleeping enemies at the dawn of St. Stephen's Day, were defeated in their purpose by an early-stirring Wren, which woke one of the Danes by hopping on a drum that stood near him! It would be well if this custom could be abolished. One of the most pitiable sights I have seen was that of the dead bodies of a dozen or more of these useful and harmless little birds hanging, like malefactors, among gaudy ribbons on a Hawthorn branch on St. Stephen's Day.

The CREEPER (Certhia familiaris) pays us occasional visits at long intervals, usually remaining the greater part of a day each time, during which he runs over every tree in the garden in search of insects which infest the bark, and to this class of insects and their larvæ he seems to confine his attention entirely. The legs of this bird are exceedingly short, and the claws are remarkably sharp, so that he can run up and around a tree, or even along the under side of a branch, back downwards, like a fly on a ceiling, without any apparent difficulty. When ascending the trunk of a tree, he presses the end of his stiff tail against the bark, using it as a prop, like the Woodpecker. It is not an easy matter to get a good view of him, as he is very shy, shifting round to the other side of the trunk or branch if he is approached too closely, so that one has to use an opera-glass, at some distance off, to observe his motions in a satisfactory manner. The Creeper seldom leaves the woods or plantations, in which he finds the most abundant supply of his special kind of food; but he is a bird that every gardener should be glad to see whenever he makes his appearance among his fruit-trees, as his visits are always more or less beneficial to them.

The WILLOW-WREN (Sylvia trochilus), a migratory bird, generally makes his appearance in our garden about the second week in April, and remains with us until the second week in October. He belongs to quite a different class of insect-eating birds from the Creeper, and subsists entirely on winged insects and caterpillars, pursuing and seizing in the air numbers of the former as they fly near him, in doing which he displays a wonderful power of making short and rapid turns on the wing, with all the combined grace and agility of a well-trained harlequin. The insects on which he preys are chiefly those which infest the leaves and blossoms of various kinds of trees, including fruit trees and bushes, and in pursuit of them he is as untiring as a swallow, hardly pausing a moment throughout the entire day. He is, therefore, a most useful bird in the garden, and, unlike his relative, the Lesser Whitethroat (Sylvia curruca), a bird which, however, rarely occurs here, never touches any kind of fruit. He is not at all a shy bird, like the Creeper, but will fearlessly allow one to watch his movements from a distance of two or three yards, provided no motion is made that would alarm him. He generally makes his nest in the side of a ditch in the field at the back of our garden, and, as soon as his young ones are able to fly, he brings them into the garden, about which they are constantly to be seen until they all take their final departure from the country in October. The nest is a domed or hooded structure, like that of the Wren, but of looser and coarser texture, being formed of interwoven Grass stalks, instead of Moss, and also having a much wider opening. When the Willow-wren arrives here in spring, his plumage is of a pale or grayish olive-green colour, almost whitish on the breast, but when he moults in autumn, a short time before he leaves us, the breast feathers are quite yellow, and all the rest of the plumage is more or less suffused with the same colour. The pale, grayish colour of his spring plumage is probably to be accounted for by the wearing away of the yellow tips of the feathers during the interval of his absence abroad.

The GREEN LINNET, or Greenfinch (Fringilla chloris), although of no great use in the garden, never does any harm there. Two or three pairs of these birds make their nests every year in the Hawthorn hedges of our garden, each pair usually rearing two broods in the season. I have never seen them meddle with any of our seeds or fruit. They live entirely on the seeds of wild plants together with the leaves of those which are of a succulent nature, such as Groundsel, Chickweed, Dandelion, &c. In severe winter weather, however, when the fields no longer supply them with food of this kind, they flock to the farmyards and houses, and then they will feed on any kind of grain, &c., that they can find there; but I have never known them to prey on the ripening corn, as the Sparrows do so largely. Except the two or three pairs of these birds which resort to our

garden every year during the breeding season, we seldom see any others of them there until winter, when they are constantly about the place in large flocks, especially when any of our neighbours are threshing out corn. Although not often seen caged, the Green Linnet makes a very interesting pet, from the liveliness and general amiability of his disposition, and the remarkable tameness and familiarity which he exhibits. His song, if not so varied nor so sweet as that of some other more favourite cage-birds, is particularly cheerful and animated, and he has one especially striking and superb note, the effect of which upon the ear may be compared to that which a sudden burst of brilliant sunshine from behind a bank of clouds has upon the eye.

The CHAFFINCH (Fringilla cœlebs) may be spoken of in almost the same terms as the Greenfinch, as to his character of doing neither good nor harm in a garden. Like that bird, he lives almost exclusively on the seeds and leaves of wild plants, and seems only to visit our garden accidentally as he passes over it, dropping down sometimes to rest on the Apple trees. In winter, however, large flocks of them often accompany the Green Linnets in their visits to us.

The GOLDFINCH (Fringilla carduelis) occasionally makes his appearance here, and is another bird of neutral character as a visitant in a well-kept garden. We should see him oftener, however, and coming as a friend, if we were less careful to keep our garden free from Groundsel, of which he is particularly fond—quite as much so, indeed, as he is of the seeds of the Thistle, from which he has obtained his specific Latin or scientific name, *carduelis*. The name "Thistlefinch" would certainly be more distinctive than that of "*Gold*finch," which is quite as applicable, if not more so, to the Green Linnet, who displays a larger amount of rich golden colour on his wings and tail, while the rest of his plumage is more or less tinged with it. I must say, however, that the name "*Gold*finch" is more in keeping with the brilliant plumage and song and the exquisite grace of every movement of this bird, which mark him out as the most "finished" and aristocratic of all our native small birds, than the humbler designation of "Thistlefinch" would be.

The YELLOW-HAMMER, or YELLOW BUNTING (Emberiza citrinella), another occasional visitant here, is also a perfectly harmless bird in the garden, as he lives entirely on the seeds of wild plants. The name "Yellow-hammer" is a corruption of "Yellow ammer" ("ammer" being the Saxon word for "bunting," and keeping its place in our language, as the word "haver," for oats, still survives among the lower classes in Yorkshire). In hard weather during the winter, numbers of these birds congregate about our garden, in company with the Green Linnets and Chaffinches, but at other times they live almost entirely in the fields. Their yellow plumage may or may not be an instance of Nature's "protective colouring," which has been so clearly established in some other cases; but, if not, it is singular that, in this district at least, during the summer months the cock Yellow-hammer invariably selects a "blossomed Furze" to perch on when singing, from which, undistinguishable among the golden flowers, day after day he repeats his brief but unique song, which resembles nothing that I can think of so much as a sad, sweet, musical sigh.

W. MILLER.

NOTES ON DIFFERENT MODES OF HEATING.

14997.—**Heating small greenhouse** (p. 520).—In reply to "Vernia"—the number of the stove referred to is 184, and I think it is known as a "Radiating Hot-air Stove." It has done me good service during the late frost.—H. A. R.

——My little greenhouse (seven feet by six feet) is slightly raised from the ground, and an idea has struck me in order to avoid the disagreeable smell emitted from oil-stoves, that a pan let into the floor and the water heated by a gas-jet would do well enough. My plants are principally Ferns—also a few Geraniums wintering there. Shall he pleased to have opinion.—J. P. *** The plan proposed by "J. P." would almost certainly result in a failure. In the first place a single gas-jet would not afford sufficient heat, unless the greenhouse were very small indeed; secondly, the amount of steam produced and allowed to escape directly into the house would probably have a very prejudicial effect; and, lastly, almost the whole of the fumes of the gas would enter the house, and the plants would suffer. An atmospheric burner with a two-inch flue to conduct the fumes outside, if arranged in the house) heating a flat or flatly-conical copper boiler, and a few feet of one and a half or two-inch pipe, would give a far better result with a minimum of trouble. But if pipes are an objection, use one of the small, slow-combustion terra-cotta or earthenware stoves (not boilers), which are exceedingly economical, and require very little attention. If the effect is too drying, place a pan of water on the top of the stove.—B. C. R.

Heating Cucumber-house.—I have built a span-roofed Cucumber-house twenty-two feet long, twelve feet wide, and eight feet high. I have put it two feet below the ground level, and I am going to heat with three rows of three-inch hot-water pipes round the house. Should I put two rows under the bed and one over, or put all under the bed, to grow good Cucumbers?—AMATEUR. *** "Amateur" had better place two of the rows of three-inch piping on each side beneath the bed, and the third above it, along the curb at the back, where the heat will run up the glass, and keep out the cold in severe weather. If possible, this upper row should be fitted, independently of the rest, with a valve, to enable the heat to be shut off when not required; for in warm weather the heated air from what must be the flow-pipe (if arranged in any other manner) acting directly upon the foliage of full-grown plants will be decidedly injurious. With the amount of piping mentioned it will not be advisable to cover in the pipes below the bed completely, but leave openings here and there along the front of the bed (opening on to the pathway), with wooden sliders or flaps to each, so as to allow some of the bottom heat to escape into the house when it is desirable to do so. If, however, very early fruit are required, more piping will be necessary, and in this case there should be one outside upper row and two or three beneath the bed on each side, with a couple more (with evaporating troughs) along the pathway: four-inch pipe would also be preferable to three-inch.—B. C. R.

14816.—**Prickly Comfrey.**—I would advise anyone proposing to use this plant to get a few roots at first. I have tried it, and find that my cows will not eat it; my pigs will; and horses will pick it over and eat a little, but not much. I sent one thousand roots of it to an estate in Ceylon for the cattle there, with the same result as to the cattle.—W. D. PAINE, *Reigate*.

15088.—**How to make a cheap frame.**—Any novice can make up the following at the small cost of 12s. 6d. Materials required:—Half-square floor boards, 4s. 6d.; twenty-four feet 2 × 2 deal, 1s.; thirty feet ⅞ sash bar, 2s.; thirty square glass 14 × 11, 4s.; putty and nails, 1s. The floor boards will cut into four six-feet lengths each, which will make a pit two feet high at back, and one foot front, and six feet square, and there will be enough left to form a drip-board for the bottom of sash. The 2 × 2 will make the top and sides morticed together, and the bars should be morticed into the 2 × 2 at top, and fastened to floor board at bottom; there will also be enough left of the 2 × 2 to strengthen the four corners of the pit. A much cheaper frame can be made by nailing four pieces of lath bâton together, making a frame six feet by three feet, and covering with calico tacked round the outer edge, and given two or three coatings of oil; the pit can be made of square sods of grass. These frames are very useful for an awning for protecting Tulips, &c.—F. A. BEAR, *Walthamstow*.

A book on vegetables.—Mr. John Murray will next week issue the most complete and thorough book on vegetables ever hitherto printed in our language. It is an English translation of the work by Messrs. Vilmorin-Andrieux & Co., with cultural directions and nomenclature suited to our English gardens. The book is very interesting from many points of view; all the really good standard vegetables, not only those known to England, but also many other important kinds, are figured, and the synonyms of our vegetables, which are complicated beyond endurance, are here classified and made clear. Many vegetables very little known in England are described and illustrated. The whole book is handy in form; it is printed in bold clear type, and is published at a reasonable price. There are over 600 illustrations. The proofs of the English edition have been read by Mr. Barron, and the book translated by Mr. Miller. It is uniform in size and binding with the "English Flower Garden," and the two promise to be the beginning of a compact series of books, each taking up a distinct branch, and forming together a useful Garden Cyclopædia.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.

No. XXVII.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

POTATOES.

THE Potato is the most familiar vegetable of which we speak. It may be rendered fit for eating by boiling, baking, or frying. The Potato belongs to a vegetable tribe of the Night-shade order, which includes a large number of poisonous plants. It comes next to the cereals in importance as vegetable food, and is said to be richer in nutrients than any other moist vegetable. We know that its cultivation has again and again prevented famine in agricultural dirtricts, and the Irish, "a hardy and healthy race,' subsisted for some time entirely upon the Potato, and generally each locality has its favourite, distinguished by the local name; some are waxy, others floury; the excellence, however, depends to a very large extent upon the manner and degree of cooking. Whilst a good Potato may be spoiled by bad cooking, an inferior one may with proper management be rendered comparatively good. Large quantities, it is to be feared, are often wasted in many families, owing simply to the way in which they are dressed. English people are often in the habit of using no other vegetable than the Potato; certainly in the present state of cultivation of Potatoes, many other vegetables might with advantage be occasionally substituted, but none can be served in such a variety of ways, or used so long without weariness. Potatoes that are cooked in such a manner as to be eaten with their own broth, are preferable to boiled Potatoes, when fruit, raw salads, and other vegetables are not obtainable; as Potatoes then supply a sufficiency of potash required for the blood. American cooks, as well as Irish, consider it very wrong to cut off the skin of the Potato before cooking; it is evident that the skin protects the Potato, and must in a measure prevent the passage of the potash into the water, although it may not entirely prevent it. Before cooking Potatoes in any of the following methods, it is advisable to select all the little ones for one day's cooking, and to reserve the larger ones for another day; for if large and small are cooked together the small ones will be cooked long before the large ones are soft.

POTATOES BOILED IN THEIR JACKETS.—Scrub and wash them well free from all dirt. You may use a vegetable brush, or failing that use your thumb and fingers, but do not on any account break the skins by putting a knife to them. When quite clean, pack them in an iron saucepan, cover them with cold water, into which put a pinch of salt; bring them slowly to the boil, and cook gently till they are soft. This may be ascertained by pricking them with a fork or skewer; if it goes in easily, you may pour off the water, put the lid on, place on one side to allow the steam to pass off, and when the skin is quite dry, serve hot, with a small plate by the side of each person to hold the skins.

PEELED POTATOES.—If the Potatoes are to be peeled first, wash them well, or the thumb and fingers will become dirty, and so discolour the whole Potato while it is being dressed, then with a sharp-pointed knife peel them very thinly, as the best part is nearest the skin, take out all the eyes with the point of the knife, and as each one is prepared throw it into cold water; when all are ready pack closely in an iron saucepan, cover with cold water and a little salt, put the lid on the pan, place by the fire and boil gently until nearly soft. Salt is added to the water to compensate for the escape of the saline constituents of the vegetable, which are freely soluble in water. When the Potatoes are nearly cooked, pour off the water and cover them with a clean cloth to absorb the steam and finish the cooking, for about fifteen minutes; then immediately remove from the fire, or the floury character will have disappeared, and the Potatoes become soft and gummy. This is due to the conversion of some of the starch into dextrin. Serve quite hot. When a Potato is peeled, not only is a considerable proportion cut off and thrown away, but the part so wasted is the least watery and most nourishing. Hence the necessity when peeling Potatoes, of using a

very sharp knife. The skin of the Potato is like cork, and impervious to water; by removing it you allow the water to get into the Potato, and all that is soluble to escape into the water, and be thrown away. If cooked in their skins, only one Potato in fourteen is said to be wasted, whereas, if peeled, one in every six is lost.

STEAMING POTATOES.—This process is considered a better method than boiling (especially if the Potatoes are such as break easily) as they probably lose less of their potash juices; this, however, is uncertain, as the drop of condensed water upon the Potato being continually renewed may possibly wash away almost as much potash as when the Potato is immersed in water. Cleanse thoroughly and peel thinly, put the Potatoes in a steamer over a pan of boiling salt and water, let the lid fit quite tightly and steam until soft. Do not cook anything in the water under the Potatoes. Some Potatoes take much longer to cook than others; the watery or waxy Potato is exceedingly trying to those who suffer from delicacy of digestion, and takes much longer to cook than those grown in Yorkshire and other dry soils which yield a much more mealy and digestible Potato. Those who buy for restaurants, hospitals, hotels, &c., as a rule seek for Potatoes grown on a sandy soil.

BAKED POTATOES.—Large Potatoes should be reserved for this purpose. Scrub and wash them well, but do not break the skins; dry them with a cloth, and place in a moderately hot oven. Bake until they feel soft; turn them about from time to time while they are cooking; do not let them remain in the oven after they are finished cooking, or they will become dry and hard. Serve on a napkin, with small pats of butter on a separate dish.

FRIED POTATOES.—Kidney Potatoes should be chosen for this purpose. Wash well and peel thinly; cut lengthwise into slices about a quarter of an inch thick, and throw them into cold water as they are prepared. Have some clarified fat on the fire in two saucepans. When one of them is near to boiling point dry the Potatoes in a cloth, and throw them into the fat No. 1; let them cook in this until they are soft, and will bend to the touch. No. 2 saucepan of fat will by this time be quite hot (which may be known as a bluish steam passes off), lift the Potatoes with a perforated spoon from saucepan No. 1 and throw them into No. 2. They should then become crisp, and swell to twice their original size. As they brown take them out on to some porous paper, sprinkle with pepper and salt, toss on the paper until dry, and serve hot.

QUESTIONS AND REPLIES.

15350.—**Jam turning mouldy.**—There are several reasons why jams turn mouldy. (1) Unless the fruit had been gathered perfectly dry (under a morning sun is best), and all broken and decayed rejected, the jam would have a tendency to mould. (2) The jars should be perfectly sound and dry, and the jam poured hot into them. (3) Sugar should be of the finest quality, whether white or brown, and a sufficient quantity used. Beetroot or other vegetable sugars, although excellent for many purposes, are not suitable for jam making, and might cause the green mould. Only the best cane-sugar should be used for jams. (4) If the jam was not boiled long enough to solidify when cold it would assuredly not keep. (5) If there is any chance of steam approaching the shelf on which the jars are placed so as to damp the surface, or if the atmosphere is too cold. I would advise the removal of the mould and reboiling, with a little more sugar, all jams thus affected. Wash the jar in hot water, and dry thoroughly before returning the jam. Cover with brandied, and then gummed paper.—ANNIE M. GRIGGS.

15351.—**Marrons glaces** (repeated query).—Will some one kindly give me a recipe for preserving Chestnuts in the form known as marrons glacés?—SPURYX.

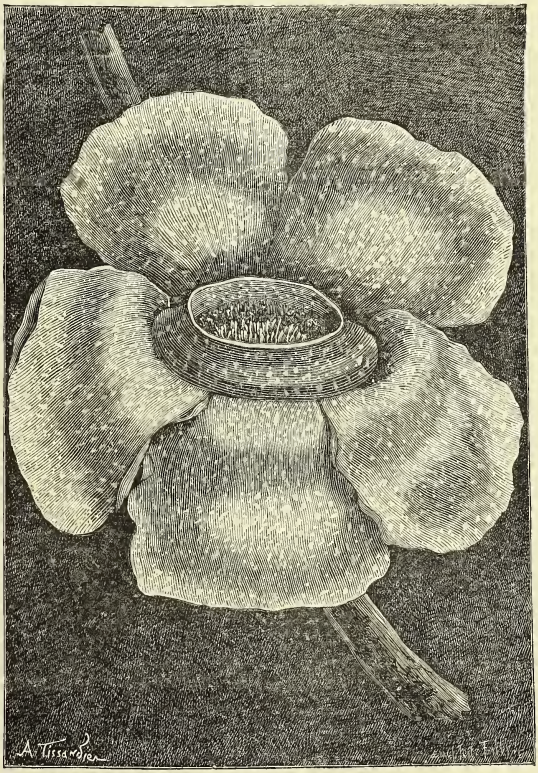
15242.—**Oat cakes.**—These should be made from the best Oatmeal, as newly ground as possible. Put the meal with a good pinch of salt into a basin and thoroughly saturate with luke-warm water, then squeeze well through your fingers and add more Oatmeal until the mixture is of the consistency of dough. Dust some Oatmeal on a baking-board, and flatten the dough with the knuckles of both hands until the cake is nearly the size required (take care to keep moving the cake round or it may stick to the board), dust a little Oatmeal over the top of the cake as it is being flattened, then smooth and finish with a rolling-pin. In olden days, a fluted rolling-pin was used for this purpose. Crimp round the edge of the cake with the thumb, but do not cut it in any way. When thus prepared, it is ready for the girdle and "firing," which operation is far more difficult to perform than making the cake. A bright clear fire without smoke is absolutely necessary. Place the girdle over the fire with some salt upon it; and as soon as the salt crackles it is hot enough for the cake; brush the girdle clean and put on the cake; turn it occasionally while it is flat so that it may be equally cooked, and when the cake is dry and slightly browned on one side carefully lift it with a spatula or slice on to a toaster to cook the second side before the fire. This will give the cake a beautiful curl, and make it short and crisp; but should you lack a roaster, then finish the cake on the girdle, but do not allow it to become too brown. A little bi-carbonate of soda added to the meal is considered by some to be an improvement, but, while it makes the cakes short, it imparts a greenish tinge, and this is not pleasant; others again add a little melted bacon fat with the warm water; but as a rule the plain cakes are preferred.—ANNIE M. GRIGGS.

—— Put three handfuls of meal, either coarse or fine, into a basin; a piece of dripping or butter, the size of a Walnut, half a salt spoon of carbonate of soda, ditto of salt, into a teacup, fill up with boiling water, stir a little, then pour over the meal, mix quickly, and turn on to the baking-board; gather up the dough, and knead out with the knuckles, keeping smothered in meal, smooth lightly with the rolling-pin, and cut in quarters. Shove gently to one side to stiffen (while the second cake is being made), then brush the loose meal off, lay on the girdle or top of the stove to brown *slowly*; finish by toasting in front of brisk fire.—R. R. H., *Inverness.*

—— "L. L." must mix two breakfast-cups of coarse Oatmeal with the same quantity of flour, a teaspoonful of baking-powder, and a little salt; rub in a little dripping, and mix with cold water; roll out thin immediately, and bake in a quick oven. Pater says they are equal to Scotch Oat cake.—MATER.

A GIGANTIC FLOWER.

IN looking over an old gardening book, I happened to alight on the following. I should like to know if it is correct:—"In 1818, Dr. Arnold discovered in the island of Sumatra a flower, which he named the Rafflesia Arnoldi. The circumference of the full expanded flower is nine feet; its nectarium calculated to hold nine pints; . . . the pistils are as large as cows' horns, and the entire weight of the blossom computed to be fifteen pounds. . . ."—M. C.



A Gigantic Flower (Rafflesia Arnoldi).

*** The description quoted by "M. C." is substantially accurate. Rafflesia Arnoldi, of which we here give an illustration, is a singular parasitic plant named in honour of its discoverers, Sir Stamford and Lady Raffles, and Dr. Arnold. The Rafflesia has neither stems nor leaves, the only evidence of the plant on its first appearance being a rounded bud of the size of a marble, protruding through the bark of a trailing Cissus. This, after gradually enlarging for a month or two, attains the size of a medium sized Cabbage, and finally expands its five thick warted, wax-like petals, forming a flower from a foot to a yard in diameter. Several other species have been discovered since 1818, when this plant was first made known, but R. Arnoldi still remains the largest and most singular. In colour, the flower is yellow, flushed here and there with pink, the petals being marbled with lurid purple,

and the whole exhales a fœtid odour by which insects are attracted to it, as in the case of Stapelias (see GARDENING, Sept. 19). The flowers remain open three or four days only, and then gradually collapse and decay. The plant is not cultivated, and probably never will be, but those interested in it may see exact models in the museum at Kew.—ED.

ERECTING GLASS STRUCTURES.

THE planning and arrangement of glass structures in gardens are often bad. The first and main error commonly committed consists in beginning without any notion of the extent to which the range of glass may finally reach; the result is that first one house is dotted down in one place, and another in another, until the end is a higgledy-piggledy arrangement, causing an infinite amount of trouble and loss. If owners of gardens only knew how much better and cheaper it is to have everything handy and convenient, they would scruple less about the little extra cost of such provision at the outset. It is just as easy to set to work in the right way as in the wrong, no matter whether the garden be large or small. It is impossible to give instructions that will apply everywhere, so much depends upon circumstances; but glass-houses, whether few or many, should at least be all near to each other, and attached to each other if practicable, so that the whole of them can be walked through without going out of doors; and the range should also be attached to a shed behind or near, which can be entered by a back entrance from the houses, and in this shed all potting and other conveniences in connection with plant culture should be provided, including the means of keeping the potting-room at a suitable temperature in cold weather. An unheated potting-shed is an almost useless structure at certain seasons of the year. All doors and paths should be of good width, sufficient to admit a wheel or hand-barrow, so that everything may be loaded and unloaded indoors without risk. Water should be provided in every house by means of cisterns and ball-taps, and ready means should be at hand for heating the water to any desired degree. These things may just as well be done as not, and if seen to at the beginning in a methodical way do not cost half so much as when they have to be done afterwards. When they are not done the inconveniences and mishaps in the management arising therefrom afterwards are likely to be both worrying and costly.

Pits and frames.—These are the simplest kind of garden structures, but they are put to a multitude of useful purposes, and in small gardens often represent the whole of the glass available for everything. The simplest kind of frame consists of a square or oblong box of any size, about twice as deep at the back as at the front, so that it slopes gently to the sun. The sides and ends of such frames may be fitted with bolts and catches, so that they may be taken to pieces and put together again in a few minutes, according to circumstances. When not in use in winter, they can be conveniently stored in a dry place. The size of a frame must depend upon what is to be grown in it. For Cucumbers and Melons that are planted out for a time, and which spread over the ground, the width should not be less than 5 feet or 6 feet, and the length according to the demand for plants. Any joiner can make an endless frame by making the back and sides in lengths, that can be pieced together as wanted, and the end put on anywhere. For small plants the frame may be only 3 feet wide, but it matters little whether it be wide or narrow so long as so much space is needed, but wide frames need long lights, and these are heavy and inconvenient, and cause more breakage; of course, frame lights are movable. Frames of this kind are very useful, but it is not economy to use them very extensively. They do not endure so long as pits built of bricks do, and they are not so convenient either, and cannot be heated very easily.

Brick pits may be the same shape as wooden frames, only they are built deep to hold fermenting materials, and are often heated; the lights also lift off and on. This kind of pit is, however, going out of fashion. They are inconvenient, as they can only be entered or attended to by lifting the lights off, which is not desirable in cold weather, and the breakage of glass through lifting the lights, airing, and by wind is far greater than in the case of fixed roofs. Besides it is found that a pit with a fixed roof, which can be entered by a door, and all the work connected with it done inside far more conveniently and speedily, costs scarcely more than the frame; it is consequently superseding it for almost all purposes. Such pits must have a narrow inside path, and must be built a little wider in consequence, but the back wall can be utilised for shelves, so that really little space is lost, while all the work and watering can be done and to much better and more profitable purpose. Pits of this kind may be partially sunk in the ground, say from 18 inches to 2 feet or even more, and they may be lean-to or span-roofed, and are suitable for growing Cucumbers, Melons, bedding-plants, pot-Vines, Tomatoes, Orchids, and stove or greenhouse plants. There is hardly anything, indeed, which may not be grown, nursed, or propagated in such small structures, which are excellent feeders for the conservatory or show-house. As a rule, there are far too few of them in gardens. When they are made on the lean-to principle, they should face southwards, and run with their ends north and south when span-roofed. Lean-to pits are best adapted for the early forcing of fruits and flowers, as they get the sun most in the winter-time, and are more easily heated. Of course, houses of large size are built on the same lines as are here described; but I am speaking of what are known as pits, in which the inmates are near the glass, and which are just lofty enough to allow a person to walk upright at the highest part, and from about 6 feet to 10 feet wide. It is in such pits that most of the plants are grown in nurseries for sale, as well as a great deal of the marketable produce that appears at Covent Garden and elsewhere. They are cheap and suitable for the purpose.

Fruit-houses.—Although we now know so much about the wants of such subjects as the Vine, Peach, Fig, and other fruit-trees, there is still much diversity of opinion on the subject of the size and shape of house best suited to their culture, although there need not be. What we have to consider first is the habit of the tree to be grown under glass; that settled, the kind of house and its arrangements are easy. But, unfortunately, this way of looking at the subject is not always thought of. Take the Vine, for example. It is a most accommodating plant in the matter of training, as, owing to its habit, it can be provided with the same space in a low house as in a lofty one, although for other reasons lofty, airy houses are best. It does not matter whether the Vine be trained upwards, or downwards, or horizontally, and hence, unless there are too many plants for the space, a low pit will just hold as large a Vine as a lofty house wherein the Vine is led up the rafters to the apex. If we remember correctly, the famous Vine at Hampton Court has two main limbs, which run the whole length of the house, equidistant from the top and bottom and from each other, and the secondary limbs are led upwards and downwards from these, so as to cover the roof in every part, and all are equally vigorous. A vinery, therefore, whether span-roof or lean-to, may be either large or small, according to circumstances, and no difficulty will be found in training the Vine to fill it. We are acquainted with fruitful vineries not more than 10 feet by 6 feet and 9 feet high, that have been going on for about thirty years with the same Vines, that look as well now as ever. The advantages of large houses for vineries are, that they can be heated more economically, maintained at a steadier temperature, and ventilated more perfectly.

Houses for Peaches and other stone fruits must, however, be made on a different principle. The Peach, Plum, Cherry, or Apricot can be grown quickly and successfully only in one way when trained on a trellis or wall, and that is upright or in an oblique direction upwards, and hence must have room to run out their branches in that direction, else difficulties will arise in a few years. Trees can be and are sometimes trained horizontally, but the plan takes so many years to form a tree, and needs so much skill and attention, that we advise no one to try it. Now, a Peach-tree trained flat on a wall or trellis will grow 20 feet high and spread to 40 feet in width in a few years, and to find that space for it, allowing for the lower branches to be depressed, the house must be both high and broad; but whether the trees be trained on the back wall or on a trellis close to the glass, it need not be more than a few feet wide, for we advocate the trees being confined either to the one or the other. Trees both back and front is a bad arrangement, though a common one, and nothing is gained; for the front trees have to be shortened by a half or more to let the light into the back ones, which, owing to the shade of the front trees, cannot be trained lower than a few feet from the top of the wall. Hence neither set can have room to grow to anything like their natural size, and the result is repression of the growth, with its attendant consequences and drawbacks, which only those who have tried both plans fully understand. Peach-houses should, therefore, be 12 feet high at the back, but 16 feet or 18 feet is much better, and 20 feet is not a whit too high. Of course, when the trees are trained close under the glass this length of branch can be got with a wall of any height, just according to the angle of the roof, which angle should not, however, be much under or above 40 deg. S. W.

POULTRY.

QUESTIONS.

15352.—**Rearing ducks.**—Will "Doulting" give me some instruction about rearing ducks from the shell? I understand chicken-rearing, but I am told that ducks require different management.—E. GORDON.

15353.—**How to ascertain the age of fowls.**—Is there any mode of knowing the age of fowls? I have a good number of old hens, which I wish to get rid of, and cannot distinguish them from the younger ones.—A CONSTANT READER.

Crop-bound fowls.—This is, perhaps, the commonest form of crop trouble, and is generally caused by careless feeding. If green food be withheld for some time, and then given in unlimited quantities, the fowl with eat to repletion, and as the crop cannot get rid of the mass of undigested food all at once, it becomes hard, and not only cannot itself pass into the stomach, but effectively bars the way into the stomach. The same may be caused by the giving of new grain, which, swelling in the crop, becomes a solid mass, or, on the other hand, crop-bound is often caused by an obstruction of the outlet, such as by a twig or some indigestible substance that has been swallowed by the fowl. The proof of a bound crop is purely external, but is, fortunately, very easily discernible. Instead of the crop having a firm, close appearance, in fact not being noticeable, it is seen to hang down like a bag, and on being felt there is found to be inside a lump or ball of food. This does not hurt, or in any way, until it has grown very large, incommode the bird, who often seems to eat more than usual, for the reason that the food it is eating is not feeding it, but going to increase the mass in the crop. If the trouble is discovered early, cure is very easy. The first step is to pour some salad oil or melted lard down the throat, and then to work gently with the hand the mass in the crop. This, if properly and effectively done, will soon cause the food and the fluid to mix, and when the mass has been well broken up, it will in the course of a few hours pass away. The length of time necessary to break up the mass will depend upon the nature of it, and I have known an hour required to do it. Warm water may be used instead of the oil or lard, but it is not so rapid or effective in its action. When the mass has been got rid of, great care is needed in order to prevent a recurrence of the same thing, which would almost certainly result if food were immediately given without stint. After distension like this, the crop is naturally in a somewhat inflamed condition, and very susceptible to any strain upon it. The food, therefore, should for a few days be very limited in quantity, and be of the very lightest kind. Often a permanent distention of the crop results from a neglect of this simple precaution. In about a week the fowl may safely be put on ordinary diet.—*Country Gentleman.*

GARDENING ILLUSTRATED.

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ROSES.

CLASSIFICATION OF ROSES.

It is much to be regretted that the list of Roses should be divided into so many sections, as the present arrangement—for garden purposes—serves no useful purpose; but, on the other hand, causes confusion in the minds of amateurs. If the whole family were divided into three sections—climbers, Hybrid Perpetuals, and Tea-scented varieties—no other distinction would be necessary; but, as I must deal with them as they are now arranged in most trade lists, I will endeavour to assist "A Puzzled Amateur," by directing attention to some of the features which serve to make up the distinctions in the different sections. Following the order in which they are named in the inquiry, I have to deal with the *Bourbons* first. The most distinctive character of these Roses is that they are principally autumn bloomers; a few of them, such as Acidalie and Queen of the Bourbons, flower both early and late, which shows that they are nearly related to the Hybrid Perpetuals, but it is as autumn bloomers they are best known, and this character is well sustained in Souvenir de la Malmaison, which does not often produce a perfect flower until the cool autumn weather sets in. For the most part the varieties are very hardy, and make good standards or dwarf bushes. This race of Roses originated, I believe, in the Isle of Bourbon, and was probably first known in this country about 1830. *Boursault Roses.*—These are very distinct in their character, and may be described in habit of growth as intermediate between the Hybrid Perpetuals and the Ayrshire section, which are rampant growers, while the Boursault varieties are more suitable for walls and for covering arches. The characteristic feature of most of the varieties is that they have no thorns, and the colour of the wood of one season's growth ranges from bright green in some to dark red in others. This section is admirably adapted for weeping standards, or for any position where Roses in quantity are desired, without respect to quality; for, although they flower abundantly, the individual blossoms are not remarkable for high quality. *Noisette Roses.*—This group contains so many Roses of different characters that an experienced grower is often perplexed to know to which section to assign them. The character of a true Noisette, however, is that it produces its flowers in large clusters. That old favourite white Rose, Aimée Vibert, is an excellent example, and may be taken as the type; but there are several others possessing the same character quite as distinctly, especially the old Cloth of Gold, Céline Forestier, and Lamarque. Many of them are so nearly related to the Tea-scented section that they are not all quite hardy. Some few are suitable for standards, and all are adapted for covering walls, if care is used in selecting the vigorous growers where much space is to be covered. This group originated in America, probably about sixty years ago.

Hybrid Perpetuals.—This is a comparatively new class, and, as regards the general character of the whole group, they vary considerably, some bearing a striking resemblance to the Damask, others appearing nearly related to the Hybrid Chinas and Bourbons; but for all the purposes of the garden it will be sufficient to say that the recognised character of the section is that Hybrid Perpetuals are those which flower from June until the autumn. If they have another distinctive feature it is that the majority are only moderate growers, suitable only for standard and dwarf plants, and also admirably adapted for pot culture. *China Roses.*—These form a small group which is not in high favour with cultivators generally. Their chief merit is that they are wonderfully floriferous, and, therefore, well suited for bedding; as a rule they are rather tender, and only make moderate growth. Their chief characteristic is that the blossoms are semi-double and scentless. The *Hybrid Chinas* are a much more valuable group, as they are fairly hardy, and include some of our best early summer Roses. They are distinguished from the Chinas by their much more vigorous habit, larger flowers, and ample foliage. Brennus and Madame Plantier may be accepted as a type. The *Hybrid Bourbons* are a small group so nearly related to the Hybrid Perpetuals that they are not readily distinguished from them. Coupe d'Hébe is a good type of this hardy and useful section. *Ayrshire Roses.*—These are easily distinguished from all others on account of their capacity to cover space, and to thrive where no other Rose can live. They are the hardiest of all Roses, and may frequently be seen growing to a great height over old stumps of trees, and similar situations. The flowers are not remarkable either for size or fragrance.

Tea-scented Roses.—This is a very distinct section, which all lovers of Roses admire; but they are not sufficiently hardy to be cultivated in the open without some protection. Long conical flower-buds and delightful fragrance are their most distinctive features, but an experienced grower will also recognise them by their ample deep green foliage. For warm walls and sheltered beds they are eminently suitable, as they are also for pot culture. The first of the Tea-scented Roses was introduced into this country about seventy years ago, the original variety bearing pink flowers; from this and from a yellow variety, introduced some years later, all the finest kinds have been raised. *Scotch Roses.*—These are low-growing bushes, rarely exceeding 4 feet in height. There are several varieties. Some have full, double flowers, and some are semi-double. The leaves are small, and thickly set on the branches. These Roses are admirably suited for wild gardening, or for the front lines of large shrubberies. *Evergreen Roses*, or the Wild Rose of Italy.—The varieties of this section are climbers, retaining their foliage in mild winters right through until the spring, which may be said to constitute their most distinctive character. Except by an experienced eye they are not likely to be distinguished from the Boursaults or Ayrshires.

Banksian Roses.—This group of Roses is easily distinguished from all others by their neat spring foliage and spineless growth, as well as by their flowers, which are borne in corymbs early in the summer. They are all climbing Roses, and only suitable for growing against walls. The White Banksian was introduced into this country early in the present century. *Musk Roses.*—This is a class of climbing Roses much esteemed for their peculiar fragrance, which resembles that of Musk. This peculiar feature of scent and the fact that they are good autumn-bloomers are their most distinctive characters. Being fairly hardy, they are good pillar or wall Roses. There are not more than half-a-dozen varieties now in cultivation, and to find these we should have to look in some old-fashioned garden. *Provence Rose.*—This is the old Cabbage Rose of our gardens, and is probably one of the oldest of such as have been introduced into this country. The type of this group is Reine de Provence, which has many large, globular, lilac-coloured flowers, which are very double, and deliciously fragrant. Although they are sometimes grown as standards, they are more vigorous when grown as bushes on their own roots. There are several other reputed classes, but they are so nearly allied to those already referred to, or have such little interest for garden decoration, that it would not serve any useful purpose to enumerate them.

J. C. C.

REPLIES.

15178.—**Pruning Gloire de Dijon Rose.**—The best time to prune Roses on a walk or in the open is after the severest part of winter is over, either in February or March, according to locality. Gloire de Dijon is of such a free flowering nature that it is seldom without blooms or buds more or less advanced, even in the winter; but to leave it entirely unpruned will not do, as the tree will get into a stunted and decrepit state, owing to such a mass of weakly wood; if a good proportion of the old flowering wood is cut out, and some of the longest and strongest shoots of the preceding year's growth are nailed in, fine flowers, and plenty of them, will be the result.—J. Groom, *Gosport.*

15254.—**Roses on their own roots.**—If you mean the Hybrid Perpetual Roses, they do not all grow with sufficient vigour to produce good exhibition flowers. You will find that those which make the strongest growth when budded on any other stock are best to make own root plants, and any that are in different growers on alien stocks must be avoided for your purpose. But there are many of them which will make growth sufficiently strong to produce exhibition flowers on their own roots if you have patience with them; we may take La France as an example: this, I find, will take four years of kindly treatment from a cutting, to make a strong plant. But look at the advantages of own root plants—you may smile on the frost, because, if it kills the branches of your Rose trees, the roots and stem will remain uninjured. Amongst the dark-coloured flowers you will find the following reliable: Alfred Colomb, A. K. Williams, Annie Wood, Camille Barnardin, Dr. Andry, Duchess of Norfolk, Empress of India, Duke of Teck, General Jacquinot, and Dupuy-Jamain. The best pink and rose-coloured flowers are: La France, Annie de Diesbach, Centifolia rosea, Countess of Oxford, Duchesse de Vallombrosa, Edouard Morren, François Michelon, Jules

Margottin, Magna Charta, Marchioness of Exeter, Reine du Midi, and Nardy Frères. The best White are Baroness Rothschild and Madame Lacharme.—J. C. C.

—— In a reply to "A Friend of the Rose," I may give him my experience. When I started to grow Roses, ten years ago, I had half-a-dozen plants on the Manetti, which I planted about 6 inches deeper than they had been in the nursery beds, with the result that in two years they made a splendid wig of new roots. I then cut away the old stocks, leaving them own root Roses. I have added to my stock of plants every year since, till I have a splendid collection of H.P. and Teas, all on their own roots. I never plant a budded Rose now, yet I have taken the first prize at two shows every year—with one exception, when I got the second place—for eight years in the amateurs' class. I can almost count on a place in the gardeners' class every year, competing against gardeners who have a better chance than I have in regard to number of plants.—Scotch Rose Grower.

—— Garden Roses can be propagated very readily by cuttings, and it is certainly the best way to propagate them, as budded Roses are an everlasting nuisance to amateurs, owing to the numerous suckers that they produce. In good garden soil the best exhibition Roses are produced from the budded plants. They are budded—say, next season, in July or August, and produce the best Roses the following season, although in some seasons good flowers are produce from two-year-old plants. They are termed "cut-backs."—J. D. E.

15244.—**Sowing Brier Roses.**—Brier seeds should be sown early in March in well-prepared soil in the open. A warm border is the best position. Prepare drills about 1 inch deep and 12 inches apart. Sow the seeds thinly, and cover with fine soil. If you thin out the plants to 12 inches apart in the rows and leave them there, they will be large enough for budding the third summer after sowing. But so much depends upon the strength of the ground what progress the seedlings make, that in some cases they will be as strong the second year as they would be in a poor soil in the third.—J. C. C.

—— Sow the seeds early in spring; but they lie in the ground twelve months before the young plants appear. We then plant them out in rows 2 feet apart and about 18 inches in the rows; the one-year-old seedling plants will be ready to bud when they have made the season's growth, and they will flower well the following season.—J. D. E.

Specific fertilisers.—In a paper on "Market Gardening around New York," read not long since in Ohio by Mr. P. Henderson, he took occasion, among other things, to refer to special fertilisers and their specific application; and after some preliminary remarks about fertilisers in general, he proceeds to say:—"I saw a list the other day, wherein were enumerated no less than sixteen separate kinds of fertilisers for thirty different crops, with the chemical elements of each split down to even one-half of 1 per cent. Now, I know nothing whatever about agricultural chemistry, and it may be presumptuous in me to criticise such a list; yet when I am told that one kind of fertiliser is needed for Cabbage and another kind for Turnips, one for Sugar-cane and another for Grass plants, if not of the same family, at least of the same natural order, I am forced to the conclusion that science, so-called, is taking the place of common-sense, and is in direct opposition to the experience of the practical farmer or gardener in his operation in the soil. In our market gardening and greenhouse operations we cultivate largely nearly every known family of plants, and in my long experience I have yet to see a fruit, flower, or vegetable crop that was not benefited, and nearly in the same degree, by a judicious application of bone dust; and I would here suggest to the advocates of special fertilisers that in their experiments they try equal weights of pure bone dust to the half of the crops of Wheat, Potatoes, Cabbage, or Strawberries, being experimented on by the 'specials,' and note the results. I do not mean to be understood that these so-called special fertilisers do not answer the purpose of the crop to which they are applied; but what I protest against is the hair-splitting distinctions claimed for them, confusing and troublesome to the cultivator, if of no practical value."

OUTDOOR PLANTS.

CROCUSES.

This interesting family of plants appears, for no very intelligible reason, to be still, as it has been for many years past, treated with a singular amount of unmerited neglect, not more than half-a-dozen species out of the seventy or so which are now known having yet come into anything like general cultivation. This neglect is all the more surprising when we consider the great value of these plants for embellishing our gardens with flowers in the late autumn and early spring months, when so very few other plants are in bloom in the open air, and also the great variety of colour, ranging through shades of blue, yellow, lilac, orange, purple, white, and buff colour, which the flowers of the different species afford. In addition to this, all the species are perfectly hardy in our climate, as, although in their native habitats they are chiefly confined to the districts around the Mediterranean and Black Seas, they are found there mostly at high altitudes, and some of them are only met with at alpine elevations. As for their culture, few plants are more easily grown, all that is required being to plant the corms or bulbs about three inches deep in well-drained, sandy loam, and, if the soil is kept uniformly moist by a mulching of sifted peat or decayed Cocoa-fibre, so much the better. The plants may be propagated either by separating the clusters of corms or bulbs or from seed. The seed should be sown as soon as possible after it is ripe. It does not, however, germinate for some time, so that no uneasiness need be felt if the young plants appear to be rather slow in coming up. The seedling corms or bulbs should be left undisturbed in the seed-bed for two years, after which they may be taken up and transplanted. They usually require two or three years' growth before they are sufficiently strong to flower. Although some of the species naturally bloom in succession through all the winter months, these in our climate are practically useless for culture in the open-air, but might be grown to advantage in conservatories and greenhouses. Of the remaining species which flower through the autumn and early spring months, and which may be divided into the two classes of autumn-flowering and spring-flowering Crocuses, the following may be mentioned as especially worthy of notice:—

Autumn-flowering kinds.—(August) Crocus Scharojani, orange; C. vallicola, straw-coloured. (September) C. nudiflorus, blue. (September and October) C. hadriaticus, white, sometimes with yellow or purple throat; C. sativus, pale violet, with deeper-coloured veins; C. pulchellus, lilac; C. speciosus, purplish-blue, striped inside with deep purple lines; C. iridiflorus, bright purple. (October) C. medius, purplish-blue. (October and November) C. Clusii, purple; C. asturicus, varying from dark purple to pure white; C. Salzmanni, lilac; C. Cambessidesii, pale lilac, feathered with purple on the outside. (November) C. Orphanidesi, soft lilac-blue. (October to December) C. cancellatus, varying from white to pale bluish-purple.

Spring-flowering kinds.—(January to March) C. chrysanthus, bright orange; C. minimus, dark purple, feathered with brown on the outside; C. corsicus, like the preceding, but paler and larger; C. etruscus, almost exactly like C. corsicus. (February) C. Imperati, lilac, with brown or buff-coloured feathering on the outside; C. susianus (the "Cloth of Gold" Crocus), golden yellow; C. biflorus, varying from white to pale lavender (the "Scotch," or "Cloth of Silver" Crocus is a large variety of this species); C. suaveolens, lilac, with brown feathering on the outside; C. aureus, golden yellow, with its varieties; C. sulphureus, sulphur yellow; C. sulphureus pallidus, pale sulphur yellow; and C. sulphureus striatus, striped sulphur yellow. (February and March) C. Sieberi (nivalis), bright lilac, orange at the base; C. banaticus, deep rich purple, occasionally varied with white. (March) C. versicolor, varying from white to purple; C. vernus, varying from white to deep purple; C. Tommasinianus, sapphire lavender; C. dalmaticus, lilac; C. stellaris, orange, with bronzy feathering on the outside; C. Olivieri (Aucheri), orange.

Although, as I have before remarked, so very few species of Crocuses are in general cultivation, either here or abroad, extensive collections of them have been formed by a few private horticulturists in England, so that a very large number of species are at present actually in the country; and the plants could, no doubt, be extensively propagated and widely distributed, if some of our leading nurserymen took them well in hand. I have before me a copy of a list of species of Crocuses which were grown by the late Rev. H. Harpur-Crewe in his garden at Drayton, Beauchamp Rectory, in the year 1875. In it are mentioned over forty distinct species already in cultivation ten years ago, and since that time many more have been discovered and introduced. Our enterprising plant-growers should have little difficulty in obtaining supplies of most of the species that have been discovered, as their habitats are now well known, having been fully described by Mr. Geo. Maw in his excellent monograph of the genus; and there can be no doubt that commercial growers of hardy plants would find their account in exerting themselves to supply the public with an extensive variety of the species of a family of plants of which it is not, perhaps, too much to say that, containing scarcely a single species that is not worth growing, its special value for enlivening the dreariness of the "dead season" with an almost unbroken succession of very charming flowers, from the end of August to the beginning of April, can hardly be over-rated. W. M.

Grass of Parnassus.—I was very much pleased to read the remarks of "H. P." (see page 528, Nov. 21), on this beautiful wild flower. It is, indeed, one of exquisite form and delicate colour, and would be well set off in company with gayer companions. I brought home with me in August a few roots from the cliffs at Scarborough, where the little plant seems to thrive very well, and I look forward to the spring with considerable interest to know whether the transfer has been effected satisfactorily, and if they will live in an ordinary garden.—J. G. T. L., *Birmingham.*

The white Sweet Pea.—I have been much pleased lately at the effect of certain groups of this plant, the white variety of the common Sweet Pea, but selected and grown by itself. It is very graceful and pretty in autumn. The practice of keeping the various colours of the Sweet Pea distinct is very desirable. Practically, each has almost the value of a distinct plant. Patches, or lines, or groups of such need not prevent us enjoying the usual mixture. I hope most growers are aware of the importance of autumn sowing in the case of the Sweet Pea. Some of the finest I have seen are from autumn-sown seed—I mean early autumn. Even if harm comes to the plant during winter, it need not prevent the usual sowing in spring. It should be an invariable practice to sow in autumn as well as in spring.—Y.

Berry-bearing plants go a long way towards brightening up the dull corners of the rock garden. Those at our command for this purpose, though few in number, are well varied, and capable of being grown in almost any garden. Amongst them must be mentioned Gaultheria procumbens, a low-growing, almost prostrate plant, and one of the best. Its leaves seem to concentrate nearly every conceivable tint, as if catching the colour of the best of the bright scarlet berries that are half hidden, or just peep sufficiently high above the foliage to be seen at a short distance. This plant, although it grows on exposed places, never seems to bear berries so well as when grown in full shade and in a peaty soil, or with just a glimpse of the morning sun. Vaccinium Myrtillus, with its black glaucous berries, is very handsome, but inferior to the Marsh Cranberry (V. Oxycoccos), with its graceful creeping or trailing habit and dull red berries. V. Vitis Idæa, the Crowberry, with its dark, shiny, evergreen leaves and pretty purplish berries, is very handsome. Margyricarpus setosus, a trailing habited Rosaceous plant, with small, wiry, shining leaves, white stems, and white snow-like berries, is also very pretty, as is also the handsome red-berried Hemiphragma heterophylla, a Himalayan plant with a prostrate habit. The various Pernettyas are also deserving a place on the rockery, the variety of colour amongst them being almost endless.—C.

A FINE UMBELLIFEROUS PLANT.

Some umbelliferous plants display a deep green and Fern-like beauty, and a good example of these is the species here illustrated—Molopospermum cicutarium. It is a very ornamental plant, with large deeply-divided leaves of a lively green colour, forming a dense irregular bush. The flowers, which are insignificant and of a yellowish-white, are borne in small roundish umbels. Many of the class, while very elegant, perish quickly—indeed, get shabby by the end of June, and are therefore out of place in the tasteful flower garden; but this is firm in character, of a fine rich green, stout, yet spreading in habit, growing more than 3 feet high, and making altogether a most pleasing bush. It is perfectly hardy, and easily increased by seed or division; it is, however, somewhat rare as yet. It loves a deep moist soil. It is fine subject for isolation, or for grouping with other hardy and graceful-leaved umbelliferous plants. R.

Early Chrysanthemums.—I quite agree with what the Editor states on page 528, that the small summer early Chrysanthemums are not wanted, there being plenty of flowers for that season; but those kinds that are hardy enough to flower out-of-doors in November, are generally valuable, as even the poor cottager whose pleasures are not too numerous, can enjoy them. Therefore, the new and splendid sorts from Japan, or produced by artificial crossing, are useful to the trading florist and the select few who can afford to grow them; but they are of little use to the multitude. Allow me to correct the statement in reply 15282 that the roots of Chrysanthemums do not require protection. I bought last autumn, of a leading grower, 12 pots of the Anemone-flowered sort, and sunk them in the ground with 3 inches of ashes on them. But everyone died, although we had only one frosty night last spring. So it will be well to caution buyers of that class to keep them indoors.—J. S. *** *We should say that "J. S.'s" Chrysanthemums were killed by excessive damp from being sunk in the ground and covered. If they had been planted in the ground instead of being in pots, they would probably have been all right. It is not necessary to protect roots of Chrysanthemums.*—Ed.

Anemone coronaria.—We have few, if any, more charming spring flowers than the common Anemone, which can be grown by the greatest novice—a flower, beautiful alike whether in a cut state or making our garden gay, an abundant bloomer, and, above all, perfectly hardy. To look at the dry, mud-like roots—which can be planted from October until May, but if required for early bloom the sooner they are put in the better—one would think they were incapable of putting forth foliage, much less brilliant flowers, and this under the most simple culture. All they require is an ordinary garden soil, provided it is well-drained, and a good aspect. In a cut state the Anemones look best arranged with their own pretty Parsley-like foliage; if the ends are cut off and water changed every few days they will last for nearly three weeks. Few people seem to be aware that Anemones make nice pot plants for cool or cold greenhouse culture, but under no circumstances must they be subjected to anything like a forcing temperature. No garden, however small, should be without this delightful flower, and I feel confident that if once introduced it will never be discarded. The roots being cheap, they are within the reach of all.—V. V. V.

Yellow flowered Mountain Avens.—Geum montanum deserves attention as an autumn bloomer. In summer the somewhat Buttercup-like flowers, though really far more beautiful, are perhaps too tame to attract much notice, as the flower season is in full swing, but in November, when yellow, and, indeed, any kind of open garden flowers are scarce, it is very noticeable. Not only do the flowers last a long time, but they are finer where the plants have been cultivated and the seed removed. What I mean by cultivated is this: every two or three years there should be division and deeper planting. To this section of the Geums, whose rootstocks get high and dry, this operation is more needful than to the ordinary run of alpine and herbaceous plants. It may be interesting to note their habit, but only by generous treatment can they be had of a lively green, and often flowering in mid-winter. Practically, as well as botanically, the flowers, nearly 2 inches across, are single yellow Roses.—J. W.

Iris olbiensis is one of the dwarfest kinds, but its flowers are very large and superbly coloured—violet-purple. No one who has flowered it would like to be without it, and those who have not yet made its acquaintance have a treat in store if they will avail themselves of it. I have often heard of its "going off," but I venture to say that if one condition is rigidly carried out in setting it, it may be grown with increased yearly vigour. Plant it in rubble, and, if in a pot, drain to half its depth with small clinkers, but give a large pot to allow the roots to creep on the surface for two or three years, during which time a young plant is better left alone. Whether planted in pot or border, the compost should be poor and of a dry nature; the sweepings from a gravel walk, with just a little peat, will not be far wrong, but a sprinkling of charcoal dust will improve it. It is, however, one thing to healthily grow this Iris, but quite another to flower it well. Doubtless an important factor in accomplishing the latter is climatic conditions; still, much can be

A fine umbelliferous plant (Molo pospermum cicutarium).

done that is not usually done for the class to which this Iris belongs. I. stylosa, I. verna, I. susiana, I. iberica, and a few others all need sunny positions, loose rubbly soil, and their crowns well exposed to air and sunshine. Some of these I never did flower until they were planted in a raised bed made of walk sweepings, to which a little lime was added. A handy and safe way of increasing this class of Iris where plants are of good size is to operate now when the new roots and crowns are pushing. Do not disturb the roots more than is needed to bare the tuberous part or rhizome; cut this through in such a way that each piece will have one crown or more and also some roots; open the cut and drop in powdered wood charcoal, which prevents decay. The advantages of this plan are that flowering is little if at all interrupted, seasonable root action goes forward, and useful back breaks are obtained from the oldest parts of the roots. After flowering the roots may be taken up, and each division will be ready for separate duty, and by that time will very likely show several fresh eyes.—J. W.

Foliage plants in beds.—Beds of plants distinguished for beauty of foliage alone produce a pleasing effect in the open-air, especially when the season happens to be a warm one. One of the prettiest beds I ever saw was last year in a Surrey garden. It was composed mainly of Castor-oil plants, variegated Maize, Cannas, and Perillas, allowed to grow at will with Cineraria maritima and Echeveria secunda glauca round the edge. In another part of the garden was the usual bedding-out arrangement—*i.e.*, a number of small beds planted in orthodox manner, but I thought this group of fine-leaved plants worth the whole of the display afforded by them, and my opinion was shared by others. In some gardens, notably at Hampton Court, fine leaved plants are used with admirable effect in conjunction with the ordinary bedders, breaking up the flat surface which the latter more or less produce.—J. B.

Veitch's Virginian Creeper.—All who delight to see richly coloured leaves in autumn should plant Ampelopsis Veitchii. It is a Virginian Creeper, which clings to wood or stone with the tenacity of the strongest Ivy, and there is no kind of foliage with which I am acquainted that assumes such a bright colour in October and November. Its leaves are like the brightest of our scarlet Pelargonium flowers, and I am sure if your readers could see this creeper, as I did the other day, against the wall of a house in Glamorganshire, it would be planted extensively this winter.—C.

The Trumpet Daffodil of Austria.—The readers of Gardening Illustrated number many thousands, and I have before obtained valuable information by appealing to them. It is believed that the wild Daffodil of Austria is distinct from that of England, but unfortunately few botanical tourists are in the field in March when these bulbs flower. If any readers of this journal should have friends who can get wild Daffodil roots from any part of the basin of the Upper Danube or its tributaries, or any part between the Adriatic and the Carpathian Mountains, they might confer a service on botanical science.—C. Wolley Dod, *Edge Hall, Malpas.*

The planting of imperfect plants in autumn is a grievous error, every year causing disappointment to scores of inexperienced cultivators. It seems to be thought that any morsel of a hardy plant will stand the winter merely because it is hardy. What I mean by an imperfect plant may be a seedling too young for transplanting at that period, a rooted cutting without a base, crown, or sprout, or a bulb, or other form of root naturally unsuited for removal in the autumn from the manner in which it completes maturity at that season. Mistakes are frequently made with the two former classes of defective plants, and they would be better left alone, either in store quarters or in the protected situations in which the cuttings were rooted until spring. These are more especially the hardy plants, the planting of which should be deferred until that season.—J. Wood, *Woodville.*

Wintering Dahlias out-of-doors.—During the past four winters we have left most of our Dahlia roots in the open ground undisturbed and unprotected, and the results are so satisfactory, that this winter we intend leaving all out (about 500) excepting a few scarce varieties and others that must be lifted on account of alterations, &c. We find them late in starting into growth, thus escaping spring frosts, but they are in bloom quite as early as those started in heat, and produce quite a mass of flowers, and annually gain strength. Many are now veritable bushes, 5 feet high and 6 feet through. Cannas, Gladioli, Lilies, &c., are similarly treated, and with like results. I should add that our soil (if it can boast of the name) is very shaley and open. To those who are so unfortunate as to have similar soils to deal with I should say go and do likewise.—J. R., *North Wales.*

15301.—**Bouvardias.**—These useful plants do not require a very high temperature. We have now an abundant display of beautiful flowers. The plants were grown out-of-doors during the summer and up to the end of September, when they were removed into a warm greenhouse, where they now are. The night temperature is about 50 degs. Young plants ought to be propagated from cuttings early in the year; that is, as soon as the cut-down plants have made growths 2 inches or 3 inches in length. They are easily raised from cuttings, which form roots readily in a hot-bed, or, better still, in a propagating house. Ordinary potting compost, such as is used for Pelargoniums, with the addition of a little peat soil, answers well to grow the plants in.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, December 7th to 12th.

Cleaning orchard house, giving water before manuring, and again after, then soiling over all, and treading firmly. Making a border ready for Parsley sowing. Manuring young Apple trees; pruning espalier Apple and Pear trees, and retying them. Planting Tritoma Uvaria, Phloxes, Hyacinths, Narcissi, and double scarlet Anemones; also standard Roses where required, and a hedge of Berberis asiatica. Planting Cypripedium pubescens under hand-glass out-of-doors in well-drained peat, and covering with a layer of leaves as a protection from frosts. Digging all vacant spaces; finishing the trenching of borders for fruit trees; putting Endive weekly into slight heat to blanch. Placing below greenhouse stage all bulbs which have finished flowering, in order to save them for planting out-of-doors for cut flowers; covering up some Rhubarb in the open ground; making a two-light bed for Carrots and Radishes; putting Ranunculuses in pots into cold frames. Potting young Cucumbers, and putting them into a small frame.

Putting Iresine Lindeni into heat for cuttings; moving Coleus from pits to shelf of early vinery; taking up Lettuces from under wall, and putting them in frame; tying up vines which were bent down in order to induce the rods to break regularly. Potting Tuberoses and placing them in heat; putting Gloire de Dijon and Maréchal Niel Roses into good-sized pots for flowering in conservatory. Planting Laurels and Yew Trees; getting Camellias into conservatory. Putting Roman Hyacinths which are in flower into greenhouse; top-dressing Cucumber plants with loam and manure, and pressing it down firmly. Beginning to surface-dig herbaceous borders; potting Pelargoniums. Protecting Peas from sparrows by means of Asparagus haulm, which not only serves to ward off frost, but lies so lightly that the young Pea shoots grow right through it.

Work in the Town Garden.

Ixias.—Among the numerous kinds of bulbous plants for early spring blooming none are brighter in colour, more easily cultivated, or generally useful, than the different varieties of Ixias. These pretty flowers are not grown nearly so universally as they should be; and as it is not yet too late, though quite late enough, for potting the bulbs, I should strongly advise those who did not order a few with the other things, to procure at least three or four dozen, and put them in at once. The bulbs much resemble those of rather small Crocus, and should be planted an inch or more deep in pots of light, loamy soil, placing from five to a dozen or more in each pot, according to its size, and covering them up in the same manner as Hyacinths, &c. The bulbs, if of even fairly good quality, cannot fail to bloom in spring; and the spikes are so neat, so useful for cutting, and so rich and varied in colour, that they are certain to be appreciated.

Bouvardias are not frequently seen in town greenhouses, yet they are by no means difficult to grow, and if properly prepared, and afforded a moderately warm temperature, invariably produce a quantity of elegant and useful blossoms during the depth of winter, even in town air. All the varieties are, of course, not suitable for this purpose, such kinds as Humboldtii and H. corymbiflora, flavescens, and a few others being naturally summer or autumn bloomers, and even the double-flowering varieties do not, we have found by experience, bloom freely enough from November to February to warrant an attempt to bring them in at this season. The best kinds to grow for winter work are elegans, Vreelandii, Hogarth, candidissima, the Bride, and others of this class. As a rule, small plants do not give very good results, at least in towns; but pot them on into 6-inch or 7-inch pots, training the plants either as bushes, or roughly-shaped standards, and place them in October in a very light house, with heat of 60 degs. to 70 degs., and they will flower abundantly from Christmas onward. After flowering we rest the plants thoroughly by withholding water to a great extent, and lowering the temperature. About April, or early in May, clean them thoroughly, cut all weak wood, and shorten back the stronger growths to half or one-third of their length; keep them close and rather warm, and syringe overhead frequently, but with the roots kept comparatively dry, a course which will cause the plants to produce fresh growth freely. When these are about 2 inches long, shake off the surface and any spent soil, and replace in the same sized pots, with a little fresh soil, or if it is desired to increase the size of the plants much, give them a shift into a size larger. The best soil is a fibrous loam, with a little leaf-mould, or peat, and sand; this must be rammed into the pots quite hard. Grow the plants on through the summer in a light, airy, house, syringing frequently, and stopping the shoots at the second or third joint up to the end of July, bearing in mind that the more, and the later, stopping is practised, the more abundant will the shoots be, the smaller the trusses of bloom, and the later these are produced. If stopping is discontinued earlier, the shoots will be fewer and stronger, and the heads of bloom larger and earlier.

Ventilation and the application of fire heat, are points requiring great attention for the next two or three months, especially in the town greenhouse. It must be premised that on the whole much less air should be given through the winter months than would be advisable where this is purer; but at the same time it is undoubtedly prejudicial, particularly to such subjects as Geraniums, Pelargoniums, Primulas, Camellias, and so forth, to keep the house closely shut for months together, as is frequently done, though in the case of stove plants or Ferns it may, in certain cases, be admissible. The best rule probably is to give no air whenever there is hard frost, thick fog, or cutting easterly winds; but on all comparatively mild days, especially if sunshine prevails, or a warm south-westerly wind is blowing, or there is much rain or dampness, open the top ventilator more or less, and in the latter case, or that of fog, endeavour to create a circulation of air and dispel damp by a gentle application of fire-heat. Do not be too chary of a moderate amount of artificial warmth. Most greenhouse plants, particularly such as are desired to bloom now, or soon, as well as all choice Pelargoniums, &c., much prefer a temperature of from 50 degs. to 60 degs. to a low, damp, stagnant atmosphere, and even common bedding plants make much better stuff in a genial warmth than if starved by being kept only a few degrees above the freezing-point, as is frequently the practice.

B. C. R.

Glasshouses.

Few of those who cultivate stove-plants now plunge them in bottom-heat in the way that used to be considered necessary; and in many cases where the practice has been discontinued the bed of fermenting material, wherein the plants used to be plunged, is done away with, which is a mistake in the matter of keeping up the necessary warmth within the house at the least cost, and also with a view to the healthy growth of the plants. Where there is a substantial bed of fermenting material in a stove during the winter months, not only are the plants benefited by the exhalations given off from the heating matter, but it does much to reduce the consumption of fuel. Tan is the best material to use, as it gives the most heat, and retains it the longest. Where a pit, 4 feet deep, occupies the centre of the house, it will, if filled at once with fresh tan, keep up a heat of from 85 degs. to 90 degs. for ten or twelve weeks, the effect of which in raising the temperature of the house will be easily understood. When the material is used it is best to have it quite fresh, and not after it has already been for some time in a state of fermentation, as often is the case when it is got in. In clearing out the old material from the pit it is best to discard the whole, as if any of it is mixed with the new it is sure to contain a stock of worms that, except where especial precautions are used, give trouble by getting into the pots. When the old material is removed it will give an opportunity for having the brickwork lime-washed; the woodwork of the house, and also the glass, should at the same time be well washed, which will help the former to resist decay, and allow more light to reach the plants. Where tan is not available, a good body of leaves—Oak or Beech, if possible—may be used, but these will not give so much heat as tan.

Perpetual flowering Carnations. — It would be difficult to speak too highly of this section of these favourite flowers; not the least of their merits is the length of time that the flowers will last, either on the plants or when cut. It is useless to expect flowers from plants at this time, where they have been stopped so late in the summer as to prevent the bloom buds being sufficiently advanced before the advent of short, sunless days reduced growth almost to the point of stagnation. It is necessary to mention this, as in several instances I have known a healthy lot of plants, that would have flowered well in spring, spoiled by being kept too warm at the close of the year, with the intention of hastening their blooming when the backward condition of their flower buds was such that more time was required to enable them to bloom. Like most other plants, the flowers of which last long, these Carnations move slowly; buds that are almost showing colour take a considerable time to open, especially in winter, for if kept too warm, the flowers will be thin and poor, and the successional buds coming on will do little good. The plants, if possible, should be near the glass, especially if the house or pit they occupy is not of a character to admit the fullest complement of light. Care must be taken that they never suffer from the extremes of an insufficient or excessive supply of water; their roots are not so numerous as those of many plants, and they are formed slowly. For this reason it is necessary to see that the portion of the stock that is intended to bloom later, and is now stood in cold pits or frames, does not get too much moisture, as if the roots of these Carnations receive any check, the flower stems that are already formed, or in course of formation, usually fail to come on. All the stock should be looked over from time to time, to see that they are free from mildew and aphides, the two worst enemies to Perpetual Carnations, as if left until they get ahead the plants are permanently injured. Sulphur either dissolved in water in which to dip the plants, or dusted on the leaves, is the best remedy for mildew, while fumigating will destroy the aphides.

Bouvardias.—To have young plants of these in strong flowering condition in autumn, they must be struck early in the year, otherwise they have not enough time to gain sufficient size. Amateurs who have not had much experience with these most useful plants, often fail in propagating them on account of the cuttings, when in a similar condition to that in which those of most plants will strike, refusing to root. If cuttings of Bouvardias are made from the points of the shoots when in an ordinary state, like, say, those of Fuchsias, or many other things, not one in a score, in all probability, will succeed. On this account they used to be propagated from root cuttings—that is, bits of the stronger roots cut in lengths about half or three-quarters of an inch long, which strike and form roots. But it is not necessary to resort to this method of root propagation, as they can be easily struck from shoot cuttings, if these are in right condition; to secure which a plant or two of each of the kinds to be increased should be dried off by withholding water until the leaves and soft parts of the shoots flag severely, when cut all the soft portions of the tops away down to the mature wood. Soak the roots, and place them in stove-heat, where they will directly break at every point, and in a few weeks the shoots will be 1½ inch or 2 inches long, when they must be severed at the base, and put, eight or ten together, in 6-inch pots, drained, and three parts filled with soil composed of two parts sifted loam to one of leaf-mould, and one of sand, the surface all sand. Kept moist in a brisk heat under propagating glasses, they will root in a few weeks, when they must be potted singly, and grown on for a time in heat.

Azaleas.—The common varieties of Azalea, such as the old indica alba and Fielder's white, are still the best for early flowering. Like many other plants when to be forced in heat, examples that have regularly for some years before been subjected to this treatment are the easiest to get early in bloom, as, by making their growth and forming their buds correspondingly early in the season, they are in such a condition that they do not need so much forcing to bring them into flower as plants that have been in the habit of blooming later. If a good-sized specimen or two that have thus become used to flowering early are now placed in heat they will bloom early in the coming year. The small purple-flowered, hardy A. amœna, is also a good forcer; so readily does it open its flowers in heat, that when the plants have been accustomed to bloom early they can be had in during the autumn months.

Berry-bearing Solanums.—At no time are these plants more useful than through the last months of the year, as if their berries are then

fully coloured, they are effective in the greenhouse amongst flowering subjects, and are equally suitable for room decoration. It is well to have two sets of plants, one with the berries ripe at the time named, and the second, later; for those that are coloured early will not keep until spring. There is much difference in individual plants in their freedom of fruiting, and to have the stock right in this matter, it is necessary to propagate them by cuttings. To come in early, these should be put in at once; they should be several together, in small pots, keeping them close and moist in the usual way under bell glasses, in heat, where they will soon root and be ready for potting off singly.

THOMAS BAINES.

FLOWER GARDEN.

A FRAME FOR ODDS AND ENDS is one of the handiest appliances one can have where rare or little-known plants are being cultivated. Only hardy plants are meant, and whilst it is very convenient to pot up new comers as they arrive singly or in small batches, they may be so treated in a frame as not to be practically under abnormal conditions as regards their hardy nature. On the contrary, it is helpful to such things if we soften the hardness of their first winter by screening them with a glass cover against frost and what often prove equally trying—fogs and rain. To fill up the frame pretty well with sand in which, when plunged, the plants are brought near the glass, provides for both good drainage and sturdy growth, and there is the advantage of open-air treatment by removing the lights when the weather is at all favourable. Where plants of a miscellaneous kind have been coming to hand allthrough the summer, it would now be well to look them over thoroughly—take all out, in fact—turn the plunging material, examine each pot, and make the drainage good where it is at fault, remove from the surface all such pests as wiverwort and Spurry, and top-dress all plants with their respective composts, to which may be added with benefit a liberal dash of finecharcoal.

GENERAL NOTES. — Some of the earliest flowering wall climbers are already expanding their blossoms, the bright yellow Jasminum nudiflorum being one of the first, and it is a most continuous bloomer, for if not cut off by severe frost the first break to mild weather brings with it a fresh supply of gay blossoms. Christmas Roses, too, are fast coming into bloom. All kinds of spring-flowering plants and shrubs in beds that have been recently planted will need the soil to be pressed around their stems as soon as it is dry enough for the purpose; and any Pansies that are likely to be broken had better be pegged down firmly. Keemice from attacking Crocuses and other bulbs by trapping them. Beds and borders may be dressed, manured, and lightly forked over while the weather is open and mild. In the pleasure grounds we are planting all beds that do not form part of the regular flower garden in this way. Single isolated beds or pairs by the side of walks, or in sheltered recesses among choice shrubs, afford a congenial home for plants that do not like annual removal. We find at the many beautiful sorts of single and double primroses make excellent edgings, as do also alpine Auriculas, Gentians, Pinks, Hoteia japonica, Saxifrages and Sedums, and many other dwarf plants, the centres being filled with Phloxes, Antirrhinums, Carnations, Roses, hardy Heaths and dwarf-flowering shrubs, and amongst these bulbs flourish extremely well, dwarf Aconites, Scillas, and Dog's-tooth Violets being used for mixing with edging plants, and the Lilies and the hardier kinds of Gladioli in the centres. Where forking cannot be done without disturbing the roots, a top-dressing of well-decayed manure and soil worked evenly over the surface under the foliage of carpets plants will invigorate them for another year's blooming.

ROSES that were planted last month should, if the work has not already been done, have a mulching of partly-decayed manure to keep the soil about the roots and lower parts of the stem from getting frozen. Where the tender Tea kinds are to be covered out-of-doors some light protection should be placed over them on the first indication of severe frost; if they are to be done justice they should have the protection of a wall, where they will keep on furnishing blooms for long after most other kinds are over. The pruning of Roses had better be deferred until spring; but manuring the beds and lightly forking it in should be done at once. Roses like good rich farmyard manure, and any beds that are getting weakly or exhausted will well repay lifting and thoroughly renewing the worn-out soil and replanting a little deeper than before. This treatment is especially beneficial to dwarf Roses.

VEGETABLES.

TURN over at this season every available plot of ground, and where manure is required use it freely. I find from many years' experience that good farmyard manure is still the best for most purposes. If Globe Artichokes are not yet protected, see to them at once. My Artichokes grow on each side of a long walk, and are quite as effective as many sub-tropical plants; therefore in this case we combine the useful with the ornamental. We are now sowing Rhubarb, Asparagus, and Seakale. We thus keep the stock well to the front, so that we have always plenty on hand. Mint, Tarragon, and Chives will now require due attention. Keep a sharp look-out for mice on the early Pea border. Directly the young Peas come up cover them an inch thick with sifted coal ashes, which will keep off mice, and protect them from cold surface winds. Beans, of which we like Green Windsor the best, should now be sown, if not already done. Expose young Cauliflower fully all day, except in severe weather, shutting them up in the evening. Brussels Sprouts and Kales will, after severe frost, be the better for having the old, decayed leaves cleared off, both to admit air to the plants and to get rid of the disagreeable smell which emanates from such decaying matter. Young plantations of Cabbage should be earthed up, and be carefully guarded from slugs and grubs by dusting with lime or soot. Cauliflowers and early Broccoli should be lifted directly they turn in, and be "heeled in" in some sheltered spot, and protected with mats in severe weather. Plots of Spinach should have the soil occasionally stirred; on light, open soil this crop never fails in winter but it is a critical crop on heavy land—hence the desirability of frequent hoeing or "pointing over." Celery should be finally earthed up when the weather is dry, and protection provided for severe weather. Hurdles or mats, resting on Pea sticks laid over the ridges, form a handy mode of protection. Potatoes may now be planted in frames; for these a bed of Oak leaves forms the most congenial bottom-heat, as also for Carrots and Radishes, and though top-heat from pipes saves a lot of covering up, by this mode of heating Potatoes are so apt to develop a weakly growth of haulm, and consequently an inferior crop of tubers, that preference should be given to growing them without top-heat other than that produced by the bed of leaves; outside linings to frames are, of course, necessary.

15188.—**Slugs in vegetable garden.**—Cover one side of Cabbage leaves with salt, and strew them about with the side downwards. This may have a good effect.—MOSS JEWEL.

15259.—**Right of removing potted Roses.**—There cannot be any question on the point of removing Roses that are now in pots, although they were once in the open ground. It is no business of the landlord's how Roses are grown when the object is to ultimately grow them in pots. All pot plants belong, of course, to the owner.—J. D. E.

—— The Rose bushes, on being planted in the unoccupied ground, immediately become the property of "B. C. S.'s" landlord. Transplanting or transferring them, either to other parts of the garden or into pots, does not revest the property in the tenant. The rule or principle regulating this right of the landlord seems a hard and technical one; but such is the law, and though the landlord may not know or exercise his right—and were I in the tenant's place I might take the Rose bushes away with me, but I do not advise this—yet, the tenant being in doubt as to what his landlord may do, should consider his position carefully before running any risk. While the law remains as it is, tenants would do well, on taking fresh houses, to make an arrangement with their landlords as to taking away flowers and shrubs planted by them during their tenancies. My experience is that landlords rarely object to this.—LAWYER Y.

NOTES ON DIFFERENT MODES OF HEATING.

A CHEAP HEATING APPARATUS.—I will endeavour to reply to the questions of your correspondents (see page 530) *seriatim*. (To "F. C. G., Peckham.") 1 and 2. The two 3-foot lengths complete the circuit connected with the flow and return pipes at right angles. They go all round the house, close to the wall; consequently, being a single pipe, I have had to make a step over the short length near the door. This can be avoided either by having a double row of pipes all round, or, for a small house, a double row along one side and one end only. 3. The bottom of the boiler is about 9 inches from the floor of greenhouse. It rests on the gas-stove—the stove on a strong wooden stool, covered on the top with sheet iron. The pipes rest on bars of wood, nailed to the uprights which support the staging. 4. No; but it would be better to insert a tap at the lowest point for emptying during summer. 5. The cistern is only for feeding, and as there is very little water a much smaller one will answer just as well, and will not be so unsightly, say, 4 inches or 5 inches deep. 6. The gas at present is naked, but I intend closing it in, making passages in my own wall for fresh air to feed the stove, and to carry off any impurity in the atmosphere; at the same time making a small hotbed immediately over the boiler. I have not been able to detect the slightest smell up to the present, but one or two gardeners have told me that hot air is injurious to plants, and in addition to this it is consuming air which they require to keep them in health. I have seen no ill effects from this yet, but it may be owing to the free use of my ventilators; at any rate, I consider it best to be on the safe side, and if, as I now intend, I enlarge my greenhouse next year I shall remove the boiler and stove to the kitchen, having only the pipes inside the house. 7. The flow-pipe rises 5 inches or 6 inches, and at the highest point—that is, the one farthest from the boiler—there is an inch air pipe carried out through the roof, so I can retire to rest, feeling tolerably secure. There is a good fall in the remainder of the pipes to the bottom of the boiler, and this, I think, ensures a quick circulation. The gas is controlled by a tap about 18 inches away from the boiler, and is easily regulated. A short length of indiarubber tubing, about 15 inches, connects the lead piping and the stove, so that any time they may be disconnected in a moment. Now a few words to "Smoke Nuisance, Accrington." I can't see how he can very well make a much smaller boiler than mine, which is only 8 inches diameter. I think the pipes would answer in the way he suggests, only that in putting the floor-pipes on the top he gains, say 4 inches or more of a drop for his return pipe; and, as I have before stated, this, in my opinion, gives a quicker circulation and, therefore, a more equal temperature. Another correspondent, I see, is asking about the cost of gas. I am sorry I cannot give this. I may be able to guess near it a little later on, when my gas bill comes in, but do not think it will be much—for this reason, that once the pipes are hot—and it does not take long to get this—a small glimmer will keep the temperature at about 45 degs. in the night during sharp frost; then there is no waste. "Caloric" will find it difficult to convince me that gas is not to be depended on. I say to every amateur who can avail himself of it, try gas. I find it is thoroughly reliable—no dirt, smell, or smoke. In the first cost there is a great saving, and it has yet to be proved that its after cost is greater than coal or coke. For cooking purposes I find that it is more economical than coal, and I do not see why the same shouldn't hold good for greenhouse heating.

Manchester. W. J.

Portable awning for Chrysanthemums, &c.—"J. W.," writing with reference to "Aquaria's" note on page 533, says that such awnings as are there recommended are now offered for sale. Perhaps the manufacturers will make a note of the fact that these appear to be in demand.

15300.—**Creepers for pots.**—The Euonymus is sufficiently a creeper if properly trained to answer "F. M. H.'s" purpose. E. radicans is handsome, and may be trained some feet up a wall, to which it slightly clings. It could be interlaced through the balustrading.—W. H. JACOB, *Maida-vale.*

TRAVELLERS' JOY AROUND DOORWAY.

We think that the most appropriate of the many English names by which Clematis Vitalba is known is that which we have here employed. Its appearance on the hedgerows, with its beard-like flowers shining in the bright sunshine, is delightfully refreshing; and as it is sometimes found stretching for miles along country roads, it may reasonably be considered particularly grateful to the tired eye of a weary traveller. None the less charming does it appear in our illustration. Here a plant is trained around a doorway at Weetwood Hall, Leeds, and forms a cheerful and attractive ornamentation. Mr. S. Marshall, who sends us the photograph, states that the plant is very old, and the main stem as large as the span of both hands. Though so old, however, it is full of vigour, and has to be continually cut back to prevent its obstructing the entrance. Some of the single-flowered wild Clematises are deservedly popular, and may be made use of with advantage in many places.

Our Readers' Illustrations: Common Travellers' Joy (Clematis Vitalba) around doorway. From Photograph sent by Mr. S. Marshall, Weetwood Hall, Leeds.

Winter protection.—It is now quite time to have all the means of protecting anything of a tender nature in readiness, as frost may occur very shortly, and although we get let off lightly in this respect for several winters in succession that should not lull us into a false sense of security. For I may remark that after heavy rain and moist growing weather, the effects of sharp frosts are more disastrous than when growth has been arrested by a cold bracing atmosphere. We are all prone to defer the work of preparation for winter, as we like to keep our garden with the few faint traces of summer beauty lingering as long as possible, but if we do not apply protection to plants of doubtful hardiness so long as severe frost keeps off, we ought to have the material ready for any emergency, as those who have had plenty of covering up at night to do can testify how much more satisfactorily and expeditiously such work can be performed by daylight. First on the list of useful protectors, I should place dry Fern fronds of the Common Bracken—which, in many parts can be got for the trouble of cutting and stacking, and if kept in a good sized heap until required for use, last well through an entire winter—for putting over the crowns of tender plants, with a few branches to keep the wind from blowing it about, and to render all snug under it, as the frost is mitigated but air is not entirely excluded; then dry forest tree leaves put around the stems of plants, with evergreen branches stuck in to keep them secure, are most valuable aids to protection; and in spring, when no longer needed, they can be forked into the soil for manure. For wall shrubs Russia mats nailed over them look as neat and are as efficient as any kind of covering, and when frost is very severe some straw may be added under the mats; and as the root is the most vital part of the plant, put a good covering of ashes or Cocoa fibre around it. For cold frames, which are frequently the only thing in the way of glass in amateurs' gardens, an efficient means of excluding frost is of the utmost importance, and I would like to impress on those that have not had much experience in such matters that the frost must be kept out from the sides, as well as the top of the frame, and for this reason turf pits, or wooden frames, with the sides protected with turf, are most valuable, as they are less liable to fluctuations of temperature than if merely covered with mats or straw. For the tops, a double covering of mats, with the addition of Fern or litter—that is, straw and hay mixed together—make a very secure covering. And I may add that glasshouses are very much benefited by having a covering of frigi-domo, or mats, over the glass, as very little fire-heat is then necessary to make the inmates quite safe from the effects of any severe frost. We do not often get such visitations, but we should always be prepared to resist it when it comes.—J. Groom, *Gosport.*

TREES AND SHRUBS.

Double-flowered Peaches.—I am glad that the Editor is directing attention to these handsome hardy trees, for they are subjects which are admirably suitable to both large and small gardens. A few years ago we grew them here in the shrubbery borders rather extensively, but they had to be removed to less kindly quarters, because the ground was wanted for other purposes; but when we gave them fair treatment they both flowered and fruited in the most satisfactory manner, the fruit being preserved in the ordinary way. As hardy flowering shrubs I was much interested in their bright and cheerful blossoms, and I used to encourage them to make growth by placing a layer of rotten manure on the surface over the roots every winter, which kept them wonderfully vigorous—so vigorous, in fact, that I had to prune them once a year to keep them within bounds. I always did what pruning was required directly they went out of flower—to cut off any of the branches at any other time would be to cut away the flowering wood. These double-flowering Peaches are also exceedingly attractive when grown in pots, as they can be had without any great exercise of skill or time. They are excellent subjects for prominent positions in the conservatory, when they are brought into flower a little in advance of the single-flowered varieties in ordinary fruit houses, as if both are in flower at the same time those with double flowers are not so much valued. When we grew them in pots we began with maiden plants, with branches about 4 feet high. These were potted in November in 10-inch pots, in a compost consisting of fibrous loam only, and the plants kept in an ordinary greenhouse. About the beginning of the New Year all the branches were cut down to within 9 inches of the pot. The plants were then stood in a light, airy position where they had plenty of light and water as often as they required it. As the summer advanced they grew vigorously, and, as soon as each shoot had grown to a length of 12 inches, half of the length was pinched off; but no shoot was pinched more than once unless there was one growing more vigorously than the others. This pinching caused a number of young shoots to be made, so that at the end of the year we had quite bushy plants with wood sufficiently vigorous to flower at every bud. Early in August the plants were taken from the greenhouse, and the pots plunged to their rims in a warm border; here they were well cared for as regards root moisture. If we had no other liquid manure they had while making growth about three doses of guano water, at the rate of one ounce of guano to one gallon of water, at intervals of a fortnight. The plants come into flower in excellent time if they are introduced into a temperature of 60 degs. about the beginning of February. They may be kept in good form by cutting back the flowering shoots every year as soon as the flowers begin to fade. With an annual rich top-dressing and regular supplies of liquid manure the plants may be kept in good condition in pots 14 inches in diameter for many years.—J. C. C.

Destroying wasp nests (p. 520).—To take wasps' or other nests, where the inhabitants are dangerous on account of their stings, care is necessary, and the more quietly it is done the better. The entrance to the nest should be marked down in the daytime, and operations performed at night, unless the first plan be adopted. (1.) Around the entrance to the nest place a few lumps of quick-lime, about the size of Walnuts. On these pour a little carbolic acid, and also pour about an ounce or more down the hole, and in a few hours the nest can be dug out. The whole of the lime and acid can be placed in position by the aid of a long stick. (2.) Dissolve 4 ounces of cyanide of potassium in a quart of water, and while hot pour over and into the nests, choosing night for the operation. Be careful not to breathe the fumes or vapour, as they are highly poisonous. (3.) Dissolve the same poison in enough boiling water to cover it. Having some wadding in readiness proceed to the nests, saturate a piece of wool in the solution, and partly thrust it into the entrance of the nest, of course using long stick. In an hour the nests can be taken and burnt, as there will be no fear of stings then. Great care must be taken with this poison. (4.) A bottle partly filled with turpentine, thrust into the nest at night, will destroy the wasps in a few days, when the nests should be taken out, and the grubs destroyed. When the nests are hung from a thatched roof, and the entrance is not so placed as to allow of easy access, a solution of cyanide of potassium, at the rate of 4 ounces to the quart of boiling water, should be poured slowly over the nest at night, and a hole being made with a long stick, as the stick is withdrawn some more of the solution should be poured into the hole. A fairly long stick should be chosen, and the bottles containing the solution should be attached to sticks 6 or 7 feet long.—(From "Garden Pests.")—Celer Audax.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, 37, *Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, sets, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

15334.—**Herbaceous plants for chalk soil.**—Will anyone kindly give me a list of herbaceous plants suitable for a pure chalk soil?—Salf, *Basingstoke.*

15355.—**Lettuce for exhibition.** — Would some vegetable grower kindly let me know the best Cos and Cabbage Lettuce for exhibition.—J. D., *Carlow.*

15356.—**Celery for exhibition.**—I should be glad to know the best red and white Celery for exhibition.—J. D., *Carlow.*

15357. — **Oil-stove.** — Will "Amateur, Strabane," kindly tell me what oil-stove he refers to in his query 15262?—H. W.

15358.—**Insects on Pelargoniums.**—Will any reader kindly inform me of the simplest mode of destroying small green insects on window Pelargoniums?—Taddy.

15359.—**Management of small aquarium.**—I shall deem it a great favour if any of your readers will kindly give me information relative to the management of an 18-inch (ball globe) aquarium.—H.

15360.—**Oil stove for greenhouse.**—Will Mr. R. R. Best kindly tell me the name or number of the stove that he recommended for a greenhouse in Gardening, page 435?—H. W. S. P.

15361.—**Wagga-Wagga Iris.**—I possess what is called the "Wagga-Wagga Iris," but the seller could not give me its botanical name. Does any reader know it?—S. A. B.

15362.—**Rockery in conservatory.**—Will any reader of Gardening kindly tell me what plants are most suitable for a rockery in a greenhouse kept at from 42 degs. to 50 degs. in winter?—Nil Desperandum.

15363.—**Gardenias, Stephanotis, and Epacris.**—Will these do well in warm greenhouse or hothouse, well-lighted, in—West Kensington? **** We should say they would, because one sees many such beautiful plants cultivated in nurseries in London.*—Ed.

15364.—**Brussels Sprouts.**—What is the best sort of Brussels Sprouts, producing the greatest quantity of buttons of the largest kind? When is the best time to sow seeds, and should it be sown under glass (say in a cold frame) or in the open?—C. W. H., *Rotherham.*

15365.—**Plants for hanging baskets.**—Will anyone kindly give me a list of plants suitable for growing in hanging baskets in a conservatory where the temperature in the winter is generally 50 degs., but occasionally falls to 42 degs. or 43 degs.?—Nil Desperandum.

15366.—**Origin of a Fern.**—Can any reader tell me where, in what year, and by whom the original plant of Athyrium F.-C. Victoriæ was found? I either read somewhere, or was told that it was found by Mr. Cosh growing on the bank of Loch Lomond about thirty years ago.—Enquirer.

15367.—**Lilium auratum outdoors.**—Willsomeone who has successfully grown Lilium auratum without a frame or greenhouse kindly give me some instructions for doing the same? I have two small bulbs, and am very anxious to flower them well. What sized pot should they be planted in, and when?—M. A. A.

15368.—**Pruning hardy Jasmines, Cotoneaster, and Pyracantha.**—I should like to know what is the best time for Jasmines to be pruned so as not to spoil their flowering freely; also when Cotoneasters and Pyracantha should be pruned not to interfere with their berries, as our plants rarely have either?—Derbyshire.

15369.—**Auriculas.**—I have in a cold frame about a hundred Auriculas, which I repotted about July last; several of them are showing flowers. Will any Auricula grower tell me whether they should be stopped, or will they flower again at the proper time; and is it natural for the leaves to turn yellow and die off just now? They looked so fresh and green a few weeks back.—A. F., *Northampton.*

15370.—**Laying out kitchen garden.**—Having just rented a piece of ground, which I intend to plant as a kitchen garden, would some readers kindly let me know how to proceed with it? It is about 30 yards by 10 yards, and has been used for the same before, but has not been touched since the spring. Information as to how to manage it, and plants now for early crop will much oblige.—Labourer, *Edinburgh.*

15371.—**Grape growing.**—I have a good forcing house, span-roof, with pit on each side, and as my lease will run out in about two years time I want to get some young vines in good bearing condition by that time, ready to plant in a permanent vinery. I should like the advice of some vine growers whether I should plant canes in the pits (inside of house) or in large pots or tubs, and the best kinds for vinery only. Should I procure fruiting or planting canes?—S. S.

15372.—**A chemical question.**—A portion of my garden has been overflowed in time past by a stream impregnated with iron pyrites (brass, the miners call it) from coal. The soil is quite red, and trees grow in it with difficulty, and flowers hardly at all. Could any readers who are learned in chemistry tell me whether there is any chemical manure that would neutralise the iron? Would nitrate of soda be any use? I fear that removing the soil is impracticable.—Perplexed Vicar.

15373.—**Filling flower bed.**—I have a flower bed 34 feet long and 5 feet 6 inches wide. On one side, 13 inches from the edge, I have planted dwarf Rose bushes, and I shall be glad if any readers will kindly advise me as to the most suitable plants with which to fill up the remaining space. I should prefer perennials, somewhat bright in colour, and of a habit not too high. My garden is well sheltered; soil good, but rather light; aspect, southerly; neighbourhood, northern part of West Riding of Yorkshire.—R. J. W.

15374.—**Black Hambro' Grapes.**—I have just finished cutting from the above vines, and should be glad if any correspondent will tell me how to proceed with them now. All the leaves are falling off, and I want to start them so as to be ready about May or June. I should be glad to know when to manure them, and what to use for that purpose; what heat to keep them at now, and when to put more heat on; how to cut them, and what to paint them with? Also, should they be down on the floor through the winter, or up to the roof? The house is a lean-to; on south wall. They are old vines.—Hambro', *Thiptrot, Wigan-lane.*

15375.—**Neglected garden.**—Kindly advise me as to the best way of getting my garden ready for next year. When I moved into it, at the beginning of this year, the house had been vacant for some years, and the garden was one mass of weeds. I had not time to get it properly manured; still, I got a very fair crop of Peas (early and late), Lettuce, Radish, Parsnips, Carrots, and Cabbage, but the Onions and Beans were a failure. The latter were attacked by a small fly, and, after awhile, presented the appearance of being burnt. I might also mention that I was kept continually weeding the whole summer.—A Young Gardener.

15376.—**Rose growing in London.**—I have a well fitted, span-roof greenhouse in the neighbourhood of Addison-road, Kensington. Will any reader who has actual experience or knowledge be good enough to say whether it is worth my while to try a Tea Rose or two, either in pots or border, inside the house. If it is really possible to succeed, I presume Gloire de Dijon and its varieties would do best. Would Maréchal Niel do as well? I know that in no case is it so prolific as Gloire de Dijon; but would it suffer more than the latter? I have plenty of good soil (imported), and plenty of light.—West Kensington.

15377.—**Pruning Tea Roses in pots.**—I am a good deal puzzled by the apparently contradictory advice given by competent authorities with regard to pruning Tea Roses in pots. I have a span-roofed house, 13 feet by 9 feet, entirely unheated, which is mainly devoted to these Roses, of which I have about 30 in pots, mostly 8-inch and 10-inch ones. I repotted them in October, and thinned them next month, cutting out all unripened wood. Ought I in March to cut them hard back, as is, apparently, recommended by Mr. Paul in his book, or to prune them very slightly, according to the advice of "J. C. C." on page 525, Gardening Illustrated? My impression last spring was that I had not pruned them sufficiently, though I had a fair show of blossom. I should like to know which plan I ought to follow.—C. E. H., *Cambridge.*

15378.—**Tacsonia not flowering.**—I have a conservatory, the floor of which is concreted and tiled throughout. Last spring I planted several Roses and other climbing plants in boxes under the front stage, none of which have done well. A friend suggests that the constant drip from the flower-pots on the shelf above is sufficient to account for the general failure. I incline to this opinion, and am going to plant the roots of the Roses which have survived and a Passion Flower in the soil outside, training them inside a wire under the glass. My Tacsonia is in a box about 18 inches cube, and has made good growth, but never a flower; but it has all dropped when just ready to open. Will some experienced gardener kindly advise me what to do? I can plant the root outside like the rest, but will Tacsonia bear planting out? My house is on the sea-coast of the county of Durham, where we have not much frost, but frequent nipping east wind.—Falstone.

15379.—**Treatment of Vallotas.**—I have two plants of Vallotas, one, the large-flowered, which has bloomed finely this autumn, and has now three seed vessels the size of large Filberts. Will they ripen in a window; and if I allow them to do so will it injure the plants for next year's blooming?—*(Take off two of the seed vessels, and allow only one to ripen; seed production always tends to weaken any plant.*—Ed.)—The other flower is the smaller sort, spotted black. It has not bloomed or flourished; I find most of the roots are dead, though some appear healthy, as is the case with several offsets I have planted. Will "Byfleet," or some other correspondent, advise whether to repot now, or leave till early spring? I have no glass; only very good south windows. Last winter I hung them up in the kitchen window, and watered them three or four times.—M. A. A., *Malvern.*

15380.—**Time of potting zonal Pelargoniums.**—I have observed at various times statements as regards the potting of zonal Pelargoniums, and, being a novice, I should like to know which is the right time for potting.—B. W. S. N. **** Zonal Pelargoniums are grown for a variety of purposes. At one time they were chiefly grown for outdoor decoration in summer, but now a still finer use for them is found in enlivening the greenhouse in winter and spring. "B. W. S. N." does not tell us what he wants to do, but we assume that he wants the plants for pot culture and for blooming indoors, as the time of potting the bedding plants is governed by the season, and is very simply determined. No doubt some of our readers who grow Pelargoniums well for house blooming will kindly give him the information he seeks. He may also consult for general information Bailey's little book on "The Pelargonium." It is published at the office of* Gardening Illustrated, *and is a practical work by a man who has grown the plants thoroughly well.*—Ed.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15381.—**Medlar tree** *(Moss Jewel).*—Yes; Medlar trees will flourish out-of-doors. Plant in good garden soil in a situation not too much exposed.

15382.—**Obtaining Roses** *(Scotch Rose Grower).*—Why not apply to some of the large Rose growers, with whose names you are, doubtless, acquainted?

15383.—**Baines' "Greenhouse and Stove Plants"** *(Beginner).*—Mr. Baines' book deals thoroughly with the cultivation of the classes of plants treated of.

15384.—**Quick-growing hedge** *(Tip).*—Evergreen Privet will suit you very well, and you can get plants at a cheap rate.

15385.—**Evergreen Creeper for greenhouse** *(J. T. Roskell).*—Lapageria rosea and L. alba will meet your wants.

15386.—**Cutting down Hydrangeas** *(Moss Jewel).*—Yes; they are deciduous. We think they should not be out down, as, when so treated, they flower badly.

15387.—**Description of Plum** *(Salt).*—The description is insufficient to enable us to reply positively but you probably refer to Denyer's Victoria.

15388.—**Treatment of bulbs** *(Beginner).*—What bulbs do you mean? We cannot answer until we know, and you had better write again. In the meantime they will sustain no harm if kept plunged in the frame.

15389.—**Keeping oats out of gardens** *(Curious).*—For information on this point we must refer you to the very many letters published recently. See Gardening August 8th and following numbers.

15390.—**Procuring herbaceous plants** *(Border).*—You should have no difficulty in procuring any of the plants mentioned by Mr. Sweet from any of the good Scotch or English nurseries.

15391.—**Chrysanthemums from last year's cuttings** *(West Kensington).*—Yes, these will make excellent plants for next year's blooming, if properly treated. Even younger plants than these will do well.

15392.—**Failure in growing Ivy** *(Moss Jewel).*—You say the soil is very poor, and that would be enough to account for the failure. Plant in rich soil, and give them a top-dressing.

15393. — **Obtaining Shrubby Mallow** *(Mrs. Hunter Campbell).*—You can get this in any large tree nursery, but you must ask for Hibiscus syriacus, or Althæa frutex, under both of which names it is known.

15394.—**Cratægus Pyracantha alba** *(Cratægus).*—This is a rare variety, and we should advise you to get the common Pyracantha, which is quite as formidable as a hedge, and brighter.

15395.—**Wintering Pelargoniums in rooms** *(G. F. B.).*—Yes; you can winter your plants in your heated room if there is sufficient light. Keep them free from frost, and open the window on fine days for ventilation.

15396.—**Treatment of Gloxinias** *(F. F. L.).*—Some growers take out the roots of Gloxinias after they have died down, and others do not. We should advise you to leave them in the soil and keep them in a dry, cool place. In February shake out the soil and repot.

15397.—**Potting Amaryllis grandis** *(Glenarm).*—They should be potted in January. They will not succeed very well in a window. They require while growing a moist and warmish atmosphere, such as should certainly not be found in a living room. The usual potting mixture will suit them.

15398.—**Roses for Clapton** *(Glenarm).*—You may try Aimée Vibert and Félicité Perpetuelle, and others of the same class, but we should advise you not to try delicate varieties, like Teas, within reach of the smoke of London. Indeed, no Roses of any kind will do well in London.

15399.—**Vine growing in London** *(West Kensington).*—Certainly a Black Hamburgh vine will do well in a house such as you describe. You may see vines growing very well in different parts of London, and they grow in Mr. Bull's nursery at Chelsea in a house not specially prepared for them.

15400.—**Repotting Lilies** *(Kensington).*—We cannot deal with your note, as you do not tell us what Lilies you refer to. Among the multitudes of Lilies now in cultivation there are many sections, and each has a different mode of growth. L. auratum, for instance, is very different in its growth from the Tiger Lily or the American Lilies.

15401.—**Insects eating Violets** *(V. B.).*—You say that you found your Violets eaten by insects, and, therefore, dispute the accuracy of reply 15206. You altogether mistake the purport of the answer, which refers to plants producing seed in the absence of what are generally called flowers, and that is a peculiarity sometimes noticed in Violets.

15402 — **Potting Ornithogalum arabicum** *(Glenarm).*—Pot the bulbs when you get them; treatment something like that given to Hyacinths will do. We have had no experience of their culture in rooms, and cannot tell you when you may expect them to bloom, but we should say in spring or early summer; you may be sure, however, that they will be very pretty when they do bloom.

15403.—**Pruning Magnolia** *(Beginner).*—Certainly you should not cut all the branches close in; all of them should be left if you have room for them. There is a great deal too much pruning and cutting done; in such cases we never think of doing anything more than thinning, when forced to, and nailing in. You ought in your question to have mentioned the particular kind of Magnolia with which you are dealing.

15404.—**Luminous centipede** *(J. G. Odell).*—The luminous creature you found was, no doubt, the luminous centipede (Geophilus subterraneus), a very common creature. It is supposed only to have the power of secreting this phosphoric fluid during the breeding season. This luminosity is noticed most often in the spring and

autumn. When this centipede (in a luminous state) moves about it leaves a trail some inches in length behind it.—G. S. S.

15405. — **Pruning fruit trees** (*E. Bishop*). — Judicious pruning is often beneficial, but merely cutting off the tips of the shoots is not pruning at all. Pruning means thinning out the branches, so that light may enter and air circulate freely; and it has also in view the production of fruit-bearing branches. You will find full information on the subject in recent replies to query 15208. It is true that, as you say, market gardeners prune but little, but it must be remembered that they have a very careful mode of cultivation. Pruning done properly is beneficial, but the work should be done by someone who knows how to do it.

15406.—**Winter temperature for Pelargoniums and Fuchsias** (*Nancy*).—Greenhouse Pelargoniums will do in winter in a house which is kept well aired and heated during cold weather, so as to keep out frost—say, between 40 degs. and 50 degs. Fuchsias are generally at rest in the winter, and cool greenhouse temperature suits them perfectly. Some growers, it is true, push on plants during the winter, and these do well in a warm greenhouse or temperate house, but we imagine that your plants are not of this sort, and that you merely want to keep them in a state of rest.

15407.—**Big Potatoes** (*W. B.*).—Perhaps some of our readers versed in the question of big Potatoes will tell you whether the fact of one Magnum Bonun weighing 2 lbs. 10 oz. and nine weighing 14 lbs. 14 ozs. is very extraordinary. Our only idea about very big Potatoes is that they are not worth having. The Magnum Bonums in our own place we have had sorted into three sizes—the large ones (not so enormous as yours, however), the medium sized, and the small ones for seed. The large ones we find with brown spots of decay in the centre; the rather small or medium sized ones are perfectly free from this, and are excellent when cooked. The gigantic Potato is nearly as bad as the gigantic Tomato—and that is very bad.

15408.—**Taking weather observations** (*H. W.*).—The observations should be taken at the same hour every morning—from eight to nine is the best time. There used to be a very good register, such as you want, "A Companion to the Weather Glass," by Dr. Tyas, published by Bemrose and Co., 21, Paternoster-row. I believe you can get what you want at any of the meteorological instrument makers, such as Negretti and Zambra, Holborn Viaduct, or Steward's, in the Strand. The clearest way of showing the rise and fall of the barometer and thermometer is on a diagram similar to those published once a week in the *Times*—I think on Fridays. From these you can see the fluctuations in the weather at a glance; the direction of the wind is, perhaps, best shown by an arrow drawn in the direction of the wind, and feathered to show the force, as in the *Times*' daily weather chart.—G. S. S.

TO CORRESPONDENTS.

H. W. Smith-Parsons.—We cannot forward your letter, but you will see that we have inserted the query.——*James Speight.*—You should send the testimonial to the tradesman himself, and he, no doubt, will make a proper use of it. We can insert it only as an advertisement.——*Canine.*—Mix it with any other refuse and use for garden purposes generally.——*C. C.*—Try Ware's, of Tottenham.——*Bee.*—We do not know what article you refer to, and so cannot give you the information you require. Can you not give us the reference?——*Nancy.*—The makers of the stove in question are the proper persons to apply to for the information you desire. They will, no doubt, be glad to give you full particulars.——*J. Jordan.*—You can get the "Rosarians' Year Book" from Messrs. Bemrose and Sons, Old Bailey; or from the editor, the Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford.——*H. W.*—You will find the address of the publishing office in the volume which you already have.——*M. A. A.*—You do not refer us to the notes that you speak of.——*G. W., Ayr.*—Thanks for your suggestion, to which we shall give the full consideration that it deserves.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor, *37, Southampton-street, Strand, W.C.*

Names of plants.—*J. J. R.*—It is a Chrysanthemum; but we cannot tell you the name of the variety.——*Davie, Donnybrook.*—1, Cannot name with certainty without a bloom; 2, Cyrtomium falcatum; 3, Pteris cretica albo-lineata; 4, Adiantum hispidulum; 5, Sedum Sieboldi.——*J. G. T. L.*—Cotoneaster Simonsi; Athyrium filiafœmina. Fields.——*X. Y.*—3, Winter Savory (Satureja montana); 4, Tarragon (Artemisia Dracunculus).——*G. P.*—Boussingaultia baselloides.——*M. D.*—Phytolacca decandra (Virginian Poke-weed).——*C. R., Wisbech.*—The plant is Selaghnella Kraussiana, erroneously called denticulata. It is one of the hardiest of the Selaginellas.——*W. B. M. N.*—4 is Sedum reflexum; you must send the others when in flower.——*Old Friend.*—1, Nephrolepis exaltata; 2, Nephrodium molle; 3, Asplenium bulbiferum; 4, Send better specimen.——*S. Galbraith Bole.*—Asplenium Veitchii.——*Castle Douglas.*—Polypodium pustulatum; Scolopendrium vulgare muricatum.——*J. M. W.*—1, Asplenium (?), specimen insufficient; 2, Polypodium semilaeerum; 3, Polystichum angulare proliferum; 4, Asplenium flaccidum.

NAMES OF FRUIT.

Naming Fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*R. T.*—Apples: 1, Rymer; 2, Golden Noble; Pears: 3, Duchesse d'Angouleme; 4, Chaumontelle.——*A. H.*—1, Catillac; 2, Beurré Rance; 3, Beurré Diel; 4, Easter Beurré.——*P. Bosanquet.*—Beurré de Capiaumont.——*A. P. Thornley.*—1, Vicar of Winkfield; 2, Beurré de Capiaumont; 3, Louise Bonne of Jersey; 4, Vicar of Winkfield.——*Miss L. Pasley.*—Pomme de Neige, we believe, but not so highly coloured as usual.——*W. W., Bristol.*—1, Doyenné Gris; 2, Comte de Lamy.——*E. W. Prevost.*—1, Tibbet's Pearmain; 2, Plum Apple.—*S. K. T.*—1, Cox's Pomona; 3, Duchess d'Angouleme; 4, Beauty of Kent.——*A. Gipp.*—Apple: 2, Gravenstein.——*Cufford.*—Unfit for naming—rotten.——*E. Rush.*—Braddick's Nonpareil.—*W. D. S.*—Beurré Bosc.——*P. B. T. N.*—1, Beurré Rance; 2, Duchesse d'Angouleme.

Smithfield market, Evesham.—List of prices realised Nov. 27, 1885:—Brussels Sprouts, 3s. 6d. to 4s. per pot (40lb.); Cabbages, pickling, 6s. to 8s. per doz.; Carrots, 1s. 6d. to 1s. 9d. per cwt.; Cauliflowers, 9d. to 1s. per doz.; Onions, 3s. 6d. to 3s. 9d. per cwt.; Parsnips, 3s. 6d. to 4s. per cwt.; Potatoes, 1s. 6d. to 2s. per pot (80 lb.); Savoy, 9d. to 1s. per doz.; Sage, 2d. per doz.; Turnips, 1s. 6d. to 2s. per pot; Apples, 3s. to 6s. 9d. per pot; Pears, 2s. to 5s. per pot (72 lb.).

15296.—**Dahlias for exhibition.**—The best twenty-four show and fancy are: Canary, Cris. Ridley, Ethel Britton, Herbert Turner, George Rawlings, James Vick, Joseph Ashby, Mrs. Douglas, Mrs. Gladstone, Mrs. Harris, Mrs. Henshaw, Ovid. The above are show varieties. The best twelve fancies are: Carnation, Charles Wyatt, Edward Peck, George Barnes, Grand Sultan, Henry Glasscock, John Forbes, Lotty Eckford, Magician, Miss Lily Large, Mrs. Saunders, Rev. J. B. M. Camm.—J. D. E.

Floral fans.—To Mrs. H. B. Smith, of Ealing Dean, we are indebted for the introduction into some of our shows of floral fans, which, as arranged by her skilful hands, are far more graceful and pleasing than the big bouquets now so much in vogue. A pretty handful of flowers is always pleasing, but a big modern bouquet is a horror. Mrs. Smith had one of these fan novelties at the Richmond Show recently, and whilst it was not possible to refrain from admiring the lightness and elegance of the dressing, it was equally impossible to refrain from entertaining a sense of pity for those who, under certain circumstances, are, in accordance with fashion, compelled to accept and carry about enormous bouquets which must prove a detestable infliction. Now, one of these light and charming floral fans would prove a very welcome, as well as a graceful, present to any lady. The framework is an ordinary folding fan covered with white lace; upon this on one side is arranged a series of fine points or sprays radiating from a base of leaves. At Ealing, Mrs. Smith made her base of rich coloured Bramble leaves, whilst at Richmond she employed leaves of Berberis Aquifolium with not less advantage, using also more colour in flowers, whilst in the former case the flowers were exclusively white. The obverse side of the fan was in each case dressed with sprays of Ivy, and the handle tied with a bow of red ribbon. I think that many ladies would greatly prefer a fan of this kind when at balls or evening parties, to a huge and unwieldy bouquet, which must often, because of its size and weight, prove a means of torture to those whom fashion condemns to carry it. It is not at all desirable that any lack of appreciation for flowers should be shown by the wealthier portion of the community, but eternal sameness in the floral decorations of the person may soon lead to that end; therefore the introduction of these floral fans may be welcomed both by ladies and bouquetists.—A. D.

Road scrapings.—For certain purposes road scrapings are most valuable. In the case of old vegetable gardens their application would often do much more good than two or three dressings of manure. For close, moisture-holding soils, difficult to work after rain, road scrapings are excellent, as, owing to their gritty character, they render such soils more friable and porous. More valuable than the scrapings, too, are the parings, which consist of Grassy particles, and therefore contain a considerable amount of organic matter. A liberal addition of these to poor, light soils infinitely improves them. In a general way both scrapings and parings can be bought for 6d. a-load, but I would recommend all who think of using the former to obtain the first lot collected, as this contains a large amount of manurial matter—horse-droppings, which, during the summer, have been ground down into powder.—J. J. B.

FRUIT.

SHOW GOOSEBERRIES.

"B. B. G." sends us "a list of the heaviest Gooseberry grown in each year from 1809 to 1885, hoping it will interest those who are engaged in Gooseberry growing, and have never seen a register":—

Year.	Name of variety.	Weight. dwts.	Weight. grs.
1809	Sportsman	18	22½
1810	Crown Bob	21	7
1811	Crown Bob	23	18
1812	Overall—seeding	19	10
1813	Crown Bob	22	21
1814	Viper	25	22
1815	Crown Bob	25	2
1816	Huntsman	26	0
1817	Highwayman	26	17
1818	Yaxley Hero	24	14
1819	Tom Sawyer	26	17
1820	Huntsman	25	18
1821	Huntsman	25	6
1822	Rough Robin	26	1
1823	Foxhunter	25	2
1824	Lion	26	5
1825	Lion	31	16
1826	Huntsman	24	6
1827	Lion	27	7
1828	Lion	29	0
1829	Lion	25	0
1830	Teazer	32	13
1831	Lion	27	6
1832	Bumper—seedling	30	18
1833	Wonderful	27	17
1834	Wonderful	27	8
1835	Wonderful	24	0
1836	Companion	23	0
1837	Companion	23	12
1838	Wonderful	30	16
1839	London	29	0
1840	London	32	0
1841	Wonderful	32	16
1842	London	31	13
1843	London	32	0
1844	London	35	12
1845	London	36	16
1846	London	27	21
1847	London	28	0
1848	London	31	19
1849	London	27	19
1850	London	27	10
1851	London	27	12
1852	London	37	7
1853	London	31	4
1854	London	31	14
1855	Paris	21	16
1856	Seedling	29	0
1857	London	29	11
1858	London	34	7
1859	Antagonist	27	4
1860	London	33	0
1861	London	29	22
1862	Antagonist	31	22
1863	Antagonist	34	21
1864	London	36	4
1865	London	33	12
1866	London	26	20
1867	Rover—seedling	30	18
1868	London	29	13
1869	London	27	19
1870	Ringer	32	21
1871	London	31	20
1872	Garibaldi	27	9
1873	Garibaldi	32	17
1874	Maccaroni	33	10
1875	Bobby	34	20
1876	Ringer	26	10
1877	Bobby	28	9
1878	Rover	31	12
1879	London	27	18
1880	Garibaldi	31	17
1881	London	29	12
1882	Leveller	34	2
1883	Transparent	29	15
1884	London	28	12
1885	Bobby	28	22

Prize Gooseberries.—"Lancashire Lad" (page 507) seems rather in doubt about the price I mentioned on page 487. I will try not to say anything but what I can prove to be true. In 1879 I had a good stock of fruit. Up to the last year or two they have not been much grown, except by working men for showing, and they do not sell until all the shows are over, and that is about the second week in August. I sold mine to a shop in Lancashire, 1879, at 1s., and carriage, per quart, and saw the shopkeeper fill a small basket, about twelve or fourteen in, and sell them for 2s. 6d. before paying me. As regards sorts to grow, there are none of them that will stand the frosts when they come so late as May or June; you cannot expect to grow them in Lancashire, among the towns, coal-pits, factories, chemical and iron works of all descriptions going on. If you have a clear air, and are shaded from north-east winds, in Lancashire you will have bloom on every bud; but if they are killed by frosty winds that is not the fault of the Gooseberries or of the trees. These are the sorts I advise for Lancashire growing: Dan's Mistake, Bobby, Speedwell, Ringer, Thatcher, Lady Haughton, Stockwell, Surprise, Shiner, Careless, Antagonist, Succeed, and Transparent.—W. B.

Canker in Apple trees.—Mr. J. Hiam, in his report on canker in Apple trees, in Gardening, p. 535, seems very confident that he has discovered the real cause of this disease. If he has he is certainly a "true benefactor of his species," and deserves the gratitude of all growers of Apple trees, for in trying to exterminate diseases the main point to be found out is their cause, as then there is some hope of successfully contending against them. I have probably not examined so many cankered trees as Mr. Hiam, and my evidence on the point of insects being the cause of disease is only negative, but I have never found on cankers any insects to which I could attribute the canker, but only a stray insect here and there running about them. It would be of great interest to many persons if Mr. Hiam would mention the name of this insect, and as I am much interested in all insects which injure cultivated plants, I should esteem it a great favour if he would kindly send the Editor some specimens, and allow me to examine them.—G. S. S.

PRUNING PYRAMID APPLE TREES.

15208.—Recognising every man's intelligence just in proportion to his recognition of principles, I have much pleasure in attempting, at least, to answer "W. W., Staffs'.," intelligent enquiry as to "the principles that should regulate pruning." Now, properly speaking, there are two such principles: One principle should aim at the proper form of the tree, and the other at fruitfulness. Passing by the first, though by no means unimportant, one as a matter to be decided more or less by the cultivator's taste, I would say in reference to the second—viz., the fruitfulness of the tree—that when, as in "W. W.'s" case, the fruit-spurs are formed, the object in pruning is, first, to keep the fruit-spurs in permanent bearing condition, and as the tree grows to make it develop fresh fruit-spurs without at all robbing those already existing. This ought to be the object of every intelligent pruner. Now, the way to obtain this object—so far, at least, as pruning is concerned—is, if I may use such an awkward expression, to force the sap down to the very bottom of every branch, which ought to be full to that very bottom with fruit-spurs, and not to allow any sap to flow to the end of the branches, either to form fresh fruit-spurs or fresh wood-shoots, except as those already existing, and well-fed ones, can harmlessly spare it. Now, speaking generally, this object is attained, when the sap is not at work (say, as soon as the leaf has fallen, or before the sap rises in the spring), by shortening the wood last produced to four, three, two, or sometimes even one bud. And "W. W." may pretty safely feel that he has not pruned too closely, however short the wood he has left may be, so long as he has not forced too much sap into the fruit-spurs, which would very plainly be indicated by the conversion of some few of them into wood-shoots. Should this occur he must at once cut close these shoots, and at next pruning time leave a little more wood at the end of the branches; or, if the trees are required to be kept small, a little judicious root-pruning will produce the same effect as leaving more wood. A very few years ago I obtained from the nursery a maiden Syke-House Russet and a maiden Coe's Golden Drop, having (almost of course) only one single shoot to each plant. These I shortened to some 10 inches or 12 inches, to form dwarf trees, and every year I have pruned them upon the principle or principles (for I am a great stickler for the form of any plant) above indicated, and have not allowed my gardener to touch them at all, except to water them when needful; for when he saw my pruning-knife at work it seemed almost as if I were pruning him, and year by year he wanted to know "Whenever I intended to let them grow?" I told him, "Only as fast as they could first make fruit-spurs, and then nourish the fruit-spurs they had already made." This was perhaps not more than some 4 inches or 5 inches per annum. Now, had I allowed them, as he termed it, "to grow," they would most probably have been by this time as tall as myself, with long, sprawling branches, having, as I have myself seen, some trained Apple trees, even at Sandringham, full 12 inches or 18 inches of naked wood between fruit-spur and fruit-spur, instead of being, as now, compact, little, well-formed Apple bushes; and though only 2 feet high and 18 inches from out to out across them, having every branch full of permanent fruit-spurs, and with thirteen nice Apples still hanging on one of them, and eleven on the other, now fit for the dessert-table.

For "W. W.'s" encouragement I may say that I feel sure that any intelligent observer of nature's conditions of production may, if he goes to Nature's own school for his instruction, very soon learn how to prune anything. For if she makes her productions upon only last year's wood, as she does invariably upon the vine and Rose trees, and for the most part, though not altogether so, the Gooseberry bush, then the intelligent cultivator will direct the vitality of the plants into two quite distinct, though simultaneous operations—viz., making fruit for this year and wood for the next, by leaving, almost alternately, one shoot, fairly long for this year's fruit, and cutting the other pretty closely back for the production of wood for next year's fruit; while if Nature gives her productions from fruit-spurs growing upon wood more than one year old, as is the case with red and white Currant bushes, Apple, Pear, and, to a very large extent, Plum trees, then the intelligent cultivator will adopt a treatment similar to that which I have attempted to describe as above.

Norwich. J. Doman.

—— In reply to "W. W." allow me to state that the operation of pruning ought not to be haphazard work, but one carried out on well-established principles, and if "W. W.'s" trees are from 6 feet to 8 feet high, they are quite tall enough to produce a good crop of fruit. Our plan is to cut out first of all the shoots that are not required either as leaders or for the formation of main branches, and in cutting them out, only leave enough eyes or buds at the base to form fruiting spurs for another year; then reduce the shoots that are required to their proper length. That can only be determined by the state of the tree, as regards vigour, as any attempt to make a lot of pyramid Apples all exactly alike, by pruning, can only end in disappointment; and if they are planted in rows, great care should be bestowed in selecting varieties of about equal vigour, for to plant Warner's King side by side with Cox's Orange Pippin is the very way "not to do it," as the hard cutting of such strong-growing sorts will cause them to send out a thicket of useless wood growth next year. But, supposing they are of about equal strength, shorten the leading shoots to about 6 inches, if the tree is large enough, but if it is desirable to increase the size of the tree leave the shoots at least one foot long. Pears and Plums may be successfully grown on the same plan. The way to get fruit quickly is to take care of all the weakly shoots that form flower buds, but no wood growth, as, with plenty of these, there is no fear of flower buds being scarce. It is only by an examination of any tree, that the exact length of shoot to leave can be determined.—J. Groom, *Gosport.*

—— With respect to the branches "W. W." mentions, which have grown from 1 foot to 18 inches, he should not prune too short, but leave them full length when possible. Only cut the side branches out, so as to give light and air to the others. Select the best shoots—*i.e.*, those coming in the right direction, from the pruning of last year. Apples and Pears form blossom buds next year on the young wood made this year, and if pruned short will only grow a lot of side branches, and not be so fruitful. We seldom see a clipped hedge bear haws. The Pear and Plum will do with the same treatment as Apples, only Plums often bear fruit on their one-year-old wood and also from blossom-spurs on old wood, and continue to do so if thinned out. If young trees grow too vigorous after they have been planted two or three years, then take them up and shorten their roots a little with your knife, and that will get them into bearing. On no account dig near them. Tread the ground firm when you plant them, and put a little short mulch of manure, or any other vegetable matter, and keep the weeds down only by hoeing. The nearer you keep the roots to the surface the better they will bear and the finer fruit. Have just enough earth on the roots to keep them from blowing about with the wind.—J. Grice, *Moorlands.*

15126.—**Caterpillars on Gooseberry trees.**—As soon as the leaves are observed to be perforated by the young caterpillars, which usually first occurs early in May, the bushes should be well syringed, on a fine, dry day, with a solution of common salt in cold water, in the proportion of one pound of salt to eight gallons of water, repeating the operation in a week or ten days should any fresh perforated leaves appear. This will destroy all the young caterpillars, but has no effect on the old ones, which must be hand-picked or killed by dusting the bushes with lime or powdered white hellebore, having previously syringed them well with plain cold water. The hellebore powder may be used in combination with finely-ground whitening (one part, by weight, of the former to six parts of the latter). It is also very effectively used in combination with powdered alum, one part (by weight) of hellebore and two parts of alum being well mixed in cold water, and then applied to the bushes with a syringe. If hellebore powder is used after the fruit has set, the bushes should when the caterpillars have disappeared, be well syringed with plain water, in order to remove any of the powder that may remain, as it is highly poisonous. As soon as the leaves have all fallen from his Gooseberry bushes, "H. W." cannot do better than, first, rake them up cleanly and burn them, and then put a good dressing of ordinary lime, gas lime, or tan, along with the stable manure, under each bush, forking it well in, to the depth of three or four inches, and taking care to apply the dressing, not only to the ground immediately under the bushes, but also for a few inches beyond the extreme spread of the branches. From my own experience, I would recommend tan to be used in preference to either common lime or gas-lime. —W. M.

15177.—**Best Black Currant.**—In reply to "Nadin" I would recommend Baldwin as one of the very best Black Currants in cultivation; and if a second variety is required try Black Naples. Both these varieties produce very fine Currants, and fruit freely as very young bushes. Last summer we gathered a heavy crop from nursery-rows of plants, only put in as cuttings the year before; the berries were quite as large as ordinary-sized Hambro' Grapes; but to get this result they must have good cultivation. Plant young bushes 5 feet to 6 feet apart on deeply-cultivated and well-manured soil. That is the way to have fine Currants, fit for exhibition or any other purpose. —J. Groom, *Gosport.*

15245.—**Medlars.**—We find the following receipt a very good one for preserving Medlars—the jelly has much the same flavour and consistency as Guava jelly: Take very ripe Medlars, wash them, and put them into a preserving-pan with enough water to cover them; simmer slowly until they become a pulp, then strain through a jelly-bag, and to a pint of this juice add three-quarters of a pound of white sugar; boil for one hour, and put into pots or moulds. The jelly should be kept for six months.—G. S. S.

—— We gather our Medlars about the middle of October, and lay them out carefully on shelves in the fruit-room. As soon as they are rotten they are ready for use.—J. D. E.

15264.—**Neighbours' dispute.**—"Norfolk's" hedge is hardly likely to grow out at his neighbour's side to such an extent as to actually interfere with the comfort and convenience of his neighbour; and until it does so he may treat the threats to take legal proceedings against him with contempt. The fact of the hedge being untrimmed and an eyesore to his neighbour is not such a nuisance as the law provides a remedy for; but in the event of the hedge growing so as to materially diminish the reasonable enjoyment by the neighbour of his garden, the latter would more probably cut it back or get it done for him, and bring an action for the expenses, or for damages, which he would be entitled to do, rather than apply to the court for a mandatory order to compel "Norfolk" to cut the hedge himself, as such an order would be difficult to obtain. The dispute seems frivolous, and ought to be settled without recourse to litigation.—Lawyer "Y."

Anthracite coal for heating purposes.—After eight years' trial I have proved this to be about one-third less costly than coke or other coal, although the price per ton here is £1. It gives a more regular and a much longer lasting heat than either coke or ordinary coal. It does not light quite so easily, but this slight difficulty is not worth consideration. It is said by some that it will not burn except where there is a quick draught, but we find no difficulty in this respect, as it is generally used in the house grates as well, where it burns freely. In the heating apparatus we use one-fourth chalk with it. The coal is placed evenly over the bars, and then the chalk in 3-inch cubes is placed in an even layer over the top, and left undisturbed. By this means a more moderate, more uniform, and much longer lasting heat is secured. It is also more economical than when coal only is used, and the chalk effectually prevents clinkers being formed on the bars. The lime is afterwards found to be very useful as manure in the garden.—W. C. T.

INDOOR PLANTS.

LATE CHRYSANTHEMUMS.

These have of late years become one of the most useful in winter flowers, as, by a little attention, they come in at the very period when flowers are at their lowest ebb, both in the open garden and under glass. Except in gardens where heated structures are plentiful, the supply of flowers for cuttings gets very limited after November is past, and anything that comes in during the Christmas season is most acceptable. There are several ways of keeping Chrysanthemums back, but the following plan we have found succeed well:—Select varieties that naturally flower late; then propagate the cuttings late, and after planting out and stopping the shoots late, the plants will show no indication of flowering until the ordinary season of Chrysanthemums are past. We propagate our latest flowering sorts in March, plant them out in April, in nursery beds, about 6 inches apart, and as we get space in the kitchen garden we transplant them into rows 2 feet apart, some time during the month of June. They are kept well supplied with water in dry weather, and the surface soil is kept clean and loose by frequent hoeing; they get their latest stopping as soon as they have recovered the check of removal, and for the rest of the season are allowed to grow quite naturally. We let our latest supply stand out in the open ground until the middle or end of November, according to season, for if the bloom buds are closely folded up a few degrees of frost will not harm them, as the plants are hardy enough to withstand pretty severe frost; but if the bloom is nearly expanded frost and rain soon spoil the purity of colour in the lighter coloured sorts. These are in the greatest request, the pure whites being very valuable at all times, but even in the earlier sorts they are seldom obtained in good condition from fully exposed plants. The majority of our flowers being required for cutting, the plants are never put in pots or boxes, but are simply transferred from the open air with good roots, and replanted directly into the inside borders of any fruit houses that are at rest, for the cooler they are kept the better. We give a good soaking of water directly after planting, and they scarcely drop a leaf, and by keeping the house wide open, except when severe frosts prevail, and by cutting the flowers in succession, we get a good supply for some time into the New Year; but it is for December and January that they are the most required, for the simple reason that flowers are getting more plentiful in February, and after so long a Chrysanthemum season a change is desirable. For

Late pot plants we select the best-shaped plants when lifting the stock, and, after shaking away the soil from the roots, we pot them in the smallest pots that they can be got into, with a little fine soil carefully worked amongst them. They are then started, tied up, and kept well-watered, and hardly seem to feel the check of removal, and they are most acceptable after the supply grown in pots is over. For those that have no glasshouse I find a very effective way of getting a late supply of bloom is to grow the plants as previously described, and at this time of year transplant them close up to a wall or fence, and cover them with thatched hurdles, for, if kept dry, they will stand a good deal of cold, and by hanging some mats in front of them a very effective shelter is provided. Anyone giving these late Chrysanthemums a trial will, I feel sure, be amply rewarded.

Gosport. J. Groom.

Fuchsias planted out under glass.—Few plants are so well adapted for planting out in cool conservatories as Fuchsias, and yet one does not often see them thus employed. What can be finer than a Fuchsia, 10 feet in height and 4 feet through, laden with flowers? It requires really skilful culture to obtain such a result in pots, but there is no difficulty in doing so by planting out. Then, again, how fine they look trained to the rafters, a position in which the major portion of the varieties display themselves to the best advantage. I once saw on the banks of the lake of Thun, in Switzerland, a house in which the best kinds were used in that way. It formed one of the prettiest floral pictures I ever saw, the plants being very luxuriant and carrying an immense number of finely-developed blooms. I think it is a great pity that Fuchsias should not be more frequently employed in this way in ordinary greenhouses, as they would effectually embellish them during the summer, and, being easily kept within bounds, would not interfere much with the well-being of other plants grown in pots. Dropping their foliage by the time the darkest days arrive, they would not materially obstruct the light from bedding plants or other things wintered in such places. Single varieties are most suitable for the purpose, but some of the stronger-growing doubles would do very well. The principal point is to thoroughly sweeten the soil for their reception, as a compost which clogs and becomes in the least sour, is not fitted for the growth of Fuchsias, the roots of which are more tender and have less penetrative power than those of many flowering plants. If this is attended to, they will not need a change of soil for years.—J. B.

RAISING FUCHSIAS FROM SEED.

Though no particularly striking results in the way of obtaining new and fine sorts may ensue from raising Fuchsias from seed, yet the peculiar enjoyment derived froom blooming seedling flowers is of such a nature as to constitute one of the chief pleasures of gardening. Some care is necessary in order to secure as far as possible good varieties of the Fuchsia from seed, and not only should good varieties be selected for seeding purposes, but the flowers must be fertilised, so as to obtain in the progeny the certain qualities or characteristics of a desired order. Having, therefore, selected the plants from which it is intended to take seed, they should be carefully watched as they expand, and all imperfect blossoms removed, those alone being retained which are quite true to character. From the flower intended to bear seed all the anthers should be cut away; then, by means of a fine camel's-hair brush, the pollen should be collected from the flowers to be used for fertilising purposes, and laid on the stigma of the parent, tying a piece of thread or some such mark about the flower to identify those which have been fertilised. A bag made of thin muslin or some such material should be used to cover the fertilised flowers, or bees and other insects will spoil the work of the operator. The seed will ripen just as well out-of-doors as indoors; but unless means be taken to protect the seed-pods, the birds are apt to take them. Like other fruits, the seed-pods of the Fuchsia will fall from the tree when ripe, sometimes before they are ripe; and it was the practice of a raiser of Fuchsias, when a pod fell, immediately to press it in the palm of his hand, and carefully pick all the seeds out of the pulp with the point of a penknife, and spread them out on a clean sheet of writing-paper, at a distance from each other. Then for an hour or two the seeds were placed on a shelf in the sun, and covered with a piece of glass to keep them from being blown away. After they were dry, the seeds were placed in a wooden or paper box, with a little dry silver sand about them to preserve them till wanted for sowing It is not difficult on the whole to obtain Fuchsia seed; but it is much better to sow 20 seeds obtained from carefully fertilised flowers than 300 selected indiscriminately. The time to sow the seed will vary according to the means of protection at command: if it be a mild, open winter, the beginning of January is a good time; or, if the weather be wintry and ungenial, it may be delayed till February; but the earlier it is sown the better. It does best when sown in a propagating house, heated on the tank system, using shallow pans filled with a light soil, which should be flattened about ½-inch from the top of the pan, and on this surface the seeds require to be placed thinly, and covered with ¼-inch of finely sifted leaf-mould or rotten turf, mixed with silver sand. The pans should then be plunged in the hot-bed up to their rims, after which a fine syringe should be used to slightly moisten the surface. Those who have not a propagating house should delay the sowing for a few weeks until they have a frame heated by manure, plunging the pans to the rims in the same way; but in the case of a manure bed great care is required in covering at night, in giving air, &c., for if there has been any carelessness in making the bed, or the pans containing the seed have been put into the frame before the bed was properly ready, the seeds will germinate quickly, but will damp off as fast as they appear above the surface. For three weeks or a month, under the most favourable circumstances, the best plan is to keep the surface of the seed-pan just moist, not wet, and frequent examination should be made to see that no insect pests are at them. When the plants have put forth a second pair of leaves above the seed leaves, the strongest should be pricked out into small 60-sized pots. This gives room for the plants remaining in the seed-pans to grow, and some Fuchsia cultivators are of opinion that this is the time when the seedlings least feel the check of removal. When the seedlings are potted the pots should be plunged in a moist bed, as it tends to keep the roots moist, and dispenses with the necessity for using much water overhead, from the excess of which the plants frequently damp off at the surface of the soil. Heat, moisture, and shade are required at this stage, and on no account should the plants be permitted to receive a check, for their early and successful blooming entirely depends upon their treatment in this stage. As the plants make growth, the leading shoot should be neatly tied to a stake, and when the pots become filled with roots they should be shifted into 48-sized pots, and in these the plants may be flowered. There is a wonderful charm in watching the opening blossoms of seedling plants, even if they do not exhibit qualities above mediocrity; but that they frequently do, if due care has been taken to select proper parents. D.

Clianthus Dampieri and Clianthus puniceus.—Such is the heading of a paragraph on page 530, but "K." altogether shirks the C. Dampieri. Anyone can grow C. puniceus, but though I constantly see notes from persons who say how easy C. Dampieri is to cultivate, I have failed to get any information. Has "K." ever grown C. Dampieri at all, and how has he succeeded with it? If it is easy to cultivate, why is it hardly ever seen?—for it is one of the most beautiful plants I know.—A. R.

The climbing Aloe ciliaris is a desirable plant to grow in the corner of a hothouse in which the air is too heated and dry for the well-being of most other plants. There is in almost every house some such corner which this succulent Aloe would just suit. It is, moreover, a showy plant, particularly when in bloom, as it is at this season; and the clusters of orange-red flowers remain in perfection a considerable time. It likes plenty of heat and a dry air, but we have seen it often growing luxuriantly in an ordinary stove with other plants.

White Chrysanthemums for successional blooming.—I saw a paragraph recently in Gardening asking for a selection of white Chrysanthemums to keep a succession of bloom. May I be allowed to append a list, given in the order, pretty nearly, when they may be expected to flower: La Petite Marie (P.), very dwarf, July; St. Mary (H.P.), early, dwarf; nanum (P.), very free, dwarf; Mrs. Cullingford (H.P.), fine shape, free and good; Madame C. Desgrange (J.), finest of all the semi-early sorts; Sœur Melaine (H.P.), useful and free; Trevenna (W) (P.), well known; La Vierge (H.P.), fine, white, dwarf, and free; Mdlle. Marthé (P.), good; Elaine (J), early, and very fine; Lady Selborne (J.), early, great favourite; White Beverley (I.), good shape and colour; Mrs. George Rundle (I.), indispensable; White Venus (I.), fine; White Globe (I.), useful; Mrs. Haliburton (I.), sulphur white, good; Empress of India (I.), large, and very good; Mrs. Forsyth (syn., White Christine) (R.), useful; Felicity (R.), good; Cassandra (I.), rather early, and fine shape; Mdlle. Lacroix (J.), new, and extra fine, very desirable; Fair Maid of Guernsey (J.), great favourite; Fleur de Marie (A.) and Lady Margaret (A.), very fine Anemone-flowered varieties; Ethel (J.), cup shape, late; Mrs. C. Carey (J.), late; Meg Merrilees (J.), sulphur white, late; Snowdrop (P), late, useful for cutting. I have grown all these sorts, and can fully recommend them to anyone requiring a good selection of white sorts to give a succession of bloom from July onwards—Mrs. C. Carey, Ethel, and Meg Merriless, I hope to have in bloom in January. It is a capital idea of the committee of the National

Chrysanthemum Society to arrange for an exhibition of late blooms in January next. We want more of the late flowering sorts. What so fine as a bunch of white Chrysanthemums at Christmas for decorative purposes, or for the use of our ladies? In October and November they are appreciated, but a month or so later are doubly so.—William Walters, *Burton-on-Trent.*

HARE'S-FOOT FERNS.

Most of the species of Davallia are natives of tropical or sub-tropical countries, and produce their fronds at intervals along a creeping rhizome which is more or less covered with chaffy scales. Many are valuable decorative Ferns, and useful either for pot culture or for hanging baskets and ornamental vases in the conservatory or drawing-room. D. hemiptera, whose habit and general characteristics are shown in our illustration, is a pretty little species from the tropics, and bears a profusion of dark green fronds which vary from 3 inches to 12 inches in length. It grows very freely in a temperate Fernery, and makes a dense and effective plant grown in a shallow pan. Davallias grow well in a compost of fibrous peat and sand, to which about one-fifth of fresh turfy loam may be added. The pots should be thoroughly drained, for though, like most other Ferns, Davallias like an abundant supply of water when growing; they speedily show signs of weakness in a sour and stagnant compost. B.

Hare's-foot Fern Davallia hemiptera).

Lobelia gracilis.—I find this a most useful plant in my cool greenhouse. I plant it in wall brackets of red earthenware (rustic, bought in the market at Worcester for 8d. each), and it forms a hanging sheet of blossom for months. The young seedlings which crop up in the pots of other plants I collect, and so keep up a constant supply. I have one plant now coming into flower. Of those which were out-of-doors I have brought in the roots which, having partly died down, were shooting up again, and these are growing well, and will make good stools to take early spring cuttings for bedding plants. It is one of the easiest, as well as one of the prettiest, plants for an amateur with no gardener or heat to manage.—Salf, *Basingstoke.*

REPLIES.

15340.—**Naming Chrysanthemums.**—If "Amateur, Burton-on-Trent," will call at my house I shall be happy to assist in naming his Chrysanthemum blooms. As I grow the best varieties in the different classes it is most likely I may have plants in bloom of the sorts "Amateur" is desirious of having named. At all events, we can compare the blooms, and shall probably be able to identify most of his varieties.—William Walters, *Burton-on-Trent.*

15261.—**Plants for growing beneath stages.**—There are many plants that grow freely in such positions as "C." requires to clothe with verdure. First put in plenty of drainage to carry off surplus water, and on this put about 6 inches of fine soil, consisting of broken peat, leaf soil, and sand. In this insert young plants of Tradescantia zebrina, Isolepis gracilis, Selaginella denticulata, Fittonia argyrea, and Ferns of the Pteris tribe, or some of the hardiest kinds of Adiantum or Maiden-Hair. It would be impossible to enumerate all the plants that will thrive in such a position, as their name is legion. I have had beautiful plants of foliage Begonias, Rivinia humilis, and similar stove plants spring up quite accidentally in such positions, and grow with a luxuriance surpassing any pot plants, as they enjoy the extra root run; and any one starting with a small collection will soon increase the number of "under-stage" plants.—J. G., *Hants.*

15256. — **Growing Tacsonias from seed.**—No other hard-wooded creeper is so easily grown from seed as this. At the present time we have plants raised from seed sown in the month of March, 1884, and they have made growth more than 20 feet long, having several branches of that length on one plant. These have flowered and have already produced large seed pods. Sow the seed in February, and keep the pots in a temperature of 60 degrees, until the plants reach a height of 3 feet, when they may be planted out. We have grown plants from purchased seeds as well as from home saved.—J. C. C.

—— "E. E. G." will find Tacsonias grow freely from seed, but they take a long time to come up. I have frequently had pots or pans of seed, that I had thought of throwing away, but after awhile nearly every seed has germinated. After they are up, be careful not to over-water until the young plants get firm in the stems, and, when 6 inches high, they may be potted off singly into 2-inch pots, and returned to the propagating pit. After they are well rooted, they may be shifted to larger pots, and will grow freely in any warm greenhouse or conservatory.—J. G. H.

15248.—**Propagating Bouvardias.**—We cut down our plants in January or February, and stack them in a warm house. As soon as the shoots are 3 inches long they may be taken off, and propagated easily as cuttings in a warm greenhouse. A bell or hand-glass should be placed over them.—J. D. E.

—— There is little difficulty in propagating these beautiful plants in spring when soft young shoots can be obtained plentifully. We treat them as follows:—As soon as they cease flowering, or have their blossoms cut off about this time of year, they are kept rather dry at the root, in a temperature of about 45 degs. (or such as "C." describes as a warm greenhouse), until the days begin to lengthen in spring, when the shoots are cut back a little, and the roots get a good soaking of water. They are then transferred to a warm house, or pit, where a temperature of about 60 degs. is kept up. Here they quickly develop a quantity of young shoots, which, when 3 inches long, make excellent cuttings. They are twisted off the old wood with the heel or junction with the old wood intact, as they strike much more readily than if cut off with a knife. The lower leaves are trimmed off, and they are then inserted round the edges of pots filled with fine sandy soil, similar to that used for Verbenas and other soft-wooded plants; in fact, the same treatment that will produce good bedding plants will produce good Bouvardias, only they must be kept under glass, and potted on into larger pots as they require it, until they are of the desired size, and the points must be pinched out to induce a bushy habit of growth. By August they will be well furnished with shoots, and should be fully exposed to plenty of light and air to ripen the wood, and swell up the flower beds. They may be hastened or retarded, as regards flowering, by being kept in the coolest position at command, or put in the stove or greenhouse to flower at once. By having a few brought on at a time a long succession of flower may be obtained.—J. G. H.

15262.—**Growing Palms in Fernery.**—You can grow any of the following Palms successfully in your greenhouse, viz.:—Fan Palm (Chamærops excelsa), African-hair Palm (Chamærops humilis), Bourbon Palm, (Latania borbonica), Bungalow Palm (Seaforthia elegans), and Kentia australis. Pot them firmly in loam and sand; when established they do not require much attention except to keep them nicely moist, and will do for a long time without repotting.—C. E. W., *Dublin.*

15249.—**Azaleas and Camellias.**—They are usually grafted, and the best time to perform the operation is in the spring; the stocks should be placed in a forcing house. The single red Camellia is propagated by cuttings, and the plants obtained in this way, when they are well established, make good stocks. Any strong-growing, easily-propagated variety of Azalea will produce good stocks from cuttings. A variety with purple flowers was much grown for this purpose years ago.—J. D. E.

15409.—**Dressing feathers.**—Having kept poultry for some time, I have a quantity of feathers. Can anyone tell me the best way of dressing them for use in pillows, &c?—K. A. R.

THE KITCHEN GARDEN.

A lady's gardening difficulties.—The lady who writes on page 524 could grow Tomatoes, Cucumbers, Mushrooms, and Melons. Firstly, as regards Tomatoes: Sow the seed early next March, say the first week or even earlier than that, in the Cucumber frame, and then pot them off when they are large enough to handle into 4-inch pots, and take them into the greenhouse, and keep them growing on until they get well rooted; then plant them out into a bed, or put them into 12-inch pots, into some good soil, half-rotten manure, and then you will be sure to have a good crop of Tomatoes by August, or even earlier than that. As to Mushrooms, you can try a bed in your warm cowshed now. Beat it very solid, and let it be for a few days, until the heat gets up, and then put the spawn in, break it in pieces as large as a Walnut. The spring time, however, would be better. As to Melons, if your man is desirous of doing all you wish, he can grow Melons in the hotbed. I have grown them now for several years, and have been most successful.—W. W., *Whitchurch, Leicestershire.*

—— I would advise the lady to let her gardener read GARDENING ILLUSTRATED. He would find everything he wished to know in it. I have been the owner of a small garden for about two and a-half years. I could not get on at first, but took in this paper, and soon found everything I wanted. I have been very successful with Tomatoes this year, and I have not a square inch of glass. In February I planted the seed in a small box, about 9 inches by 12 inches, and 4 inches deep; kept them in the window of my living room till the middle of March; then dug a hole in the garden, and put the box in, covered them over on very cold days and nights. They soon got large plants. I planted them out, some against a wall, and some in the open. For those in the open I used Pea-sticks and tied them out like Gooseberry trees, and I had the finest fruit from these; on one plant I counted 89 Tomatoes. I should mention that I used no manure, and only watered with water from the tap; my ground is rather of a sandy nature. I am a carpenter, brought up in a country town, so can't be expected to know much about gardening. I should say that I was at work last spring in a greenhouse amongst the most beautiful flowers I ever saw in full bloom; there was a Grape vine and ripe Strawberries, and at each corner there was a large pot with Tomatoes doing well. I only write this to show what can be done by a little perseverance. That word "can't" is a bad word; I never use it myself, and I have never failed either at my occupation or at gardening.—V. B.

Cabbages and caterpillars.—On this subject M. X. Thiris writes as follows, in the French agricultural journal, *Insectologie Agricole*:—"Almost every year the Cabbage caterpillar causes considerable loss to gardeners and cultivators by eating a great part of their cabbages. I have seen whole beds of this precious vegetable entirely lost. Writers who have described the Cabbage butterfly in journals have indicated many ways, more or less excellent, of destroying its caterpillars; but I think there is no method more efficacious or more simple than that which the householders in my locality have used for several years. They plant the Cabbages close to a Hemp field, or else sow some Hemp in their gardens at short distances among the Cabbages. The butterfly seems to have such an aversion to the strong odour of this plant that it keeps away from the gardens, and never lays its eggs in the neighbourhood of the Hemp. If this plant is sown in every corner of the garden no one will ever see a caterpillar on the Cabbages. This practice, the efficacy of which is well proved, owes its origin to a chance discovery. A cultivator had remarked that there were never any caterpillars on Cabbages planted near a field of Hemp, while those growing elsewhere suffered severely from their ravages. Hence the idea of sowing Hemp seed here and there in the kitchen gardens, which has been followed by most excellent results. The odour of the Broom plant affects the Cabbage butterfly in a similar manner, and green branches of it placed among the Cabbages will save them from being attacked, but as the branches soon dry up and lose all their odour, it is necessary to replace them with fresh ones. Hemp, on the contrary, exhales its odour all through the summer, and the few plants of it sown in the garden not only do not interfere with the vegetables, but, in addition to protecting these from caterpillars, yield no trifling quantity of seeds and fibre."—W. M.

The White Elephant Potato.—Having seen this Potato referred to as of first-rate quality perhaps a word in qualification of this view, might be preventive of disappointment to some of your readers. This variety certainly comes of excellent quality in light land, but from heavy land it is decidedly inferior. Our garden is on the tertiary clay, and we have got rid of it because it boils so close. In my opinion, one cannot speak authoritatively of the quality of any variety of Potato unless he knows how it deports itself when grown in heavy land. There is the Red-skin Flour Ball. As its name denotes, when grown in light land it boils like a ball of flour, but from clayey land it boils more like a ball of soap. The Magnum Bonum, the Schoolmaster, and several other kinds, which are considered by many whose experience in Potato culture have only extended to light land as of first-class quality, are known to the cultivators of heavy soils as but second-class kinds. To return to the White Elephant. I have found that it is a heavy cropper in land that is fairly rich, but that in poor soils it is like the other varieties of the Rose section, but a very indifferent cropper relatively to some other varieties grown in the same soil.—L. C. K., *Newport, I. W.*

Pumpkin pie.—As suggested in the editorial note of Nov. 14th, this is certainly an old English phrase; but I much doubt if the American thing is known in England, except where it has arrived by importation of recipe. In my boyhood I used to hear the Northamptonshire cottagers talk of Pumpkin pie, and I always understood it to be some compound of sliced Pumpkin and Apple, or other flavouring, the result, no doubt, being (as was said by a writer in GARDENING a few years ago), an Apple pie spoiled. American Pumpkin pie is quite another institution. Here is the recipe for it: Take a ripe Pumpkin (whether as big as a bushel or no larger than a lamp-globe matters not); cut it in sections; take out the seeds with their strings and squalor, and pare rather thickly; then chop in pieces not more than half an inch either way; sprinkle them with water, and stew till tender; then mash, and continue stewing till as much as possible of their moisture is evaporated without burning. Pass through a sieve and make into a custard with cream or new milk, eggs, and spices; lay delicate pastry in shallow plates, spread the custard thinly thereover to form open tarts; bake and serve cold. Ripe Pumpkin is also excellent cut in large sections, and boiled, as a vegetable. So likewise is Squash. Both these require the same culture as Vegetable Marrows. The ripe fruit will keep for several months in a dry, cool cellar or loft. I have seeds of various American Gourds, and will send a few to anybody who likes to send me a stamped addressed envelope.—W. SIMMONS, 92, *Long Acre, W.C.*

—— In the note on Pumpkin pie, page 510, the Editor states that "the growth of Pumpkins for this purpose" is not common in England. I find that most of the cottagers in this neighbourhood grow a plant annually—which usually perfects but one fruit, and is cut before frost, and hung up to ripen in a warm room—for the purpose of making their Christmas pies. The fruit is chopped up, with raisins, spices, &c., and made up in a similar manner to mince-pies. The sort grown is oval, shorter, and much larger round than marrows; but I cannot ascertain the name. I had seeds sent me from Kansas, U.S., the fruit of which when ripe is exactly the colour and shape of an orange, and grew to be 10lbs. in weight. I made pies, both English and American fashion, which were much appreciated.—M. A. A., *Malvern.*

A book on vegetables.—The name of the book published by Mr. John Murray, to which we referred last week, is "The Vegetable Garden." It will contain a large number of very fine illustrations.

15180.—**Utilising cellar.**—"Sybil" may utilise her cellar most profitably for growing Mushrooms, as they succeed admirably in such a structure. Seakale and Rhubarb may also be forced fit for use, and Chicory and Dandelion blanched for salad, while seed of Potatoes for earliest crops out-of-doors may be advanced by spreading them out in single layers, and sprouting them ready for planting, while roots of various flowers may be safely stored in such a position.—JAMES GROOM, *Gosport.*

HOUSE & WINDOW GARDENING.

Seasonable floral decorations.—Sprays of the handsome winter-flowering climber, Jasminum nudiflorum, associate well with the dark bronzy foliage of Berberis Aquifolium. A few stray blooms of China Roses which continue to open are very useful at this end of the season. Chrysanthemums of all colours and sizes can still be had in abundance, and therefore they should be largely employed in floral arrangements. After they are cut they absorb a quantity of water, a circumstance to which attention should be paid. The vases should be emptied and refilled at least twice a week. When this is done, the stems should have a trifle cut off them, and then be rearranged. Some of the very finest flowers look well placed singly in specimen glasses, and the Pompones make good coat flowers with the addition of a leaf or two of scented or Oak-leaf Geranium. Occasional stray blooms from Tea-scented Roses in pots, Niphetos, or Madame Falcot in particular, make beautiful button-hole flowers, more attractive, if possible, at this season of the year than at any other. Of Bouvardias, two of the best and most durable for this work are Vreelandi (white) and Hogarth or elegans (scarlet). About three flowers of Calanthe vestita rosea carefully wired will make a handsome button-hole; so will one small spray of Euphorbia jacquiniæflora, with its own foliage, a small spike of white Roman Hyacinth being added thereto. Blossoms of Gardenia intermedia likewise make choice coat flowers. Its own foliage should now be used instead of Fern fronds. For the drawing-room an effective arrangement may be made just now with the following subjects. Let us suppose the stand to be filled has one tall cornucopia, with three smaller ones as branches near the base. For the topmost glass use spikes of Salvia splendens and white Roman Hyacinth, with a fringe of Maiden-hair Fern and two or three rather long growths of Myrsiphyllum asparagoides trailing below. In the lower glasses place bunches of Violets or choice bits of Orchids, adding a few Fern fronds. Among plants that may be advantageously used just now in the house the following will be found serviceable—viz.: Pandanus Veitchi, small well-coloured plants of Crotons and Dracænas for the dinner-table, and Ficus elastica, Curculigo recurvata, and Dracæna rubra for the drawing-room or entrance-hall. All these plants will stand well where gas is burned, if ordinary precautions are taken and they are changed every few days.

15257.—**Pelargoniums in rooms.**—This is one of the very best window plants, but it cannot be expected to flower during winter. The treatment the plants ought to receive is very much the same as that best adapted for greenhouse culture; they flower in the summer months, and when the flowering period is over, cut them down, so that they may make their growth before winter. Give them very little water during winter, and keep frost from the plants. They start to grow best in spring, when they have well rested during winter.—J. D. E.

—— I have been successful in growing Pelargoniums in my dressing-room window. There is no fire, but the room is not a cold one; it looks S.E. The best were from seed, sown in a large pot in April, transplanted, when in rough leaf, into small pots, and afterwards into larger. I used common garden earth, mixed with leaf-mould and sand, and watered usually with slightly soapy water. They will not bloom the first season, but will be fine, stout little plants by winter. They should be kept near the glass, turned every day to keep them straight, removed from the window to a dark part of the room in frost, and get very little water all the winter. In spring, cut down those that are badly shaped; they will flower a little later than the others. Old plants should be re-potted; seedlings don't need that, a little top dressing does for them. Give a fair supply of water in warm weather, but never let it remain in the saucer. If the leaves get dusty, take them out to a yard and drench them thoroughly overhead with water, which must not be very cold. As soon as they are out of flower, prune back to within about

two joints of the wood. I don't keep my plants more than two years. Young ones do better in a room.—Aster.

15299.—**Plants for gas-lighted rooms.**—The best two plants are Aspidistra lurida, and its variety, and Latania borbonica, a handsome Palm. Wash with a soft sponge and soap and lukewarm water when dusty. Pteris cretica, P. serrulata, and P. s. cristata are also good. Plunge the pots in lukewarm water over the brim at intervals, waving the fronds of the Ferns gently in the water, so as to wash off the dust.—H. W. Jacob, *Maidavale.*

DINNER TABLE DECORATION.

As nowadays almost everybody has a garden, there is no reason why the most humble dinner-table should not be adorned with a group of beautiful flowers, or be set off by the fine green of some bold foliage plant. At each season of the year some blooms are procurable as there is a greenhouse in most gardens; and even during the present dull time there are probably few of the readers of Gardening who could not make a creditable show if called upon. Where the elaborate decoration of the table is a thing of everyday occurrence, however, it is often difficult, even when flowers are plentiful, to secure the much-needed variety. When masses of rich colour are seen day after day, the small changes in tints and arrangement may escape attention, and a sensation of sameness be experienced. To obviate this, the plan suggested in our illustration may be followed. Here, an entire plant—the Silver-Veined Eranthemum (E. argyroncurum)—is placed in an epergne, and the effect is pleasing. D. E. T.

The Silver-veined Eranthemum in epergne.

Keeping Geraniums in winter.—I find that Geraniums are most easily managed and kept during winter if anyone has a spare corner, not too dark. I have several plants that are eight years old, and blooming grandly now, though I have no glass house. Of course they are in pots in the window, where I manage to grow Primulas, Cinerarias, Calceolarias, Arums, Marguerites, Pelargoniums, Acacias, Carnations, Nicotiana, &c., all raised from seeds or cuttings. I water them occasionally with soot water or some artificial manure. The Geraniums out-of-doors I lift in October, and plant thickly in boxes, give them one watering, and leave them under the shrubbery till sharp frost, when they are lifted indoors and covered with newspapers in frosty weather; if very severe I put a blanket over all. During the winter of 1880-81 I kept my plants in a room with no fire, where it froze a glass of water to a solid lump, and only very few of them died. I am careful not to uncover them till a day or two after the frost is gone.—M. A. A., *Malvern.*

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXVIII.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Salsify.

The Salsify, or, as it is sometimes called, Purple Goat's Beard, is a hardy English plant, and belongs to the same family as the Lettuce. It is not so well known nor so generally used as it deserves to be, though it is much more frequently used on the Continent than at our English tables. The root is long and thin, but with careful cultivation becomes fleshy and tender, with a white milky juice, which is said to possess stimulating properties. The vegetable may be prepared in various ways for the table, by boiling, stewing, or frying; one of the disadvantages of its use being the lengthy process necessary for its preparation, and the tedious and slow boiling which is requisite to remove a certain bitterness unpleasantly perceptible when the Salsify is not well boiled. Salsify should be cooked fresh, which condition is evidenced by the leaves being brittle, and the root firm and dark coloured. To prepare the root for cooking cut off each end, wash thoroughly, and with a sharp knife scrape off quickly the dark red outside skin, rinse in clear water, and throw each piece into a basin of fresh cold water, containing a little white wine vinegar, or the juice of a lemon. Let them remain covered for at least one hour, when they will have imparted a slight red tinge to the water. You cannot be too quick when preparing this vegetable, for if exposed to the air after it is scraped (out of water) the roots will turn quite black; and the same calamity will befall them after boiling if they are allowed to remain in the water too long. When Salsify is fried in batter, or mashed and mixed into cakes, and fried, it frequently goes under the name of the "Vegetable Oyster," or the "Oyster-Plant." When more Salsify is forthcoming than will be required for the winter's use, it is best to leave the roots in the ground until the spring, when they will send up firm green shoots which may be cooked and served as Asparagus, forming a cheap and excellent dish.

Boiled Salsify.—After the roots have been scraped and lain in acid and water for one hour, cut each in pieces about three inches long, and throw them into a saucepan of boiling salt and water, with a small pat of butter. Take care to have the saucepan large, and enough water for the pieces to move freely; let it boil very rapidly for three-quarters of an hour, adding more as it may be required. Then take one piece out, cut it through, and if it be quite tender pour away the water and drain the Salsifies while you make the sauce, which may be varied according to taste, but one slightly acid is best for toning down the bitterness and bringing out the flavour of the Salsifies. The following is recommended:—*Dutch Sauce:* Put four ounces of salt butter into a basin, with the yolks of three eggs, the juice of two Lemons or two dessert-spoonsful of white vinegar. Stand the basin in a saucepan of boiling water, and stir the contents of the basin constantly until the same thickens, when it is ready to pour over the Salsifies. Do not on any account allow this sauce to boil, or it will curdle, and so be spoiled.

Vegetable Oyster cakes.—Take half a pound of boiled Salsifies, half a pound of boiled Potatoes, and pass both through a wire sieve; add to them the yolk of one egg, the juice of one Lemon, half a teaspoonful of salt, a pinch of cayenne pepper and one ounce of butter, melted. Beat these well with a fork, until all are thoroughly mixed; then form into flat round cakes, about the size of a five shilling piece, and half-an-inch thick; roll each cake in a very little flour, to dry the surface; then dip into a well-beaten egg, and from the egg toss in bread crumbs, taking care that every part is well covered with crumbs. Fry in boiling fat, drain on porous paper, serve hot on a folded napkin, and garnish with fried Parsley.

Salsify, a la creme.—Take half a pound of cooked Salsify, and cut it into pieces about an inch long (the remnants of boiled Salsify may be used for this dish), season with cayenne pepper, salt, and Lemon-juice. Melt one ounce of butter in a saucepan, and add to it the same weight in flour; when these two are well mixed add one gill of milk and one gill of cream; stir until boiling, and then stir in the pieces of Salsify, and continue to stir over a gentle fire for ten minutes, when all should be quite hot. Turn on to a hot dish, keeping the Salsify rather high in the centre of the dish. Sprinkle one tablespoonful of finely-minced Parsley over the top, and garnish with *croûtons* of fried bread.

Fried Salsify.—Boil some pieces of Salsify, about four inches long; dry and drain them in a soft cloth; make a batter with five ounces of flour, one teaspoonful of salad oil, and one gill of beer, or milk; beat for five minutes, and then stir lightly in the whites of two eggs, previously beaten to a stiff froth. Cover each piece of Salsify separately with batter, and then drop into boiling fat; fry for three minutes; drain on porous paper; sprinkle with a little white pepper and salt. Serve on a hot folded napkin, with fried Parsley in the centre, and hand thinly-cut brown bread and butter and Lemon with the Salsify. Salsify, when fried thus, is frequently used as a garnish for boiled fish, &c.

Fruit as food.—It must always be borne in mind that all comparisons of the nutritive value of foods are only reliable in so far as the foods compared are equally digestible. Of invalids it may be said that what is food to one is poison to another, and with them each case has a law to itself. With the ordinarily healthy the results are more uniform, but, unfortunately, we know more of the relative digestibility of foods for cattle than of those for men. Experiment has, however, shown that nearly one-half of our ordinary daily food escapes complete digestion and assimilation. In the light of this fact the fruits occupy a very favourable position, the great majority of them showing a very high proportion of soluble matters. This also partly explains the value to invalids of such fruits as Grapes and Strawberries, both of which contain relatively but a small proportion of insoluble matters. The term "anti-scorbutic drinks" shows in what high estimation fruits have always been held as health-preserving agents, and now that more accurate analyses, and a

better understanding of the nature and values of foods, show them to be also highly nutritious, it is evident that they should be used as foods. Fruits, from a false idea of their nature, have too frequently been used as drinks and taken at improper times. They have, in consequence, received a bad name, and apprehensive mothers warn their children against fruit, visions of diarrhœa, cholera, &c., being held up as bogies to enforce obedience; but let them give extract of beef or any other of the supposed concentrated nutritious flesh foods, and watch the result. They will not have long to wait before the same stomach ailments begin to show themselves, and that in forms more dangerous than ever followed the use of ripe fruit at equally unseasonable hours. Fruit should be used as part of a meal. With children and healthy adults, just before breakfast and dinner are the best times. Invalids will find it safer, especially with juicy fruits, to take it about the middle of the meal, other dishes preceding and succeeding it. This refers chiefly to uncooked fruit. When cooked and served hot, fruit may be safely taken at any period of the meal. Invalids will also generally find the more acid fruits less digestible, and especially so when preceded in the same meal by Potatoes. Fruits, especially when not quite ripe, are generally rendered more digestible by cooking. Stewing is the general, and a good method, but roasting is preferable. This may be done in an oven, or before an open fire. Apples tightly wrapped in paper are easily and pleasantly roasted before the parlour fire. Done in this manner they will generally be found to require little or no sugar, a decided advantage with invalids. Unripe fruits should not be eaten, many of the acids found in the green fruits being poisonous.—*Dietetic Reformer.*

POULTRY.

15410.—**How to ascertain the age of fowls.**—It is exceedingly difficult to tell the age of hens with any certainty after they are eighteen months old. Soon after the pullets reach the age of a year they begin to assume an adult look, and during the following summer it is not easy for a stranger to distinguish them at a glance from hens at least a year their seniors. Rough legs are a tolerably sure sign of age, the legs of young birds being generally very smooth. Another clue, though not an infallible one, is the time of year at which a fowl moults. As a rule, birds moult later every year, so that if a hen changes her feathers early in the autumn it may be taken for granted that she was hatched the previous year. Again, fowls get lighter in colour as their years increase. And, lastly, in old birds there is an absence of that sprightliness common to youth, and, at the same time, they carry that appearance of age which ought not to deceive even a novice at poultry keeping. I have long held the opinion—based on practice—that in cases where the fowls receive that attention they deserve, whether from the owner or an ordinary attendant, there ought to be no difficulty whatever in distinguishing one bird from another, even though they may be all of one breed, and so carefully bred that they resemble each other like Peas in a pod. This is an easier task than most people imagine. The breeder should keep a careful record of his poultry, and at a certain date, say the first of January in every year, should take stock. He may either group the birds according to their ages, thus—12 pullets and two cockerels rising a year old, 12 hens and 2 cocks rising two years, and so on; or, which I think to be the best plan, describe each bird separately. The latter system should be always adopted when pure-bred birds are kept. The owner then knows what stock he has to work with, and as he reduces or adds to that stock he should make an entry to that effect in his stock book. This attention to matters of detail will make him take a greater interest in the birds themselves, and so it comes to pass that he is able to recognise each bird in his flock, for no two fowls are so exactly alike as to baffle identification. If "A Constant Reader" will in future act upon these suggestions he will not, I think, have cause to regret it, for the knowledge gained will enable him to sell off his old stock at any time, without being visited with those twinges of conscience that tell one he has sent to execution birds which would have done him good service in the future had he been more patient. I am aware that there are cases where the attention to which I have referred cannot, for various reasons, be given. Here again there is a remedy. Let all birds of the same year carry a small piece of twisted wire round one leg. The wire is sufficient, but a small tin plate may be attached to the wire if considered necessary, and would not be too heavy to annoy the bird. Some poultry-keepers mark their fowls in the web of the wing with a small red-hot wire. The pain is said to be but momentary, and the mark is indelible. But whatever plan be adopted, the birds of the same year must be all marked alike, and a register kept, or the labour will be all thrown away.—Doultng.

AQUARIA.

Cape Pondweed.—Late and early this is always a welcome visitor to our tanks and lakes, emitting a fragrance hardly equalled by our own native May. As long as the weather remains open, it throws up well above the water its ivory-white, curiously formed flowers, relieved by intensely black anthers. It also stands forcing well, and abundantly repays any extra care taken in securing for it a favoured spot in an intermediate house, a good-sized tub being all that is necessary. Out-of-doors the secret of success, we think, lies in deep planting—not less than a foot below the surface, and where the roots will be away from frost. The Aponogeton is also partial to good feeding, and will be all the better for a top-dressing of half-spent manure in spring, which never fails to give fresh vigour to the hard-worked tubers. It ripens seeds freely, but as these come to maturity under water they are gathered with difficulty. Young seedlings may, however, be seen by the hundred early in spring pushing their tiny light green, strap-shaped leaves through the water. We believe this plant has been successfully naturalised in some of the Highland lakes. So robust and thoroughly at home does it seem, that we lately had a difficulty in convincing a discoverer of the locality in which it grows that it was not a native of this country.—K.

BIRDS.

15411.—**Loss of song** *(Dickie).*—This is not at all unusual. Even the best singers among the canary tribe will sometimes lose their voice; sometimes after moulting, or when a bird has caught a cold. In either of these cases they are nearly sure to come right after a short time; but, should your bird be old or asthmatic, it has a bad chance. It is true, he may live for many years, and be a good bird to breed from, but as a singer his day has passed. Loss of song may, again, be attributable to people keeping birds in an apartment lit with gas. This is very injurious to birds, for the room during the evening is heated to a high temperature, and in the night is cool, sometimes to the freezing point. The only means that can be tried to recover the bird's voice is to feed him on a paste composed of bread soaked in milk, and Rape seed, well pounded and mixed with a little water and yolk of egg. Some bird fanciers recommend one drop of oil of almonds mixed with their bread and milk.—S.

1542.—**Mopish pigeons** *(Puzzled).*—We should advise you to keep the young birds isolated in a clean pen, well lime-whited, and give plenty of clean water. Feed only upon Tares and White Peas, and keep warm.—S.

The bullfinch.—I would like to endorse what "W. Miller" says in Gardening, respecting the destructive habits of these birds to buds. In this neighbourhood, in addition to Gooseberries, Currants, and Hawthorn, I may mention Apples, Plums, Pears, Cherries, and Lilacs, as buds of which they are very fond. Nor do they only visit us in spring as stated by "W. M.," but at the time I am writing (Nov. 24) they have played sad havoc with the best buds on a Napoleon Pear tree, and directly hard frosty weather sets in the Plums and Gooseberries will be attacked. In a cottage garden near here last year I saw a specimen of their mode of disbudding Cherry trees. One could have swept up a peck of buds, or rather the outer scales of them, in a few minutes. Plums and Damsons are completely spoiled by the buds, both fruit and growth, being removed. Now, as to a remedy. Netting large trees is out of the question. We have shot dozens last year, but still they come. Any of your readers who have tried anything which answered effectively would confer a great blessing by stating such in your columns. One word more. Cock bullfinches can be taught to whistle any tune if taken when young, but any amount of teaching will never make a hen bird do so, hence I must beg to disagree with "W. Miller" when he says the hen bird sings as well as the cock.—A. H., *Abergavenny.*

15309—**Chrysanthemums after blooming.**—Cut the old stems down at once. Now is the best time to take the cuttings, to produce the strongest and best plants. Each cutting should be planted in the centre of a small pot, and the pots placed on a shelf in a greenhouse, or in a cold frame. An easier way is to take the cuttings in February, and treat them in the same way, except that the pots should be plunged in a hotbed, where roots will soon form. Future potting consists in potting on the plants into larger pots as soon as they are well-rooted. They must be grown under glass in cold frames until the first week in May when they may be placed out-of-doors.—J. D. E.

15238.—**Destroying wireworms.**—The modes of destroying wireworms are numerous on paper, but in practice they are few. The best method of keeping them under is by high cultivation, frequently turning the ground over, so that the small birds may clear them off. Before turning Grass land in, it is a good plan to apply a heavy dressing of fresh gas-lime at least a month before ploughing. If the weather is showery this will destroy all grubs and plants as well; therefore, it is not applicable where there are growing crops. Frequent hoeing will keep the wireworm down. Amongst plants, where salt and other deterrents cannot be applied, Carrots stuck into the ground, or slices of Turnip or Potato served in like manner, and examined on alternate days, will effect a clearance if the traps are sufficiently numerous. Nitrate of soda or salt, applied at the rate of about 5 cwt. per acre, about twice, at intervals of a week, will clear the ground, but they will also damage the plants. They should be applied in showery weather. Gas liquor, diluted with about six times its bulk of water, and liberally applied to the land as soon as it is ploughed, will clear off all grubs within a reasonable distance of the surface. The application should be a least a month before getting in a crop. Where salt cannot be used, ground linseed cake, sown broadcast over the crops, is very useful, as the worms eat it and burst, but it is too expensive for general use. (From "Garden Pests and their Eradication.")—Celer et Audax.

Shy striking cuttings.—I can supplement Mr. J. Martin's interesting communication on the above (on page 529) by some experience of my own, the way to which was also pointed out to me by a lady. She told me that if, when putting down cuttings of the upright-growing Juniper common Oats were sown in a shallow trench, 5 inches or so wide, and the Oats, say about ¾ of an inch apart, and when this was filled in level, the Juniper sprigs planted along the centre, they would all grow, while those planted in the same place (which was an ordinary shady border of rather stiff soil) without the Oats would fail. Absurd as this may appear, on trial by myself I found it was absolutely the case. Of course, in ground better prepared the cuttings might have succeeded without the Oats, especially if covered; but in the circumstances stated they did not do so, while those with the Oats did. Another thing I have heard, but not tried, is that slitting the base of Rose cuttings facilitates their rooting. I presume something was inserted to keep the slit open. Perhaps a pebble or bit of crock might answer as well as the grain of Wheat read of by J. Martin. Both might be worth trying with subjects so difficult for amateurs to succeed with as Roses. The cutting, by the way, ought in the case of Roses to be inserted as soon as it is made. I should be glad to know how J. Martin found his twisting and bending-up plan to answer so far with Roses—Hybrid Perpetuals, for instance—as to cause the greater part of them to root.—A. Boyle, *Amroth.*

HEATING SMALL GREENHOUSES.

This ever-recurring, vexed question, seemingly never to be settled, is again to the fore, as usual, at this time of the year. In spite of all the newest improvements, all the grand inventions and patents that are constantly being brought out, the old difficulty crops up again, and the rival merits of hot water, hot air, gas, paraffin, flues, are as great a puzzle as ever to the thousands who wish to preserve their plants through the winter. Let us try to classify the different systems as far as possible, gauge their various merits and drawbacks, and simplify the question to some extent, at least. In the first place we must take it as an axiom that

There is nothing like hot water. This is a hard-and-fast rule to which there is no exception, though how the water had better be heated is another matter, and depends entirely upon circumstances. Water contained in pipes cannot (at least, in low-pressure system) be heated above a certain moderate point; consequently no scorching or over-heating of the air of the house, so fatal to plant life, can occur, no gases or fumes of any kind are produced, and the temperature of the pipes is subject to no sudden fluctuations, while the water contained in them, particularly if the quantity is considerable, and the gauge large, retains its heat for for some time after the heating principle is removed. Again, we may take it as undoubted that in the case of anything like large apparatus, with 50 feet or upwards of 3-inch or 4-inch piping, the water may be most effectually and economically heated by means of a coke or smokeless coal fire and a wrought or cast iron boiler of some description, from the tiny coil of three or four turns of three-quarter-inch iron barrel, as it is termed, to the gigantic saddle or tubular boiler, 12 feet to 15 feet long, and capable of heating several thousand feet of 4-inch piping. The great objection to hot-water apparatus is its expense, which is often quite beyond the moderate means of many amateurs. Still, there are ways of going to work besides the usual one of giving the job to a local ironmonger or fitter, whose bill for fitting comes to about the same as the iron-work costs. Many large London and provincial firms can and will supply pipes, boilers, and all fittings very much cheaper than small tradesmen, though fitting, if done by good workmen, always comes expensive; but anyone who is draughtsman enough to put down on paper, in the simplest possible style, just what he wants, ready to fit together himself, and will go to the engineer's himself and make a bit of a bargain for the lot, complete, with ready money in his hand, will generally find hot-water goods not so dear after all. Then it is very frequently possible to pick up odd lots of piping, &c., if not quite new, still practically as good, at sales for a merely nominal sum. I have often known capital 3-in. and 4-in. piping go for 6d. or 9d. a yard at a sale, and fittings at old iron price. In heating my first greenhouse I found a couple of lengths of old (but sound) 4-in. pipe among some old iron in a yard of which I had the run. Four blank spigot ends, ready drilled, cost 6d. each at an old iron shop. These I connected together with some inch gas-pipe bends. Then I converted an old cast-iron boiler (of the kind called a "fountain" in the country) by screwing down the lid, inserting a wrought bend at the top for a flow, and using the spout, which was at the bottom, for the return, set this in brickwork, with a "copper" fire door, in the cellar of the house, which was about 8 feet from one end of the greenhouse, connected the boiler and pipes with some five-eighths gas-barrel I had used for a garden fountain before, and ran the flue, formed of a few old bricks and slates, along and upwards to the end of the greenhouse, with the "flow" inside it to keep it warm, which it did most effectually. The thing worked capitally, and lasted for years, till I came away and took it out, and it cost altogether, if I remember right, about 8s. 6d., including half-a-crown to the man who lent me tools and gave a hand two or three times. The greenhouse was 14 feet by 6 feet wide, or thereabouts, and my arrangement heated it well at a very small cost. But to return—we may take it that, for a house requiring 50 feet or more of 4-inch piping (or even 3-inch), which will warm a cubic air space of about 1,000 feet to full greenhouse temperature, giving us a house of, say, 15 feet long, 10 feet wide, and 8 feet to ridge, some one of the many small

Boilers made to burn small coke will be most suitable. There are numbers to choose from. The make called "Star" or "Gem" boilers, consisting of an upright wrought iron cylinder to contain the fire, with a thin water-chamber all round, a feeding door or lid on the top, an upright flue at the back, and small fire and ash-pit doors at the bottom, by which the draught can be regulated to a nicety, is one of the very best forms. These boilers are extremely economical, and if of a good size—rather more than equal to the work it is required to do—they work very steadily; and the larger sizes, or those with an elongated cylindrical top, or hopper, to hold extra fuel, keep alight for many hours without attention. Then come the cylindrical slow combustion coil boilers, also upright. These work with wonderful steadiness, and seldom need attention more than two or three times in the twenty-four hours. The fire in these only extends about one-third up the cylinder at any time, or no farther than the coil, which is placed round the fire. As this burns away, the coke in the upper part drops down, so that there is just as much fire in the morning as when it was left at night, and the house is at the same temperature. The only drawbacks these boilers have is that they are not so economical as the last, and the cylinder, being made of thin iron, soon decays, unless placed in a shed or protected from the weather in some way. Both these boilers are so simple in construction and arrangement that they may be simply stood on a few bricks just outside the greenhouse, with no stoke-hole or brick setting, and connected directly on to the flow and return pipes. A very useful form of small boiler, of a more or less semicircular shape, is now made by several manufacturers, with a few slight variations in detail, to build into the side or end wall of a greenhouse, the body of the boiler being inside the house, and all the heat from it utilised, while the fire and ash-doors and the flue are placed outside. The "Loughboro'" is one of the best known of these, and, though I have never used one myself, I have always heard it well spoken of. Some of these boilers, however, have several faults of arrrangement, and might be greatly improved upon. Coil boilers, consisting simply of a few turns of steam tube, for building into brickwork, are praised by some, and they are certainly very inexpensive, and, if properly set, generally work well; but this is a most difficult thing to do, and not one man in a hundred, even of experienced setters, can do it as it should be done. Then small coils seldom keep alight long, while large ones are very extravagant, unless, as I have said, set just right. On the whole, I should strongly recommend, for anything up to about 200 feet of (4-inch) piping, one of the upright cylindrical slow combustion boilers, or, perhaps, for a very small apparatus, where the fire could not be seen to more than about twice daily, one of the small coils, in a slow combustion sheet iron casing. For anything to heat above the quantity of pipe mentioned, it would be better to have a small saddle, or a small, upright tubular, which are very powerful and economical. I have, however, to one of my houses an upright conical (wrought) boiler, on just the same principle as the "Gem," with an additional hopper on the top. This stands altogether over 6 feet high, and works 400 feet of 3-inch piping very well, and with wonderful economy. Its only fault is that the nozzle into the flue is too small, and I have had to build a rather high chimney to it to increase the draught. As it is, we can only use lumps of coke; if there is any dust with it the draught gets bad, owing to the height, and to the small size of the exit. Otherwise it does its work excellently. Up to 1,000 feet or 2,000 feet of 4-inch there is nothing to beat a good saddle, well set, with, if expense is no object, one or two flues running through the boiler, as well as the outer ones. The "L-ended" saddles are wonderfully powerful for their size, and heat quickly and well; but an upright tubular will drive anything almost—in fact, they are almost too powerful; and it is often necessary to put a large open "stand-pipe" to act as a safety-valve, on the flow near the boiler, or it may split the pipes if the fire gets strong suddenly. In large nurseries, where two or three large houses containing several thousand feet of piping have to be heated by one boiler, the horizontal tubular boilers are much used, and are remarkably powerful, but by no means to be recommended, except for heating on a large scale. But where not more heating-power than would be afforded by a smaller quantity of 4-in. piping than I have mentioned as the limit is required, as in the case of the numberless small lean-to houses 10 feet or 12 feet in length, by 6 feet or 8 feet wide, or less, for which a couple of 9-foot lengths of 3-in. or 4-in. piping would afford ample heat, a coke fire would need to be so small that where frequent attention could not be given it would become a source of too much trouble. In such a case I should strongly recommend the use of a small copper-boiler, with (where gas is available) an atmospheric gas-burner.

(To be continued.)

Cotoneaster affinis.—Nothing can be more beautiful in the way of berried shrubs at this season than a well-grown specimen of this Cotoneaster. We have a plant of it in the shrubbery 20 feet high and about as much through, every branch of which is heavily laden with bunches of glossy red berries. Every year it produces fruit in the most profuse manner. It is a plant that well deserves a place in every shrubbery, and it requires no more attention than the common Laurels, among which it is growing. It is also well adapted for planting along the margins of covers or game preserves, as it affords abundance of food for pheasants, which are very fond of its berries. I have started from eighteen to twenty pheasants at a time from under its branches. Our plant of it here is exposed to the east, and is partially shaded on the south and west by a very large Lucombe Oak and other trees. Probably the more fully it is exposed to the influence of the sun, the more freely does it produce its beautiful clusters of fruit.—John Garland, *Killerton, Exeter.*

Earthworms and gardens. — Belle Vue is celebrated for leaves and bits of stick, &c., &c., being carried into the ground several inches deep by some insects unknown. The sticks and leaves are as if first packed together, and then dragged ends downward into the earth. I have pulled up scores of them, and can only find a worm. It seems almost incredible that a worm can perform this extraordinary garden work, and I shall be much obliged for information on the subject, which puzzles my gardener and me. This work is not peculiar to any particular part of the garden, and it is even carried on between the paving-stones in the yard and on gravel walks. Belle Vue is near the sea on west coast of Ireland.—McMahon.

*** Strange as it may appear, the leaves and sticks which you noticed dragged into the ground were undoubtedly placed in the position by common earthworms. This they are in the habit of doing for more than one reason: some leaves they drag in for food, others for lining the upper part of their burrows, and some they merely use for closing the entrances to their holes. Why they should wish to plug up the mouth of their holes is uncertain; the most probable reasons are for warmth and protection against certain enemies. Sometimes, if they cannot get leaves or sticks they use stones—the entrance to the burrow of a worm on a gravel path may often be found covered with small stones, perhaps as many as 20 or 30 in number; a worm has been known to move a stone weighing 2 ounces; when the entrance is covered with castings stones or leaves are not used. Worms lay hold of thin objects, such as leaves, with their lips; they have no teeth, and the parts of their mouths are very soft. Other things they appear to move by converting their mouths into a kind of suction, and in this way taking hold of them. This practice of worms bringing leaves and other vegetable matter, taken in connection with their habit of throwing up subsoil, is a very important factor in the formation of the surface soil. If "McMahon" feels any further interest in this subject I should recommend him to read Mr. Darwin's book on "Vegetable Mould and Earthworms," a most instructive and readable little book, which if everyone would study would at once stop the wicked question which is continually being asked: "How can I kill the worms in my lawn?"—G. S. S.

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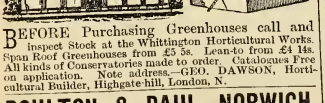

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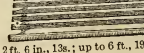

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Vol. VII. DECEMBER, 12, 1885. No. 353.

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THE KITCHEN GARDEN.

EXHIBITION VEGETABLES.—CELERY.

Having many times been called upon to act as censor at flower and vegetable shows, I have had many opportunities of seeing and judging the merits of Celery exhibited by amateurs. In many cases the exhibits of Celery have been so satisfactory that I cannot hope to teach old exhibitors anything; but there are the rising enthusiasts to whom I hope these remarks will be useful. I will first refer to the best sorts to grow, and I have no hesitation in saying the best for exhibiting up to the end of August is Turner's Incomparable Dwarf White. I have had many samples pass through my hands, but I have never seen well-grown examples of this beaten. I have handled and cut through to the heart many heavier, and, to all appearance, better samples, because the individual sticks have been longer, but where judged by the quantity and quality fit to send to table, Turner's White, when well-grown, has always gained the highest honours. The reason of this is not far to seek, as the habit is naturally dwarf, so dwarf that it never exceeds 1 foot in height, and being white, it requires less time to blanch it, and the quality is always good, being very crisp, with a nutty flavour. For exhibiting later in the season, Leicester Red or Major Clarke's Red should have the preference, as true stocks of either will not disappoint. The following remarks are intended for those who exhibit Celery up to the end of September.

The seed should be sown early in February in a temperature ranging from 55 degs. to 65 degs. As only a few plants will be required, a pot 8 inches in diameter will be better than a shallow seed-pan. In all the stages of growth a rich soil is necessary, and that in which the plants are raised should be sifted rather fine, and some sand put with it to increase the number of roots. While the seed is vegetating it will require the usual care that is given to young seedling plants, and as soon as the plants are seen above the soil plenty of light and a moderate amount of air are necessary; and as a matter of course the soil must be kept moist by gentle waterings as often as it gets dry. Although Celery in a young state likes both light and air, it will thrive much better when shaded than when the sun shines upon it. The natural home of Celery is by shady and running streams of water, and this should give the cultivator the key to its proper management, as it evidently shows that shade and moisture are essential to its well-being. This is borne out by the behaviour of Celery every year, for the main crops always grow more vigorously under the subdued light and copious autumn rains than under a strong summer sun, and we may conclude that the conditions which suit it best in the autumn are what we should aim at securing for it in early spring and summer. To return to the young plants: As soon as they are large enough to handle they should be taken out of the pot with as much care as possible to preserve the roots, and be pricked out into a box or pan of rich soil. The box should be 6 inches deep, and at the bottom of it there should be a layer of rotten manure, 2 inches thick, for the roots to feed upon. From the beginning to the end of April the temperature of an ordinary greenhouse will suit them best; after the end of April, a fortnight in a cold pit or frame will harden them off properly. The plants must be put out in the trenches not later than the middle of May. With regard to

The Trenches, the most successful exhibitor in this district has his trench running east and west, in order that the sun should not strike with all its force on the soil, as it has the chance of doing when the trench runs from north to south, and I have noticed also that the trench is very deep. I had the curiosity to measure one last summer, and I found that from the top of the ridge of soil, which was banked up beside the trench, down to the surface in which the plants were growing, it was 17 inches; below this there was a thick layer of well-rotted farmyard manure, with 3 inches of soil on the top of the manure. I could understand at once the reason for these deep trenches, as, being so much below the surface the roots were enjoying the cool, moist medium they so much needed, because at no hour in the day could the sun reach to the bottom of the trench with sufficient force to dry up the moisture, so that, comparatively speaking, the labour of watering was reduced to a minimum. It is best to give plants for this purpose plenty of room in the trenches; if 12 inches apart that is not too much. As soon as they are planted they should have a good soaking of water, and if bright weather sets in a few green branches laid across the trenches will afford the necessary shade. During very bright, sunny weather the shading should be continued through the summer, as it will be found that the plants thrive better with it than they do even if double the quantity of water is given to the roots. I have consulted several other exhibitors about the advisability of giving liquid stimulants to encourage growth, and they all agree that it is not desirable, as it makes the Celery soft and pithy. One appeared to agree with giving weak doses of soot water only in the early stages of growth. In

Earthing to blanch it, what is required should be given in two applications. Five weeks is long enough to blanch white Celery for exhibition if the work is thoroughly well done—that is to say, all the useless small leaves pulled off the plants, and each plant neatly tied up with a piece of matting before earthing commences. The roots should have a good soaking of water before any soil is put over them; the earth requires to be well broken up and beaten together very firmly so as to exclude the air. About a fortnight after the first earthing the last lot should be put on, and this must be pressed very firmly up to the plant, for if the air is allowed to get down into the heart of the plant the blanching will be very imperfect. In preparing the sticks for exhibition only the rough outside leaves should be removed—the remaining part should be nicely washed. When practicable Celery ought not to be dug up until the morning of the day of the show.

Later exhibitions.—To render the above remarks applicable to the production of Celery for later exhibitions, the cultivator has only to sow the seed a month later, and instead of pricking the young plants into boxes, and keeping them in the greenhouse, as soon as the plants are large enough they may be pricked out on a warm border, bearing in mind that the conditions necessary to secure vigorous growth are a rich soil and plenty of root moisture. It is not a matter of any consequence in what direction the trenches run for late crops, and it is not necessary that they should be so deep as for the earlier supplies. A good selection of red Celery is decidedly the best for late exhibitions.—J. C. C., *Somerset.*

Seakale from seed.—Although the custom of increasing Seakale by means of root cuttings has nearly superseded the older plan of raising it from seed, there can be little doubt that for permanent plantations healthy seedling plants are best. If large roots are used for cuttings they frequently bear traces of decay that in a short time spreads and eventually destroys the plant. I find, therefore, that in order to obtain good, healthy roots, seedlings have a great advantage over cuttings; they push out long, thong-like roots that, in the loose stony soil of the south coast, penetrate to a great depth, so that in periods of the greatest drought they find plenty of moisture. Some of the huge clumps of native Seakale growing on the shore about Southampton are of enormous size and probably of great age, and young seedlings that spring up around these old plants show extraordinary vigour even in the poorest soil. In fact, Seakale appears to grow best among loose shingly stones about which there is nothing but sand, and although this vegetable is looked on as a luxury, there can be no question that many a garden in which it is but sparingly grown could be made to yield an abundant supply. Seed sown in March in drills 1 foot apart will produce good plants fit for transplanting by the autumn, and this should be done as soon as the leaves die down. Many are deterred from growing this useful vegetable under the impression that a large outlay to produce it is needed; whereas it can be had in the highest state of excellence without any outlay beyond what any moderate garden can command.—J. G.

A lady's garden difficulties (see p. 524).—Tomatoes are by no means difficult to manage, particularly in such a favourable climate as Derbyshire. Sow your seeds in the month of March, in a shallow seed-pan; cover slightly with fine sifted soil, and place in your hot-bed. When the seedlings are strong enough to handle prick into small pots. Keep close for a few days, shading from strong sun; afterwards admit a little air. Keep growing on until ready for 6-inch pot, then re-pot. After they are established gradually harden off, and plant against your south walls in the month of June. Attend to tying up and removing surplus growth. A little manure water occasionally would be advantageous, and you might expect ripe fruit by the month of September or early in October. You could also have some in 10-inch or 12-inch pots, with turfy loam, a little leaf-mould, and a small portion of sand. When the pots are filled with roots give manure water occasionally. Of course many of them would shade your plants in greenhouse, but you would do well to leave these matters to your gardener's discretion. Mushrooms can be conveniently grown in a pig-stye or any outhouse; but without the aid of artificial heat it would not pay to

make up beds in winter. Say in the month of March or April, horse droppings could be collected together into a heap, spread out to dry a little, then put altogether, and beat firm, having the bed 18 inches in depth. Spawn the bed when the heat is on the decline—say 75 degs.; break the spawn in small pieces, about the size of pigeons' eggs, and insert about 2 inches into the bed, about 10 inches apart. Cover the bed over with soil to the depth of 2 inches. Cover over with hay or straw, and you may expect Mushrooms in about seven weeks.—W. G., *Linlithgowshire.*

REPLIES.

15097.—**Judging Vegetable Marrows.**—At most of our local shows round this district two sets of prizes are frequently offered—one for size and the other for condition. They are usually shown in pairs, and the two Marrows should be of the same size and the same variety, and, if shown for cooking, should be of medium size, and have a fresh-looking, youthful appearance. A pair of young Marrows 9 inches or 10 inches long, and of proportionate size, bearing the marks of quick growth, will beat almost anything larger. The Long White is a good variety. Muir's Hybrid, though small, is a handsome kind. When prizes are offered for size, all one has to do is to pile on the liquid manure, and plant a large-growing kind.—E. Hobday.

15101.—**Failure with ridge Cucumbers.**—When healthy Cucumber plants do not bear fruit there must be some cause for it. Perhaps more than one cause is operating. The variety may have some constitutional defect. The soil may contain too much manure. The plants may have been put out late, and the cold nights of the past season checked the growth. In the case of all this family more fruit will be obtained from a sound healthy turfy loam than if much manure be used, though mulching on the surface with manure in dry weather is beneficial.—E. Hobday.

15122.—**Growing vegetables for exhibition.**—Plant the Jersey Shallot in February or early in March, in rows 12 inches apart and 6 inches in the rows, pressing the base of the bulblet into the ground, and covering each with a handful of light, rich compost, of which wood ashes and manure form chief part. Sow Nantes Horn, and Intermediate Carrots in March, in rows, 14 inches apart, and thin out to 4 inches; water with liquid manure in dry weather. Plant International, Aderondack, Vicar of Laleham, Schoolmaster, and other suitable kinds of Potatoes in March. Plant in drills 3 feet apart and 12 inches apart in the rows, use none but good, handsome seed, and cover with a special compost of manure, old turf, wood ashes, &c. Stir the soil frequently and deeply between the rows as soon as the plants are up. Before earthing up, sprinkle a little phosphate between the drills. The best Broad Bean is Taylor's, and the best long pod is Aquidulcie. Plant in March and give the plants plenty of room.—E. Hobday.

15029.—**Parsnips forking.**—Forking or rooting out in Parsnips and Carrots is mainly due to the presence of fresh manure in the soil. It is also influenced to some extent by the character of the roots that the seeds were saved from. Hence the importance of selection in saving seeds. Sow on land that has been manured well for a previous crop. Trench up deeply now and leave exposed till the end of February, and then sow.—E. Hobday.

15110.—**Vegetable garden facing east.**—A garden with a stiffish soil facing east will not do for Potatoes, but Peas, Beans, Cabbages, and all other kinds of vegetables and salads may be grown with more or less success in it. The stiffish soil may perhaps be lightened a bit with burnt earth and wood-ashes, &c., and this also will raise the temperature. I should advise "Worsley" to plant anything he fancies except Potatoes.—E. Hobday.

15298.—**Peas and Beans for autumn planting.**—The sorts I referred to in my note (p. 518) were—Peas, Laxton's William I.; and Beans, Old Green Windsor. There are other suitable kinds, but I prefer those I have mentioned.—G.

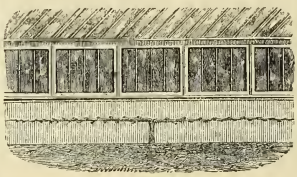
15108.—**Growing Celery.**—The Celery should be earthed up to blanch at once, if not already done; and have protecting material ready as severe frost will spoil it. Celery 14 inches high is poor stuff; but you cannot do anything to improve matters now. Look out for better information early in spring.—E. Hobday.

FRUIT.

THE CORDON SYSTEM OF FRUIT GROWING.

When the cordon system was first much talked of in this country a few years ago it was laughed at by many as a "fad" or curiosity, but now, oddly enough, people begin to find that the finest fruit shown is grown in this way. Therefore, we publish in Gardening an account of the system as given in the "Parks and Gardens of Paris." In Sussex and in various places extremely good results have been obtained from the cordon system, and, this being the planting season, the information given may prove useful to many readers.

A cordon means a tree confined to a single stem, that stem being furnished with spurs, or sometimes with little fruiting branches nailed in, as in the case of the Peach when trained to one stem. Some have supposed that it means any form of branch closely spurred in; but this is not the case. The term is wrongly applied to any form of tree but the small and simple-stemmed ones. The French have no more need of the word to express a tree trained on the spur system than we have, and they have trained trees on the spur system for ages without ever calling them by this name. Professor Du Breuil, in reply to a letter requesting him to define the exact use and meaning of the term, replied as follows: "The word *cordon* is derived in French from *corde*. I employed this expression to



Cordon tree on low wall of plant-house. In this way Calville Blanche, Reinette du Canada, Melon Apple, American Mother, and the finer and more tender Apples may be grown to perfection.

designate the forms of fruit trees composed of one branch, which only bears fruit-buds and branchlets." He states that struck with the long period it took to cover a wall by means of the larger forms of trees, he adopted those quick-rising simple-stemmed kinds to cover the walls rapidly, and give a quick return. Hence it is clear that if we call a fan-trained or a horizontal tree a "cordon" we not only misapply the term, but prevent the inventor's simple idea from being understood. However, the figures will give a correct idea of what the cordon system is.

A simple galvanised wire is attached to a strong oak post or rod of iron, so firmly fixed that the strain of the wire may not disturb it. The wire is usually supported at a distance of 1 foot from the ground, and tightened by a raidisseur—a handy little implement. A raidisseur will tighten several hundred feet of the wire, which need not be thicker than strong twine, and of the same sort as that recommended for walls and espaliers. The galvanised wire known as No. 14 is the most suitable for general use. At intervals, a support of wood or iron, with an eye in it, is placed under the wire on which the tree is trained; thus forming the simplest and best kind of cordon, and the one so extensively employed for making edgings around the squares in fruit gardens. By selecting good kinds, and training them in this way, abundance of the finest fruit may be grown without having any of the large trees, or those of any other form in the garden, to shade or occupy its surface. The bilateral cordon is useful for the same purposes as the simple one, and especially adapted to the bottoms of walls, bare spaces between the fruit trees, the fronts of pits, or any low bare wall with a warm exposure. As in many cases the lower parts of walls in gardens are quite bare, this form of cordon offers an opportunity for covering them with what will yield a certain and valuable return. It is by this method that the finest-coloured, largest, and best French Apples sold in Covent-garden and in the Paris fruit shops at such high prices are grown. In Covent-garden and in Regent-street they are sometimes marked two and three shillings each, and in St. Petersburg they are sold in winter for as much as six shillings each. Considering the great number of walled gardens there are in this country, there can be no doubt whatever that by merely covering, by means of this plan, the lower parts of walls now entirely useless, we could easily supply our markets with the very choice fruit referred to, and be independent of other countries in this respect.

Many will suppose that such very fine fruit must require a warmer country than ours for their production. But by treating them as the French do we may produce quite as good a result, and may, in addition, grow tender but fine Apples, like the Calville Blanche, that do little good when grown as standards. The climate in most parts of England will be found to suit them as well as that of France, if not better, because the sun in some districts of France is rather too strong for the perfect development of the flesh and flavour of the Apple. There is no part of this country in which the low cordon will not be found a useful addition to the garden—that is, wherever first-rate dessert fruit is wanted. So great is the demand in the markets for fruit of the highest quality that sometimes the little trees more than pay for themselves the first year after being planted. In any northern exposed and cold places, where choice Apples do not ripen well, it would be desirable to give the trees as warm and sunny a position as possible, while the form recommended for walls should be used extensively. In no ease should the system be tried except as a garden one—an improved method of orcharding being what is wanted for kitchen fruit and for the supply of the markets. When lines of well-grown cordons are completed the whole forms a mass of bold spurs. Some keep them very closely pinched in to the rod, but the best are allowed a rather free development of spurs, care being taken that these are produced regularly and thickly along the stem. The cordon system, as generally applied to the Apple, is simply bringing one good branch near the earth, where it receives more heat, where it causes no injurious shade, and where it may be protected with the greatest efficiency and the least amount of trouble. It is an extension of the best principles of pruning—a wise bending of the young tree to the conditions that best suit it in our northern climate. The fact that by its means we bring all the fruit and leaves to within ten inches or a foot of the ground, thereby exposing them to an increase of heat, which compensates to a great extent for a bad climate, will prove a strong argument in favour of the plan. The form is so definite and simple that anybody may attend to it, and direct the energies of the little trees to a useful end, with much less trouble than is requisite to form a presentable pyramid or bush. It does not, like other forms, shade anything; and beneath the very line of cordons a slight crop may be grown. They are less trouble to support than either pyramid or bush, always under the eye for thinning, stopping, and pruning: easy of protection, if that be desired; and very cheap in the first instance. A few words are necessary as to the best method of planting and managing the Apple trained and planted around the quarters or borders. In a garden in which much neatness is desirable, it would be better to plant them within whatever edging may be used for the walks; but in the rough kitchen or fruit garden they may be used as edgings. The reason for supporting the cordon at the height of a foot from the surface is to prevent the fruit getting soiled by earthy splashings. In gardens where it would not be suitable as an edging, the best way would be to plant it 10 inches within the box or whatever kind of edging was employed.

In planting, the union of stock and scion must be kept just above the surface of the ground, to prevent the Apple grafted on the Paradise from throwing out its own roots and consequently becoming useless for such a mode of training. The trees should never be fixed down to wire or wall immediately after being planted, but allowed to remain erect during their first winter, and until the sap is moving in them, when they may be tied down. Some allow them to grow erect for a whole year before tying them down. They should in all cases be allowed to settle well into the ground before being

tied to anything. For general plantings the best kind of plants to get are those known as "maidens"—*i.e.*, erect growing trees about a year from the graft. These can be readily trained down to the wire, or to the wall, in spring. In training the young tree, the point, with its growing shoot of the current year, should always be allowed to grow, so that the sap will flow equably through the plant, drawn on by the rising shoot at its end. To allow gross shoots to rise at any other parts of the tree is to spoil all prospect of success. If the tree does not break regularly into buds, it must be forced to do so by making incisions before dormant eyes.

A chief point is not to pinch too closely or too soon. The first stopping of the year is the most important one, and the first shoots should not be pinched in too young, but when the wood is a little firm, so that the lower eyes at the bases of the leaves may not break soon after the operation. Stopping should be done at six leaves, as the object is not to have a mere stick for the cordon, but a dense, bushy array of fruit-spurs quite a foot or more in diameter when the leaves are on in summer. All the after-pinching of the year may be shorter, and, as the object is to regularly furnish the line, the observant trainer will vary his tactics to secure that end. In one place he will have to repress vigour, in another to encourage it. About three general stoppings during the summer will suffice, but at all times when a strong "water shoot" shows itself well above the mass of fruitful ones it should be pinched in, though not too closely. In some of our nurseries may be seen "cordons" with every shoot allowed to rise up like a Willow wand—utterly neglected, and on the wrong stock. As the Paradise keeps its roots quite near the surface of the ground, spreading an inch or two of half-decomposed manure over the ground—or, in gardening language, "mulching"—could not fail to be beneficial. This is the more necessary on warmer, dry soils, in which the Paradise stock is least vigorous. The cordons are usually planted too close together in France. When the trees overtake each other it is common to graft them one to another—a very simple operation. If when all are united they should grow too strong in rich ground, the stem of every second plant may be cut off just beneath the wire, and the trees will be nourished by the others. When the line is well trained and established the wire may be taken away altogether. If the plantation be made on a slope, all the trees should be planted so as to grow up the incline. Finally, in winter, the trees will be the better for being looked over, with a view to a little pruning here and there, taking care to thin and regulate the spurs when the plantation is thoroughly established, to cut in useless stumps, and to firmly tie the shoots along the wire, but not too tightly, so as to prevent their free expansion. As the system is chiefly valuable for the production of fine dessert fruit, only

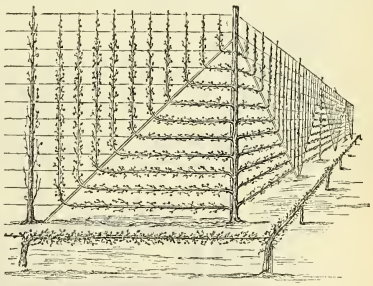
The best kinds should be selected; but, as some Apples are of high value, both for kitchen and dessert, some of the finer kitchen Apples are included in the following list of such as will be found very suitable: Reinette du Canada, Reinette du Canada Grise, Reinette Grise, Reinette de Caux, Reinette d'Espagne, Reinette très-tardive, Belle Dubois, Pomme d'Api, Mela Carla, Calville St. Sauveur, Coe's Golden Drop, Calville Blanche, Northern Spy, Melon-Apple, Cox's Orange Pippin, Duke of Devonshire, Kerry Pippin, Lodgemore Nonpareil, White Nonpareil, American Mother, Early Harvest, Lord Burleigh, Beauty of Kent, Bedfordshire Foundling, Lord Suffield, Cox's Pomona, Hawthornden, Tower of Glamis, Winter Hawthornden, Betty Geeson, Small's Admirable, and Braddick's Nonpareil. Some of the best of the above are valuable keeping Apples. The Reinette Grise may be seen in fine condition in the markets at Rouen in June, and Reinette très-tardive is good in July. Those who wish to plant good early Apples might try Borovitsky, and a few of the best early kinds; but it is better to devote most of the horizontal cordons to the growth of the fine and later fruits. Of the above selection the Calville Blanche, the Reinette du Canada, and Mela Carla must be grown on a warm wall; the Mother Melon, and several of the later and finer Apples will also be grateful for the same protection. Of the kinds of French Apples that may be had grafted on the Paradise abundantly in nurseries all over France the following are amongst the best: Calville Blanche, Reinette du Canada, R. d'Angleterre, R. Grise, R. de Caux, R. très-tardive, R. de Bretagne, R. d'Espagne, Belle du Bois, Belle Joséphine, Calville St. Sauveur.

As to the culture of the Apple on the Paradise in its earliest stage in nurseries, M. Jean Durand, of Bourg-la-Reine, near Paris, writes as follows:—"If the Apple-tree is to be grown in the form of the horizontal cordon, it must be grafted on the variety known to horticulturists as the Paradise. This variety, which loves a fresh, damp, clayey soil, cannot be grown from seed, but must be propagated by means of layers or cuttings, which are obtained in the following manner: Having chosen soil of the proper description, it must be well dug and manured. Trenches, 6 inches deep and a yard apart, are then opened, and the stocks, which have been prepared previously, planted in them. They should be pruned down to 12 inches or 14 inches in height, and placed in trenches at a distance of 4 inches apart, and in such a way that about 6 inches of the top appears above the ground. The trenches are then filled in and the ground levelled. In the following spring, as soon as there is no longer any danger from frost, the stocks are cut down level with the ground. The object of this operation is to develop a number of shoots; these are earthed up about June or July by covering them with a small quantity of earth taken from the trench on each side of the line of plants, so as to cover their bases to the depth of 4 inches or so. In the following November these buds will have taken root; the plants from which they take their origin will give every year a certain number of young plants, and will be alluded to in future as old stools. Every year during the month of November the young plants should be stripped from these old stools. It is necessary above all during the first year to use a strong pair of pruning shears, called a sécateur, for taking them off, in order not to injure the stools; later on they may be simply broken off. Immediately after this operation the stools should be covered over with earth. They will afford young plants for a long time—from five to ten years, according to the care taken of them—and the suckers thus obtained will serve for grafting in the nursery. The ground which is to receive them should be well dug, and the trees then planted in lines 2 feet apart, or a little more. They should be placed 16 inches or 20 inches apart, and 3 inches or 4 inches deep. The operation of planting in beds requires great care. The young plants should be well trimmed both at top and bottom, so as to give the branches a uniform length of 16 inches, and the ground hoed frequently until the month of August, with the double object of destroying weeds and keeping the ground open. At this period the young plants are ready for budding, each subject receiving a bud at about 4 inches above the surface of the ground. Immediately afterwards, particularly in dry seasons, it will be well to give the ground a good hoeing to help to keep it moist. During the winter the plant should be cut down to within 3 inches above the bud, and all the remaining shoots should be stripped off. The following spring a number of small shoots will make their appearance all over the pruned plant. When they have reached a length of an inch or an inch and a-half, they should be pinched down to favour the growth of the graft, which will have grown as large as the other buds. The bud which has not been pinched will naturally soon exceed in size those which have been. From this time it will attain sufficient strength to absorb the sap, and it will be necessary to remove all the other shoots. This little pruning operation requires considerable caution, and is performed by the aid of the knife; care should be taken not to

Simple and double Cordon trees, training as edgings.

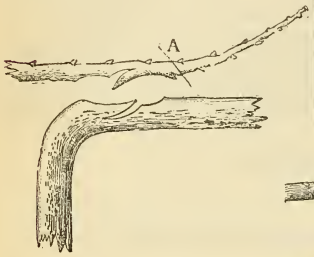
Young Cordon tree of the Lady Apple, trained as an edging.

Reinette du Canada, trained as a Cordon.

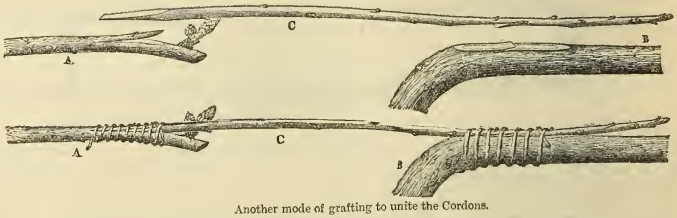


Edging of simple Cordons, three years old, in fruit garden at Brunoy.

confound the graft with the other shoots on the plant. The stem of the stock above the bud being thus deprived of its shoots, serves as a stake to which to tie the young growing scion, which tied loosely is preserved from accident during its growth. At the end of the year, this natural stake, having served its purpose, is cut away, and the graft, having attained its proper size, is ready for transplanting as a maiden plant, and may then be trained into any form the grower may think desirable. The Apple thus grafted on the Paradise is, as is well known, a great success throughout all parts of France, and the adjoining countries. In proportion to the space it occupies, it furnishes a great quantity of the finest fruit. It is not rare to count 70 or 80 Apples upon a little tree whose arms together are not more than 7 feet long. This form is due to M. J. L. Jamin, of Bourg-la-Reine. This nurseryman used to sell dwarf fruit trees of all kinds, in pots in the Paris market, and amongst them the now well-known cordon. The form was much appreciated and promptly spread abroad, and having some success at a horticultural exhibition held at the Louvre, it was definitely adopted in kitchen and fruit gardens under the name of horizontal cordon. To establish the growth of cordons in the nursery a line of galvanised iron wire is stretched horizontally at about 14 inches above the ground, the ends being firmly fixed. The young trees are then cut down nearly to the level of the wire, and when they start in spring two opposite buds are chosen for the formation of the two arms, and allowed to grow during the summer, the buds on the stem below these being pinched within an inch or so of their base.



Grafting by approach to unite the points of Horizontal Cordons The apex of each Cordon is cut at A when firmly united to its neighbour.



Another mode of grafting to unite the Cordons.

During the summer the two shoots ought to form a strong cordon fit for transplanting in the following winter. The simple cordon with one branch is formed in the same manner, except that one bud only is allowed to grow."

Since the discussion which took place in the journals concerning the merits of this mode of Apple-growing I have seen a great number of cordons on the Paradise in many parts of France and in Switzerland; seeking in various districts to ascertain its merits and defects, I am more than ever satisfied of its value. Some have considered that a late frosty season would be fatal to low cordons, and that our climate is too conducive to the production of gross wood, while on the Continent it becomes ripe and stubby, and the trees may be preserved within bounds. If such were the fact, this objectionable tendency should be more developed in the warm parts of north-western France, near the sea-coast; but this is not the case. Grafted on the true French Paradise stock, the tree is always good, and keeps perfectly within bounds in parts of France and Belgium as cold and moist as southern England. In a note from Professor Morren, of Liège, I find:—"The culture of the Apple as a cordon on the Paradise stock has been extensively tried in this country, and is rapidly extending, particularly near Liège, Verviers, Huy, Namur, and in all the Flemish districts. Hedges of horizontal cordon Apples and Pears are now formed along the sides of the railway between Brussels and Louvain. These plantations were made two years ago, and have proved very successful. The fruits attain a considerable size, and the experiment promises so well that preparations are being made to greatly extend it." It is improbable that there should be so much difference in the behaviour of trees separated by a few miles of sea! In many continental districts, where frosts are quite as severe as here, the cordons escape without serious injury; and, besides, no form of tree is so easily protected in spring, it being so very low.

Simple mode of protecting Cordon Apple trees in M. Jamin's garden at Bourg-la-Reine.

In conclusion, it may be urged in favour of these cordon Apple trees:—1. The fruit is larger and finer than that borne on any large form of tree. 2. The tree comes into bearing much earlier, in fact, often bears freely the second summer after being grafted. 3. The growth is dwarfer and much more compact than that of the Apple or any other stock, and the tree may, without root-pruning, be kept in a more compact and fruitful form than Apples on the Crab may be with that troublesome attention. 4. The fruit being held at an average of one foot from the ground is, in consequence, benefited by a greater degree of heat; and from the compactness of the form the leaves and wood enjoy a greater amount of sun than is the case with high trees. It need hardly be said that these are great advantages. 5. The tree, being confined to a single stem, and stubby fruit spurs held near the surface of the ground, there is, in consequence, no injury to the fruit from wind or the swaying about of branches; besides, the fruit, if it does fall, is not injured. 6. The trees may be more readily protected than any other form whatever, should protection be considered necessary. 7. They may be more easily attended to in pinching, pruning, and thinning the fruit, and the desired shape attained more readily than any other form of trained tree. 8. Being little taller than a neglected Box edging they shade no garden crop. 9. They take up but small space, and the positions best suited to them are those that hitherto have been made no use of. 10. The Apple on the French Paradise grows to its highest perfection on stiff loamy and wet and clayey soils, those which are often most inimical to fruit culture in these islands. 11. By planting it against low walls we may grow the fine winter Apples now supplied to the capitals of Europe from northern France. It is not merely in the way it is at present practised in France or elsewhere that the cordon system is interesting and instructive to all taking an interest in the culture of hardy fruits. It offers a means of training trees so that we may readily give them that protection in spring, the want of which is, in nine cases out of ten, the cause of our failures in fruit crops. Hitherto the best course to pursue with the borders along our fruit-walls has always been a disputed point; some contending that they ought not to be cropped at all; others that salads and small vegetables might be grown upon them.

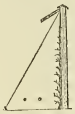
Let us crop the borders with trees trained on the horizontal-cordon principle, as suggested in the accompanying figures, and in this way dispose of the much-debated question as to what is best to do with the fruit borders. By so doing we should collect such a valuable stock of fruit trees immediately in front of each wall as would render it convenient and desirable to protect efficiently both walls and borders, and by the same means. The low cordons will no more shade the wall than a crop of small salading, and will prevent all need for disturbing the border. Indeed, I can conceive no greater improvement in our fruit culture than devoting to fruit trees those excellent sunny borders that usually lie at the foot of our fruit walls. By this plan we should, it is true, sacrifice some of the more suitable spots for early vegetables and salads; but we should gain very much more, and the change would be in every way conducive to the beauty and utility of our gardens. When the wall-trees are being attended to, the cordons cannot be forgotten, and the whole will be under the eye at a glance. The Pear may also be grown thus in the highest perfection, and there can be no doubt that the fruit which may be grown in this way on the border would, if put to the market test, more than pay for the expense of protecting cordons and wall-trees at the same time. Other fruits will probably be found to submit to this mode of culture as well as these, and all kinds should be tried by those with opportunities for making experiments in fruit culture, those kinds of a fertile and compact habit being selected for trial. Should we in time find varieties of our other hardy fruits conform as readily to the cordon system as the Apple on the Paradise, this way

The Horizontal Cordon trained as an edging. Originally the trees represented here were planted too thickly, and after all had been securely grafted together every second stem was severed. B shows the position of the Raidisseur.

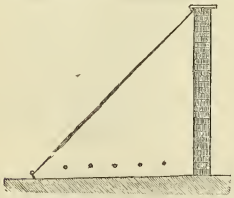
of covering borders as well as walls with fruit-trees will prove a gain in the culture of our choice hardy fruits, the importance of which it would be difficult to over-estimate. Care being taken to protect the borders and walls efficiently from the time of flowering till the fruit is beyond all danger, they may be afterwards exposed to the refreshing summer rains, and then there will be an end to all but mere routine work till the protecting season comes again. Every hundred feet in length of such well-protected wall and border would be equivalent to a well-managed orchard-house. Although the cordon is so simply supported, it is desirable to know the best means of doing so in a permanent and ready way. The simplest way of all is to drive a tough wooden post in the ground to the required height, and attach the wire to it. The post may be driven in obliquely, or upright; or an iron support with a stay let into a block of rough stone would be as satisfactory as any other, because permanent. A variety of good supports are now offered by houses who erect espalier trellises.

The Pear as a cordon.—When at Holme Lacy in Herefordshire, a few years ago, I was pleasantly surprised to see a wall covered with Pear-trees, trained as single cordons, and in the finest bearing condition. I learnt from Sir H. Scudamore Stanhope that he had taken some interest in their mode of culture when in France, and made several experiments, this plantation of Winter Pears being one of them. He has kindly furnished me with the following account of the trees:—

"One-half of my cordon Pear wall, planted in December, 1861, bore fruit in 1864; another half, planted in March, 1865, bore fruit in 1868. From the time these trees began fruit-bearing up to the present date, they have been, and are now, perfectly healthy, and have yielded large crops every year, with the exception of two or three trees, perhaps, which may miss bearing each year; as to the superiority of the fruit, in size, appearance, and flavour, over fruit grown in many gardens on pyramids and espaliers, there can be no question. In hot summers it was found necessary to mulch, and even to water them, owing to the Quince stock, on which all are grafted, having more fibres and rooting nearer the surface than the Pear stock. They are trained on a south wall, which, however, is somewhat shaded by large Oaks, and, although this circumstance renders the wall unfavourable for Peaches, I do not consider it has been against these Quince-grafted Pears, as, but for the shade, they would probably have suffered more



Narrow border in front of fruit wall with two lines of horizontal Cordons, protected in spring by wide temporary copings and rough canvas.



Peach wall and border, with five lines of Cordons, the whole protected in spring.

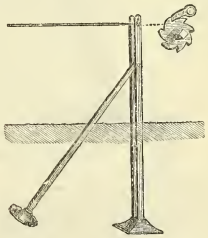
in hot summers than they have done. I do not, therefore, think a south wall by any means a necessity for the successful culture of cordon Pears in the south and west of England. As to the pruning, my late gardener writes as follows:—'My experience in pinching has never been what I was led to expect; never but in one solitary instance have I found the fruit-bud to be the result of that practice, and even that one being so far from home, so to speak, would have to be cut off in order to keep the spur short. But that was not all, for I have found that what was once a decided fruit-bud would lengthen and grow into wood before the growing season closed.' I myself certainly think that the pinching cannot be carried out in our climate to the same extent as in France. [Close pinching is a bad English practice—not a French one. In France I never saw fruit trees pinched in very close.—Author "Parks and Gardens of Paris."] The result with us was to produce too many wood shoots. Whether this is the result of a richer soil and a moister climate or not I cannot say. The merit of the successful results of the cordon wall is due to my late gardener, Mr. Wells, now at Osborne Park Nurseries, Potter's Bar. The following are the weights of

Simple wooden support for Cordon, the wire attached to a stone in the ground.

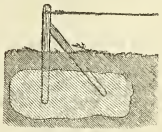
some cordon-grown Pears produced by trees which have always been allowed to bear freely, viz.:—Glou Morceau, 13½ oz.; Beurré Bosc, 12½ oz.; Beurré Superfin, 14 oz.; Van Mons, 15 oz.; Easter Beurré, 16 oz.; Beurré Diel, 15 oz.; Zéphirin Grégoire, 11½ oz.; Triomphe de Jodoigne, 14 oz.; Joséphine de Malines, 11 oz.; Doyenné d'Alençon, 13¾ oz.; Duchesse d'Hiver, 18½ oz.; Bergamotte d'Esperen, 11½ oz.; Conseiller de la Cour, 14 oz.; and fruit from Doyenné Bossouch, Beurré Hardy, Madame Millet, William's Bon Chrétien, Figue d'Alençon, and Beurré Sterckmans, have weighed equal to these; as have also Duchesse d'Angoulême and many others."

For the fruiting of seedlings and testing of new kinds, the cordon for Pears is also a good plan, and if the object be to cover a wall in a short time and get a quick return, it is certainly the best way. In this case it enables us to attain our ends in the shortest space of time, and with the least possible waste of space. Some of the leading teachers of fruit culture in France adopt the oblique cordon as the short way to a quick return, and plant extensively the finest varieties trained this way; but others ridicule the planting of trees as closely as one would Coleworts. For the finest kind of winter Pears and for culture on high walls it is well worth adopting, provided the trees can be got at a low price or grafted on the spot. None but the very best kinds should be planted; and to begin with it would be desirable to plant a goodly number of one kind known to succeed well in the neighbourhood rather than a variety of sorts. The kinds known to do best in this contracted form are Beurré Superfin, Flemish Beauty, Beurré Giffard, *Louise Bonne of Jersey, *Marie Louise, Beurré Clairgeau, Duchesse d'Angoulême, *Easter Beurré, and Beurré d'Anjou. Of these the beginner would do well to take those marked with an asterisk. As regards the training of the Pear in this way, it is too simple to require description here. The tree is merely treated as we train a single branch of a fan-shaped tree, and requires none of the careful pruning necessary to form the more elaborate shapes. Healthy young plants, a year from the graft, are chosen and planted at from 16 inches to 18 inches apart. Sometimes the Pear is trained as a vertical, single, or double cordon. Of the two forms the single is preferable, and it is chiefly suited for very high walls, the gable ends of outhouses, and the like. It need scarcely be added that the trees in this case should be on the Quince stock. The Pear may also be trained as a horizontal cordon on low walls, the fronts of glasshouses, and as an edging like the Apple. But generally the Pear pushes too vigorously to be trained in this way, while the pendulous habit of the fruit renders it more liable to be splashed. I once saw Uvedale's St. Germain grown in this way at Chartres, the great fruit sitting on the ground, and quite encrusted with earthy splashings. The disposition to form a neat compact line of spurs so abundantly manifested by the Apple when well trained on the Paradise is more rarely shown by the Pear. Nevertheless, a few varieties, such as Louise Bonne and Beurré Giffard, might be tried; allowing them to attain a greater length of stem than the cordon Apples, and placing them a little higher from the ground.

The Peach as a cordon.—With the Peach as an oblique cordon, a good result is attained, the wall being covered very rapidly; and the neat laying-in of a great number of shoots on each side of the simple stem does away with the crowded appearance which a plantation of cordon Pears assumes when old and the stems thickened. But, instead of the wood being closely pinched in, as people might suppose in England from reading of the method of one M. Grin, it is nailed in at each side of the branch—more so, indeed, than if that branch were part and parcel of one of the older and larger forms of tree. I once saw an excellent result afforded by this system against the high back wall of a vinery in the establishment of M. Rose-Charmeux, at Thomery. By its means he perfectly covered his wall in a short time, and gathered a great variety of fruit from a small space. Out-of-doors it not unfrequently affords equally good results. It is well calculated for high walls, and may be adopted for low ones by training the trees at a more acute angle with the earth. Considering the time usually required to furnish walls in the ordinary way, there can be little doubt that this mode of training the Peach is a real improvement, where a considerable number of varieties are required from a small space. Apart from that, however, the facility and simplicity with which walls may be covered by this method, and the readiness with which a diseased or otherwise objectionable tree may be replaced, will doubtless prove a sufficient recommendation for cultivators who are not restricted as to space. It should, however, be borne in mind that on very good soils where the Peach grows very vigorously, it will not suit so well as on poor ones where it grows slowly, and that medium-sized forms may be adopted for the Peach as well as for the Pear. The following is a description of the mode of forming it after M. Lepère:—"There are two modes of growing this form. One, which was recommended by a professor of arboriculture, and frequently put in practice by many amateurs, but which I consider faulty, consists in planting the trees just as they come from the nursery, and training them at once in the oblique form. The inconvenience arising from



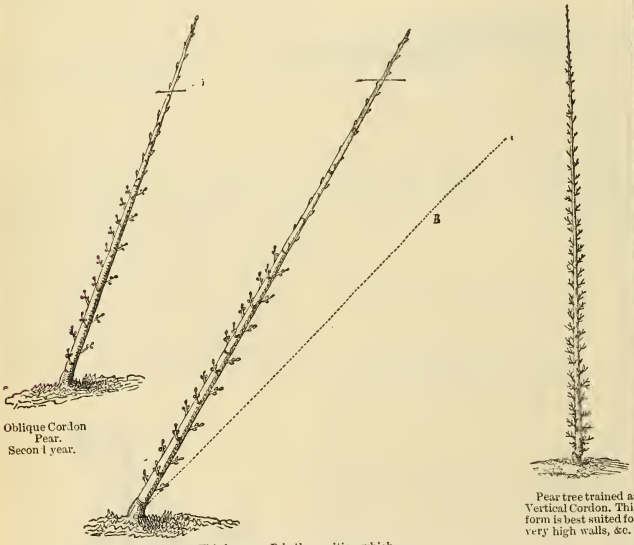
Iron support, with rachet wheel at the top



Iron support let into stone.

this method consists in being obliged to place the tree close to the wall, which crowds the roots too much, preventing them from affording sufficient nourishment to the tree. Besides this, on account of the inclination of the tree, part of the roots are directed towards the surface of the earth or placed in an unnatural position, thereby preventing their full development. By-and-by, the trees that have been planted thus are cut to half the length that they were when they came from the nursery, having a number of weak, useless branches on the lower

part, a condition which, as everyone knows, is always unfavourable. The second method differs from the first, inasmuch as the plant from the nursery is cut down instead of being planted in an oblique direction. To obtain the oblique form without planting the tree in a crooked position, the stem is cut at 8 inches from the graft, and placed in the ground so that the base of the stem is 4 inches from the wall, with its extremity just touching it. The roots are well spread over the hole and drawn as much as possible towards the border in which the tree is planted. Care is taken to leave a well-placed bud on the side where the oblique branch is to be formed, and its development must be encouraged by ruthlessly pinching off all useless shoots. Under these conditions, the tree grows as long during the first year as the one planted obliquely and allowed to be of its full length from the first. This method is also to be preferred because the shoot thus obtained the first year can be left intact and allowed to attain a development equal to that of the tree planted according to the first method. Besides this, the shoot is calculated to grow faster in consequence of its bark being less hardened, and each year



Oblique Cordon Pear. Second year.

Oblique Cordon Pear. Third year. B is the position which the tree will eventually occupy.

Pear tree trained as Vertical Cordon. This form is best suited for very high walls, &c.

the terminal point may be allowed to grow without cutting back. Sometimes the terminal bud does not develop, owing to its having been killed by cold. In such a case a stronger eye is chosen lower down to make the desired lengthening. As in the case of other forms of training, the branches of the Peach cordons are allowed to grow in a more erect position at first than they are finally intended to occupy. I should advise this cordon form to be adopted in the case of gardens whose walls are on the incline, as often occurs, and for soil of inferior quality where the Peach-tree grows slowly, because under such circumstances it never attains its full development. The plan does not answer where the ground is flat, and the conditions are such as favour the rapid growth of the tree."

Some fruit-growers think that there is no occasion for resorting to this simple cordon in the case of the Peach, any more than in the case of the Pear. M. F. Jamin, of Bourg-la-Reine, plants in his fruit-garden a form of tree with three vertical branches, and if he wants a great variety of fruit from a small space, works a different variety on each branch. The figure on page 571 shows, on a small scale, the appearance of one of his young specimens trained on this principle. The U and double U forms are also extensively adopted by many growers in preference to the oblique cordon.

REPLIES.

15205.—**Nectarines.**—"R. S." is quite right, manure is a bad thing for young trees of stone fruit—*i.e.*, taking the popular view as to what constitutes manure; but turfy loam, containing a good deal of fibre, also contains much nourishment, and is at the same time gently stimulative, and, if it be taken from the surface of a limestone soil, is the best possible pabulum for fruit trees, and no other manure is needed. The following are excellent kinds:—Lord Napier, Rivers' Royal Orange, Elruge, Violette Hâtive, Pine-apple, and Victoria.—E. Hobday.

15123.—**Fruit-growing for profit.**—The profits of the fruit grower depend a good deal upon the market. Our railway companies favour the foreigner at the expense of the home grower, and, therefore, before planting anything largely it is as well to ascertain what kind of a market there is in your own neighbourhood, taking into consideration also what the land is best adapted for. Gooseberries, as a rule, pay well, but there is a good deal of fluctuation in the price, and no reliable estimate can be formed. In a sheltered, early situation, half an acre or more of Industry and Whitesmith Gooseberries for gathering green will pay well, especially if they are in the market before the glut comes. But it is always best when we are located where there is a good home demand. The Red Warrington is a very useful Gooseberry for jam making, and bears well. Raspberries and Black Currants do best on deep, rather moist, land, and the Fastolf Red Raspberry and Lee's Prolific Black Currant are good varieties for sale. Strawberries are a paying crop where the land is deep and good, if within reach of a good-sized town. As a rule, small lots of open-air fruit sell better in country towns than in London, unless the situation is warm and early, and then with fruit in the market the first comer is best served. If Gooseberries or Black Currants are planted 6 feet apart, for two or three years, a row of Strawberries, or, if preferred, a row of Mangolds, may be planted between each two rows of bushes. If the situation suits Plum trees, I think I should plant standard Plums 18 feet or 20 feet apart, as a top crop; Orleans and Victoria both bear and sell well.—E. Hobday.

15105.—**Peach-growing under glass without heat.**—The borders should be two feet deep and well-drained. If the sub-soil is wet and cold, excavate 6 inches deeper, and put in a layer of concrete, sloping to a drain. In an unheated house success will hang upon the ripening of the wood, and this will be much influenced by the condition of the roots. The soil should be turfy loam, from a limestone district, if obtainable. No manure should be used. Support can be given afterwards, when needed, by top-dressing, and the use of liquid-manure and artificials. The shoots should be trained thinly. No bearing branch should be nearer to each other than six inches. The greater part of the pruning will be done in spring, when the shoots are just emerging from the bud to the shoot, and can easily be rubbed off with the finger and thumb. The trees must be well supplied with water, and the syringe used freely when growth is progressing. Avoid a damp, stagnant atmosphere, as that encourages mildew. Ventilate freely when the weather is suitable, but avoid cold draughts when the trees are in blossom or when the growths are tender and young. Utilise to the fullest extent the sunshine by closing early in the afternoon during the growing season. When the fruit is approaching the ripening stage discontinue the use of the syringe and withhold water at the root, and ventilate freely night and day, especially the last week or ten days. Read Thompson's "Handy Book of Fruit Culture under Glass."—E. Hobday.

15304.—**Border for vines.**—If as you say, the border is in a bad condition, you cannot do better than renew it. The middle of February is the best time to do the work, and I advise you to take away all the old soil and replace it with new compost; as a matter of course you understand that you must take all possible care of the roots when excavating the old border, and when replacing the roots be careful to place them at various depths in the border; none should be nearer to the surface than 4 inches. If you find the vines break strong you may allow them to bear about a third of a crop; but if they break weakly, you will gain in the end if they are not allowed to bear any Grapes the first year—J. C. C.

15189.—**Vines in pots.**—As "Buckland Sweetwater," gives no idea as to the strength of the wood of his vine, further than that it is 4 feet high, I should say it is too weak to bear any Grapes next year. He must endeavour to get the wood stronger, and the rod 6 feet in length. To do this, cut down the rod at once to within an inch of the surface, or within two buds of the soil. Early in January put it into a pot, 14 inches in diameter, using as a compost three parts loam and one part rotten manure. Early in March place the pot on a stage, so that the young rod can be trained under the glass, but not nearer to it than 14 inches. When it has reached 6 feet in length take off the top. This will strengthen the rod, but it will cause the young rod to make lateral growth. These must be kept pinched off at the first leaf. If you get the vine properly ripened, so that the leaves have all fallen naturally by the middle of November, it ought to bear fruit in 1887. Eight medium-sized bunches would be a full crop for a vine in a 14-inch pot.—J. C. C.

15303.—**Unproductive vines.**—With so few particulars as you give we can only advise you to root out the old vines and make a new border, and plant young ones in their place. It is not always the best plan to root out vines, as very often, if they are not too old, they can be renovated in a very much shorter time than young ones can be raised to take their place; but the age of the vines and the condition of the border must decide the question. One would require to see them to definitely decide what had best be done.—J. C. C.

—— The vines alluded to are evidently worn out. In that case it is more economical to dig them out. Prepare a border such as several contributors to Gardening have described in previous numbers, and plant with young vines in March.—J. D. E.

15192.—**Fruit for Norfolk.**—Apples: Devonshire Quarrenden, Worcester Pearmain Cockle Pippin, Court Pendu Plat, Cox's Orange Pippin, London Pippin, Alfriston, Fearn's Pippin, Sturmer Pippin, Lord Suffield, Dumelow's Seedling, Warner's King, Waltham Abbey Seedling, and Mank's Codlin. Pears: Jargonelle, William's Bon Chrétien, Beurré Superfin, Louise Bonne of Jersey, Marie Louise, Baronne de Mello, Beurré Diel, Beurré d'Anjou, Pitmaston Duchess, Beurré Bosc, Beurré Rance, Conseiller de la Cour, Easter Beurré, General

Todleben.] Plums (these should be planted as standards): Coe's Golden Drop, Victoria, Early Prolific, Diamond, Transparent Gage, White Magnum Bonum. I am pretty well acquainted with East Norfolk, and I think the above collection will suit that part.—E. Hobday.

15028.—**Pruning vines.**—The common way is to prune to short spurs, leaving at least one good eye, and where the roots are in good order this system answers well enough. The rod system leaves in more young wood, and the boughs are commonly larger; but spur pruning always grows a nice regular crop. Sometimes a combination of the two systems is aimed at. A young rod is occasionally left, and when it reaches the top of the house one of the old rods is cut out. This gradual renewal has its advantages, as the uprising of young growth gives a beneficial impetus to the roots.—E. Hobday.

15297.—**Procuring old-fashioned Bullace.**—I bought six recently from Mr. John Fraser, of Lea-bridge Nurseries; but most of the large trade growers can supply Bullace trees—Rivers, Sawbridgeworth; Veitch, Chelsea, &c.—J. D. E.

—— I recommend "N. P." to try Messrs. Thomson, of Wimbledon.—R. W. Green.

—— Bullaces are very plentiful here, and "N.P." can get the trees of Mr. R. Allen, Victoria Nursery, Norwich.—E. Taylor, *Norwich.*

—— If "N. P." means the old-fashioned white Bullace, I will give him as many young suckers as he likes to have if he calls for them; they come true from suckers.—J. Lodge, *The Vineries, Mill-hill, Hendon, N.W.*

15106.—**Unproductive Cherry tree.**—If the Cherry tree be lifted and replanted it will bear, I have no doubt. Young trees take some time, especially on a light soil, to get fully into bearing. The lifting may be done at once. After replanting, mulch, and secure the tree from wind.—E. Hobday.

15014.—**Wasps in vineries.**—The first few years I had a vinery the wasps were most troublesome. Three seasons in succession I have sprinkled powdered sulphur on the top and bottom ventilators, and since then I have had no further annoyance from them.—Harrisson, *Holbeach.*

15185.—**Tan-yard refuse for vine border.**—I should advise "J. C." to have nothing at all to do with this refuse; carrion, or any similar material, has been proved to be of no benefit to vines. On the contrary, where it has been used the borders have not sustained the vines so long in a fruitful condition as those made with good loam only.—J. C. C.

15184.—**Raspberry growing.**—The simplest and most productive method of training Raspberries is to plant the canes 1 foot apart in the row, and the rows 5 feet; then drive in a few stakes along the centre of the row, and stretch two lines of cord, one 2 feet the other 4 feet from the ground; to these cords tie the canes.—J. C. C.

ROSES.

Pruning climbing Roses indoors.—I have recently pruned the climbing Tea Roses in a large house, and badly they needed it, although somewhat hard thinned early in the summer just after blooming. Really when in

Young Peach tree, trained as an Oblique Cordon. First year. A shows the first pruning. (See page 566.)

good soil and thriving well, strong-growing Roses make such rapid growth that the knife must be used freely, or else a terrible mat of growth soon results. I have been astonished to see what vigorous growth Maréchal Niel made during the summer. Indeed, the plants then have nothing else to do but to make wood, and if the weaker branches were removed as the season advanced, giving encouragement to the strongest shoots, so much the better for the blooms next year. I have often noted the sparing way in which the knife is, or has been, used in many places where flowers are grown for sale, and have noted that grand old trees of Maréchal Niel have literally run to waste or comparative decay through dread of using the knife freely. There are few Roses that possess more recuperative power than this kind, and if cut back ever so hard it will soon recoup its loss by the production of some very robust shoots, which produce the finest blooms. Late summer prunings are to be avoided, because then the trees are encouraged to make a new growth that is neither

Young Peach tree with three stems, a different variety being grafted on each. (See page 566.)

matured nor capable of producing flowers. I am writing of Roses that are not forced, but which produce their chief blooms during the months of April and May. Very old exhausted shoots should be clean cut away the moment the bloom is over, and thus ample time is given to reproduce fine robust shoots. In the case of younger wood a thinning of the weaker shoots in the summer, with a hard pruning now, is the most desirable course of treatment.—D.

15310.—**Roses in pots.**—The best Roses in your list for pots are Prince Arthur, Prince Camille de Rohan, Countess of Oxford, Duke of Wellington, Madame Knox, and Prosper Langier. Emperor of Morocco is much too weak in growth to make a good pot plant. Victor Verdier flowers too much in clusters for an amateur to manage. Baroness Rothschild makes a capital pot plant, but it is later in coming into flower than any of the others. It has no other fault unless you want a sweet-smelling Rose, and then it will disappoint you. In place of Emperor of Morocco substitute A. K. Williams, and for Victor Verdier, Paul Jamain.—J. C. C.

—— The Roses named can be grown successfully in pots, but the sizes of the pots to be used would depend upon the size of the plants. The most useful sizes for ordinary greenhouses are 7-inch and 8-inch. The best potting soil is four parts good loam, one of leaf-mould, and one of decayed manure. A little light fibrous peat ought to be mixed with it for Tea Roses.—J. D. E.

15085.—**Varieties of Begonias.**—Single: Bridesmaid (white), Black Douglas (dark crimson), Countess of Rosslyn (bronze-orange), Distincta (crimson, white centre), Earl of Chesterfield (bright crimson), Exoniensis (orange, scarlet), Her Majesty (blush, centre, rosy-pink), Golden Queen (yellow), Mrs. Warren (Rose), Mrs. Weeks (white, rose-pink margin), Rose Perfection (rose), Lord Crewe (violet, crimson). Double varieties: alba-plena (white), Apricot (bronze yellow), Canary Bird (yellow), Clarinda (buff-flaked white), Dr. Duke (scarlet), General Gordon (carmine), Gloire de Chamant (rose), Lady Garry (pink and white), Octavia (white), Sir Garnet (dark orange and scarlet), Madame Arnoult (salmon, rose), Prince of Wales (crimson).—E. Hobday.

14555.—**The "Amateur Question."**—*To the Editor.*—Sir,—I have just been studying my monthly number of your paper, which I have taken regularly since it was started, and to it I give all the credit for having become a fair specimen of an amateur horticulturist. All gardeners should be grateful to you for the opportunity of discussing this question, upon which there is great diversity of opinion, and, with your permission, I would like to give my practical experience of the matter in this district. For several years a very large and successful show was held in this town, and, according to the rules of the society, a competitor like myself, who was in every respect an amateur (by that I mean one who does the whole of the work—digging, &c., himself, and whose produce is not sold), had to compete with self-styled amateurs, who employed a professional gardener two or three days a week, and others whose coachman or farm hand really did the work. Yet those people were allowed to exhibit as amateurs not employing professional gardeners, the result being that the amateur pure had no chance, as he really was competing with indirect professional assistance. This, I am aware, is wide of the question asked by "L.," but knowing that there are many of your readers like myself, anxious that the question, "What is an amateur?" should be clearly answered beyond a possibility of misunderstanding, I take the liberty of putting the matter on its very broad basis. In 1883 a show was started by a few gentlemen in one of the districts of this town, with which I am connected as committee-man and secretary. Our rules are that a cottager is a person whose rent does not exceed £12 per annum, but the committee reserve to themselves the power of deciding whether one man has greater advantages than another, and, if so decided, we think it to the advantage of the society that such a person should compete as an amateur, and not as a cottager. As an instance, a man, industrious and painstaking, and assisted by his wife to a great extent, took from thirty to forty prizes at our 1883 show, all of which he thoroughly deserved. His fellow-cottagers were quite disheartened at this, and our next show would have been a failure if the successful cottager had declined to accede to our request that he should compete as an amateur only. The two next shows he exhibited among the amateurs, and he proved his worth by carrying off more prizes than he had done as a cottager. Another man, whose rent was under £12, but who possessed several acres of garden, and who devoted the whole of his time to it, insisted that as his rent complied with our conditions, we were bound to accept his entries as a cottager; but, of course, in justice to our cottage competition, we would not. And this is where my experience applies to "L.;" it is a question that should be left to the discretion of the committee; but, as far as my judgment goes, I should certainly make a labourer working under a gardener, practically earning his living by gardening work, a professional, and not an amateur, and my reason would be the fact that he possessed immense advantages over an ordinary workman or artisan, who

Peach tree trained as an Oblique Cordon. Second year's pruning. The leading shoot is cut at A, and the side shoots at the cross-marks. (See page 566.)

could only devote an hour or so of an evening after his ordinary day's work. I trust you will pardon the length of my letter, but if it induces others to state their experience for the benefit of their fellow-gardeners we shall be doubly grateful for your assistance.—W. H. T., *S. Wales.*

OUR READERS' ILLUSTRATIONS.

GROUP OF SUB-TROPICAL PLANTS.

Our illustration this week is an engraving of a photograph of a beautiful group of sub-tropical plants, suitable for an amateur's garden, sent us by Mr. W. T. Butler, of Harrow Lodge, Dorking. The group is carefully composed, the plants well held together and not dotted about in the "spotty" and stupid way that they generally are, even in the public parks. Mr. Butler was awarded one of the prizes in our recent competition. The following note respecting the group has been sent us :—

"The accompanying engraving is from a well-executed photograph by Mr. Usherwood, of Dorking, taken for Mr. Butler, the owner of the prettily-situated house and grounds of Harrow Lodge, Dorking. Being on the side of a hill, it was found necessary to arrange the garden in terraces, one of which forms the lawn, where some of the larger plants are placed out from the greenhouse during the summer months, and add greatly to its beauty and to the health of the plants in that somewhat sheltered position. The principal plant in the group is a fine Musa Ensete; in front of this is a Dicksonia antarctica; to the right, Latania borbonica (Fan Palm); behind this is a tall Dracæna australis (about 12 feet in height), and to the right is Seaforthia elegans and Date Palm (Phœnix dactylifera). The smaller plants are Cycas revoluta, Maiden-hair and other Ferns and plants, the whole being well backed up by Laurels and some fine Oak trees."

Our Readers' Illustrations: Beautiful group of sub-tropical plants at Harrow Lodge, Dorking. From a photograph sent by Mr. W. T. Butler.

15124.—Building brick flue.—I should recommend "J. W., Cheshire," to build an arched fireplace with fire bricks, 2 feet deep, 16 inches high in the centre, 11 inches at sides, and 17 inches wide, fire-bar 2 feet long, leaving a space of 3 inches between end of bars and furnace door; the ash-hole same size as fire-bar, with door to match. The flue carried round on the level of floor of the house must be 6 inches higher than top of fire-bar, with a gradual rise of 6 inches about 6 feet from chimney end, and built 3 bricks deep edgeways, 1 foot wide within, lined with silt mortar, and covered over with Yorkshire slabs, 2½ inches thick; a chimney 15 feet high to match the flue will give sufficient draught. At the bottom of chimney put in a small door, and a damper 5 feet above. The flue must not be built to turn at right angles, but with a curve on the outside. When all is complete, to get it to draw place a double handful of shavings at bottom of chimney, set on fire, close the door, and when blazing light the fire, leaving the ash-hole door open.—F. A. Harrison.

15037.—**Heating a greenhouse.**—Two rows of 3-inch pipe will keep out frost; but if flowers are wanted in winter more heat will be required, and it is safest and best to have plenty of pipe; but in any case two rows of 3-inch pipe on each side will be sufficient, or, if 4-inch pipes are preferred, two rows on one side and one row on the other will maintain a nice genial temperature, without severe firing, which furnishes just the conditions plants require. The coil, set in a brick furnace, will work the pipes economically; but if "Young Beginner" would prefer a regular boiler, I have seen the Loughborough boiler doing good work. A neighbour near has one at work in a house similar in size to that of "Young Beginner," and he expresses great satisfaction at its working. If the house was set on 2-inch planks it would be a tenant's fixture; but if any brickwork were used in constructing the heating apparatus the latter would have to remain. In such a house zonal and other Pelargoniums would do admirably, and if the glass were darkened Ferns would do well in it; in fact, such a house, so far as its size permitted, would grow anything.—E. Hobday.

HOUSE & WINDOW GARDENING.

Fern for windows.—Many people consider the Maiden-hair to be the best of all window Ferns, but I am not of that opinion. Some succeed with it fairly well, but it has two serious defects—viz., it does not well resist an arid atmosphere and cold draughts, and it is not strictly evergreen, as the fronds die off under ordinary room culture early in spring. None of these objections exist in the case of Asplenium bulbiferum, which is about the hardiest of all cool house Ferns, continuing to grow through the winter if merely kept from frost. It is compact, yet graceful in growth, and will live for years healthily in the same pot if kept moist at the roots. Little bulblets form on the stem, and if taken off quickly form plants. I cannot too strongly recommend this Fern to all who want a thoroughly satisfactory window plant.—J. B.

Dinner table decoration in winter.—It is comparatively easy during summer for anyone with only a small garden to find sufficient material for the effective decoration of the dinner table, but where resources are limited there is occasionally during winter a dearth of the necessary plants. In carrying out the following suggestion as regards winter decoration I may say that the different subjects to be used may be found in most gardens, and the arrangement will be found to harmonise with the outdoor aspect of vegetation. An ordinary trumpet-shaped vase, with the basin and trumpet filled with damp sand, will answer for the centre of the table, and the materials for dressing this may consist of Escallonia, Euonymus, the different varieties of Box, one or two fine-foliaged Conifers, Alaternus, and Laurustinus. A pyramid of foliage may be worked up with this, well feathered at the base and filled in tastily, so as to present when finished a light and graceful appearance. Similar pyramids on a somewhat smaller scale may be used, if necessary, towards the ends of the table. Flowers may, of course, be worked in at the will of the operator, but these, with the exception, necessarily, of the Laurustinus, are not essential, a pleasing effect being produced by the flowers of this shrub, and the variegation of the Alaternus standing out from the foliage of the Escallonia and the Conifers. Small vases with flowers and foliage will be required if the table is large, and these may be filled with bronze Chrysanthemums or with Primulas, with the foliage (if Maiden-hair is scarce) of the small Marguerite. Tracery, in some shape or form, seems nowadays an indispensable feature on the table, and it must be confessed it is preferable to the hideous little tins that were in force some time ago. Where the stock of Fern or Selaginella is limited, substitutes for tracery may be found in the leaves of the Banksian Rose, the foliage of Taxodium sempervirens, or Abies canadensis, relieved at intervals by tiny clusters of some scarlet berry. The foliage of Taxodium distichum will be found to be very useful for the purpose in summer and early autumn. The design may, of course, be varied to meet the requirements of the table, but, whatever it is it should in all cases be carefully executed. A little light tracery is usually advisable round each pyramid, but anything in the shape of crowding should be most carefully avoided, either in the manipulation of the pyramids or in the arrangement of the vases.—E. B.

15296.—Dahlias for exhibition.—The following twenty-four varieties are unrivalled for competition:—Light: Emily Edwards, Annie Neville, The Countess, Flag of Truce. Yellow: Cremorne, John N. Keynes, Henry Walton, Vice-President. Crimson: John Wyatt, W. H. Williams, Chris. Ridley, John Standish. Purple: James Cocker, Alexander Cramond, Burgundy, Prince Bismarck. Fancy: Rev. J. B. Camm, Flora Wyatt, Grand Sultan, Viceroy.—R. M., *Shadwell, Leeds.*

—— James Vick, John W. Lord, Mrs. Dodds, Bessie Ford, Thomas Goodwin, Rev. J. B. M. Camm, Beauty, Ethel Britton, James Cocker, Professor Fawcett, Annie Neville, Champion Bollo, Herbert Turner, The Countess, Mrs. W. E. Gladstone, Goldfinder, Lord Chelmsford, Miss Browning, Criterion, Honourable Mrs. P. Windham, Joseph B. Service, Ovid, Rev. J. Goodday, George Smith, Halter, H. Williams. They are all distinct. I have exhibited at eight shows this summer, and have been awarded five first and two second prizes, one equal-first prize.—W. Aldersea, *Chesterton.*

15323.—**Seaweed in gardens.**—Seaweed is good with stable manure after they have been mixed and allowed to stand awhile to rot. In spring spread and dig in the mixture. It is rather too strong to put directly under the sets and plants.—W. W.

15315.—**Hedgehogs and slugs.**—Give your hedgehog once a day a little bread and milk. A few ducks would soon clear your garden of slugs, grubs, and many other pests, besides helping to manure it.—Harrisson, *Holbeach.*

THIRD ILLUSTRATION COMPETITION.

We again invite our readers to send us photographs of any pretty garden views that they have in their possession. We will not, on this occasion, limit the competition to any particular branch of gardening, but will welcome any illustrations of interest. The selected photos will be engraved and illustrated in Gardening. That is, perhaps, the best honorarium we can bestow upon the winners; but the senders of the chosen pictures will be entitled to receive a water-colour drawing of some beautiful garden flowers. All photographs for the competition must reach us by Saturday, 26th December.

In addition to the above, however, we propose to give to the persons who during the year 1885 send us the best series of illustrations,

THREE PRIZES OF HONOUR,

as follow:—First—A water-colour drawing of the Wild Field Rose, by the late Mrs. Coleman; purchased at Christie's for Twelve Guineas. Second—A water-colour drawing, by Madame Vonga, of Zurich, of the first cultivated plant of the rose-coloured hardy Water-Lily flowered in Europe; purchased for Five Guineas. Third—A water-colour drawing of a group of Pæonies, by Mrs. Duffield, purchased for Three Guineas. The recent competitions are included in these special prizes.

The following rules must be observed by competitors:—

First.—The photos may be of objects either in the possession of the sender or of others, but the source whence they are obtained must be stated, and none sent the copyright of which is open to question; the Editor is to have the right of engraving and publishing the chosen photographs.

Second.—The name and address of the sender, together with the name and description of the object shown, should be plainly written on the back of each photo.

Third.—All letters relating to the Competition must be addressed to the Editor, and marked "Illustration Competition."

Figures of men or women, barrows, vases, rollers, implements, and all similar objects had better, as a general rule, be omitted from these photographs. The object is to show the beauty of the garden, and this cannot be done well when the photographer is confused by other considerations. Photographs must be mounted. They should be clear, and the subject intended to be shown in good focus, and so as to be distinctly seen.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *27, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

15413.—**Striking Pelargonium cuttings.**—Will any correspondent kindly give me a few hints as to striking Pelargonium cuttings?—Anxious.

15414.—**Obtaining Calvary Clover.**—Can any reader tell me where the seed of Calvary Clover (Medicago echinus) can be obtained? I have tried many seedsmen without success.—J. C. T.

15415.—**Chrysanthemums.**—Would some reader kindly give me the names and colours of a few of the best large flowered and Japanese Chrysanthemums? I want a few of them for exhibition purposes.—J. D., *Carlow.*

15416.—**Roses.**—Will some Rose grower kindly tell me the names of a few of the best sorts, including Hybrid Perpetuals, Tea-scented, and Noisette, Bourbon Roses, Moss Roses, and climbing Roses?—W. Griffin.

15417.—**Pelargoniums.**—Could any reader of Gardening tell me why the flowers of my Pelargoniums turn white at the edges? They are in a house, which is kept at about 55 degs., in a town.—C. H. E., *Birmingham.*

15418.—**Roses for button-holes.**—Will any Rose grower tell me the name of light crimson Hybrid Perpetuals suitable for button-holes; also a good light crimson Moss Rose?—East Yorkshire.

15419.—**Garden nets.**—Will any reader who has made garden nets kindly tell me what description of twine is best suited for the purpose?—J. E.

15420.—**Early Chrysanthemums.**—Will anyone tell me the names of about six of the earliest Japanese, reflexed or incurved Chrysanthemums? I have very little sun in the winter on my garden, and it faces due east.—A Perplexed One.

15421.—**Petroleum heating stoves.**—Will any correspondent kindly tell me whether the smell of oil-stoves burning in a greenhouse will do harm to the plants, always providing there is no smoke from the lamps?—A. E. Staley.

15422.—**Hemp v. caterpillars.**—I have read on page 560 a suggestion on this subject. Will any reader kindly let me know at what time I should sow the Hemp-seed that it may be advanced enough to disgust the butterfly, for the protection of the Cabbage crop?—R. K., *Dublin.*

15423.—**Ice Flowers on windows.**—Will anyone who has tried the plan suggested on page 518 of fixing Ice Flowers on glass kindly tell me where the enamel powder is to be procured, and what quantity is necessary for a pane of glass 16 inches by 12 inches?—K. C.

15424.—**Climbers for cold greenhouse.**—I have a greenhouse, lean-to, north-east aspect, tiled floor. Will some reader kindly tell me what evergreen or deciduous climbers would be suitable for the back wall; also a suitable time to plant, whether in an inside border or in pots, and the kind of soil to use?—Climbers.

15425.—**Seedling Lilium auratum.**—A friend of mine gave me some seedling Lilium auratum about three months since, which are doing well under the shelter of a warm greenhouse. Will any kind reader give me cultural directions, and tell me when I may expect them to flower?—East Yorkshire.

15426.—**Scarlet Elder not fruiting.**—I have some scarlet Elder bushes, which flower profusely in April, but never set their fruit. The bushes were grown from cuttings taken off fruiting bushes growing half a degree further north. The parent bushes had a north exposure; mine a south exposure. What is the cause, and what the remedy?—Rothvin, *Moidart.*

15427.—**Cocoa-nut fibre refuse for propagating.**—I am told that this is very superior for striking cuttings. Will anyone kindly tell me if it should be used alone or mixed with loam, and in what proportions? I am thinking more especially of Chrysanthemums.—Trinette.

*** *Our experience of Chrysanthemum cuttings is that they will strike in anything.*—Ed.

15428.—**Carnation, Souvenir de la Malmaison.**—I should be glad to have some further advice on the culture and treatment of the Malmaison Carnation? Last year the flowers on my plants were small and of a pale, sickly colour; the foliage, too, was wanting in luxuriance. What manure ought to be used in potting, and when ought the potting to take place?—George.

15429.—**Hot-water pipes for greenhouse.**—I have a greenhouse 13 feet long, 8 feet high, 6 feet back to front, walled in on three sides. What quantity of 2-inch or 3-inch piping would keep up an average heat of 50 degs., situation rather exposed, in a northern town? Would it be safe to have the boiler inside the house? Would a slow combustion stove without hot-water pipes answer my purpose, as I have only ordinary mixed collection?—Liverpool.

15430.—**Smoky heating apparatus.**—Is there any means of heating with coal or coke so that there will be no smoke, or with means of consuming same? I have a hot-water apparatus; pipes go twice along front of greenhouse; it was heated by gas, and answered perfectly, but the ring for the gas-lights perished, and, finding gas rather too expensive, I had a copper grate fitted under boiler, with pipe at side for smoke; it draws and heats pipes, but the smoke is not a nuisance I cannot use it. Being near house, it gets into bedrooms, &c. The house is three-storey, so I cannot take pipe to top, but thought of running an iron pipe (such as is used for spouts) round two sides of greenhouse, 64 yards in all, and then taking pipe up side of kitchen level with kitchen chimney. Would this be likely to answer, or is there any better way? I thought by so doing I should get a little heat from the flue as well as hot-water pipes.—Bee.

15431.—**Horse and sawdust manure.**—I write to ask your opinion (or that of some of your readers) of the use of tram-horse manure, which is composed of horse droppings, sawdust, sea sand, and urine. I have used it for a short time in a good old garden (gravel bottom) that has been well worked for half a century. I found it very stimulating for small vegetables and bedding plants; but have not yet been able to try it for heavy crops, such as Potatoes, Peas, and Beans, Cauliflowers, Celery, &c. Will you recommend me to use it—alone or mixed? It is a very clean, easily-handled manure, does not favour weeds, or introduce them like ordinary litter manure. My Roses have benefited wonderfully by its use. I should have said the manure is like a dry mash, and makes at once an excellent liquid manure, the water taking up the urine retained in the sawdust. It can be used as a top-dressing before rain to the same end.—Tram.

*** *We should say that this manure is capital stuff for any crop that is grown, and particularly in heavy soils, as it would tend to lighten them. We should use it alone.*—Ed.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15432.—**Chrysanthemum maximum and Pyrethrum uliginosum** *(C. C. and E. Wallington).*—The flowers mentioned by Mr. Leach on page 537 may be easily obtained. Try any good hardy plant nursery.

15433.—**Watering plants in greenhouse** *(R. F. W.).*—Pour the water round the roots only.

15434.—**Book on names of Ferns** *(Old Friend).*—We fear there is no book that would meet your requirements.

15435.—**Plants in tubs** *W. Griffin).*—Tubs are suited only for large plants. The bottom should be perforated with holes, and drainage provided by means of potsherds.

15436.—**Plants for shady banks** *(A. S. B.).*—Ferns, Periwinkles (Vinca), and St. John's Wort will be suitable plants to use in such a position. The Ampelopsis Veitchii will do on the fence

15437.—**Weeds on lawn** *(Acre).*—Lawn sand is useful for removing weeds on lawns; the best remedy is rooting them up. It is of no use sowing Grass seed now; wait until the spring.

15438.—**Propagating Gooseberries** *(C. J. Robinson).*—Gooseberries may be propagated by cuttings taken when the wood is ripe. You can plant them now, in ordinary garden soil; add a little sand if the soil is heavy.

15439.—**Galega officinalis alba** *(Ignoramus).*—You probably refer to this plant. It is a perfectly hardy perennial, and we doubt whether you will succeed in growing it with any kind of protection.

15440.—**Pomegranate** *(S.).*—The Pomegranate is grown in the temperature of a cold greenhouse, and in warm places it can be grown out-of-doors against a wall. It very seldom, if ever, ripens fruit in this country.

15441.—**Training fruit trees** *(A Learner).*—Certainly you may use wires for the purpose; they should be fixed about 6 inches apart. You will be able to derive some hints from the article on c rdon fruit trees in this week's number.

15442.—**Cultivation of the Blackberry** *(Roath).*—There are now some very fine varieties of the Blackberry in cultivation, large fruited, and in every way superior to the common kind. Some have been advertised in Gardening as recently as a few weeks ago.

15443.—**Obtaining shale for walks** *(Constant Subscriber).*—The shale recommended by "Pat" is, we believe, obtainable only from certain quarries in Ireland. Perhaps the proprietors will see the advisability of letting readers know how to get it.

15444.—**Obtaining Chrysanthemum cuttings** *(Roath).*—We cannot recommend any particular firm, but you should certainly have no difficulty in procuring cuttings of Chrysanthemums. Any grower of the plants would be happy to execute your order. Apply to one of those who advertise in Gardening.

15445.—**Chrysanthemums after flowering** *(Perplexed One).*—It is best to keep them in a frame or cool house during the winter; they will soon be developing suckers, if they have not done so already. Chrysanthemums planted out, however, are perfectly able to stand the winter out-of-doors.

15446.—**India-rubber plant** *(W.J.A.).*—The India-rubber plant can be grown in any ordinary living room. It requires a moderate amount of water; if the plant is in vigorous growth and the drainage good you cannot very well hurt it with water, provided this is not left in the saucer. Stagnant water is often the cause of much evil in window plant culture.

15447.—**Growing Mushrooms** *(Mushroom).*—You will find the culture of the Mushroom fully treated of in Gardening for May 23rd last; there have also been other articles on the same subject—see Sept. 26th. If you want any information which these do not supply write again. You can obtain suitable Mushroom spawn from nurserymen.

15448.—**Size of pots** *(Perplexed One).*—The terms "32 pots," "48 pots," mean that there are 32 or 48 pots to what is called the "cast," or quantity in which they are generally sold. By the Chiswick standard, which is now almost universally adopted, a 32 pot should be 6 inches diameter at top, and 6 inches deep; 48's are 4½ inches diameter at top, and 5 inches deep.

15449.—**Gardening reference books** *(G. King).*—We know of no books that you could obtain in the way you describe. Your best plan would be to buy—for indoor, Baines' "Greenhouse and Stove Plants;" outdoor, "The English Flower Garden;" and for kitchen garden "The Vegetable Garden." These you could get at discount prices almost anywhere.

15450.—**Treatment of young vine** *(Astic).*—Keep the vine in the pot until March, when it ought to be planted in the prepared border. It would be better to train it up the rafters; train it up the corner of the house to train it downwards from the top. It does not require any heat in winter. There is no reason why it should not bear fruit in 1887.—J. D. E.

15451.—**Market for Apples** *(F. W., Norwood).*—The Apple you send is nice-looking, and of fair quality. You should have no difficulty in finding a market for it. Write to any of the salesmen in Covent-garden—Messrs. Webber, for instance—or to those in Liverpool and Manchester. We think we have noticed the same Apple in Covent-garden market.

15452.—**Doyenne d'Ete and Madame Millet Pears** *(G. S. B.).*—These are both good Pears. The fruit of the Summer Doyenné is small, and of good flavour. It is ripe at the end of July, but should be gathered before it gets yellow. Madame Millet has also a rich flavour; the fruit is large, and ripe in March or April. It should be planted in a warm situation against a wall.

15453.—**Failure with Chrysanthemums** *(Multum in Parvo).*—From what you say we come to the conclusion that your failure is due to the fact that you overfed the plants, and you had better start again. You must remember that it is just as wrong to give the plant a greater amount of food than it can assimilate as it is to starve it.

15454.—**Tea-leaves and leaf-mould** *(Amateur).*—We do not suppose that the Tea leaves used instead of leaf-mould would be injurious to plants; they would, probably, do no harm, and would act mechanically in keeping the soil open until they rotted, but we doubt whether there is much nutriment to be derived from them.

15455.—**Nephrolepis not thriving** *(F. S. P.).*—It is not surprising that your Nephrolepis exaltata and davalloides are not thriving. They are stove Ferns, and a position on the mantelpiece in a drawing-room does not meet their requirements; the atmosphere is not suitable, and there is also insufficient light. Repotting should be done in spring; if they are pot-bound you need not fear giving too much water if it percolates freely.

15456.—**Worm casts on lawns** *(S. E. C.).*—Read the note on page 563. Worms do more good than harm;

it should be remembered that the worm casts, being composed of richer soil than the other, fertilises the lawn. The best way to deal with them would be to brush the lawn with a stiff broom, so as to work the casts into the soil. You cannot rid your lawn permanently of worms. You will find notes on the subject in previous numbers.

15457.—**Culture of the blue Cornflower** *(East Yorkshire).*—The blue Cornflower is a hardy annual which sows itself in autumn and grows well all the winter. It may be sown from gathered seed at any time during the autumn or early spring—autumn being best, as the plants will be stronger. Seed is offered in nearly all catalogues; its botanical name is Centaurea cyanus. It is grown in large quantities for the London and other markets.

15458.—**Fertilising Moss for bulbs** *(T. E. Pearce).*—Some of our readers have in the past spoken favourably of "Fertilising Moss" for various purposes. Our own experience is that it is not of much value. Bulbs will succeed better in it than other plants, because they have their strength stored up in themselves, and simply require to be kept moist to develop, as Hyacinths will flower with their roots in water.

15459.—**Heating greenhouse from washhouse copper** *(Constant Reader).*—We do not see any reason why the greenhouse should not be heated from the washhouse copper as proposed, though how this would agree with the household arrangements is another matter. We should recommend a simple flow and return pipe (3 inches or 4 inches in diameter) along the front of the house. The connections to the copper must be large, nothing less than 2 inches diameter, the flow fixed about 3 inches from the top or rim of the copper, and the return entering at the bottom. The pipes must be set almost on a dead level, with not more than an inch rise along the flow, just sufficient to allow any air to escape by the air-pipe at the farther end. Of course no cistern need be provided. We should recommend placing a plain throttle or sluice-valve on the flow to stop the current when required.—B. C. R.

15460.—**Plants for verandah** *(W. Griffin).*—To keep plants in a healthy state it is necessary that you should give them ventilation in some way or other; cool house plants in particular abhor a stuffy atmosphere. If the verandah were ours we should construct some kind of rocky bank, and plant out hardy Ferns and other plants which will luxuriate without heat. You can make a very pretty verandah by planting out hardy Ferns, Farfugium grande, Aspidistra, Calla, and a variety of other things, while on the wall you could grow Myrsiphyllum asparagoides (or Boston Vine), Clematis indivisa, the Scarlet Honeysuckle (Lonicera sempervirens), Cobæa scandens, &c. You could also use for other purposes small Bamboos and any of the Acanthuses. If you want further information as to plants, frame a simple question and write again.

TO CORRESPONDENTS.

Richard E. Batten.—See names of fruit.——*J. Swallwell.*—You will find an answer in this week's number.——*W. H. Harborne.*—The monograph is not yet published.——*J. Connor, F. J. Smith, and others.*—We cannot furnish readers with the addresses of correspondents, and we must ask them not to forward stamps for replies. Queries respecting articles will be dealt with in Gardening.——*G. A. Thomson.*—It is published by the author; the price is, we believe, 10s. 6d.——*J. E.*—1, See query column; 2, We do not know.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor, *37, Southampton-street, Strand, W.C.*

Names of plants.—*F. S. P.*—The small one is Nephrolepsis exaltata; the larger one N. davalliioides. See replies to queries.——*Salf.*—They are very like the leaves of Habrothamnus; but you must send us flowers if you wish plants named accurately.——*F. K. J.*—Asplenium lucidum.——*F. G. L.*—We cannot name such a specimen. It may be a Burdock; but it may also be anything else.——*Mrs. R.*—We are sorry we cannot assist you. Chrysanthemums can only be named by those who are specialists, or who have the means of comparing blooms. It is too late now to do so; but your best plan would be, another year, to send blooms to some nurseryman, who will name them for you.——*Miss Howes.*—See above.——*Chemicus.*—Acanthus longifolius (Long-leaved Bear's Breech).——*Clara M.*—Sparmannia africana. See note and illustration, page 496.

NAMES OF FRUIT.

Naming Fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*A. E. U.*—Emperor Alexander.——*A. Gibb.*—1, Emperor Alexander.——*A. P., Hants.*—1, Cox's Orange Pippin; 2, Blenheim Orange; 3, Pearson's Plate.——*Kenley.*—1, Beurré Hardy; 2, General Todleben; 3, Beurré Clairgeau; 4 (Apple), Duke of Devonshire.——*C. H.*—1 Autumn Bergamot; 2, Vicar of Winkfield; 3, Huyshe's Bergamot; 4, Knight's Monarch.——*R. E. Batten.*—1, Minchal Crab; 2, Waltham Abbey Seedling; 3, Winter Hawthornden; 4, Cox's Pomona.——*D. Wallace.*—Royal Pearmain; Brownlees' Russet.——*A. Witchell.*—Resembles Dog's Snout—a sort of no value.——*S. T. R.*—Beurré Hardy.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, December 14th to 19th.

Planting Souvenir de la Malmaison Roses in front of houses for autumn flowers, also Box hedge for shelter. Putting in more forcing materials, including plants for cut flowers, and Sweet Briers and Roses for stands. Beginning to place show Pelargoniums in their flowering pots, using a compost consisting of loam, manure, and sand, and stopping them. Putting a few Fuchsias into heat for cuttings; mulching all young fruit trees with manure, and beginning to clear up Mint, Horse-radish, and other beds. Putting in Deutzia gracilis, Anne Boleyn Pinks, and fancy Pelargoniums to force. Putting Endive under cover, and ashes over Peas to protect them from birds. Forking over in a shallow manner Raspberry ground. Putting lilium auratum into peat and sand. Planting Stephanotis in loam and peat. Putting in more Mint and Balm to force.

Putting into heat Roses, Pinks, Cyclamens, and Heliotropes. Inserting Fuchsia cuttings. Putting in Dielytra to force, and a batch of Asparagus. Finishing painting, and tying orchard house trees. Potting off late sown Calceolarias, also Canterbury Bell and Cucumber plants. Shifting herbaceous Calceolarias. Putting litter over Parsnips, Seakale, Artichokes, Celery, Carrots, &c., in order to be able to get them up during frost; potting Vallotas in peat and loam. Emptying a pit and refilling it for Potatoes. Putting manure on Asparagus beds. Potting Isolepis gracilis for room decoration.

WORK IN THE TOWN GARDEN.

Greenhouse.—Owing probably to the absence or want of sunshine and to the subdued light, caused by the smoke and fog-laden state of the atmosphere, plants in town gardens and greenhouses appear to become even more entirely dormant than is usually the case. In very smoky localities, not only is it all but impossible to obtain any bloom from any kind of plants—except Chinese Primulas, Roman Hyacinths, Epacris, and a few other persistent subjects that must come into flower now or never—but growth, even in the genial atmosphere of a fairly warm greenhouse, seems to come to a standstill. Of course, under these circumstances it would be very unwise to attempt to force any plants into either growth or bloom by the application of more than a very moderate temperature; any extension of tissue obtained in this way only exhausts the plants, instead of strengthening them, so that all that can be done for the present is, by careful ventilation, judicious watering, and strict attention to cleanliness, to afford such conditions as will render the resting period safe and even beneficial. It is a very general practice in country gardens to shift Cinerarias, Pelargoniums, &c., into their blooming pots during the present month, but it is not advisable to attempt this in towns, except, perhaps in the outer suburbs, and where a batch of such plants are so forward as to render the process absolutely necessary. Far better wait until the turn of the year, and when the days begin perceptibly to lengthen a very much better chance of success will be obtained. I suppose that most amateurs are aware that to give such newly-potted plants a better start they should, if possible, be shut up closely in a slightly higher temperature than the one they have been growing, in for a week or two after being shifted—in fact, until they have "drawn root," and that they must be very carefully and sparingly watered at the root for some time.

Propagation of Chrysanthemums. — The only things that can be propagated at present are Chrysanthemums, which are now gone out of flower, and will probably be found to have produced a good crop of suckers. Only the large-flowering kinds should be propagated at present; these cannot be got to work too soon, but Pompons do better if struck in March, as a rule; if, however, the stock plants of these occupy too much space, a few pots of cuttings may be taken now, and the tops from these struck again later. These and common sorts we always place 6 or 8 together in a large 60-sized pot, or a dozen or so in a 48, but choice, large-flowered kinds should be struck singly in thumbs, and shifted on without breaking the roots.

Look well to the Auriculas. They will soon be making a move again, and must be well ventilated in mild weather, or, indeed, at any time short of sharp frost; protect by mats when it does freeze; have a sufficient supply of water, but not a drop too much, and every decayed leaf or weed removed as soon as seen. Auriculas should never be watered over the leaves, particularly in winter: use a small spouted can, and pour the water just inside the rim of the pot.

Out-of-doors, of course, almost nothing can be done, with the exception of a little tidying and sweeping. Dahlias, however, had better be lifted, slightly dried if wet, and stored away in a frost-proof cellar or shed, where they will suffer from neither dryness nor damp. Secure the labels to each with wire. B. C. R.

GLASSHOUSES.

Autumn-flowering Heaths.—Soft-wooded Heaths that flower early in autumn often do little good after the first time of blooming. This in a great measure is traceable to the way in which they have been treated for some time previous to their flowering. The cultivation of autumn and winter-blooming Heaths is in most cases left to those who grow them for sale, and to give them a luxuriant appearance they are often subjected to a highly stimulating course of treatment during the summer previous to their flowering, the effect of which is that they frequently die after blooming. The best course to follow with them when the flowering is over is to pick off the dead flowers, as, if allowed to remain, the mould which usually attacks them extends to the foliage as well. The plants should then be stood in a cold pit or house, where they can get plenty of light and air, with a little warmth turned on for a few hours early in the day two or three times a week, shutting it off early enough to let the pipes get quite cold before night, except when the weather is frosty. Heaths of all kinds will be benefited by being treated in this way, for although they do not like more artificial warmth than is requisite to keep them from being frozen, still, in such excessively damp seasons as the present, it is well to dry the atmosphere a little at short intervals. The stock should be gone over at least every other day to see that none want for water, at the same time keeping the soil drier than when more growth was being made.

Mixed collections of greenhouse plants will also be benefited by having as much warmth applied as will expel damp, and when the temperature is low enough to require more or less heat turned on in the night, it will be an advantage to have the roof ventilators open an inch or so, by which means the vapour, always more or less present when fire-heat is used, will be able to pass off.

Fuchsias.—Where the stock of these intended to flower next season was struck in summer, the plants should be kept in an intermediate temperature, so as to keep them growing slowly. Fuchsias, more than most plants, are naturally so much inclined to flower rather than make growth, that in the spring, when the days lengthen and the weather is more sunny, they begin to bloom whatever their size. Young Fuchsias are generally much better in appearance than old ones, unless the latter have more root room, and are grown to a larger size than the extent of glass accommodation often will allow; consequently, where they were not propagated at the latter end of summer no time should be lost in getting them struck early in the coming year. With this intention a plant of each of the varieties intended to be grown should at once be put in heat to provide cuttings. If the heat is sufficient in a month from the time of starting, the cuttings will be large enough for taking off.

Epacrises.—Few plants are more useful in keeping up a supply of flowers through the autumn and winter than these. They are well adapted when cut for filling vases and baskets, in which way their long sprays of bloom are very effective among others of a less elegant character. Plants that came into bloom early in the autumn should, as soon as they have done flowering, be cut in, reducing all the shoots to within 4 inches or 6 inches of where they were shortened back to last year. This is the more necessary with the erect-growing kinds, which are the earliest flowerers. It will be found much better to cut these plants in as soon as the flowering is over, than to leave them until spring, when they have made a considerable amount of growth.

Primulas.—The single varieties of these plants are always much better for being kept in a temperature of about 45 degs. in the night, as when so treated their flowers are larger and more plentiful. The double sorts will be benefited by having a little more warmth than the single ones; in fact to grow them as the

should be they must be kept at something like an intermediate temperature in the winter, otherwise the plants never attain a size that enables them to produce the full amount of flowers of which they are capable. Treated in this way they will make growth freely, to assist which manure water should be given at intervals. Both the double and the single kinds should at this season be kept close to the glass, in a light house or pit.

Acacias.—These plants are well adapted for forcing, and require much less heat to bring them into flower than is necessary for most things. An intermediate temperature will suit them. A. armata, one of the older kinds, is still one of the best; A. Drummondii, and any of the less vigorous growers that do not attain too great a size to be kept in a healthy condition under pot culture, will answer for forcing. These plants are so easily grown, and bear cutting so well, that it seems strange they are not more generally cultivated by amateurs and others who do not happen to have much glass accommodation. They are little subject to the attacks of insects, except scale, which is another matter that commends them to those who have not had much experience in hard-wooded plant culture.

Lilies.—L. Harrisii, the new form of L. longiflorum, and L. eximium, are the two best for forcing. The former is a little earlier than the older and better known sort. It is a remarkably free bloomer, and, with L. eximium, deserves to be grown largely in pots. The cultivation of these Lilies is simple, but there are several points in their management necessary to be kept in view, or failure is likely to follow. First, the bulbs must be obtained early enough in autumn to admit of their being potted before root-growth has begun, otherwise it is more than likely that they will not flower. Another matter of equal importance is not to hurry them either by putting the plants in heat before top-growth is enough advanced, or by giving them too much heat after they are in a sufficiently forward state to admit of forcing. Plants that were potted at the time above suggested should now be kept in a cool greenhouse or pit out of the reach of frost, but where they will get plenty of light and air, giving them enough water to keep the soil fairly moistened. In this way the top growth will be short and sturdy. All that is further necessary for some time is to see that they are quite free from aphides, to which they are somewhat liable, and which, if allowed to get ahead, do much injury to the young leaves. As soon as any of the parasites are discovered the affected plants ought to be fumigated.

Thomas Baines.

Flower Garden.

General work.—Choice shrubs and trees should be top-dressed as frequently as circumstances admit of. Young Conifers—all sorts—and Hollies are much benefited by surface-dressings of suitable material; for the latter, we use old vine border soil, and for Conifers well-decayed manure and light, sandy loam. For the most part, the trees that we have to top-dress are on turf; this, therefore, has to be rolled back, the surface soil lightly loosened with a fork, and the dressing is then applied. The turf is then rolled back at once, but not beaten down, only levelled, and thus the trees get the full benefit of all the rain that falls. The clipping of hedges, and trimming into form evergreen shrubs, clearing out of drains and haw-haws, as also the wheeling of soil and manure, are all of them suitable operations for frosty weather when little else can be done out-of-doors.

Treatment of bedding plants.—Old plants of Pelargoniums that were lifted from the beds will now have started into good growth, and should have all decayed portions of stems cut off and bad leaves removed, and if afforded plenty of light and a minimum temperature of 60 degrees, they will produce good cuttings for spring propagation. As to root moisture, till the turn of the year, this should be rather sparingly applied, more particularly in regard to the tricolor section, which are somewhat impatient of too much water at the root at this dull season of the year. Autumn-struck plants will need little or no watering for the next month or so, and, to prevent mildew, frequently go over them to remove all decaying leaves; give air freely when the weather is favourable, and if it can be accompanied by a little fire heat, damp will be the more effectually expelled.

The tender kinds, such as Alternantheras and Coleus, are no trouble to winter where firing is plentiful, but otherwise it is risky work, and those who cannot command a temperature of 65 degs. to 70 degs. had best exclude them altogether. Keep them well up to the light, and fumigate the moment there is the slightest trace of fly and thrips. Alternantheras and Iresines are very liable to attacks of these insects, and if the plants are weakly, the more quickly do these pests increase.

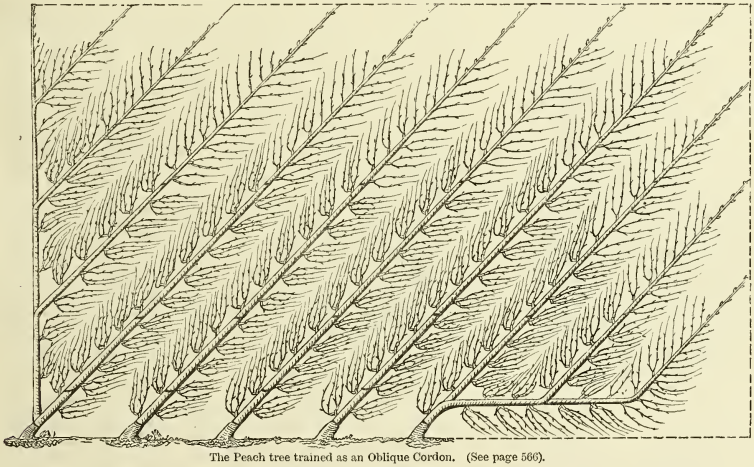
Finally, let all the plants be arranged as neatly as if they were intended for conservatory decoration, and this apparently small matter will not only be productive of pleasure, but serve to the better wintering of them, as they are sure to get more attention than they would if stood about anywhere and anyhow. Have plenty of extra covering at hand, in readiness for very severe weather, such as Bracken, straw, or litter, to cover up cold frames that contain Calceolarias, Echeverias, and the like; this covering should be left on continuously so long as the frosts last, and not be removed for at least a couple of days after a thaw has taken place.

Fruit.

American blight.—Where this blight affects the trees means should be taken to deal effectively with it. Much pains will first of all have to be taken to wash it off with hot soapy water, and then to paint over the affected parts with a strong solution (8 ounces to the gallon) of Gishurst compound, or a strong solution of soft-soap water and a half-pint of paraffin oil added to 3 gallons of the solution is equally effective. A greater quantity of the oil might prove fatal, but this amount we have proved to be both safe and a sure destroyer of the insect.

Aphides on hardy fruits.—Among all hardy fruits, Peaches and Cherries are the most subject to attacks of aphis early in summer, and, by way of prevention, these should always have a winter dressing of the solution just named. Cherries may have it as strong as recommended for the American blight, but Peaches should have the Gishurst at but 4 ounces to the gallon of water. The walls as well as the trees require dressing, and these we treat with soapsuds fresh from the laundry applied with the garden engine. Such an annual dressing, by preventing attacks of aphis, saves a large amount of labour and annoyance in the early summer months, when, through pressure of other work, it is difficult to find time to attend to them. As soon as the frost disappears, push to a close all arrears of draining, trenching, and forming fruit tree borders, in order that the ground may get consolidated before planting the trees, which had now better be delayed till February. See that recently planted trees are securely staked, and that both these and all that require manurial aid should at once have a thick covering of the best manure obtainable.

Work in orchard.—If frosty weather prevails, grub up old fruit trees, cut out all the dead wood in the orchard plantations, and otherwise thin out the branches, particularly such as are crowded and intersect each other. All Moss or Lichen should also be rubbed off them, and if afterwards they can have a good splash over with newly-slaked lime, this will prevent the Lichen from growing again for a long time to come, and so put an end to a convenient harbour for insects. Usually, such orchards are on Grass, and, in the matter of manure, are left to take their chance, a circumstance more attributable to custom than to any real feeling that manure is not required, which it most certainly is, in order to ensure fine fruit. A good dressing of stable manure ought to be given every alternate year, and, if this be scarce, soot and wood-ashes form a most excellent substitute, and should be applied now, in order that the winter rains may wash them down to the roots before growth commences. By thus annually devoting a few days' labour to old orchards, they might be made much more remunerative. If the sorts are not the best, and



The Peach tree trained as an Oblique Cordon. (See page 566).

the trees are healthy, this can soon be remedied by grafting, and when pruning good kinds the shoots should be saved for grafts, and heeled in at the base of the trees till required in March. The trees that have to be grafted may be headed down at once. Cut off all ground suckers with a spade. Whilst the ground is hard through frost let all wheeling of manure and soil on to the fruit quarters be done; also clear up all prunings, hedge-clippings, and vegetable refuse of every kind for burning, the ashes from which are a valuable fertiliser for any crop. Though it seems wrong to prune trees in frosty weather, we have never noted any ill-effects from it; but we would recommend that only the commoner and hardier kinds be done, and this solely with the view of forwarding the work. M.

Early vines.—As soon as the buds are fairly on the move, examine inside borders, and, if necessary, give old vines, which cannot be over-stimulated, a good soaking with warm diluted liquid manure; also mulch the roots with rotten manure; renovate the fermenting material, and let the temperature range from 50 degs. to 56 degs. at night, and from 65 degs. to 70 degs. by day. As old vines generally break well, direct syringing may be moderated on dull days, but young ones which have not been forced early will require more careful management, as it not unfrequently happens that the most prominent buds take the lead; and unless timely attention is devoted to bending down and sometimes rubbing out the terminal buds, unsightly blanks will be sure to mar the appearance of the house.

Late houses.—Very damp weather is injurious to Alicantes, Gros Colmar, and Muscats, and one neglected berry soon mars the beauty of a bunch. Get rid of the foliage little by little, as it parts freely from the vine, but do not take off any more laterals, at least where the Grapes are to be bottled, otherwise the wounds will give off moisture and colour when the bunches are taken to the dry atmosphere of the Grape room. Ventilate freely with gentle warmth on fine mornings. Keep the house quite close in foggy weather, and let the temperature range from 55 degs. by day to 45 degs. at night. Make a good selection of eyes from early prunings, and, if young planting canes are wanted early in the spring, insert in sods or small 3-inch pots before Christmas. Keep them in a cold frame for three weeks, then place them in or over bottom heat. Cut back to the required length, or quite down to the pots, yearling vines intended for planting. Dress the cuts with styptic, and keep them in a cold house until the time arrives for encouraging growth.

Vegetables.

Forcing vegetables.—We have a capital place in which to force Asparagus—an old Pine stove, so that by not covering the roots above an inch deep with soil the light greens the Grass with little trouble. We have cut our first dish of it. Our cook likes it green best, it being better flavoured than when white. We lift the roots from old beds, and every year plant young beds containing about the quantity we lift for forcing; therefore, we have always a stock for that purpose. As to Rhubarb, we force Hawk's Champagne—the best variety to my mind—in the same pit; but we cover the crowns a foot deep with dry Oak leaves, and the Rhubarb comes up a fine crimson colour. Seakale we force in the beds in which it grows in the old-fashioned way, covering the crowns with boxes with lids to them. We use leaves only for this crop, with the exception of a bit of long manure over the leaves to keep them in their places. We have a large quarter of Broccoli laid on their sides on the principle that small heads are better than none; still, I like covering up with Bracken better, as in that way the size is not diminished, and unless the thermometer falls below zero we are generally safe. We also cover our Spinach with Bracken. It keeps the leaves green. R. G.

Gas boilers.—My experience of a gas boiler fixed inside the greenhouse is that it is unmanagable. I have been unable to control the back draught down the smoke-pipe.—Trinette.

15111.—Sowing Araucaria imbricata seed.—Sow the Araucaria seeds in gentle heat in February; gradually harden the young plants off. All these can be planted in a nursery bed in the open air. Sometimes the young plants are potted off, and kept under glass till established, and then planted out.—E. Hobday.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXIX.

(By Annie M. Griggs, Edinburgh School of Cookery).

Apples.

This fruit is the most useful, plentiful, and wholesome of any growth on British soil. Numerous varieties are now cultivated, but all have sprung from the "Wild Apple," or Crab, native of Great Britain. The Apple tree is very hardy, but the fruit requires a great deal of summer heat to bring it to perfection. The largest and best-imported Apples are brought to this country from America, and the "Newtown Pippins" are especially fine for all cooking purposes; but no country has at present been able to excel English Apples in flavour and firmness. When eaten raw the Apple is not considered easy of digestion, but when thoroughly cooked it produces a light and digestible food. As a rule, smooth-skinned Apples are most suitable for cooking, while the rough-skinned Apples are the best for dessert.

Apple ginger preserve.—Newtown Pippins are best for this purpose. Pare, quarter, and core the Apples, and as they are prepared throw them into cold water to preserve the colour. Allow equal weight of preserving sugar and Apples. Dissolve the sugar in a little water until it is a clear syrup; then put in the Apples and allow them to boil very slowly, and remove each piece (with a perforated spoon) as it becomes clear, into a clean and dry jar; only three parts fill each jar. Take great care not to allow the pieces to break or become pulpy. When all the pieces of Apple are removed from the syrup, add the essence of Ginger to the syrup, let it boil for five minutes, and then pour over the Apple in the jars. Three teaspoonsful of essence of Ginger is usually sufficient for 12 lb. of Apples; but, of course, a great deal depends on individual taste with regard to the heat and strength desired.

Apple jelly.—This jelly may be made from almost any kind of Apple; but should it be required to have a bright and light appearance, then use the Calville Apple, or half Newtown Pippins and half Calvilles will give a satisfactory result. Apples are in the best condition for making jelly between the middle of November and the middle of December. Take 5 lb. of Apples, peel them and cut them into very thin slices, and put them into a preserving-pan with 2 quarts of water. Let all simmer over a slow fire until the Apples are well cooked, then strain the liquid through and through a cloth until it is perfectly clear. Measure the liquid and return it to the preserving-pan, with 10 ounces of sugar to every pint, and boil it rapidly until it will solidify; then pour it hot into jars; let stand until cold, and then cover with paper, as already described for jams. Apple jelly may be flavoured with Cloves, Lemon, Orange flower, Roses, or Violets; or thin shreds of Lemon or Orange peel may be thrown into the jelly at will.

Apple soup.—Take 2 lb. of fresh hard Apples, the crumb of one penny roll, 2 quarts of stock, the yellow rind and juice of one Lemon, twelve white Peppercorns, six Cardamum seeds, one-inch stick of Cinnamon, ¼ lb. of brown sugar, salt to taste, and 1 gill of white wine. Peel, slice, and core the Apples; add them, with the roll and seasonings, to the hot stock in a saucepan; cover with a lid and let all simmer until the Apples are sufficiently soft to be passed through a hair sieve; return to the saucepan with the white wine, and stir constantly until boiling; pour into a hot soup tureen, and serve with toasted bread, cut in dice.

Apples with Tapioca.—Take six good-sized Apples, two ounces of butter, and sugar to taste, four ounces of Tapioca, one pint and a half of milk, two eggs; soak the Tapioca for one hour in the milk, and then cook it very gently until it is quite clear and soft—this must be done very slowly, or the Tapioca will be hard; sweeten to taste, and add the two eggs, previously well beaten; stir briskly until the mixture thickens, but do not allow it to boil, or the eggs will curdle; have the Apples ready cooked as follows: Peel thinly, and remove the core without breaking the Apple (this may be accomplished with a thin-pronged fork, if you have not an Apple corer); put them into a saucepan with the butter melted, sugar, and a very little water; cover with a lid, and cook gently until the Apples are soft, but not broken. Put the Tapioca in the centre of a hot dish, keeping it as high as possible; arrange the Apples neatly on this, and pour the juice around; sprinkle some pink sugar over, and serve at once.

Apple snow.—Take four large Apples, three ounces of powdered sugar, the whites of four eggs; peel the Apples, and cook them whole until quite tender, but not broken; remove the core, and beat the Apples very smooth, add the sugar; whip the whites to a froth, and then mix all and whip briskly for twenty minutes; pile high in the centre of a crystal dish or serve in small glasses with custard, or a jug of cream. When Apple pulp is required never pass the fruit through a wire sieve, as the copper will be acted upon by the malic acid in the fruit, and spoil the pulp for whatever purpose it may be required.

15351.—Marrons glaces.—"K. E. J." hopes the following recipe will suit "Sphinx":—Large Spanish Chestnuts, bake in a slow oven until done, peel, and crush flat with the hand; beat the whites of two eggs to a stiff froth, mix in half-pound icing sugar, dip each Chestnut into it, and place in cool oven to harden.

OUTDOOR PLANTS.

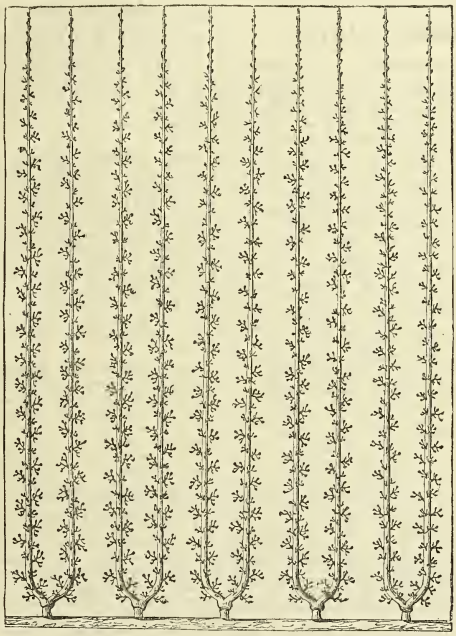
The great Christmas Rose (Helleborus altifolius).—Some uncommonly fine specimens of this beautiful winter flower, the finest that we have yet seen, have been sent to us by Mrs. Astell, of West Lodge, Dorchester, who evidently knows well the requirements of the plant, although she has had to contend with difficulties in its culture. The flower stems are 16 inches in height, all twin-flowered, and very heavily mottled, which is a characteristic of the variety. The flowers measure fully 4½ inches across, and are pure white on the inside, slightly tinged with blue on the exterior. The leaves are enormous for a Hellebore; the leaf stalks over a foot high, and the blades no less than 18 inches across, and of a deep, dull green colour. Such a plant as this in one's garden at this time of the year is indeed a treasure; and particular interest attaches to the following note from Mrs. Astell, wherein she explains her mode of growing it: "Three years since I brought from Hursley one small clump. My soil is chalk, and what I put on the top of it. Two years ago I brought from Road another small clump; and I treated both thus—First, I pulled apart fair-sized pieces, and then made a basin of clay, which I filled with rough peat, leaf-mould, very old manure, and loam from the downs. The one kind is 18 inches high, with dark, dull, leathery-green leaves, and tall white blossoms now—October—showing strongly; the other about 10 inches high, with glossy green leaves, and will not show flower till January." In sending the blooms on Dec. 1st Mrs. Astell states that from five stools 160 (double) flower-stalks had been cut, and still there is quite "a mass of bloom, like a snow-wreath, pushing through the green."

Tree Ivies.—About four years ago I bought a collection of tree Ivies, and they have now developed into very handsome bushes. Perhaps it is hardly right to call them trees, but in the course of time, and with a little help in the way of training, some of them may assume an arboreal character. They will be found very useful in suburban or town gardens, as they are as hardy and vigorous as the common Ivies, from which some of them have probably sprung, as is shown by a stray shoot now and then being put forth which has a tendency to climb. They are easily propagated by means of cuttings, and are now cheap enough for all to plant them. The varieties which I have here are Hedera aurea maculata, baccifera lutea (yellow-fruited), canariensis (Irish), canariensis variegata, marginata argentea (pretty silver-leaved variety), Regneriana, palmata, and tricolor variegata. The last-named and marginata argentea are two prettily variegated Ivies, of erect growth. They progress rather slowly at first, but when well established they grow more rapidly.—E. H.

Aralia Sieboldi on rockwork.—This Aralia has always been grown here with herbaceous plants on rockwork and in borders; in sandy loam, raised, it is perfectly hardy, having been out fully exposed seven or eight years. In

November it showed numerous panicles of bloom, which, of course, is not of much value; besides, the little frost we had at the latter end of last month caused it all to fall prematurely. As a distinct dwarf shrub, for enlivening a garden during the dullest season, nothing could be named to excel it. Even the youngest plants do well kept away from artificial heat; a cold frame is as much as they require in winter, but the pots should be plunged in sand or ashes.—J. W., *Kirkstall*.

Manure for Pampas Grass.—There is such a difference between stunted specimens of this noble Grass and those luxuriating in a rich, congenial soil, that it is well worth while, when it is first planted, to be at the expense of thoroughly preparing the ground for its reception. A moderately good soil, if broken up and well enriched with manure to a depth of 3 feet, will suit it well, but if naturally poor it is better to replace it with soil of a better character. Where, however, large old plants show signs of weakness and soil exhaustion, much may be done to reinvigorate them by means of surface applications of liquid and solid and farmyard manure. We have a few fine, old-established clumps of this Grass whose appearance indicated want of food, and, while anxious to improve their condition, we wished to avoid the slightest risk as regards their safety by undue root disturbance; the turf, therefore, was removed to a distance of about 5 feet from the stem of the plants all round. The old soil was then forked off till the roots were reached; maiden loam and well decayed farmyard manure in equal parts were applied, and the turf was relaid. This was done in the autumn, and since then the plants have grown and flowered with greatly increased vigour. During the dryest period of the following summer delugings of water were given them. Whether the good effect was the result of the exceptionally fine season or the treatment just recorded, I cannot say, but certain it is that our plants flowered earlier and much better than usual. The beautiful feathery plumes are much valued for indoor decoration, and therefore we have usually to resort to some means of protection to keep them from being disfigured by early frosts till fully developed, or nearly so. They retain their graceful lightness best when dried in an upright position just as they grow; in fact, all Grasses are best dried in that manner. If not quite fully developed, we free the bottom flowers from the sheath and gently shake the heads out before a large fire; afterwards we fix them in an upright position in some dry, airy place.—A. M.



Pear tree trained in U form for very high walls. (See page 566).

Evergreen plants for rockwork.—Rockeries should now be examined with a view to improving their appearance in winter as well as in summer by introducing plants that retain their foliage intact throughout the year. In large rockeries, or even where the individual stones are above the average size, a few evergreen plants scattered here and there are indispensable. They hide the bare stones and set off to advantage spring and autumn-flowering bulbs. Nearly all the species of Acanthus, most of them being striking plants, are valuable in such positions, more especially A. longifolius, spinosus, and mollis. In well-drained soil they succeed admirably, and are not at all troublesome. When in flower they are very effective. The Pampas Grass is also very attractive, especially when in flower, the variety of it called plumosum being quite a gem and exceedingly beautiful. The common Globe Artichoke, although ordinarily grown for culinary purposes, is one of the most useful of fine-foliaged plants; when allowed to flower, however, it becomes leggy, and, therefore, the flower-head should be picked off when quite young. The leaves are very deeply divided, and downy white on both sides—resembling, in fact, frosted silver. A good mulching assists it considerably. Both Helleborus fœtidus and H. lividus can also be used effectively in this way.—K.

Gaultheria procumbens.—There is nothing very striking about this American evergreen creeper, but for all that it is very useful and pretty, and it would be hard to name many better things for growing either on flat surfaces or on rockwork where there is peat. It never seems to be out of flower, and for a good part of the year it bears bright-coloured berries. Moreover, its foliage is always pleasing and crisp, shining and variously tinted with shades between green and red. In a barrowful of peat cast into a hole 9 in. or 13 in. deep quite effective specimens may be had in a short time, for it is a rapid surface rooter. The wonder, indeed, is that it is not more grown than it is. A ready way of establishing it is to form a dip in rockwork, and fill it up with half-decayed Cocoa-nut fibre in which a few roots may be pressed firmly, and small stones placed over them. In two years all will be covered with tinted foliage and fruit. As the old fibre settles, fresh dressings should be applied, preferably of peat and sand.—J. Wood.

Purple Saxifrage.—One is bound to stop and admire the rich colouring of this fine plant—Saxifraga (Megasea) purpurascens. The leaves of young plants scarcely a year old from root cuttings colour almost as finely as those on older plants, and they are of a clear vermilion and very effective. It may be useful to say, however that they only assume fine autumnal tints when grown well exposed to sunshine, and if the situation is dry all the better. Rockwork having a south aspect would suit this Saxifrage admirably. What a fine painting it would make!—leaves green, coppery red, vermilion and yellow, all existing at one time on the same plant.—J. W.

The Spanish Iris (Iris hispanica).—Though so called, this is really a native of Portugal, where it is found growing in great patches on sandy hillocks. It is a bulbous perennial, growing from 10 inches to 20 inches in height, according to variety. The leaves, unlike those of the common Flag, or yellow Iris, of our own marshes, are narrow and pointed; flowers are varied in colour, but yellow, purple, light and dark blue predominate. This is but little known, though a very valuable addition to our gardens, and those who like a rich mass of colour should plant a few dozen bulbs for next summer's bloom. With ladies it is a great favourite, especially in a cut state, as it lasts for a considerable time and the colours are pleasing. The present is a good time for planting in a very sandy soil, giving a nice warm aspect. Year after year it will continue to come up and increase in numbers, but never to the extent of being a weed. It is thoroughly hardy, but, like many other bulbous perennials, is liable to be damaged if the ground is not drained. To see it to advantage, grow in a small clump, and, if planted under Arabis or other dwarf-growing plants, the rich velvety flowers look well on their green cushion.—V. V. V.

Ficus repens in the open air.—Some time ago we were charmed to see this plant, usually grown under glass, covering walls near Bristol in a very pretty way and in perfect health. It was a low wall in front of a glass-house, and was densely covered with foliage, swelling in many pretty little waves and hillocks, and yet never getting loose or patchy. We have never seen quite so perfect or delicate a carpet for a wall. We remember also to have seen this plant in perfect health on a wall in Kilkenny, but there the leaves were larger and quite of a bronzy colour.—R.

Tigridias.—These are grown in the open borders rather largely, and I have no hesitation in saying that the success attained here surpasses anything I have before seen; they are planted in good sized clumps in spring, the soil being made thoroughly rich with well-rotted manure. Through the summer they are watered with manure water. Under this treatment they make plenty of healthy leaves and flowers-stems more than 1 foot high, and bear a corresponding number of flowers, which, when seen in the early part of the day, are rich and striking. In autumn the bulbs are taken up with the stems attached to them, laid in boxes of dry soil, and kept in a cool house all the winter until planting time comes round again.—J. C., *Taunton*.

Michaelmas Daisies.—I was pleased to see Mr. Leach's note on page 537, calling attention to these fine flowers. I was never so much impressed with their beauty as when, some time ago, after travelling for some hours over fields and ditches, I came upon a farmhouse standing back about 30 yards from the entrance gate. On either side of the pathway leading up to the front door was a row of large bushes, about 4 feet high, and as much through, and just touching each other, of Michaelmas Daisies. The shoots not tied up at all; some of the stems stood

erect, others bent over, some were laid upon the Grass, all being covered entirely with flowers just at their very best—a veritable avenue of blue, and just about the last thing one would have thought of to plant an avenue with.—T. S.

Single Dahlias from seed.—The great variety of colours and the fine form of the flowers of Dahlias raised in this way, render it, in my opinion, quite unnecessary to grow named kinds; and, for the future, I shall discard all that we have hitherto kept according to name, with the exception of Paragon. Of that variety I have raised many scores of plants and flowered them, but in no instance has that variety reproduced itself true. All others, however, even the best, with white flowers, will come from seed in such varied colours that for all ordinary purposes of garden decoration seedlings are equal to named plants. I do not think that any of them can be depended upon to produce any great percentage of plants true to the original; but if seed is obtained from a good strain, an ordinary packet will produce variety enough to please everybody, and in the case of those who have the convenience of a heated structure in spring in which to raise the plants, they can be had in flower quite as early as plants raised from cuttings, and certainly with less trouble.—J. C.

REPLIES.

15181.—**Drying Pampas Grass.**—If "H." cuts the Pampas Grass when the inflorescence is just opening—when the flowers are about the same age as Everlastings when cut for drying—the plumes will retain their colour for many months; but if the spikes are allowed to remain on the plants until the weather has discoloured them the proper colour cannot be recovered. We usually cut our supply early in October, and suspend them, plume downwards, in a dry loft. We have some now that were treated this way last year, and they are nearly as bright as they were when cut from the plants. —J. C. C.

15203.—**Laying out garden.**—With so many borders to plant there is scope for a good deal of variety of treatment. For instance, I would suggest that one border should be planted chiefly with bulbs—the early-flowering bulbs, such as the Crocus, Daffodils, Tulips, &c., to be followed by spring-sown annuals, which might be sown in a reserve bed, and transplanted. I should say the bed marked No. 2 would do for the bulbs. The back line might be Lilies of various kinds, including the old white candidum —indeed, half a dozen groups of candidum would make a good back ground. Between might come groups of Gladiolus brenchleyensis, and hybrids; then Daffodils, Fritillarias, Tulips, Hyacinths, Crocus, Scillas, Snowdrops, &c. The bulbs will do better together, and with a few such annuals as the Godetias (various), Stocks, Asters, &c., to fill in in June, a good summer and autumn display may be obtained at a small expense. When the annuals come off, the border should be top-dressed with rotten manure, and some turfy loam, if available, and left till spring. Border No. 1 might have half-a-dozen Phloxes of distinct colours in the background, then ten Dwarf Roses, H.P.'s, also distinct. Next, a dozen of different-coloured border Carnations, with a few patches of Christmas Rose and Lily of the Valley worked in along the front. The borders under No. 3, being on each side of the hall door, and of a south aspect, might have a preponderance of spring flowers, especially near the front. The following plants would do along the back:—Lychnis chalcedonica, fl.-pl. (3 feet, scarlet); Baptisia australis (3 feet, blue); Chelone barbata (scarlet, 2½ feet); Delphinium formosum (blue, 2½ feet); Dielytra spectabilis (2½ feet, rose and yellow); Iris germanica in variety (various); Lupinus polyphyllus (3 feet, blue); Liatris scariosa (3 feet, purple); Pyrethrum in variety (2 feet); Papaver orientale (2 feet); double Potentilla in variety (2 feet); Statice latifolia (blue); Spiræa japonica (white, 2 feet); Stenactis speciosa (purple, 2 feet); Tritoma Uvaria glaucescens (red or orange, 3 feet); Veronica amethystina (blue, 2 feet); Anemone japonica, rosea and alba (3 feet); Rudbeckia Newmanni (3 feet, yellow). Along the front might come such plants as Aubrietia grandiflora, Adonis vernalis, Alyssum saxatile, Arabis albida (white), Campanula carpatica (blue), Cheiranthus Marshallii (yellow). The place will be too hot for Pansies, or else they will make a bright margin in spring. Primroses and Daisies should find a place somewhere, as also should the dwarf Wallflowers and the dwarf Phloxes. These latter grow 3 inches or 4 inches high, and would do close to the edge. The Gibraltar Iberis and the Hepatica, in various colours, would supply a few bright clumps in early spring. I think all such borders require to have all the plants lifted every three or four years, and the ground should be well manured, and trenched 2 feet deep, and then a fresh arrangement could be made. If I had a dozen borders to plant I should want as many different features, unless they were match borders, one on each side of a door or walk, and then the system adopted should bear some relation the one side to the other. Perhaps what I have said may supply a hint or two. There is plenty of room for variety of treatment. Some of the plants may stand singly, others may be grouped, and I think everyone should use his own judgment. There has been too much of borrowing ideas and following in a particular track in the planting of such borders. —E. Hobday.

INDOOR PLANTS.

Justicia speciosa.—Where flowering plants are required in quantity for decorative purposes this Justicia is especially valuable, as it is a plant of the easiest culture, and is just now thickly covered with bloom of a pleasing shade of light purple, blotched on the upper part with the same colour. Though individually the flowers do not remain long in perfection, yet they are produced in such numbers, that by means of them the plant is rendered effective for weeks together. It makes a good companion to winter-flowering Salvias, and supplies a tint which is, as far as I am aware, unrepresented among them. Cuttings made of the young shoots strike root in a short time, and after being potted off grow away quickly. Though requiring no great amount of heat during summer it should be grown under glass, as its foliage is apt to become discoloured if too much exposed. Throughout the growing season the syringe must be used pretty freely, otherwise red spider is apt to make its appearance.—H. P.

The Sweet Luculia as a wall plant.—Just outside the morning-room door, which leads into the conservatory in a gentleman's house, near Newport, Luculia gratissima has been put into a bed and trained over a large space on the wall, and at present it is dotted over with many fine trusses of lovely delicate pink blossoms, and the delicious fragrance which they emit is delightful. There are many well grown and attractive plants in the conservatory just mentioned, but none so striking as this, and I am sure, if your readers could see it, Luculias would be oftener met with than they now are in conservatories. They bloom naturally at this time, and I would place them in the foremost rank among December-flowering shrubs. The plant referred to is growing in a mixture of peat, loam, and sand. It required a little extra attention to establish it, but after that it was among the easiest cared-for of greenhouse plants.—C.

The Wood Sorrels.—Besides the value of these plants for the decoration of the greenhouse in spring, they are equally effective if planted in exposed positions on the rockery during summer, flowering as they do at various times through the year, and always forming dense little tufts of green, bronzy, or silvery leaves. Of course many of the species are too tender to live out-of-doors through our winters, and these it is necessary to protect during the cold season. The bulbs or tubers formed by most of them render this an easy task, as they may be taken up and kept in sand, or even paper bags, until the return of warmer weather, when they may be replanted in a rich, loamy soil in their former quarters. Under pot culture any rich soil will suit them, but they must have plenty of drainage and moderate pot room. During summer they should be placed out-of-doors, and if possible plunged in ashes. Here they may be left to take care of themselves, though it is never advisable to allow them to have too much rain. Some have recommended placing them in a dry situation in summer, but such treatment for a moisture-loving plant I consider to be a mistake. In the autumn the pots should be transferred to a cold pit or frame, and plunged in ashes as before. Here they soon commence to grow, and by the beginning of February many of them will be in flower. During their growing season a free allowance of liquid manure should be given them. They should be repotted as soon as they have lost most of their leaves. Some of the most beautiful of the species are Oxalis floribunda, O. speciosa, O. grandiflora, O. tricolor, O. crenata, O. cernua, O. asinina, O. lutea, O. enneaphylla, O. lanata, O. pectinata, O. sanguinea, O. versicolor, and O. Bowei. Besides the greenhouse kinds there are several shrubby species cultivated in stoves, one of which (O. sensitiva) is a pretty and interesting plant. It has leaves not unlike those of the sensitive Mimosa, and, like them too, they are sensitive to the touch. O. fruticosa and O. Plumieri are pretty yellow-coloured kinds. O. scandens is a remarkable Oxalis from its habit of climbing; otherwise it is of little horticultural interest. —B.

REPLIES.

15319.—**Azalea leaves dropping off.**—There is nothing unusual in the leaves of Azaleas falling off in the autumn—in fact, it is perfectly seasonable for them to do so. They do so when in perfect health at this time of year, but it is quite necessary to water them with great care from this time until the end of February, as the soil should be kept only just moist, and not wet, for days together.—J. C. C.

15307.—**Imantophyllum not flowering.**—This is a very strong rooting subject, and it is possible that your specimen has not root room enough to make it flower. However, take the Editor's advice, and leave it alone until the middle of February, when you may examine the roots, and if the pot is very full of roots you should give it a larger pot; on the other hand, it must not be over-potted, as it will grow all to leaves if the roots have too much room. I have had them crack the pot owing to there being so many roots, and yet flower satisfactorily. Has your plant had enough water?—J. C. C.

15102.—**Culture of Mandevillas.**—The Mandevilla requires a good-sized house to do it justice, where it can ramble about and hang dangling from the roof. It does best planted out, and, as it flowers on the young wood, it must have plenty of room to grow, and the growth must be made in the full light to ensure plenty of flowers. I remember a plant I had in a conservatory, which used to ramble outside through the open lights in the summer, and the outside growth was more robust and fuller of blossoms than that made inside. The plant is rather subject to greenfly, especially if the growth be weakly and made some distance from the glass or where the light is imperfect. Though it does best planted out in a large house, it may be grown successfully in a good-sized pot in loam and peat. Its large clusters of pure white fragrant flowers are very desirable in summer.—E. Hobday.

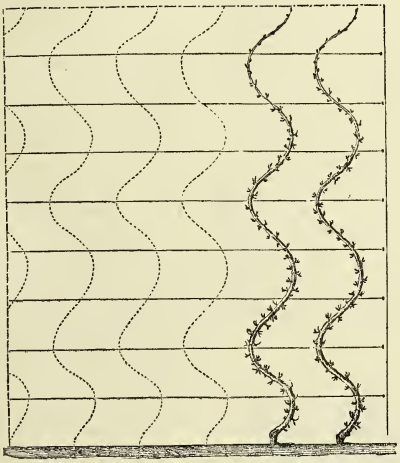
15316.—**Culture of Onoclea sensibilis.**—The fronds of this species die rather earlier than those of most other kinds, and this is its only defect. I am, however, surprised that they should have gone off so early under the protection of a cool glasshouse. This Fern is very charming when the fronds have the freshness of youth in them, but it has not the substance which our own native hardy kinds possess. The mould which forms on the surface of the soil is a fungus caused by a very damp, confined atmosphere, and would indicate a too saturated condition of the soil, and, probably, insufficient air. Ferns like a moist atmosphere; but fresh air should always be admitted when the weather is favourable.—J. C. B.

15086.—**Striking cuttings of Chrysanthemums.**—If you have a hotbed you can commence striking cuttings in February. If not, shake away a portion of the old soil from the old plants, and search for the suckers which have roots, and pot them singly in 3-inch pots. Do this about the middle of March, and keep them in a cold pit or frame kept rather close for a few weeks. Cuttings put in without roots at the beginning of April will strike in a

warm greenhouse or cold frame. Plant out the old plants close to a warm wall or fence, and if you reside in a favourable district they will flower in the autumn.—J. C. C.

15191.—**Foliage plants for conservatory.**—The plants in the following list are all suitable, and may be used to select from:—Palms: Seaforthia elegans, Kentia australis, Phœnix dactylifera, Dracæna indivisa, D. rubra. Tree Ferns: Alsophila australis, Cyathea dealbata, Dicksonia antarctica, Arundo Donax variegata, Aralia papyrifera, Coprosma Baueriana, Eurya latifolia variegata, Ficus australis, Grevillea robusta, Phormium tenax variegatum, Aspidistra lurida variegata, Seaforthia elegans, Dracæna indivisa. These will make a nice group.—E. Hobday.

15309.—**Chrysanthemums after blooming.**—In answer to "Young Beginner"—I have tried several ways of managing my plants after they have done blooming, and I have found the following plan to answer admirably:—As soon as they have doue blooming I cut them down to within 6 inches of the soil, and place the pots in a cold frame, and let them have plenty of air. They will soon throw up strong healthy cuttings, which can be



The Spiral Cordon against walls. (See page 566).

taken off when about 3 inches or 4 inches long, and inserted in sandy soil, around the sides of 3-inch pots. Then well water and place in a frame, where they will soon root. The above plan I have found answer well, especially with amateurs who have only cold frames to depend upon.—J. M., *Walthamstow.*

15114.—**Lobelias in pots.**—With careful watering you may keep your Lobelia plant through the winter, as it is not an annual; but you will do better next year if you start with a younger plant. The ordinary bedding variety named pumila is not so suitable for suspending in a window as L. Erinus, which has much stronger growth. Remember that any plant suspended in the way you suggest requires more water than one standing on a window-sill.—J. C. C.

15266.—**Making small greenhouse pay.**—It is difficult to give a satisfactory answer to "C. H. A.," as she does not say whether her house is a sunny or a shady one, or whether she has a garden or not. If in or near a town, with the addition of a cold frame many half-hardy bedding plants could be raised in the spring; but, if that is impracticable, "C. H. A." had better try easily-grown plants, as Fuchsias, Pelargoniums (zonal and Ivy-leaf), Musk, Abutilons, Lantanas, Heliotropes, double Petunias, &c., and grow them into nice specimens for window decoration, or sell the cut flowers, if they are in demand. The expenses in connection with such a small house should not, if properly managed, exceed twelve shillings per year, after a good stock of plants is got together. My greenhouse more than pays its own expenses. This year I have over £1 clear profit. I have already endeavoured to show (June 27th, page 208) how I do so. I shall be glad to give further information if required. —J. H., *Accrington.*

15308.—**Maiden-hair Ferns.**—These are very easily grown; but peat and silver sand are not the best materials to grow them well. Two parts of decayed turfy loam should be added to the peat and sand. The pots need not have any soil round them, nor tubs of water under the bench. The use of the water is not apparent.—J. D. E.

15024.—**Ferns.**—Pteris tremula, P. cretica albo-lineata, P. serrulata cristata, Davallia canariensis, Cyrtomium falcatum, Asplenium bulbiferum, Asplenium flaccidum, Woodwardia radicans, Nephrolepis exaltata, Polypodium aureum, Platycerum alcicorne, Adiantum assimile, A. cuneatum, A. formosum, A. setulosum, A. venustum, A. Williamsi, Pteris scaberula.—E. Hobday.

15204.—**Cyclamen dying.**—The corms had been weakened by some cause; perhaps lack of rest. The simplest way of treating Cyclamens by those who have not much time is, when they have done flowering in the greenhouse, to plant them out in a bed of sandy soil, in a partially shaded situation, covering the crowns with the soil, and pot them up again in the autumn.—E. Hobday.

15096.—**Treatment of Poinciana Gilliesii.**—This Poinciana is the hardiest of the group, and will succeed in the greenhouse or conservatory. It has a shrubby habit, growing from 6 feet to 10 feet high, according to conditions of treatment. The flowers are yellow, and are borne in loose spikes at the end of the shoots. Sow the seeds in heat in February, and grow them in heat till nicely established; then move to greenhouse.—E. Hobday.

15361.—**The Wagga-Wagga Iris** is, perhaps, the common native "Gladden" or Gladwyn (Iris fœtidissima). The red-seeded fruits of this became very popular in Covent-garden years ago (during the Tichborne trials at Westminster) under the above name. It has erect, dark green leaves, which smell badly when bruised.—F. W. B.

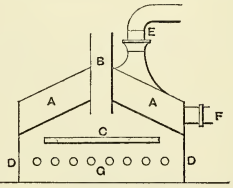
15093.—**Solution for cut Geraniums.**—The simplest kind of styptic for stopping the bleeding of Geraniums is quicklime. The lime must be fresh, and the ends of the cut shoots should be thrust into a pan of it. This will do in the case of plants lifted from the garden with most of the leaves cut off. In other cases the liquid knotting used by painters, applied with a small brush, will answer every purpose.—E. Hobday.

15205.—**Gladioli for competition.**—The best twenty-four are: Adolphe Brougniart, Ambrose Verschaffelt Atlas, Bicolor, Carnation, Celinéne, Dahlia, De turbel, Duchess of Edinburgh, Eclair, Feu Follet, Giganteus, Flamboyant, Hercules, Horace Vernet, Lady Brideport, Leander, Leda, Mabel, Marquis of Lothian, Madame Desportes, Murillo, Orpheus.—J. D. E.

—— I think the following twenty-four varieties are among the very best in cultivation: Admiral Willis, Earl of Airlie, Dr. Hogg, Dr. Woodman, Earl of Strathmore, James Douglas, James Kelway, Lady Aberdare, Lady Bridport, Lord Bridport, La Vésuve, Magnificent, M. Legouve, Princess Mary of Cambridge, Queen Mary, Victory, Yellow King, Claribel, Horace Vernet, Madame Furtado, Duchess of Connaught, Grace Darling, Madame Dombrain, Sir J. Paxton.—R. M., *Shadwell, Leeds.*

HEATING SMALL GREENHOUSES.—II.

These atmospheric gas burners afford a large amount of heat, with a very small consumption of gas. It should be fixed preferably in a small outhouse or shed, and not in the greenhouse, though I have occasionally placed the boiler and burner inside the greenhouse with good results, certain precautions being taken. These are, to prevent any escape of either gas or fumes, and to guard against down-draught, which is often productive of great mischief. The advantages of having the boiler placed inside the greenhouse is that all the heat from it and the flue is utilised, whereas if the boiler is placed outside, all the heat, except just that given off by the pipes themselves, is wasted. As the slightest puff of wind down the flue puts out the gas, especially if turned low, it is nearly always necessary to have one of the patent cowls, or flue-caps, fitted, when the fiercer the storm outside the stronger the upward draught becomes. It is also a great advantage to have the central flue-pipe carried down an inch or two below the boiler. This not only prevents the gas being blown out by anything short of a strong gust of wind, but, by checking the heat from the burner in its passage into the flue, throws more heat into the boiler, and allows less to escape into the open air. A copper boiler of this description, 14 inches or 15 inches in diameter, occupies but little space, and will heat from 20 feet to 30 feet of 1½-inch or 2-inch piping well, which, the boiler being also inside the house, and the flue (2 inches in diameter) carried up through the roof, will keep a greenhouse, 10 feet or 12 feet by 6 feet, by 8 feet to 10 feet high (at the back, if a lean-to), safe from frost, at least—that is, if in a fairly sheltered position, as it is



A A, water space; B, flue; C, annular gas burner; D, casing (atmospheric); E, flow; F, return; G, air holes in casing.

almost certain to be in a town. The gas can be turned on and lit at any moment, and in less than an hour the water will be thoroughly heated; the action is perfectly regular, there is no dust, mess, or ashes, and, beyond a little fresh water in the cistern occasionally, no attention is required. It is not well with this kind of thing to employ large pipes—the body of water becomes too great for the comparatively small amount of fire or flame. Tubes, 1¼ inch, 1½ inch, or 2 inches in diameter, are most suitable, and if any larger are used they should be made hollow—that is, with another inner tube, so as to reduce the water space as much as possible. The great thing is to prevent the escape of gas fumes into the house, but with down-draught prevented by a proper cap this will give no trouble. Of course, where gas is not available, a suitable lamp for burning paraffin may be substituted; this should have three or four broad wicks, and, if properly constructed and attended to, will give much better results than the ordinary paraffin stoves, as all the products of combustion are carried outside the house. These

Paraffin or lamp stoves had perhaps better be taken next. They are undeniably useful, to a certain extent, and a good one is quite capable of excluding frost from a small greenhouse (say, not exceeding 500 feet of cubic contents). This will, of course, enable the hardier kinds of plants (Geraniums, Primulas, Fuchsias, &c.,) to be just kept alive through the winter; but beyond this they cannot go, and to expect to grow things properly, or to obtain any reasonable amount of bloom in the dark days, is mere folly. There is no doubt that the cause of these stoves being so generally in use is their cheapness in the first place, a very decent

article being obtainable for a few shillings—but, at the same time, it is a great mistake to purchase a commonly made one, as they burn so badly, and give off such a dreadful odour. In this respect these stoves vary greatly, some being almost odourless, while others are simply insufferable when in action. Of course the higher-priced ones, of superior construction, are much less open to this serious objection, which undoubtedly affects plants to a great extent; and the best way to avoid it is to purchase a really good and well-made stove. To keep it thoroughly clean, burn the best (not common) oil, and, above all, never burn the lamp unless it is really required; for to use the stove in mild weather, or when the outside temperature is above 40 degs., is not only wasteful, but actually injurious. Beyond these the only other practically useful apparatus that have come under my notice are the "Calorigens," or

Hot-air stoves, which sometimes seem to work very satisfactorily, though they have naturally a very drying influence on the atmosphere. These are constructed to burn either oil (paraffin) or gas. Secondly, the slow combustion terra-cotta stoves (without hot water), which are exceedingly economical in action, and give off a gentle and regular warmth, quite sufficient for a small house. They also only require attention twice daily, if properly charged. Flues are quite out of date, though by no means expensive in the first place. Unless the furnace is sufficiently large to keep in for eight or ten hours, they are a source of endless trouble, and in this case it is far better to employ hot water. Besides, flues have such a desiccating effect upon a house that they necessitate constant labour (except, perhaps, in very damp houses) in watering the floors, &c., where any degree of moisture is essential, as is usually the case.

In fine, I wish strongly to recommend, for large or good-sized houses at any rate, a hot-water apparatus, heated by a suitable slow combustion stove to burn coke or smokeless coal. For small houses, of say 500 feet of cubic contents, or less, a small gas-boiler, with atmospheric burner and small gauge pipes. This can be constructed on any scale, down to a size that, with a few feet of ¾-inch piping, and a mere flicker of gas, will maintain a regular genial warmth in a Fern or window case, 3 feet long by 18 inches wide, or even less.

B. C. R.

POULTRY.

The most profitable fowls.—Having had the management of poultry for ten years, and kept the following sorts—viz., Brahmas, Game, Dorkings, Leghorns, Cochin, Hamburgh, Spanish, and Houdans—I found the last-named the most profitable. It is an all-round good bird, being excellent for the table and a first-class layer, producing fine large eggs. It is, I think, a very hardy race, and one that does well on a wet run, as my run was a very cold, wet one. Spanish would not do at all; the light Brahmas did fairly well for one season; Leghorns are first-class summer layers, but nothing for winter; dark Brahmas, Cochins, were always wanting to sit; Game were too delicate; Hamburghs good layers, but too small for the table. After giving them all a thorough trial, I came to the conclusion that Houdans are the best suited for a cold and wet climate.—T. C., *Kent.*

15461.—**Management of Poultry** *(A. C. C., Ireland).*—"A. C. C." is giving too many Potatoes, and his system of feeding in other respects is not what it should be. Potatoes make a useful food when given in moderation and mixed with meal, but are far too fattening when they form the principal portion, as in the present case. The grain should be given at the end of the day instead of at mid-day. If "A. C. C." will feel his fowls at ten o'clock at night he will find their crops quite empty, whereas, if fed with grain, there is plenty left to supply the wants of the birds until the morning. I advise him, therefore, to discontinue the Indian meal and poultry Rice entirely, also the greater part of the Potatoes, and use instead, for the first meal, a mixture of Barley-meal, Potatoes, and any other vegetable refuse. At mid-day I should give only the scraps from the table, and at night a feed of hard grain—such as Wheat, Barley, or Buckwheat. Fowls which have their liberty do not really require a mid-day meal, for if it be given them they are likely to become sluggish, and will not forage for themselves. As to the quantity of food, I always say it is best to give just as much as the birds will pick up with a relish, and no more. Trust rather to the birds themselves than to any set rules, for the appetites vary so much. The use of pepper is only to be recommended at moulting times or during cold weather. It is not surprising that "A. C. C." has no eggs. His hens are now resting, and his pullets are a little too young. They should have been hatched in March or early in April.—Doulting.

BEES.

15462.—**Shading hives** *(C. W. R.).*—Frequently in cold weather sudden gleams of sunshine entice bees out of their hive in great numbers, when they in many cases become chilled, fall to the ground, being unable to regain the hive, and thus perish. The sun shining upon snow seems to be a special temptation to the bees to leave the hive. It is beneficial to them to take an airing now and then during winter on really mild days, and they must in no case be confined to their hives. The zig-zag entrance provided to some bar-frame hives is most effectual, on account of its form, in preventing the direct rays of the sun entering, and is also most useful in checking robbing and fighting, as the narrow tunnel-like entrance gives the defenders great advantage over their adversaries. As your hive, probably, has not an entrance of this kind you should fix a shading-board before the front of the hive a foot or two in advance. By adapting this precaution you will find that the bees will only leave the hive when the temperature is sufficiently high to allow of their doing so with safety. Great numbers of old bees die off at this time from natural causes, and every mild day the dead are cast out of the hive. This partly accounts for the decrease in the population of your hive. Nothing tends more to keep bees in health during the winter than a dry hive placed in a dry, sheltered situation. It is seldom that a colony of bees dies from cold; it is internal dampness of the hive that kills.—S. S. G.

Books received.—*The Turkish Bath in Diseases of the Heart, Obesity, and Atrophy.* By Richard Metcalf.—John Heywood, 11, Paternoster-buildings. E.C.—*The Destruction of Scottish Agriculture.* By the Rev. George Brooks.—Woodford Fawcett, and Co., 8, New Bridge-street, E.C.

Catalogues received.—*Forest and Ornamental Trees, Shrubs, Roses, Fruit Trees, &c.* Hogg and Wood, Coldstream and Duns, Scotland.—*Novelties and Specialities in Seeds, Vegetables, Fruits, Flowers, &c., for 1866.*—Thomas Laxton, Bedford.

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OUTDOOR PLANTS.

FAVOURITE FLOWERS AND HOW TO GROW THEM.—I.

The Pansy.

Enquiring minds are not satisfied with merely a superficial knowledge of the culture of their plants, but have a desire to know something of their origin and history. Our garden Pansy has been traced by some to the common garden weed, Viola tricolor. There are other species entitled to compete with V. tricolor for this honour, notably Viola montana. This species was cultivated two hundred years ago, and was well known as a garden plant. The original species is well figured in the "Botanical Magazine," plate 1595. The flowers are bluish. Viola altaica, a species with pale yellow flowers, also figured in the "Botanical Magazine," plate 1776, seems not very far removed from the yellow-coloured Pansies grown in our gardens now, except that it has not the large size and rounded form. The petals have a very irregular outline, and from the centre radiate several blue rays, instead of the solid dark blotch so much esteemed in the garden varieties. The origin is no doubt lost in obscurity, but it is quite as feasible to trace it through Viola montana or V. altaica as through V. tricolor. The garden varieties of the Pansy are now very numerous, and they are universally admired. No hardy flowers are more easily grown, or better adapted for small gardens. The plants can be placed in any part of the gardens, either in beds by themselves, or planted out in the borders; and for early flowering they may be planted out in frames or grown in pots. I would like to place before the readers of Gardening, in as few word as possible, the propagation and cultural requirements of this lowly but lovely flower in the open garden and in pots,

Beginning in the first month of the year with the plants in beds or borders. If the ground is frozen nothing can be done; but when a thaw comes it is possible that some of the plants may be much loosened, and if they are not well established may be thrown out of the ground altogether. Press the plants into the ground with the fingers of both hands, and after this is done cover the surface of the ground round the plants with some fine soil, and peg down the long shoots into this, a necessary arrangement which prevents the plants being broken over by frost winds. This treatment may be followed up to the end of March. Admirers of the Pansy may with advantage fill a frame with them. They are really beautiful in March and April if well grown in pots, large-sized young plants ought to be established in small pots by the end of October to be repotted again into 7-inch pots about the end of January or early in February. 6-inch and 7-inch pots are large enough to bloom them in; but the soil ought to be of the best quality, and well enriched with decayed cow or stable manure and a fourth part of leaf-mould; mix some pounded charcoal and sharp sand with the compost. When the plants have been carefully potted peg the long growths out over the surface, and place them in cold frames; the tops should be so close to the glass, that the lights may be pushed off without injuring the plants. Admit air quite freely; and when the weather is mild and fine the lights ought to be drawn off. The plants, when well established in the pots, require a good supply of rain water, but must on no account be quite wet. They will grow very freely in fine weather, and will be nicely in flower during March and April. They are not much troubled with insect pests at this early season of the year; but green fly will live, if it does not flourish much, and if there are any specimens of it to be seen fumigate with tobacco smoke. Look out for slugs, and the leather-coated or other grubs and caterpillars. They may be found feeding at night, when they are easily caught and destroyed. When the flowering period is over, take the cuttings off those near the base of the plants; the old plants may be thrown away when they are exhausted. As soon as the plants in frames have finished flowering those out-of-doors will succeed them.

Bunch of winter Pansies.

The out-of-door plants begin to grow freely early in the month, and if the weather is favourable they will be in flower by the end of it. The strongest growing varieties should be planted about fifteen inches apart; the more weakly growing kinds ten inches or a foot apart. April is the month in which the flowers are developed in the greatest beauty; the richness of colouring of some of the varieties is very remarkable at this early season. In the north and in Scotland they are not in full beauty until later, but they are charming in May. Pansies form large masses of roots, and if they are planted in a bed the roots will permeate every portion of it to the depth of 18 inches. They also like a very rich soil, and during the operation of trenching it up a layer of manure ought to be placed at the bottom. If the soil is heavy loam a layer of leaf-mould should be spread over the surface, and be forked in. Road sand may be used as a substitute for leaf-mould. Stable manure is best for heavy loam, and cow manure for light, sandy loam.

Propagation.—Pansies are propagated in two ways—by seeds and cuttings. They do not come true from seeds, so that any particular variety must be increased by cuttings. These may be taken off and rooted in the open ground or under hand-lights at any season of the year; but the best time is the end of July or early in August. I never propagate them at any other time if I can help it. On examining the old plants there will be found a number of thick, hollow-stemmed shoots, which have produced the flowers—these are not the best for cuttings; the small, slender growths which have been formed round the neck of the plants are the best. They can be gently drawn out with the fingers, and with a portion of the roots attached to them. Those who cannot place them under glass will have no difficulty in striking them in a partially shady place out-of-doors in light soil. The plan I have adopted for many years with great success has been to plant the cuttings in rows in shallow boxes, and place them in cold frames with the back of the frames facing the south; nearly every one of the cuttings will form roots in a few days.

Seeds ought to be sown about midsummer. They will produce strong plants, which may be set out in beds early in September, to produce strong flowering plants by the end of the year. They pass through the winter uninjured. One of the most beautiful features we ever had in our garden was a bed of seedling Pansies; it was 60 feet long and about 6 feet wide, the plants 9 inches or 10 inches apart. The flowers opened freely early in March, and from that time until the middle of June we had such a display of bloom as no bed of named varieties could equal. Those who have not grown Pansies I would advise to purchase a packet of seeds of the fancy or Belgian type. Sow the seeds about the first day in July, in a shady place out-of-doors; when the seedlings can be easily handled prick them out 3 inches or 4 inches apart, and by the first week of September, or perhaps by the middle of that month, they may be planted out in a bed or border of deep soil, thoroughly well enriched with decayed manure; the results, I am certain, will be of the most pleasing kind. If any specially good varieties bloom amongst the seedlings it is easy enough to propagate them from cuttings in the usual way. Those who prefer the more sober tints of the show varieties can as easily obtain seeds of that section, and they can be grown quite as easily from seeds. The following lists contain the best show and fancy Pansies that have been introduced to commerce up to the present time:—

Twenty-four show Pansies.—*Selfs*: Andrew Miller, light plum; Archibald Rolland, yellow; David Malcom, very dark; Harry Paul, purple; James Morrison, dark self; Mauve Queen; Mrs. Goodall, white; Mrs. Galloway, white; Mrs. Gladstone, white; William Crockart, yellow. *Yellow grounds*: David Dalgleish, bronzy purple belt; Ha Murray, broad purple belting; Matthew Bullock, bronze purple; Lizzie Bullock, purple; Thomas Ritchie, purple; William Dickson, light plum. *White grounds*: Devonia, purple margin; Fair Maid, broad purple belt; Miss Jessie Foot, light purple; Miss Ritchie, purple; Mrs. James Miller, dark purple; Mrs. J. G. Paul, purple; N. H. Pownell, purple. The white and yellow ground varieties have a narrow or broad margin of different shades of purple, which is called the belt; the upper petals are similar in colour to the margin.

Twenty-four fancy Pansies.—Bob Montgomery, dark maroon blotch, yellow margin;

Catherine Agnes, violet purple, white edge; Craigforth, violet blotch, margin white; Charlie Stansell, heavy dark blotch, white edge; Edward Caird, reddish maroon; Evelyn Bruce, yellow upper petals, purplish blotch; James Gardiner, rosy red; Janet Orkney, dark blotch, white edge; May Tate, yellowish, large dark blotch; Miss Bliss, reddish bronze, whitish margin; Mrs. Barrie, yellow, dark maroon blotch; Mrs. G. P. France, dark blotch, crimson shade; Mrs. John Downie, lemon, chocolate blotch; Mrs. F. McComb, purple, mulberry blotch; Mrs. John Stewart, upper petals creamy, violet blotch; Princess Beatrice, dark blotch, white margin; Silver Wing, dark blotch, white margin; Tom Bell, purple blotch, straw margin; William Dick, maroon blotch, yellow margin; William Dickson, violet and white; William Cuthbertson, dark blotch, yellow edge; William Dean, dark blotch, yellow edge; Mrs. Welsh, dark purplish self, white edge; W. E. Gumbleton, maroon, crimson and yellow. James Douglas.

Ornamental Cucurbitaceous plants.—Cucurbits, although not so showy as one might expect, are, nevertheless, when appropriately used, very effective. For covering old buildings and tree trunks they are unsurpassed, as their quickness of growth enables them to clothe them in a surprisingly short time. For this purpose the common Bryony is very useful, and doubly so, being within the reach of everyone. Even on account of the variety in their fruits alone they deserve a place in every garden. The squirting Cucumber itself never fails to interest one; it grows regularly every year from self-sown seed, the only attention required being to thin out seedlings where not desired. Of the genus Cicyos, one or two of the species are quite hardy; most of them are annuals, but they reproduce themselves freely from self-sown seed. They are climbing or trailing plants, some of them having been known to attain a height of 50 feet to 60 feet on trees, to which they cling with their corkscrew-like tendrils much in the way in which vines climb. Although they grow most luxuriantly in strong loam, any garden soil will suit them much better, as over-luxuriance in their case becomes troublesome. The fruit, which is borne in small clusters from nearly all the joints, is very singular, being covered with stiff hairs, irritating to the touch. S. angulatus is one of the best and hardiest. It is an annual and a native of North America, where it is found on the banks of the Columbia. The leaves, which are angular and slightly cordate, with the angles sharp pointed, are of a beautiful light soft green colour and furnished with remarkably long tendrils, by which the plant clings to the neighbouring brushwood, from which it hangs in graceful festoons. The flowers, which are borne in corymb heads, are large and of an attractive sulphur colour. S. pachycarpos, which is similar to the above, is also a desirable plant. —D. K.

Ficus repens on a wall.—We have this growing on a wall in the open air. The wall is 4 feet high, and faces the north-west. It is densely covered with dark green foliage, which assumes a bronzy hue after severe frost. The plant in question has been growing in its present position for eight years, during which time we have had some severe frosts, but it holds its own under all circumstances. I have also got it thriving most luxuriantly in a cool fernery, where I find it to be most accommodating. It adheres tenaciously to wood, iron, stone or glass.—T. B. F., *Bridgenorth.*

Chrysanthemums in the open air.—In the following remarks I am not going to refer to that useful class of Chrysanthemums now becoming known and appreciated for their value in the summer and autumn decoration of the flower garden; what I am going to write of are the numerous fine varieties commonly grown in pots for the embellishment of greenhouses and conservatories. It does not appear to occur to many to grow the best kinds of these in the open air to bloom in November, and I know of many who think that the magnificent flowering sorts which they see under glass are too tender for the open air, but that is incorrect; one kind of Chrysanthemum is just as hardy as another. Fair Maid of Guernsey, James Salter, Queen of England, and many others of all sections have been blooming in one of our kitchen garden borders up to the end of November, as beautiful and well as any under glass, and we have cut large quantities of flowers from them. As flower garden subjects generally are now almost out of flower and herbaceous borders are not very bright, the Chrysanthemums are most conspicuous and attractive. Many people say they never thought they would flower so well in the open air at this season, and they are going to try them more extensively another year, which is just what I want them to do, as I feel certain that all who do so will be satisfied with the result. A grower not far from here has a very large collection in his kitchen garden borders this season, and is delighted with his success; his blooms of the finest sorts are just as large and numerous as any which he had from pot plants under glass. His plants are all from spring cuttings, and they have grown well. Indeed, considering the little attention which they have had, they are remarkably good. Our plants flowering just now are mostly old pot ones of last year; after we took the cuttings from them in spring they were planted out here and there in the borders, and plants of this kind are very useful, but we are so much impressed with their good qualities in the open at this season, that we intend propagating largely next spring for open-air culture. They will be planted in mixed rows and masses. In my opinion we have no flower indoors or out to surpass the Chrysanthemum at this season, and those with no glasshouses, who see such grand displays of them at shows, must feel sorry that they do not possess the means of growing them to such perfection; but let all who have a little front garden or a back one either, or a piece of ground anywhere, plant some of the best kinds in spring, and they will be delighted with the result. I often see rows of some puny flowering sort grown in the open air, but rarely any of the large incurved or Japanese sorts, and it is these which are capable of giving the greatest satisfaction. Even in gardens with plenty of glasshouses I would recommend a good collection to be grown in the open air, as they supply large quantities of blooms for cutting, and this saves the pot plants. Newly-rooted cuttings of good sorts can always be bought cheaply in spring, and all who may be induced to invest in them may rest assured that they will prove highly remunerative.—J. M., *South Wales.*

Early Hawthorn. — This afternoon (December 4), whilst walking round the north side of the University parks, I noticed a small May tree growing in the shrubbery running from Keble Gate to the park-keeper's lodge, which was covered with fresh spring leaves, and hundreds of bunches of bloom knots. On examining the label I found the tree was called the Cratægus Oxyacantha præcox (the Glastonbury Thorn), and although I have read the legend in connection with this particular species I was unaware that it showed its blossoms at so late a period of the year.—Anon. ⁂ *It is a very early form of the common Hawthorn, and, so far as we have been able to see, not a desirable one, because it flowers at a season when it cannot perfect its bloom.*—Ed.

Wintering Dahlias out-of-doors.—I can quite endorse what "J. R." says (p. 551) about leaving Dahlia roots in the open ground through the winter, in soil of an open nature; but I would strongly advise those whose gardens are cold and heavy not to try the experiment. In light land it seems to be safer to winter them in this manner, with a small heap of ashes over each stool, than to take the roots up and store them away; and, as "J. R." says, though they are later in starting in the spring, when they do begin to grow they soon make ample amends for this by their vigorous growth. I now know a garden where there are Dahlias that have been in the place they now occupy fifteen or sixteen winters, and they come into bloom each year quite as soon as we get ours to flower where we start them in heat. We are on the clay. I have tried wintering them here and elsewhere in similar soil, but it has always proved a failure. We have Dahlias in bloom in the open ground now (December 2).—L. C. K., *Newport, I. W.*

Night flowering Tobacco plant.—This plant (Nicotiana affinis) may be grown as a perennial or annual, but I think it does best treated as the latter, as it always flowers best the first year. It has large foliage. Its flowers are deliciously-scented, pure white, and, as in the case of most of the family, open towards the evening; they close again at the beginning of daylight. It begins to flower from June, and continues till the frost cuts it down. It is not quite as tender as a great many other annuals, as 2 degs. or 3 degs. Fah. will not kill it. As it can be raised so freely from seed in the spring, it should not be omitted from any garden whatever. It is a beautiful sight to see a whole bed of these plants towards the evening, when all the flowers have opened and distributed their strong perfume. I suppose it is like a great many other beautiful plants, because they can be raised so easily they are thought not worth the growing. The seeds can be had from most seedsmen at a very low price. In raising the plants, treat as ordinary annuals.—W. Griesinger.

A basket of Pansies. (See article on preceding page.)

REPLIES.

15368. — **Pruning hardy Jasmines, Cotoneaster, and Pyracantha.** — Old plants of Jasmines are liable to get over-crowded with weakly shoots if not thinned out occasionally. If yours is in that condition have it attended to in the month of February, but severe pruning must be avoided. The Cotoneaster and Pyracantha should have those branches cut away in February which have borne the berries, if they really want pruning, which is very doubtful in your case. Our plants of the two last mentioned subjects bear berries every year, but in the case of the Pyracantha if it fruits heavily one year the crop is thin the next, and it gets very little pruning. Do not prune yours for two years and you will find that they will bear plenty of berries.—J. C. C.

—— Jasminum officinale revolutum may be pruned at once, but such as Jasminum nudiflorum should be left till flowering is over. Cotoneasters and Pyracantha, if grown against a wall, may be pruned during the spring, not later than the end of April, laying in through the summer the young growth, as on this the berries are formed, especially in the case of Cotoneaster Simonsii. The shoots of Pyracantha should be laid in to the wall two feet apart if you want them to be well berried; if in dry situation, water during summer. Birds are very fond of the berries.—Alpha, *Derbyshire.*

15343.—**Training plants to galvanised iron wires.**—Last year I had some galvanised wire, and also some copper wire to train Wistaria. This summer I found that the young

growth had twined round the former, but wherever it had touched the copper it had turned black and died; I therefore removed the copper and had a length of galvanised wire netting substituted. The plant has shown no dislike to the netting; it has grown very freely this summer, and is now supported for several feet entirely by the netting. I have also trained Virginian Creeper and Winter Jasmine to the wire netting for some months, without any apparent bad results; and a friend of mine has had several Clematis and Roses trained in the same way for more than two years. If, however, I am still likely to suffer, I shall be as grateful as "Borderer" for being set right.—Sphinx.

15367.—**Lilium auratum outdoors.**—If the Lilium auratum bulbs are imported ones, place them in some damp Cocoa-nut fibre refuse indoors until the bulbs become plump and begin to emit roots, as these bulbs suffer much from the journey over; then plant them, if small, in 5-inch pots in a mixture of peat, loam, and sand in equal parts, and plunge the pots out-of-doors in ashes until the spring. Grow them on the side of the path during the summer, not allowing them to have much sun from 11.30 a.m. until 5 p.m. When the buds show, commence feeding them with clear soot-water, or a little weak guano water, once or twice a-week. When the buds show colour take the plant indoors, as these Lilies suffer much from wind and rain.—J. L. J.

—— Last January I bought some Liliums of various sorts, one being auratum. This I potted in a 5-inch pot, and put under a wall in the garden, covering it with silver sand about 1 foot deep, where it remained about two months, when I took it out and gradually brought it to the light, and then fully exposed it. Whenever I expected frost at night I put it under a wall in a sheltered place. I found that my pot was full of roots, and shifted the plant into one a size larger, and later on I shifted it into an 8-inch pot in which it bloomed. The compost used was equal parts of silver sand, turf, mould, and stable manure made by Moss litter. The plant remained outdoors the whole time fully exposed to the south until the blooms began to open. I then took it into my drawing-room window, which faces north, and every bud expanded the same night and lasted in bloom eight days. I may say that I have never seen one come to such perfection. It had six blooms on it in about 6 inches of the length of the stem. The stem was not more than 3 feet long and ½-inch diameter, and every leaf was as green as possible till the bloom was gone. I used about a dozen spoonfuls of guano three or four times during the latter part of its growth.—A. Thompson, *Newport, Mon.*

—— As you say your bulbs are small it is doubtful if, under the most careful management, they will flower next year, but a great deal depends on their size. I should advise you to keep your bulbs in pots, in a cold frame, until the middle of March, putting each bulb now in a 6-inch pot, and keep the soil moist about them, as they will probably begin to make roots soon. During the winter prepare a place for them on a warm border where the soil is deep and fairly dry. If you can add a little peat and loam to the soil, and mix it well together to a depth of 18 inches, you will be more likely to get them to flower. Plant out the bulbs in March, but be careful not to break the ball of soil in which they have been growing. The top of the bulb should be 4 inches beneath the surface. These Lilies do not succeed in the open in all cases; with us they flower well the first and second year, and then gradually get weaker, but we have never had any difficulty in getting a good bloom for the first two years.—J. C. C.

—— This will do better planted out in the borders than grown in pots. These Lilies do remarkably well in borders of peat soil. I have also grown them very successfully in ordinary herbaceous borders, by digging out a hole about a foot wide and as much deep; it should be filled with a mixture of equal parts turfy peat and loam.—J. D. E.

15369.—**Auriculas.**—It is natural for the leaves to turn yellow and die off at this season. Most of the outer leaves die off. The flower trusses to be seen now down in the centre of the plants must not be interfered with; but those that have thrown up flower-stems with buds on them ought to have the buds removed, but not the stem itself. Should the stem be broken over it will gradually rot down to the base, and probably destroy the plant itself.—J. D. E.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, December 21st to 26th.

Putting Schizanthus in pots, and getting up Rhubarb for forcing. Pruning and nailing Cotoneaster. Plunging Fig trees in pots in a hotbed of leaves; wheeling manure on to vacant land. Making a new Mushroom bed. Pruning trees, and whitewashing walls and cleaning woodwork and glass of Peach-house. Sowing Cucumber seed to produce plants for March. Potting Gladiolus in one-third loam, scarcely one-third manure, and rather over one-third peat and sand; also more Mint. Putting into force some Lily of the Valley, a few Ghent Azaleas and Deutzias, a batch of Jules Margottin Roses, a few Dielytras, some Cinerarias, and also Azalea vittata punctata—temperature 55 degs. to 60 degs. at night, and from 60 degs. to 65 degs. during the day. Putting cases over Watercresses to protect them from frost. Planting some standard kitchen Apples. Putting in Vine eyes and clipping tops off shrubs in pleasure grounds where too high. Sowing Nemophila in pots; shifting young tree Mignonette into 6-inch pots. Dividing Irises and planting them again in border; planting and staking Cherry and Plum trees. Refilling baskets for conservatory with Nemophila and Silene; putting Alyssum and old Verbenas into vinery for cuttings. Placing all Mignonette from pits on late vinery shelves, so as to get it in the sun.

Glasshouses.

Pelargoniums.—The stock of the large-flowered section of these plants should now be tied out, getting the strongest shoots well down to the outsides of the specimens, leaving the weaker growth in a more erect position in the centre of the plants, by which means the strength of the whole will become more equal. Except where Pelargoniums are required for exhibition it is unnecessary to do more in the way of training than is requisite to support the shoots, so as to keep them from hanging loosely about when the plants are in flower; at the same time the shoots need to be opened out sufficiently to admit of the light getting freely through them; without this they get drawn up weakly, and neither bloom nor look so well as when sufficiently, but not over, trained. Stopping must be regulated by the time the plants are wanted to bloom, those that are required early should not have their shoots interfered with, but such as are to come in later will be better for having their points pinched out. The fancy varieties are naturally more bushy in habit than the large-flowered sorts, and want proportionately less tying, but a few sticks to keep the shoots in the centre of the plants from becoming crowded will be an advantage. Both sections of these Pelargoniums should now be kept close to the light in a little warmer temperature than that required by the generality of greenhouse plants. During the next two months the soil should be allowed to get drier before water is given than most occupants of the greenhouse would bear—unless this is done they will be liable to run too much to leaf. On the least appearance of aphides, at once fumigate; these pests are much more easily got rid of when few in number, than when they have become numerous before means are taken for their destruction.

Cinerarias.—Early sown plants that have been well attended to should soon be in bloom, but there must be no attempt at hurrying them on by the use of fire heat, or the flowers will be weak and poor. Few plants have such an objection to a dry, warm atmosphere. What they like is not only to be quite cool, but to have the air of the pit or house in which they are located, moist; a damp bottom for the plants to stand on is much more congenial to them than a position on dry shelves with a circulation of dry air passing round them. A moist condition of the air is not only conducive to their making strong healthy growth, but the moisture that condenses on the leaves helps to keep them free from aphides. The later portion of the stock intended to bloom towards spring should be kept under similar conditions as to moisture. If the temperature is just above freezing it is high enough. Where there is not the means of keeping Cinerarias by themselves in the winter, and they have to occupy the same structure as the general stock of greenhouse plants, they should have a corner of the front stage, which should be covered over with sand, coal-ashes, or something of a like description that will hold moisture. Placed on this, with no more artificial warmth than is requisite for the plants associated with them, they may be expected to do fairly. When the pots are full of roots give manure water.

Calceolarias.—These, whether they are the shrubby or herbaceous varieties, like to be treated much in the same way as Cinerarias; they also dislike anything approaching a dry atmosphere, or being stood on a dry bottom. Nowhere do they do so well during winter as in a light low pit, with a pipe round it so that the heat can be turned on when required, where they can stand on the floor, and still not be far from the glass. Any that are in small pots, and that have filled the soil moderately with roots should at once have a shift, as if they get at all pot-bound while small they will not move freely afterwards. They delight in rich soil to which, in addition to a liberal quantity of manure, has been added some leaf-mould. Those who have not had much to do with Calceolarias are often afraid that if treated too liberally in the matter of soil they may grow too rank to bloom well, but such is not the case, provided they get light enough to keep the leaves from being drawn out thin and weak. The bigger the plants get, the finer the head of flower will be. These and Cinerarias should have some air given them daily all through the winter when the weather is not frosty, but it should not be admitted on both sides of the house or pit, otherwise there will be a current which they do not like. The stock ought to be looked over frequently to see that they are quite free from aphides, which are the worst insect-enemies they have, and which must never be allowed to get numerous on them.

Propagating Chrysanthemums.—Cuttings of these should now be put in, for, although they will succeed later on, I have always found them do the best and give the least trouble when the cuttings are put in before the end of the year. These plants do best when the cuttings are struck in a house or pit, with no more warmth than that of an ordinary greenhouse. So treated they make roots with little or no extension of the tops, in which way the young stock is more sturdy. The cuttings may be put singly in little pots, or half-a-dozen together in a larger size, half-filled with loam and sand, the remainder all sand; they require to be kept close and moist until rooted. A square piece of board or slate, large enough to take a moderate-sized hand-light, will hold cuttings enough for a moderate stock. This should be covered with an inch or two of sand or fine ashes on which to stand the pots. All that is further required until the cuttings are well rooted is to keep them moist in a light place.

Azaleas that flowered early last season, and are in strong, vigorous condition, will soon begin to push their shoot-buds, previous to which, if at all affected with thrips last summer, they should again be dipped in or well washed with strong Tobacco water; this should be allowed to dry on the leaves in the way advised at the time the season's growth was completed. This second washing will be the means of killing any of the insects that may hitherto have escaped, and also of destroying the vitality of the eggs. Where the plants have been troubled with red spider, add about two ounces of Gishurst compound to each gallon of the Tobacco water, as the latter alone is not so destructive to the spider as it is to some kinds of insects.

Thomas Baines.

Flower Garden.

General work.—A general survey should now be made to see what improvement can be effected in the way of flower beds, as this and other alterations that it may be desirable to carry out can now be accomplished with speed and comfort. Deciduous trees and shrubs transplanted before the new year has far advanced stand a better chance of succeeding than is possible for them if their removal is deferred until the spring. Any, however, of large size had better be left till next autumn, and to prepare them for lifting then they should have a trench opened around them now in order that their roots may be cut, when by filling in the trench again with light sandy soil the cut roots will form fresh fibres, which will be a great help towards rendering their future removal safe, and will assist materially in getting them quickly established. In the transplanting of trees and shrubs, the great point is to secure as many roots as possible, and to preserve each and all from injury.

Fruit.

Hardy fruit.—It will now be well to defer further planting of fruit trees until after the turn of the year, and as many newly-purchased

trees will be laid in on a dry border, see that plenty of fine soil or leaf-mould is placed about them to prevent the frost from descending to the roots, and, in the event of the weather becoming unusually severe, a little dry Bracken placed amongst the shoots will do good service in protecting them. Meantime press forward the pruning and nailing of established trees, and top-dress all that are likely to derive future benefit from that operation. The nature and strength of the material used for this purpose will, of course, be governed by the condition as well as the varieties of fruit trees under consideration. Old trees, as a rule, particularly Apples and Pears, are greatly benefited by a good dressing of manure, while young ones will become more fruitful if treated to a dressing of fresh loam, burnt earth, or charred garden refuse. Peaches and Apricots, indeed all kinds of stone fruit trees, require calcareous matter, and there is nothing better than old lime rubble or plaster broken pretty fine and spread over the surface of the border. Strawberries, Raspberries, and bush fruits enjoy liberal supplies of good rotten manure, and the earlier it is applied the better, as independently of the protection which it affords to the surface roots, its manurial or stimulating qualities get washed down ready for the demand when spring growth sets in. Peaches, Nectarines, and Morello Cherries which have been unnailed and secured from injury by wind, may be well washed and dressed with Gishurst compound when the weather is dry and mild, and the nailing of the Cherries may immediately follow the cleansing of the walls with soapsuds, brine, or lime-water; but Peaches must be left till last in order to retard the blossoms, and so preserve them from early spring frosts.

Pot Strawberries.—The beginning of January is a good time to get in the first batch of plants where there is no proper Strawberry house, and the forcing of the fruit has to be carried on in early Peach houses and vineries. Select from the most forward plants in the smallest pots, as the crowns are sure to be ripe, and, the pots being quite full of roots, they will be certain to throw up flower scapes. When the plants have been dipped and top-dressed, place them on shelves close to the glass, syringe regularly, and give them sufficient water to keep the roots constantly moist, as anything approaching drought will foster spider, and produce a check which may prove fatal to the crop. It is a common practice to fill the shelves in these houses when they are closed for forcing, and although the temperature of the vinery may be somewhat high, that of the Peach house suits them admirably. To keep up the succession it is a good plan to fit up an ordinary Cucumber or Melon pit with shelves some 12 inches or 15 inches from the glass for the reception of the remainder of the early batch, and to place some fermenting material beneath, but not touching them. In mild weather the humid heat will be found quite sufficient, but when very cold, gentle fire-heat may be needed to prevent the temperature from falling below 40 degs. at night, and air must be given when it is likely to rise above 50 degs. by day. Where the general stock is wintered in cold pits throw the lights off by night, and when the weather is fine and settled by day also. Close and tilt them, to protect from heavy rain or snow; a sharp dry frost will do them no injury if they are well plunged over the rims.

Vegetables.

General work.—Vegetable refuse makes a valuable manure if it can be dug in while green, but if this cannot be done it should be thrown together and intermixed with a little fresh lime, which will add to its fertilising properties. Go over plots of Greens, therefore, and remove all decaying leaves. Let all vacant plots of ground be manured, and dug, trenched, or ridged up as soon as possible, in order that they may have the fullest exposure to the ameliorating influences of the weather. A plan of cropping for the forthcoming season should at once be decided on, and in making it out see that the various plots have the crops varied as much as possible from those of last year. Taking the same crop twice consecutively from the same ground not only impoverishes it more than it otherwise would be, but the produce is less, except when the ground is deeply trenched. Potatoes should be carefully examined; all the early seed tubers should be laid in single file to sprout on floors or shelves, free from frost. Some of the first earlies may now be put in shallow boxes of leaf soil, and placed in frames to start them; and as soon as fairly rooted into the mould they should be finally planted in forcing pits or pots; we find the pots a very convenient mode of growing the batch, as they can be moved from place to place as circumstances demand. Myatt's Ashleaf Kidney and Fenn's Early Market Round are both excellent varieties for pot culture. If not yet done, Asparagus plantations should have a thick covering of well-rotted manure, but no alleys should be scooped out to cover it; such a proceeding is not only useless, but hurtful. New plantations of Horseradish and Rhubarb may now be made at any time, and established pots should be manured and dug over. Still keep Globe Artichokes well protected, though if time can be afforded, the protecting material should be removed when there is no likelihood of frost, and again applied on the first indications of it.

Cucumbers.—Where several compartments are devoted to winter-fruiting plants, now is a good time to give the earliest batch a thorough rest by cutting off all the fruit and a few of the old leaves to make room for young growths, which will in their turn produce a good succession about the middle of January. Take vigorous measures for the destruction of worms, if necessary; tepid lime water is a good agent for effecting their removal. From this time forward discontinue stopping, remove all male blossoms, and use the syringe sparingly, but keep up a good supply of atmospheric moisture by damping all available surfaces with liquid, and by frequently turning and renovating the fermenting material, which should not be allowed to fall below 80 degs. Let the heat by night range from 65 degs. to 70 degs., and that by day from 75 degs. to 80 degs., and economise fire-heat by covering the glass during the hours of darkness. If this treatment does not keep spider in check, sponge the leaves with soapy water or clear sulphur water, and dust with dry sulphur on the first appearance of mildew. Where plants in full bearing are planted or plunged over heated chambers, liberal supplies of warm liquid and weak guano water may be given alternately, and their general treatment as to heat and atmospheric moisture may be the same as that advised for resting plants. Late plants intended for fruiting in February may be kept a few degrees cooler at night, but the bottom-heat should not be allowed to fall below 76 degs. Keep the young growths free from male and female blossoms.

THE GARDEN IN WINTER.

After 9 degs. of frost, a survey of the garden is tinged with sadness at the mischief which the cold has wrought amongst our favourites. The few remaining Chrysanthemums have received their *coup de grace*, and early spring visitors, such as Primroses and Wallflowers, which had been tempted by mild weather into premature blooming, are reminded that Jack Frost is still, as of yore, their unpitying enemy. It is, however, strange what an unexpectedly small amount of damage is done to blossoms by frost so long as the thaw is gradual; flowers which yesterday hung their heads apparently death-smitten, are now, with the thermometer at 34 degs., to all appearance as fresh as if nothing had happened to arrest their unseasonable forwardness. What can be more beautiful than some of the Sedums and Saxifrages—S. ceratophylla, hibernica, elegans, tazzetta, hypnoides, atropurpurea, intacta, and pectinata—silvered over as they are with rime, and the saw-like edges of S. longifolia and nepalensis as clearly and distinctly cut in hoar-frost as if formed by the microscopically small frosting-tool of the goldsmith. Now is the time to enjoy our evergreens, which give an air of snugness to our gardens by their deep-green leaves and almost invariably scarlet or orange-coloured berries. Thrushes, blackbirds, tits, and many birds which we only find in our gardens in winter, surely do not need such brilliant contrasts and harmony of colour to direct them to their food. Aucubas, Pyracanthas, and the two indispensable Cotoneasters, C. microphylla and Simonsi, can only be properly appreciated at such a dead time of the year as this, giving brilliance as they do by their fruit to the somewhat monotonous hues of greens, russets, and browns, backed by leaden skies, and still further enhanced by a wreath of blue peat smoke curling up from the cottage hidden amongst the Scotch firs, whose coppery branches are festooned with glaucous Lichens.

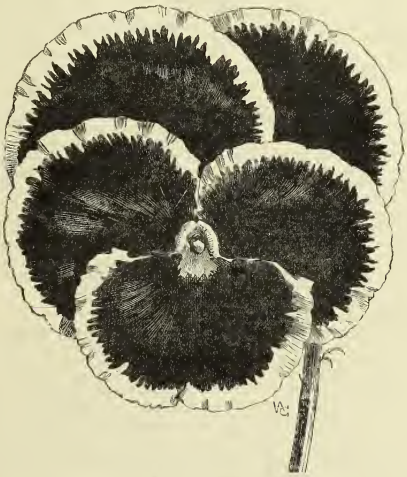
We can now see markings on our Ivies never before noticed. Hedera digitata, H. rhomboidea, H. versicolor, H. conglomerata, and a great many other beautiful varieties from the adjoining woods, having lost their climbing habit, persist in creeping round corners and over every flat surface; H. marginata elegantissima, beautifully dappled green and white, with intense crimson blotches and edges, is particularly charming as it rambles over the rock garden. The beds of Pinks and Carnations, having been earthed up with a rich compost, now show by sturdy and deep green growth that they are prepared to defy the keenest winter. Roses mulched round about several inches thick with rich manure are alike protected. Scillas (again too early) are piercing through their carpet of Herniaria glabra, and the appearance of small Irises and Anemones through a cushion of Mountain Thyme is almost dreaded. Borders of Pansies have long ago been housed up with a light covering of dead Bracken fronds, kept in position by a single layer of old fishing net. One bed, containing some sixty varieties of Daffodils, can take no harm, as it is completely covered over with Myosotis dissitiflora, which is self-renewed each year by its own seedlings, and the effect of blue and gold in these two subjects when in bloom is such that once seen it is never forgotten. Always grown together, they are appreciated amongst perennials, as the Gazania splendens and blue Lobelia are amongst annuals. We do not like to cast away old friends, however homely, and this is the case with a bed of half-standard Roses, which are only dear because they are home-made, so to speak, having been budded as they stand in a time of eager Rose enthusiasm; yet even they, ugly as they are, may be tolerated by having their spindled stems hid by drawing down and tying to them the long luxuriant growths of bush Roses planted between them; in the Rose season this bed is an interlaced mass of growth and bloom. How fresh and verdant Mosses, at this season in full prime, encrust every bit of lime that holds the stones of old walls together! Old and Moss-grown boulder-stones, verged by tufts of Crowberry, Bilberry, and Erica carnea, placed here and there, serve as seats, and behind, or under the lee of these, are hidden beds of Ixias and Sparaxis, which will spend their winter under light leaf-mould, and be thus sheltered from the keenest frosts. At this time of the year particularly a sloping grassy bank, whose uniformity is broken by large protruding stones, relieves the sameness peculiar to closely shorn terraces by having growing in it choice young Conifers, such as Picea Nordmanniana, P. nobilis, Pinus excelsa, P. contorta, P. austriaca, P. Jeffreyii, Abies Douglasi, A. Morinda, A. Albertiana, A. Drummondi, A. Fortunei, Cedrus deodara, C. atlantica, various varieties of Cypress, &c. Under shelter of these will soon bloom the Snowdrops, Squills, and Crocuses. Wherever winter would exhibit bare patches of cold earth, colour is given by Darwin's and the holly-leaved Barberries, Retinosporas, Osmanthus, Thujopsis, Skimmias, and the prostrate Savin. These and similar plants render a garden stroll still somewhat delightful, even at this, the very worst time of the year. All such plants as have not donned their winter covering of dead leaves are protected, or looked to in some other way. Lilium auratum and L. Harrisi, Gladioli, Tigridias, &c., are covered by a cone of ashes, under which is a rich top dressing of old manure and leaf-mould. Thus, with all our favourites provided for, we can watch with pleasure the song-birds creep for shelter under the tilted handlights over the Christmas Roses, where perchance a stray and venturesome snail or slug may contribute towards an evening meal. Above ground snug and sound, all beneath is a teeming store of root growth, and preparation for an outburst of spring bloom. —*The Field.*

Cowslips and Wallflowers in bloom in December.—A correspondent states that Wallflowers have been in bloom in his garden in south Devonshire during the past few weeks, and that he has also had Cowslips in flower for the same time in a box outside his window.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XV.

Fine-leaved Begonias.—Some years ago Begonia Rex and its varieties were frequently seen in windows. The compact habit and massive and handsomely-variegated foliage which distinguish these ornamental-leaved kinds, rendered them very popular for a time, but the generality of window gardeners found so much difficulty in keeping them in health that they gradually lost the popularity they had so quickly obtained. Frankly I cannot recommend the fine-leaved Begonias as amongst the best of window plants, for they cannot well be accorded the conditions necessary to promote healthy growth in the dwelling, but the inquiries that have been made from time to time in GARDENING respecting their management in windows show that with some they are still in favour, and I have, therefore, thought that a few hints as to their treatment would be acceptable. In the first place plants should never be bought in the winter or autumn, for even if kept in a warm room the change from a hothouse will be too great, the probability being that the leaves will turn yellow before they become accustomed to the altered conditions. The best time to procure fine-leaved Begonias is about the end of June, when the heat of summer prevents them feeling the ill effects of the change. During the summer months they will make a certain amount of growth which, if the plants are rightly cared for, will remain in good condition through the winter. Fine-leaved Begonias like plenty of light and scarcely any sun, and they very much dislike cutting draughts, and a very dry atmosphere. They will do very well in a living or indeed in any room during the summer, but in winter they must be kept in a constantly heated apartment; and herein lays the difficulty as regards their culture in rooms, the air becomes much too rarified for them, and this avidity cannot be counteracted by damping down, as is done in glasshouses. Much can be done however, by frequently washing the foliage with quite clean tepid water to counteract the parching effect of a too dry and warm atmosphere. Twice a week, at least, the foliage should be either washed with a soft sponge or well sprinkled. The soil should never become dry, or many of the roots, which are small, will perish. It should be kept in a nice uniform state of moisture during the growing time, but no more should be given than is absolutely necessary to maintain the roots in a fresh condition in the resting period. By following the above instructions no one will find any difficulty in keeping these Begonias in good health for one year at least. The leaves made in spring will, if the proper care has been given to the plants, remain till the following spring in beauty, but then they begin to fade and die away, and others should be pushing up to take their place. The moist heat, which it is the nature of fine-leaved Begonias to require when forming new foliage, cannot be imitated in rooms, consequently the growth is generally less than that made the preceding year, so that gradually the plants diminish in size. Therefore I consider Begonia Rex only useful as a room plant by affording a complete contrast to all other plants. It is a handsome plant, and looks remarkably well by candlelight, the clear variegation showing up even better then than in the daytime. There is one species of ornamental leaved Begonias which I can strongly recommend as being much more amenable to room culture than its congener Rex. I allude to B. metallica, the name of which is well descriptive of the colour of the foliage. It differs from Rex in throwing up a straight stem a foot or more in height, along which the glossy deep-hued leaves are arranged. It is very distinct and ornamental, and thrives well in an ordinary living room in winter, and a cool one in summer. A still more easily-grown species, and one once often seen in windows, is B. discolor, or the "Resurrection Plant" as it is often called, presumably because it dies down completely in winter, and throws up again very strongly the following season. It is an extremely easy plant to grow, its requirements being easily fulfilled by anyone having a fairly light window. When doing well it has quite an impressive appearance, and it flowers freely enough to render it attractive as a blooming plant alone. Its treatment is simple, for as I have mentioned, the stems die off by winter so that no water is required until spring. In March a little should be given now and then, and in the course of a month or so young shoots appear, when all the old soil should be shaken away and the tubers repotted in good loam with a little leaf soil. When in full growth plenty of water should be given and a little liquid manure will be beneficial. Beginners in plant culture will find this a good subject to try their hands upon.



Large-spotted Belgian Pansy (natural size). (See article on page 581.)

Cypripedium insigne, or the Lady's Slipper, is rarely if ever grown in windows. I have never seen it recommended for this purpose, but from experience I know that with a little management it may form an attractive feature in the dwelling during a certain portion of the year; at least, I have kept this Lady's Slipper in a living room from the end of October till June, where it throve and bloomed as well as in a glasshouse. But I wish it to be understood that I do not hold out hopes of this Orchid flourishing in a room all the year through. In the summer-time, when making its growth, it requires more moisture in the air than can be given in such a position, but it can be accommodated to perfection in a frame, and as so many who do not own a greenhouse possess a frame or two, I think, considering how very interesting, distinct, and beautiful the Lady's Slipper is, I shall be directing some of your readers to a new source of pleasure when I show that it can be well grown by means of window and frame culture combined. We will suppose that a fairly good specimen is in the possession of the grower in June. For the next four months it should be kept in a frame in a sunny position. The treatment consists in giving plenty of air in fine weather, shading from hot sun, keeping the soil moist at all times with plenty of water in hot weather, and syringing overhead every day, when the weather is bright and sunny. When the days are hot, and the nights rather cool, the air should be taken off about 4 p.m., so as to enclose for the night a body of warm, moist air, which is what Cypripediums delight in when making their growth. By attending to these essentials the development of a new set of leaves will be encouraged, which the exposure to plenty of light and air will endow with sufficient substance to ensure the formation of strong blooming crowns. About the first week in October the removal to winter quarters—*i.e.*, the light window of a constantly-heated room—should be made. In this genial temperature the flower buds will soon appear, and their slow steady progress, culminating in the formation of the curiously-shaped beautiful blooms, will be a never-failing source of interest through the dreary winter months, a considerable portion of which they will brighten. As with all plants grown in rooms the foliage must be kept clean by frequent cleansings, which will, with good attention to watering, never allowing the soil to become quite dry, maintain perfect health and vigour. The fact of this Lady's Slipper blooming in winter naturally enhances its value for window gardeners, the more especially as the individual flowers last six weeks in good condition. The compost required for Cypripediums is fibrous peat, in lumps about the size of a nut, Sphagnum Moss, and either a little charcoal or small pieces of crocks. The pot should be half filled with drainage, the compost must be firmly pressed in round the roots, and kept well raised above the rim of the pot. The beginning of July is the right time to repot. BYFLEET.

ROOM PLANTS FOR CHRISTMAS.

At no period of the year are indoor plant decorations so much appreciated as at Christmas, when vegetation out-of-doors is at its lowest ebb. But the list of plants suitable for the purpose is rather limited; at least, such as succeed well for any length of time in the dry atmosphere of ordinary rooms that are in daily use. The following are such as may be grown by any one with the average amount of attention required to grow any kind of plant—Foliage plants—Chamærops humilis and C. excelsa, two of the hardiest of the whole family of Palms; Aspidistra lurida is another most useful plant, and every one knows Ficus elastica, or the India-rubber plant, to be almost without a rival; then there is Aralia Sieboldi, with its Fig-like leaves. Dracæna indivisa is a very elegant plant, and may be grown into large specimens in quite small pots. Ferns of hardy and greenhouse kinds do well in rooms if the hard, leathery-leaved ones are selected. The common Hart's Tongue is a very effective plant when well established in pots, and its shining leaves clear and bright, with a good washing from the syringe. Then members of the Pteris family—which are called the Ribbon Ferns, from having long serrated leaves—such as P. longifolia, P. serrulata, and P. cretica, will thrive the year round as window plants, and the beautiful Lycopodium denticulatum is most effective with its verdant green, either by itself in pots or hanging baskets, or for carpeting surface soil in the pots of other plants, as when well established it hangs over the edges of the pots, forming a most graceful fringe or covering. I have known many amateurs make most effective winter baskets of the common small-leaved English Ivy by digging up plants with good roots on banks where it grows amongst Ferns, and transferring the clump bodily into baskets of either wire or wood, the latter being preferable, as if

they have pieces with the bark on they look extremely well, and the Ivy and Ferns last for years, as they may be hung up in any shady position out-of-doors when not required for indoor decoration.

Among flowering plants Erica hyemalis is one of the easiest-grown Heaths, and, with Erica carnea, flowers naturally about this time of year. Primulas are most effective window plants, and if one has a little frame to grow them in summer they will keep blooming all through the winter and spring, as a rather dry atmosphere suits them well. Zonal Geraniums continue to produce their gay blooms as room plants where a genial warmth and rather dry atmosphere prevails. The Early White Roman Hyacinth may be had in full bloom at Christmas by potting them early in August, and keeping them in the warmest part of the house. Of berry-bearing plants, Solanum Capsicastrum, or Winter Cherry, is most attractive, and easy to manage, for if cut down close in spring, it may be grown on in summer in an ordinary frame, to form most effective plants. Many others might be added, but the above are easily procurable, and may be grown with the usual appliances at command of villa gardeners; the great thing to aim at is to have the plants well rooted, in fact, rather under than over potted, as they are not only much more useful, but are decidedly more easily kept in good health in small pots than in large ones, the roots perishing if surrounded by by a quantity of cold, inert soil, and it is surprising how long plants may be kept growing in small pots full of roots by means of liquid food alone.

Gosport, Hants. J. Groom.

15358.—**Insects on Pelargoniums.**—As it is not convenient to fumigate window plants with Tobacco, the simplest way of killing the insects is to dissolve half an ounce of soft soap in 2 quarts of warm water, and then, either with a painter's brush, or a piece of sponge, wash the plants with the soapy water, using it while warm, and working it into a lather before using it. If the first washing does not kill them, add a second quantity of soap to the same water, and repeat the washing. The mixture may be put into a bottle and corked down for future use.—J. C. C.

15127.—**Hardy Cyclamens.**—As Mr. J. Maddy remarks, there is a good deal of confusion among the hardy Cyclamens; but some of the confusion has been brought about by the different cultural condition they have been subjected to developing special characteristics, which are not permanent under a different set of circumstances. This may account, perhaps, for the mixing of the species of europæum with hederæfolum in some cases. I believe C. vernum and repandum are identical, only sometimes varied by culture. The same might also be said about C. Atkinsoni and C. ibericum.—E. Hobday.

15408.—**Taking weather observations.**—The usual hours at which weather observations are taken are 9 a.m. and 9 p.m.; but should 9 p.m. be inconvenient then 9 a.m. is the almost universal hour. If "H. W." intends to keep a record of the rainfall he should at once communicate with Mr. G. J. Symons, 62, Camden-square, London, N.W., who will supply him gratis with a little pamphlet, entitled "Arrangements for the Systematic Observation and Record of the Rainfall of the British Isles," as well as an annual register. Mr. Symons, who will always be glad to give every information in his power, publishes annually a book entitled Symons's "British Rainfall," in which a yearly record of rainfall at upwards of 2,000 stations, with other valuable and interesting information, is given; also a monthly meteorological magazine, which, likewise, is of much interest. "H. W." should provide himself with maximum, minimum, and a wet and dry bulb thermometers, and a Stevenson's screen in which to hang them, also a glass thermometer. These instruments should have been verified at Kew, which entails an extra cost of about 2s. 6d. each. Diagrams for barometers and thermometers are supplied by opticians. It may be of interest to know that a fall of rain measuring the tenth (·10 inch) of an inch in depth, corresponds to the deposit of 2,262 gallons, or about forty hogsheads, or ten tons' weight of water per acre.—Celer et Audax.

TREES AND SHRUBS.

CONIFEROUS TREES FOR MEDIUM-SIZED GARDENS.

A selection of a few of the ornamental Coniferæ suitable for gardens of medium size may, perhaps, serve some useful purpose. For such gardens as I have in view I cannot begin with more suitable subjects than the Cypresses, of which Cupressus Lawsoniana and its varieties are undoubtedly the best. The original variety of Lawson Cyprus is just the plant for positions on lawns of limited extent, as its habit is erect and growth compact, and it takes many years to outgrow the space allotted it to fill if it is not too circumscribed in the first place. C. erecta viridis is very distinct, as it is more formal in growth than the preceding, but as this character is so striking in the plant it is useful for the decoration of formal gardens, the colour of the foliage being a dark olive green. C. lutea in habit is less formal than the last named, but still sufficiently distinct in character to render it acceptable, and, as regards its golden colour, it is more marked than the generality of trees with golden foliage. C. Nutkaensis pendula is a very desirable plant, as the whole outline is very different from that of any of the species, being strikingly graceful, and the foliage always retaining an agreeable dark green colour. C. macrocarpa is a well-known plant which is of rapid growth, and, therefore, only suitable for gardens of moderate extent. It remains in a stiff and formal condition for some years, and is not an objectionable plant in a sheltered position, but if planted in exposed places, the branches fall about in a manner that spoils the symmetry of the tree as it attains age. C. disticha is the deciduous Cypress, which is valuable, perhaps, only for the sake of variety, and in that respect it is very distinct from all others. It may be described as forming a tree of medium height and of a symmetrical growth. Of Retinosporas there are several very pretty varieties suitable for the most prominent positions, and especially valuable where space does not permit of more vigorous subjects being planted. R. squarrosa is the best known perhaps of the whole family, its feathery growth and neat habit being conspicuous; it is a suitable variety for positions on the lawn or in the front line of the shrubbery border. The most pleasing form among them, however, is, undoubtedly, plumosa: this possesses the same freedom and feathery growth, but with a distinct tone of a bluish tinge pervading the whole of the plant. It is just the plant to occupy prominent positions either on the terrace or on a formal lawn. R. pisifera aurea bears a general resemblance to the family in stature and outline, but has bright golden foliage, which renders it both pleasing and conspicuous, especially during the winter months.

For gardens requiring pyramidal effect the Irish Juniper is indispensable, as the trees form perfect columns reaching frequently to a height of 25 feet, and their foliage is at all times attractive. The Chinese Juniper is distinct from this only in the form of its growth, which is more bushy, growing to a height of 20 feet; it is altogether a desirable plant. Thujopsis dolabrata is one of the most distinct and graceful of all this family. The colour and form of growth are quite distinct. It is admirably adapted for prominent positions, and a capital companion plant for Lawson Cyprus. No doubt in its native country, Japan, it attains a great height, but in this country it does not show a disposition to do so, and, therefore, is a tree admirably suited for medium-sized gardens. There is a variegated form of it, but I do not think it is wanted in small collections. As T. gigantea is likely to remain for many years before it outgrows the space that is likely to be devoted to this class of plants in gardens of moderate extent, it ought not to be omitted. The foliage is bright green, the form erect and handsome; in fact, it is one of those subjects that strike the observer with a sense of importance, for a well-grown specimen cannot fail to arrest attention. As distinct from these, T. sinensis may be recommended for forecourts and other limited spaces, as it is quite hardy and not a too vigorous grower. T. aurea is a well-known plant; it seldom attains a greater height than 4 feet, and during the early spring and summer the shoots assume a bright golden colour. It is a very suitable plant for positions on terraces and other formal gardens, as its form is quite globular, the diameter of the branches frequently exceeding the height. Araucaria imbricata is too well-known to need description. It may eventually become too large for small gardens, but, as it will be many years before that can take place, if a suitable position is selected for it, I do not think it ought to be shut out except from the smallest gardens.

Abies Albertiana is a very graceful tree, admirably suited for small selections, as the graceful, arching branches and the grey-green foliage give it a character peculiarly its own. This and A. Menziesii are the only two of the Abies adapted to gardens of limited extent, and perhaps it will be said that the last-named makes too much of a tree for that purpose; I would, nevertheless, find room for it if possible, as its silvery foliage and density of growth make it a very desirable tree. If I had to choose another of this genus I should select A. orientalis, as it is a most refined species, carrying altogether a lighter bearing than any other member of this family. Pinus Cembra is not suited to small gardens, but where room can be found for it it should be used. It is very attractive in a young state, its light and silvery foliage and erect habit offering a strong contrast to the more sombre species. Picea Pinsapo is another of the Conifera tribe that cannot be dispensed with, even in limited collections, for its style of growth and the arrangement of the foliage is so perfect that, as a lawn tree, it is almost unsurpassed. The tree is a fairly vigorous grower, but, even if planted where space is rather confined, it would be a quarter of a century before it got too large; and one would get a deal of pleasure out of such a handsome tree in watching its growth, even if it had to be destroyed at the end of that time. Picea nobilis is even a more handsome tree than P. Pinsapo, and there are undoubtedly two varieties of it, one being much more glaucous than the other, and therefore much more striking in appearance. The horizontal growth of the branches is characteristic of the species. This is a fine companion tree to P. Pinsapo, and two more of equal merit as lawn trees could hardly be selected from the whole list of Conifers. J. C. C.

Yellow-berried Holly.—In many places Hollies seem to be this year unusually laden with berries, and when such is the case most other berry-bearing trees and shrubs are put in the shade by the superior display furnished by the Hollies. That the yellow-berried variety is not more often planted seems difficult to account for when a well-fruited specimen is met with, as it is a most handsome tree, and, besides supplying a colour but little represented among hardy fruits, it forms such a good companion to the ordinary bright-coloured Holly.—A.

15315.—**Treatment of hedgehog in walled garden.**—"A Constant Reader" may make his hedgehog quite content with half an acre if he supplies him with bread and milk and a vessel of water to bathe in, and allows him to enjoy himself in his own way. These two luxuries are indispensable; but he will, perhaps, never be seen to enjoy either, for he delights in concealment. A few years ago a friend left a hedgehog in our charge for some months, telling us of its requirements, so we felt no anxiety as long as these were carefully attended to, though he now and then disappeared for a few days at a time, leaving his breakfasts untouched. His favourite hiding-place was in the centre of a Pampas Grass plant, where he carried all the Moss he could collect in our suburban garden, and made himself a very snug nest. At another time he settled in a large earthenware draining pipe, and as soon as discovered would always hide somewhere else. He made a very good hit once by settling inside the house, and was not known to be there, until he walked into the kitchen, attracted by the savoury smells of the servants' dinner. His habits were altogether an amusing study; and as the weather grew warmer we used to see him enjoying his twilight walks in our garden, doing us good service, too, no doubt. Hedgehogs require warmth in very severe weather. The one in question lost his life by being lodged in a stable.—C. L.

INDOOR PLANTS.

DOUBLE PRIMULAS AND THEIR CULTURE.

Of all flowers which we cultivate, either for the embellishment of the conservatory, the dinner-table, or for making bouquets, none to me has the charm that belongs to the double Primula. Assuming that we have good cuttings in May, we proceed as follows: The first thing is mixing the soil, which consists of two parts loam, one part leaf-soil, and one part sharp sand. We then crock small 2½-inch pots, filling each to the rim with this compost; then we take them to the propagating house, set them all level on the floor, and water them. When settled we commence to put in the cuttings. Each cutting being taken off with a heel, we make a hole in the centre of the soil and insert it, filling in the hole with sharp sand and making all firm. We then tie up the foliage to a small stake very carefully. Double Primulas are struck here in a bottom heat of from 70 degs. to 75 degs. The pots are plunged to their rims in sawdust. A very great point in their propagation is never to let a leaf flag; therefore, as each cutting is potted, place it in the propagating case at once. When the ease is filled give them a slight watering and leave the lid of the case open until the foliage is quite dry; then put in two or three dozen lumps of charcoal to suck up the moisture. Keep the cuttings close and carefully shaded from the sun. They take from five to six weeks before one can see the roots at the sides of the pots; we then give air and gradually harden them off. When the roots, in plenty, but not matted, can be seen, the time for

Repotting is at hand. These cuttings we shift into 4½-inch pots—that is, if for flowering. If for stock, we shift all the best plants into 6-inch pots, keeping them in the same house, if possible, until all danger of flagging is over. They are then placed in ordinary three-light boxes under a north wall on a good bed of coal ashes; and here I must note that they should be quite shaded from sunshine and kept close. I may be told that the sun seldom shines on the north side of a wall, but on a hot day in July, when the sun is working round to the west, the plants suffer if not duly shaded. They will want but little water for the first week, but a slight bedewing with the syringe is very beneficial to them. The great point in bringing these Primulas to perfection is the watering; therefore give water to those that are dry only. By the first week in October all these little cuttings will be fine strong stubby plants throwing up flower-spikes. They should then be moved into a light, airy house and set on shelves. This house should be kept at from 50 degs. to 55 degs. at night; opening the top ventilators in fine weather will enhance the colour of the flowers and the stubbiness of the plants. About the end of November they will be in great beauty, when each should have a top-dressing of sifted, light, sandy soil, with a little artificial manure added; slightly stir up the surface and apply the top-dressing. When placing these plants in their flowering pots we use the following compost, viz.: Two parts good turfy loam, one part charcoal and sand, and one part sifted manure from an old hotbed, of which the greater part is leaves. If the old flowers and dead foliage are kept well picked off, they will look well in their respective positions until the middle of March. They are then well cleansed and again top-dressed and placed near the glass on shelves, when they make fresh growth, and this growth forms the cuttings with which we begin in May. R. G.

Chrysanthemums at Christmas.—During the last few years the Japanese varieties of this useful flower have become extremely popular, and I find amongst them several that have the valuable habit of flowering after the majority of other kinds are over. Therefore by adopting a system of late propagation and retarding the flowering as much as possible, Chrysanthemums may be had in bloom at Christmas, or even later, when, I need hardly say, they would be most acceptable. Such fine blossoms, however, from plants checked in growth can scarcely be expected as from those grown on interruptedly, but this detracts little from their value at the date mentioned, when one is glad of anything in the way of flowers for cutting, especially white flowers, and of these there are several excellent sorts, amongst which I may mention Ethel and Sarnia. From amongst those possessing various shades of colour I pick out such as show a natural propensity for late flowering, and propagate them late in the summer from tops of the flowering shoots. I put three in a 4-inch pot; they soon strike root in a close frame, and may then be inured to the open air and grown on in an open sunny position until the bloom-buds are formed, when they should be set in the coolest and shadiest place available, keeping them out-of-doors until danger from sharp frost renders it unsafe to trust them out longer. When placed under glass, a house with a north aspect is best for them; there they can expand gradually, and be allowed a free circulation of air.—J. G. H.

Cereus flagelliformis, commonly called the Rat's-tail Cactus, is worthy of more care than is generally bestowed upon it. Well grown, it is one of the most attractive and distinct plants in cultivation. We have a specimen of it upwards of ten years old, which every spring is a perfect picture, bearing upwards of a hundred of its extremely graceful, bright rose-coloured blooms. This plant has been seven years or more in the same pot, and grows as finely now as at any period of its existence. It gets no water in the winter, but has a little liquid manure in summer. Comparing this treatment with that required for so many flowering plants, one wonders that a plant having so much to recommend it as this Cactus has should be so neglected. It is more beautiful than many Orchids, but it belongs, unfortunately, to a race of plants which are unpopular, and which, consequently, receive but little attention. Even when out of bloom this Cereus is ornamental, forming quite a dense curtain of slender growths clothed with thickly-set, glittering spines; it is one of the best of plants for a hanging basket in a cool house or window. All that it demands in summer is plenty of sun and air; then it makes strong growths and blooms freely. A good-sized plant of it lasts a considerable time in flower, as while the first blooms are expanding the last ones are only just making their appearance.—J. B.

A fernery in December.—I am indueed to send you a photograph and description of a small and inexpensive fernhouse, in the belief that many lovers of Ferns might be glad to have a similar one. The house is a lean-to, 12 feet by 9 feet, with a S.S.E. aspect. The front wall is built up to the height of 8 feet, of rough stones, with soil between, the stones used for the inside being petrified Moss, from the cliffs near the river Yore. They are porous, and look well. The S.W. wall is solid to the top, but the N.E. side above the door is of glass, the door also having glass in it. I built the house myself two years ago, or, rather, I did the woodwork and glazing. There is a small fountain on a level with the floor (the nozzle being a gas burner!), which throws fine spray into almost every corner of the house. A small slow combustion stove is used in severe weather, to keep frost out, but not at any other time. It contains hardy Ferns, both British and foreign, planted in between the stones and in hollows left for them. As will be seen by the photograph, they are growing well (though the deciduous ones are over now), and hundreds of seedlings of the common Pteris (both the common and the white-striped) Cystopteris, Asplenium viride, and especially Adiantum Capillus-Veneris, are springing up everywhere. The common foreign Lycopodium grows so freely as almost to be a nuisance. Our situation is cold, nearly 700 feet above the sea-level, and it is a great pleasure to see this tiny house green and flourishing when all outside have withered.—F. W. S., *Aysforth, Yorkshire.* *** *The photograph, though dim and poor, yet enables us to endorse the concluding observations of "F. W. S." It shows a mass of fine Ferns, and such a charming greenery must be a very pleasant sight at this period of the year.*—Ed.

Brugmansias planted out.—These showy plants are very effective in conservatories when planted out, and they submit to heading down with impunity. I lately saw some very fine specimens of them covered with blossoms for the third time this season, and the large size of both leaves and blossoms showed that planting out such subjects had great advantages over pots or tubs. In the latter it is well-nigh impossible to supply their wants in regard to moisture and root room. Give them plenty of space and they will flourish in almost any kind of soil; the plan adopted here is to head them down as soon as they cease flowering in autumn to about 5 feet high, after the fashion of a pollarded tree, thus admitting light and air to the other occupants of the conservatory, such as Camellias and other winter-flowering plants. Anyone having large conservatories to fill will find these Brugmansias most useful subjects for the purpose.—J. G. H.

Clianthus Dampieri.—I shall be glad to be of service in any way to "A. R." (page 558). I find that one important point in the culture of this beautiful Glory Pea is that the seed should be sown in autumn, where they are to remain, and the plants watered carefully during the winter to prevent damping off. It should also be protected round the collar or neck to keep off slugs. It thrives best in a mixture of peat and good fibrous turfy loam in about equal parts. If the seeds are not sown where the plants are to remain the greatest care must be taken not to injure the roots when planting out. I have never had much success with it as a pot plant; it frequently damped off when transplanted.—D. T.

—— In growing this plant in 6-inch pots there is generally no difficulty in getting the seedlings to grow freely enough until the time comes for giving them more root room, after which, unless very great care is taken not to interfere with the roots, the plants usually cease to make progress, and assume a stunted condition. Seeds are best sown about April, but may be put in earlier or later; sow singly in small pots 3 inches or 4 inches in diameter. Light, open material, such as a combination of equal parts of turfy loam and the best fibrous peat, with a liberal addition of leaf-mould and sharp sand, is best suited to the plants; the pots should be well drained, and if placed in an intermediate temperature the seeds will soon vegetate, and plenty of light, a fair admission of air, and sufficient water to keep the soil moderately moist must be given. The plants must be repotted before the roots get matted around the side. A warm greenhouse temperature will suit the young plants, and it is all the better if they can be kept through the winter at about 45 degs. at night. Although perennial in habit the plant is often biennial in character, and to keep up a regular succession a few seeds should be sown each year.—B.

REPLIES.

15427.—**Cocoa-nut fibre refuse for propagating.**—Cocoa-nut fibre refuse is very useful for mixing with loam for striking cuttings. It should be used in about equal quantities, with the addition of plenty of silver sand. Chrysanthemum cuttings strike very well in a compost made as above. When rooted they should be potted singly into soil consisting of three parts loam and one part well rotten manure, with the addition of a little silver sand.—W. E. Boyce, *Holloway.*

15362.—**Rockery in Conservatory.**—If "Nil Desperandum's" rockery is of tufa stone (than which there is nothing better), or of porous material, he will find Ficus repens and Tradescantia very suitable. Also amongst Ferns—Nephrolepis exalata, Polypodium Billardieri (the fronds of which are very aromatic when dried), and Adiantum Capillus-Veneris. For a large pocket, Aspidistra lurida and A. l. variegata. This is also an answer to his query about hanging baskets.—W. H. Jacob, *Maidavale.*

15415.—**Chrysanthemums.**—The following are twelve good incurved varieties suitable for exhibition: Alfred Salter, Beverley, White and Golden, Empress of India and Golden Empress, Queen of England and Golden Queen, Hero of Stoke Newington, Jeanne d'Arc, Lord Wolseley, Nil Desperandum, and Princess Imperial (syn. Lord Alcester). Twelve good Japanese varieties are: Boule d'Or, Brise du Matin, Elaine, Beauté des Jardins, Comte de Germiny, Fernand Feral, La Géante de Valence, Mdme. C. Audiguier, Mdme. de Sevin, Mdlle. Lacroix, Mons. Astorg, Val d'Audorre. Full colours and descriptions of the above varieties can be obtained from most of the Chrysanthemum catalogues.—W. E. Boyce, *Holloway.*

PERSIAN CYCLAMENS.

There are few, if any, dwarf flowering plants to equal the Cyclamen persicum and its varieties for decorative purposes during winter. When well grown they are wonderfully effective, whether arranged in groups, lines, or singly among other plants. For affording cut flowers in quantity and over a long period they are invaluable. The improvements effected of late years in the various strains have been most marked; the foliage of many is now strikingly handsome, and the fine large flowers, ranging in colour from purest white to the deepest purple, are in many cases strongly and pleasingly scented. A large mixed packet should contain sufficient seeds to meet the requirements of most private gardens, and the present is not too late for sowing. Use for the purpose well-drained pots or seed pans; fill these to within an inch of the rim with a finely-sifted mixture of loam, leaf-soil, and sand. On this the seeds should be sown, pressed in, and covered with about a quarter of an inch of fine soil; then place them in a house where a temperature of from 50 degs. to 60 degs. is maintained, and water them through a fine-rosed pot if the soil is at all dry, covering them with squares of glass. As soon as the seedlings appear they should have a light position to prevent them from becoming unduly drawn, and by the time they have made a couple of leaves they will be ready for pricking off into pans in a soil similar to that just named. It is important that they be kept in a warm house until spring, so as to keep them steadily growing, as they make but little progress when subjected to cool treatment. In fact, they do better if kept warmer than most greenhouse plants until they begin to open their flowers, when they will last longer in perfection if kept somewhat cooler. In spring they will require potting off singly into 3-inch pots, which ought to be filled with roots by the beginning or end of June; then they should be potted into others 5 inches in diameter, which we find sufficiently large for the first year's growth. The best soil for this shift consists of three parts of good turfy loam to one of well-rotted cow manure, adding a little soot and sand, and the corms should not be more than half buried in the soil, otherwise when the flowering season arrives many of the blooms will decay prematurely. From this date a warm pit would be the best position, kept as near the glass as possible, and giving sufficient air to maintain a sturdy growth. Slight shading must be resorted to during bright weather, either by means of limewash or thin shading material drawn over the lights; the former is the method most generally adopted, and perhaps the best. Watering must be carefully attended to; do not allow them to become very dry or very wet, and the water should never be poured directly into the centre of the plant, but around the sides of the pot. Cyclamens are benefited by syringing on the afternoons of fine days, an operation which also serves to keep insects in check. They are most liable to attacks from green fly, thrips, and also red spider; fumigating with Tobacco paper will destroy the green fly. Sponging carefully with soapy water is the most effectual remedy for the two latter, but none of them must be allowed to become well established, or they will seriously check growth.

When they begin to throw up their flowers they should be favoured with a light position in the greenhouse, and receive an occasional watering with liquid manure; plenty of air should also be given on favourable occasions. After they have finished blooming all the old flower-stems should be removed, and the plants kept a little dry at the roots in order to rest them for a time, but they should not be dried off too severely, or many of them will become nearly or quite blind. When the corms show signs of growing they should be shaken out of the old soil and repotted in pots one or two sizes larger, using a compost similar to that recommended for the young plants, and their subsequent treatment should also be similar. Old plants will grow and flower for several years, but it is a good plan to raise a number of seedlings every year, as they produce much the finest blooms, if somewhat fewer in number. Old plants do remarkably well when planted out in moderately rich soil about the beginning of June. They should be lifted again in the autumn, and repotted, taking care to shade them from bright sunshine till re-established. Whenever flower-stems are removed or blooms are required, they should be pulled clean off the corms, as should a part of a stem be left, this is liable to spread decay all around it. M.

Large flowered Persian Cyclamen (C. persicum var. grandiflorum).

14819.—**Mountain Ash berries for winter use.**—I am sorry I did not notice "Barnsley's" query before, but perhaps the information may be useful to him another year. The Mountain Ash berries can be kept quite fresh-looking by either sealing the stalk of each bunch or dipping the berries into spirits of wine. They are very useful where Holly berries are scarce; the fruit of the Berberis may also be used, and it has this advantage, that it is not absolutely necessary to treat them artificially.—V. L.

A useful greenhouse stove.—There are in all probability a good many readers of Gardening Illustrated to whom the subjoined experiences may be useful: I have a greenhouse 20 feet by 8 feet, and after trying several ineffectual means of heating it during the winter months I determined last year to give a trial to one of Portway's slow combustion stoves. I therefore purchased one of their No. 1 stoves. I had then to get 8 feet of 3-inch piping for chimney, an elbow, and a cowl. My stove being complete, it did not take more than a quarter of an hour to fix; I then gave the stove a trial of a month, using coke broken very small. I found, however, that it did not altogether answer inasmuch as, the bottom being composed of fire-clay, and the fire having to lay on that, it very quickly got choked. Thinking a false bottom would alter this, I had a grating made, in two halves (to enable it to be put in the stove), standing on legs, 2½ inches in length, thus leaving a clear space in the stove, between the grating and the bottom, of 2½ inches, for the ashes and cinders to drop. I found now that the stove answered admirably, and all I had to do to keep the fire in for weeks together, was to occasionally rake the ashes from the grating. I may mention that to counteract the dryness of the atmosphere, consequent upon the action of the stove, I have had made a galvanised iron pan to fix over the stove. It is in two parts—an upper and under—the under part is filled with water, which the heat evaporates, and so moistens the air; the upper part being filled with Cocoa-nut fibre refuse, and used for propagating purposes. I need only add, that I used the stove during the whole of last winter, and found it highly satisfactory, and am doing the same this year.—Alfred J. White, *Peckham.*

15420.—**Early Chrysanthemums.**—Where it is intended to grow Chrysanthemums in the ground, the best varieties to grow are the early and semi-early Chrysanthemums, as they will, as a rule, finish blooming before frost sets in. A good selection was given in Gardening for Nov. 28, p. 542.—W. E. Boyce, *Holloway.*

THIRD ILLUSTRATION COMPETITION.

We again invite our readers to send us photographs of any pretty garden views that they have in their possession. We will not, on this occasion, limit the competition to any particular branch of gardening, but will welcome any illustrations of interest. The selected photos will be engraved and illustrated in GARDENING. That is, perhaps, the best honorarium we can bestow upon the winners; but the senders of the chosen pictures will each be entitled to receive an original water-colour drawing of some beautiful garden flowers. All photographs for the competition must reach us by Saturday, 26th December.

In addition to the above, however, we propose to give to the persons who during the year 1885 send us the best series of illustrations,

THREE PRIZES OF HONOUR,

as follow:—First—A water-colour drawing of the Wild Field Rose, by the late Mrs. Coleman; purchased at Christie's for Twelve Guineas. Second—A water-colour drawing, by Madame Vonga, of Zurich, of the first cultivated plant of the rose-coloured hardy Water-Lily flowered in Europe; purchased for Five Guineas. Third—A water-colour drawing of a group of Pæonies, by Mrs. Duffield, purchased for Three Guineas. The recent competitions are included in these special prizes.

The following rules must be observed by competitors:—

First.—The photos may be of objects either in the possession of the sender or of others, but the source whence they are obtained must be stated, and none sent the copyright of which is open to question; the Editor is to have the right of engraving and publishing the chosen photographs.

Second.—The name and address of the sender, together with the name and description of the object shown, should be plainly written on the back of each photo.

Third.—All letters relating to the Competition must be addressed to the Editor, and marked "Illustration Competition."

Figures of men or women, barrows, vases, rollers, implements, and all similar objects had better, as a general rule, be omitted from these photographs. The object is to show the beauty of the garden, and this cannot be done well when the photographer is confused by other considerations. Photographs must be mounted. They should be clear, and the subject intended to be shown in good focus, and so as to be distinctly seen.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15463.—**Plants for shady border.**—I have a border 30 feet by 3 feet, very shady. Will anyone kindly tell me what plants or flowers can be grown without much sun?—NOVICE, *Canonbury.*

15464.—**Prize Gooseberries.**—Will "W. B." (page 556) kindly say which are the best sorts for a stiff soil, high up on a hill, facing south, half-way between Leeds and Bradford?—J. C.

15465.—**Shrubs beneath trees.**—A portion of my garden is much shaded by Yew and other trees. I should be glad to learn what evergreen shrubs I can plant with a prospect of good results.—T.

15466.—**Ataccia cristata.**—Correspondents write to us to say that they find great difficulty in procuring plants of Ataccia cristata, figured in GARDENING recently. If, therefore, any reader knows a nurseryman who has it he will oblige by informing us.

15467.—**Chrysanthemums.**—Mr. Weaver, in speaking of "specimen Chrysanthemums" trained round sticks to hide the long bare stems does not say if they should be stopped after commencing to train or allowed to grow to a single stem. Will he kindly tell me?—L. C. S.

15468.—**Best flavoured Raspberries.**—I should be glad to learn the names of the best flavoured red Raspberries—fine fruit.—DADO.

15469.—**Cleaning wire flower-stands.**—Will anyone tell me the best way to clean two wire flower-stands for painting? They have got very rusty, and scraping them is slow work and unsatisfactory. I have been told to cover them with lime to clean the rust off. Has anyone tried this method?—HECATE, *Swansea.*

15470.—**Renovating tennis lawn.**—Can any reader tell me how to renovate a somewhat worn-out tennis lawn, situated on the Bagshot sands? Would nitrate of soda, which was mentioned some time ago by a correspondent, be suitable on this soil? If so, is that quantity should it be used? When ought it to be put on? and where can it be got? I shall be grateful for any information.—BAGSHOT SANDS.

15471.—**Fern case lining.**—I am about making a Fern-case, and wish to know if a zinc or lead lining in the soil trough would be detrimental to the Ferns (Pilling), which I intend planting in it, as a plain wood trough is apt to leak? My idea is to be able to give water to the Ferns without moving the case. There will be good drainage, and a vent for surplus water. Any information on the subject will be greatly esteemed by—AMATEUR.

15472.—**Treatment of Winter Cherry.**—Will "J. C. C." or some other kind reader, kindly tell me how to succeed with my Winter Cherries (Solanum Capsicastrum) another year? Last March I repotted in good loam in 48 pots, and kept them in my greenhouse till the middle of May, then plunged them in a sunny border. They made good growth, and bloomed well; but the blooms did not set. Will turning out of the pots do any good?—A WEEKLY READER.

15473.—**Heating conservatory by gas.**—I have a conservatory, facing south-west, 14 feet long by 7 feet wide, span-roof, with water for gold fish, in basin 10 feet long by 18 inches wide and 4 inches deep. I propose heating it by gas. Will anyone kindly tell me the best mode of doing this—whether by Asbestos fire, with burnt gas outlet; hot air, by means of fresh air admitted for circulation in pipes round house, with burnt gas outlet; or other method? Information on this subject, with any suggestions, will be thankfully received by—VERITAS.

15474.—**Heating small greenhouse.**—I have read with much interest the various articles that have appeared in your paper relating to the above subject; but I should be glad if some correspondent would kindly give his advice as to the best position of the pipes in a lean-to, as in some cases they are 9 inches off the ground, and in others the top pipe rest on the top of the stage level with the bottom of the glass in the front of the greenhouse. My experience of these toy greenhouses is that the great difficulty arises from the short length of piping, the water returning to the boiler nearly as hot as it left it.—H. R. H.

15475.—**Management of heating apparatus.**—I built a small, span-roof greenhouse, 10 feet by 15 feet, this last summer; I put at the end farthest from the door a saddle boiler about 20 inches long. It was set up and mounted by professionals, with 4-inch flow and return along one side of the house. I am not succeeding with my heating; it takes a long time and a deal of coal to get the heat up to 40 degs. or 45 degs., and then the water is driven out of the supply cistern, and the house filled with steam. Would some correspondents give me a few hints about the stoking, &c., and tell me what coal and what quantity I should use?—H. W.

15476.—**Magnolia grandiflora as a bush.**—I shall be obliged if any of the readers of GARDENING ILLUSTRATED will tell me if they know of any places in England where Magnolia grandiflora (Exmouth variety) is grown as a bush in borders, and if it thrives? It is thus grown in the north of France, but I am told by two nurserymen in the Midlands that it will only do against a wall. I much wish to grow it as a bush.—M. E. E., *Kidderminster.* ⁂ *We have in several parts of the south of England seen fairly healthy bushes of Magnolia, but are not quite sure that they were the Exmouth variety. We have no doubt, however, that some of our readers in the south will state their experience.*—ED.

15477.—**Defective hot-water apparatus.**—I have lately put up, with the assistance of a friend, a hot-water apparatus, which does not work at all satisfactorily, but is, in fact, a failure. The stove is a No. 1 Tortoise (greenhouse), to which I have attached a 2-inch hot-water pipe running round the greenhouse, which is a small one. The flow pipe is 6 feet long, and the gradient 1 inch in 6 feet; no matter how hot the boiler may be the highest end of the flow pipe (*i.e.*, the farthest point from the boiler) remains quite cool, thus showing that the water does not flow properly. The return pipe has a deeper fall than the rise in the flow-pipe. Near the stove and to the return pipe is attached the tank by an upright ¾-inch pipe, 1 foot above the boiler. When the boiler gets warm the water surges up and down in this tank, causing it to overflow and steaming the greenhouse fearfully. There is clearly a defect somewhere, and if some kind reader can suggest a remedy I shall be glad, as I can ill afford to employ a mechanic, having had my resources severely tried in buying the stove and pipes.—F. P., *Cheshire.*

15478.—**Management of Fern case.**—Last October I planted a Wardian case (constructed by myself), 24 in. by 18 inches by 18 inches, with our hardy Ferns—Lastrea Filix-mas, Scolopendrium vulgare, Lastrea montana, and Polystichum aculeatum, with some sprays of Ivy as a ground work. The Ivy seems to be growing nicely, but the Ferns, with one or two exceptions, are not thriving, the fronds becoming shrivelled up at the tips and turning brown, many of them showing specks of white fungus-like growth on the under surface. The case stands in an ordinary sitting-room window, facing north-east. The Ferns have been watered only once since planted, as the soil does not appear to need it, keeping moderately moist. The ventilation seems sufficient. Would some reader of GARDENING who has succeeded with such a case kindly give me the benefit of his experience? Can the failure be due to late planting, and is there a probability of the plants throwing up new fronds if left undisturbed until spring? Any hints will be most acceptable to a lover of Ferns. I may add that I have carefully read the recent articles in GARDENING on this subject, but they do not appear to meet my case.—R. A. D., *Dublin.*

15479.—**Roses for Kent.**—What Roses would be considered suitable for this district? The soil is a good loam, and the garden quite open to the south-west; in fact, has the sun on it all day, and the air is pure enough for the most delicate colours. I also want to grow a few pot Roses. My house is a lean-to, 10 feet by 6 feet and 9 feet high, faces south-west, and is heated at night with an oil-stove.—LEE, *S.E.*

15480.—**Treatment of Deutzia gracilis.**—Will some reader of GARDENING kindly give particulars as to the culture and treatment of a Deutzia? I bought my plant last spring, when it was a mass of white flowers, and on its ceasing to bloom I turned it out of its pot into the garden, keeping it well watered through the summer. About August I repotted it, and, after cutting it back to about half its size, put it in a cold frame till it showed signs of budding. I then brought it into my sitting-room, and placed it in the window with other plants (no gas in the room); it is kept well supplied with rain-water, and begins to throw out its leaves, but they have a tendency to go black and to die off. How should I treat the plant, and shall I be likely to bloom it? I shall be thankful for any hints.—F. W. G., *Watford.* ⁂ *There is no doubt that the atmosphere of the room is too dry for the tender new foliage of this shrub. A moist, genial atmosphere is indispensable for the welfare of such plants. You should have kept it in the frame until spring if you have no glass-house, and if your frame is slightly heated we should advise you to put the plant back there.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15481.—**Shoots at side of Hyacinth bulbs** (*C. H. B.*).—Yes; you should rub them off.

15482.—**Cineraria leaves curling up** (*A. Subden*).—You do not give us particulars upon which to base an opinion; but it looks as if the plants wanted water.

15483.—**Climbing Roses in tubs** (*Novice*).—Yes, you can grow climbing Roses out-of-doors in tubs; these must be well drained. Marechal Niel and Cheshunt Hybrid will meet your requirements.

15484.—**Ayrshire Roses** (*Cork*).—You can get these from or through any good Rose nursery. As you have not planted in autumn you should plant them as soon as you can in the winter, provided the weather and the ground suit.

15485.—**Anemone japonica** (*Sphinx*).—According to your description your Anemones are very fine; we should advise you to treat some in the way mentioned by "J. D." on page 538, but to let some of the old plants remain as they are.

15486.—**Bulbs in pots** (*Amateur*).—As they push up it is not desirable to expose them to severe frost, and, as we presume you want to flower them, they should at that stage be introduced to cold frames or a cool greenhouse. If you want to retard them the best way is to bury them deeper.

15487.—**Vines from seeds** (*F. W. S.*).—They will, of course, produce fruit without being grafted; but you will not know what the fruit is like until you taste it, as you cannot be certain that the seeds will produce their kind. Treat them as you would other vines; grow them well, and in due season they will fruit.

15488.—**Pampas Grass** (*H. P., Croydon*).—We doubt whether Gynerium jubatum would be hardy enough to flourish around London in such a position as you describe. Buy vigorous plants of the common kind, G. argenteum, and intermix with your light soil some stiffish loam. Do not plant before April.

15489.—**Oil stove for greenhouse** (*G. F. B.*).—You will find several oil stoves suitable for your purpose advertised in GARDENING. If you use the best paraffin oil, and keep the stove clean, there will not be much risk of injuring the plants. In a greenhouse of the size of yours the cost of keeping the temperature above freezing point would be trifling.

15490.—**Chrysanthemums after flowering** (*Homer*).—Chrysanthemums may be propagated now, and if you look through this week's issue and recent numbers you will find notes on the subject. All fowl manure is very strong, and liquid manure manufactured from it should be made weak. Its best use is for mixing with other and weaker manures and soil for general use.

15491.—**Vertical and horizontal boilers** (*Devoniensis*).—The boiler you refer to is considered a good one, and is now largely employed for heating. You are right in supposing that vertical boilers are more wasteful and less easily managed than horizontal ones, which are now becoming more and more popular—particularly the old saddle-shaped and its numerous modifications.

15492.—**Unfruitful Damson trees** (*J. F. C.*).—Unless you describe more fully the condition of the trees we cannot well advise you. If they are too vigorous they require both root-pruning and head-pruning; on the other hand, if their unfruitfulness is due to the fact that they are old and not vigorous they require the very opposite treatment—stimulating the roots by enriching the soil with manure.

15493.—**A legal question** (*A Lover of Flowers*).—Your query is not at all clearly put, and we cannot see what information you desire. "J. D. E.'s" note on page 553, and another to the same effect in this week's number, will, perhaps, satisfy you as to the right of a tenant to remove potted Roses; as for the other matters you refer to you must write again, and we shall be glad to assist you if possible.

15494.—**Keeping bulbs out of the ground** (*Hopeful*).—The question asked is whether bulbs such as Scillas, Ixias, Crocuses, Tulips, &c., can be kept out of the ground until after March. We suppose "Hopeful" has some particular reason for wishing to keep the bulbs out of the ground, because, doubtless, she is aware that they ought to have been planted some time ago. We fear that many of them will deteriorate and perish. Narcissi recover after having been kept an unnaturally long period out of the ground, but do not flower well, and our experience is that many of them perish altogether.

15495.—**Asteriscus maritimus** (*S. A. B.*).—This is also known as Odontospermum maritimum; we believe it is in the trade, and may be had of any hardy plant dealer. It may be easily cultivated in the garden in a light, sandy soil and very sunny position. It seems to be very variable in its habit, which may also depend a good deal on the locality from where it has been taken. A native of Gibraltar, Algeria, and the Mediterranean region generally, also from N. Morocco.

15496.—**American Blackberries** (*Subscriber, Eton*).—We think that the American Blackberries would grow well on the paling in your garden; but the plants have never had a fair trial in this country, so far as we know, and whether they will prove as good as they are in their own, we do not know. We think they are worth a trial. Most trade nurserymen ought to be able to get plants for you if they have not got them in their collections.

15497.—**The best Asparagus** (*Dado*).—There is really no difference in the flavour of Asparagus worth speaking of as regards the kinds. The difference consists in the size and earliness. We like the kind grown by the Argenteuil growers near Paris; but the difference is very slight. You are quite mistaken in seeking plants three or four years old, which never get on so well as yearling plants. According to our experience all plantations of Asparagus are best if made of clean, fairly-grown yearling plants planted in or about April.

15498.—**Tropæolum tuberosum not flowering** (*S. Beck*).—The abundance of foliage and absence of bloom indicate over-luxuriance of growth, due to excessive richness of the soil. We should try it another year, when the soil will, to some extent, become exhausted, and you will probably be rewarded with bloom. The best example that we have seen this year of this beautiful Tropæolum was at the foot of the south wall of a cottage in Sussex, and for several weeks past it has been covered with myriads of scarlet and yellow bloom.

15499.—**Manure water for bulbs** (*Amateur*).—We do not think that manure water is necessary for bulbs if you use good soil, because proper bulbs have all the necessary strength stored up in them, and are, in fact, matured growths, only wanting fair treatment to give good results. If you grow them on with a view to keeping them in after years no doubt mild doses of manure-water would be beneficial; but few people in England do treat their bulbs with a view to their existence beyond the blooming year. If they keep them at all they generally plant them out afterwards.

15500.—**Sowing Auriculas** (*W. L. L.*).—A good time to sow the seeds of Auriculas is the end of January or February. Use good yellow loam, two parts, and one of leaf-mould; add to it a little sharp sand. Fill the pots up to within half an inch of the top, make the surface quite level, sow the seeds evenly and thinly over the surface, and just cover them with finely-sifted soil. They vegetate more freely in a cool greenhouse or cold frame than they do in a hothouse or hotbed. Lay a square of glass over the pot to maintain a moist atmosphere, which gives a uniform degree of moisture in the soil. The plants will begin to appear three weeks after the seeds are sown, and will continue to vegetate for more than twelve months. The young plants must be pricked out as soon as they have formed the first leaf after the seed leaves. They are very small, and require careful handling. A dozen plants should be pricked out in a small 60-sized pot When they have grown so that the leaves meet together they must again be potted off into the same sized pots, three plants in each. When these have well filled the pots they must again be repotted, one plant in each, until, by the end of the season, the large plants are in large 60-sized pots, and the small ones in the small 60 size.—D.

15501.—**Training Marechal Niel Rose** (*W. Griffin*).—You should plant your Marechal Niel in the border or floor of the house, as it will soon run up and cover the entire roof—in fact, there is no other Rose that we are acquainted with that makes such long shoots in one year's growth. Marechal Niel Rose is now made a specialty of by many nurserymen, who grow it in 8-inch or 10-inch pots with single or double shoots like pot vines, and they are thoroughly ripened to from 12 feet to 15 feet in length, and every bud will bring fine blooms; therefore, there need be no doubt about the capability of a Marechal Niel, even in a large pot, covering the space mentioned. But they are far more satisfactory and give less trouble when planted out. If the natural soil is good do not add any manure, as it is a very strong grower, and some good turf and a little old mortar rubbish, just to give the plants a start, will produce more floriferous wood than over rich soil. If planted now in a cool house do not excite growth by keeping the house close, but give all the air possible in mild weather; when it begins to grow naturally by reason of the increased solar heat avoid all checks to growth by means of cold draughts or currents of air, and if green fly appear fumigate with Tobacco paper or dust with Tobacco powder, and after a day or two syringe freely to wash off both powder and insects. Do not stop the shoots, but let them grow straight up the wires, as the rods of vines are usually trained, and by the end of the summer they will present a firm, well-ripened look, with prominent buds at the axils of the leaves. Then keep the ventilators wide open, so as to give the Rose perfect rest, and in spring it will start away vigorously, and produce hundreds of blooms of a rich golden hue that are certainly, in their season, not surpassed by any Rose or flower we cultivate.—G.

15502.—**Building early vinery** (*W. Foster*).—The lean-to form is decidedly best for an early house as it gets more direct sunlight in proportion to surface of glass than any other, and the wall at back screens it from the cold in winter and early spring. For early forcing the incline should be more than that for mid-season or late crops. We should recommend raising the back wall to 10 feet high, and having no front light; but let the wall plate for carrying the rafters rest on a wall arched underground to let the roots out, and rising about 1 foot clear of the border, with ventilators let into it under every alternate light. If the soil is naturally good and well drained thoroughly break it up two spits deep, and add some ½-inch bones and any fresh turfy soil to give the vines a start, but there is no necessity for making a border; plant one vine under each rafter, and train them to single rods. The best sorts for early work are Black Hamburo' and Foster's Seedling or Muscadine. As regards the boiler, we should say a good saddle boiler is better suited to the purpose required than any other form. Two rows of pipes will not be enough for early forcing, but will do very well for mid-season or late crops. We should advise four rows of pipes, as it is better to have four rows moderately heated than two rows giving off heated fumes, which are most injurious to the tender foliage. The variation in the height of house at the two ends will not make any material difference, and the greatest improvement we can suggest is to let the roots run into the outer border, as we find the outside border far less trouble than inside ones, as regards keeping at an equable state of moisture, as inside borders require constant care to prevent the roots suffering from drought, one of the most fruitful sources of failure in vine culture.—G.

15503.—**Chrysanthemum culture** (*Liebhaber, Hampstead*).—Six or seven plants cannot be grown with any chance of success in 7-inch and 9-inch pots. One plant is enough for pots that size. The cuttings should be put in at once, one in the centre of a small pot. When the cuttings are well rooted, and have grown a little, pot them in 5-inch and 6-inch pots, to be potted in May or June into the pots in which they are to flower. Each plant ought to produce three blooms. The plants ought to be cut over early in June; three growths will then start from below the cut portion. More may start, but they ought to be rubbed out in the bud state, except three. Each of these growths will produce one such flower as is seen at exhibitions. There is one point in the culture of these plants which is almost invariably overlooked by beginners, and that is what growers call the setting of the buds some time in August. The flower-buds can be seen in course of formation, and immediately under these buds shoots begin to grow. If these shoots are removed at once with the finger and thumb the buds will swell and produce flowers; should the buds not be removed the flower-buds will be barren, and flowers will be produced on each of the shoots that have been allowed to grow from under the incipient flower-bud; but they will be such as "Liebhaber" describes in his question, and quite unlike what one sees at exhibitions. The large flowers seen at exhibitions are mostly dressed, but the petals are not curled inwards—they take that form naturally. Only weakly-grown plants produce flowers with reflexed petals—that is, if these reflexed flowers are produced on plants that are incurved varieties. There are, of course, varieties which produce reflexed flowers under the best cultural conditions. Of these Annie Salter, Christine, Cullingfordii, Cloth of Gold, are the best representatives. The best of the incurved type are Empress of India, Mrs. Rundle, Jeanne d'Arc, Princess of Wales, Alfred Salter, &c.—D.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor, *37, Southampton-street, Strand, W.C.*

Names of plants.—*W. Chater.*—Montbretia Pottsi.——*J. G. W.*—Solanum jasminoides.——*Alpha.*—The name of your Fern is Pteris stramnea.——*Drumore.*—The Fern received is Lomaria gibba, a native of New Caledonia, requiring stove heat in winter. The Palms and other plants enumerated in your letter will be all the better for a moderate amount of water only being given to them, until they make a fresh start in April next, when they all require copious watering all through the summer months.

NAMES OF FRUIT.

Naming Fruit.—*Reader who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of the same variety greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*M. D.*—Golden Noble.——*S. C. O.*—2 is Vicar of Winkfield. You must send us good specimens (more than one) of the others, if you want them accurately named.——*G. F. T.*—1, Beurré Diel; 2, Glou Morceau; 3, Looks like Vicar of Winkfield; 4, Appears to be poor specimen of the Trout Pear; 5, Decayed. You should send two or three good specimens of each fruit.——*Anonymous* (postmark "Broadway?)—Not known.——*J. S.*—Marie Louise.——*W. M.*—1, Winter Hawthornden; 2, Sweeney Nonpareil; 3, Court of Wick; 4, Golden Noble.——*W. S.*—The two large Apples may be Beauty of Kent and Mank's Codlin.——*W. Franklin.*—1, Old English Codlin; 2, Winter Strawberry.——*C. W. M.*——Beauty of Kent.——*G. Smith.*—1, Beurré de Capiaumont; 2, Rotten; 3, Napoleon; 4, Easter Beurré.——*C. Lucas.*—Glou Morceau.——*R. M. N.*—Beurré Diel.

TO CORRESPONDENTS.

R. A. D., Dublin.—Try T. Smith, of Newry.——*M. D.*—Yes.——*A. D.*—See reply in this week's number to query 15357.——*H. Harper.*—It is unnecessary to ask the maker of the stove for the particulars through Gardening; you have his address and can write to him direct.——*C. D. Craven.*—Steven Bros. and Co., 35 and 36, Upper Thames-street.——*W. D.* (No address given).—We really cannot understand your question about "Willows that did not keep last year." Kindly write it clearly, and we will try to help you.

Catalogues received.—*Hybrid Gladioli.* Alex. E. Campbell, Cove Gardens, Gourock, N.B.——*Flower and Vegetable Seeds, Bulbs, &c.* Waite, Nash, & Co., 79, Southwark-street, S. E.

AN AMATEUR'S HEATING APPARATUS.

I shall be pleased if the following account of my mode of heating a greenhouse should prove useful to readers of Gardening, as I have found it so cheap and simple to construct, and very effective in its results, that it leaves, I think, very little to be desired. I am sure that any journeyman gardener might, with a little care, build one with equally satisfactory results. My greenhouse, a span-roof, is 20 feet by 8 feet, and 9 feet to angle of gable, is a tenant's fixture of wood and glass. At one end I have a door in the centre, and at the back of the door the stove is built, in a potting shed of common bricks, lined with fire-bricks. It is 6 inches wide by 9 inches deep, and 24 inches high, inside measurement; a grating door, 10 inches deep at the bottom, and an ordinary feeding door at the top. The grating door at bottom I had made, as, after several trials with the ordinary door, I found the ashes accumulated on the bottom grating of the stove during the night, and stopped the draught, and so extinguished the fire. A brick flue is carried into the house a short distance, and then continued by using glazed drain pipes, 4 inches in diameter, and these are taken the whole length of the house, and pass out at the end with a T drain-pipe (one with three openings). One opening is stopped and cemented with a cap, which can be removed, if required, to clean the flue. The long piece is turned upwards, and a 4-inch iron stack-pipe, 6 feet long, forms the chimney when placed in the socket of the drain pipe. The best cement to use, I find, is Portland and fine sand, but it must be left two or three days to harden before the fire is lighted. Now, round the actual brick stove I have a brick chamber which projects several feet into the house, and an opening is left at the bottom, and another also at the top, and into this top opening I have 12 feet of stack piping fixed, the opening at the end of the pipe being within an inch or two of the back of the stove; this pipe runs by the side of the drain-pipe flue, the object of this being that the cool air at the bottom of the greenhouse passes in at the bottom opening of the chamber, becomes heated, and passes out of the stack-pipe twelve feet into the house, and equalises the temperature in all parts, whilst, at the same time, it keeps the air in motion—a great advantage to the plants. On the top of the stove and chamber I have an iron plate, on which I have a layer of bricks and cement, and a wall three bricks deep all round, and in this pit I have fibre for plunging pots in, and it answers well. The fuel I use is broken coke, and it burns all night—that is, from twelve to fourteen hours without attention when banked up. My practice is to keep the fire constantly going, and to give top ventilation day and night, if the weather is not very severe. The expense of fuel is twopence for twenty-four hours. I have burned, from October 16th to November 22nd, exactly six sacks of coke. Of course, some persons may prefer lighting the stove at night only, but I do not think it would reduce the expense, and the trouble is greater; and, besides, when the fire is constantly kept in the stove is more effective, the heat of the bricks being greater; whereas, if lighted only at night, it would be some hours before the brickwork would be thoroughly heated through. I need scarcely remark that the cleaner the flue is kept the better the stove will burn, and by removing the stopped end of the T drain-pipe you can pass a wire down the flue easily, and, having a flue brush attached, it can be drawn through. Like all amateurs, I have my pet hobby, and flues have been for years my study. In this instance I am quite satisfied. In severe weather, when all ventilators are shut, there is a beautiful warmth equally, scarcely varying a degree, throughout the house. H. T. J.

Smithfield market, Evesham.—List of prices realised Dec. 11, 1885:—Brussels Sprouts, 3s. to 4s. per pot; Carrots, 1s. 6d. to 2s. per cwt.; Onions, 3s. to 4s. per cwt.; Parsnips, 3s. 3d. to 4s. per cwt.; Potatoes, 1s. 6d. to 2s. per pot (80 lb.); Sage, 2d. to 2½d. per doz. bunches; Turnips, 1s. to 1s. 9d. per pot; Apples, 2s. to 3s. 6d. per pot; Pears, 2s. 6d. to 5s. per pot.

15295.—**Gladioli for competition.**—The following list of 24 varieties of Gladioli for competition may suit "An Ayrshire Reader":—Adolphe Brougniart, Africaine, Amalthea, Archduchess Marie Christina, Belladonna, Bicolore, Camille, Carnation, Celimene, Dalila, De Mirbel, Dido, Dumont d'Urville, Eclair, Giganteus, Horace Vernet, L'Unique, Violet, Mabel, Marquis of Lothian, Ondine, Opale, Orpheus, Sylvia, Leander. The above are all good well-known varieties for competition.—Albert, *Glasgow.*

THE KITCHEN GARDEN.

AMERICAN GOURDS.

Having been applied to by a number of readers of Gardening for seeds of these in accordance with my offer (which has been or shall be duly fulfilled to each), I now send a few cultural and culinary notes, such as I have promised several enquirers I would ask you to publish for their use. In north-west America, where the summer heat is as great as the winter cold, all the seeds in question are simply planted like field Beans, at sufficient distances apart, on the furrowed field, and left to take care of themselves for the most part. "Musk" Melons (the common English Melons) and Cucumbers are grown in the same way. Here different treatment is no doubt necessary.

Pumpkin.—Treatment much the same as Vegetable Marrow. Plant the seeds three in a pot in a mild frame-covered hotbed or glass-house, harden them off gradually, and, when risk of severe frost is over, plant them out, giving them protection against possible night frosts so long as may be necessary. A spent hotbed, manure heap, rubbish mound, or a few barrowfuls of soil and rotten manure mixed and formed into a bed, will be suitable for them; but wherever put they must have ample room to spread abroad their vines, and several bushels of good loamy soil immediately about their roots. Watering is essential in dry weather. They will do well enough trailing about on the flat ground, or may be allowed to run up a fence, care being taken to support the heavy Gourds from tearing down the vines. I have seen them this summer in Surrey, growing at large over a low-pitched tile roof of an outbuilding, where their gorgeous rondures, varying in colour from a deep green to an equally rich orange, made a very effective show. The fruit is ripe when the colour changes to orange throughout, but it is better left on the vine till the latter is cut down by frost. While ripening turn it over carefully sometimes, so as to give the other side a cooking. A bit of mat or board, or a little straw placed underneath will be a remunerative protection from the cold ground. The fruit should be put away thoroughly dry in a cool place, secure from damp, and it will keep for a long time. Any green fruits too late for ripening should be cut early, and used in the same way as Vegetable Marrows. The ripe flesh is good in pies (as I have formerly described), or made into a purée, or simply boiled tender and eaten with butter sauce. With Pumpkin, as with other vegetables and fruits, mere increase of size (due to rank cultivation) does not mean superior quality, but often the reverse. American farmers grow and speak highly of Pumpkins as winter food for cattle. I am afraid to say how many waggon-loads one of them told me an acre will often produce. As they will thrive here our farmers would do well to try their merits for the same purpose.

Squash.—Grow and use these in the same way as Pumpkins, to which the flesh is considered superior boiled, but inferior for pies. The "yellow" Squash is of a pretty yellowish-pink colour externally when ripe. The Hubbard Squash has a hard rind. This variety is highly esteemed in America, where it is cut in lengths and baked or fried, like Sweet Potato. Our American neighbours had never thought of cooking Pumpkin and Squash green till we tried, and found the result satisfactory. They do not seem to know our Vegetable Marrow.

Citron Gourd.—Possibly this and the three following Gourds may be satisfied with the same treatment as recommended for Pumpkins, but I should not be surprised if they require frame or glasshouse cultivation. The peeled flesh of the Citron, if cut in small pieces, well flavoured with shredded Lemon peel, and some of the juice of the Lemons, sweetened with sugar or honey, and thoroughly boiled, makes a nice preserve, to which powdered Ginger and, perhaps, other spices may with advantage be added in the making. The seeds of this Gourd are of a bright brown colour when ripe, but there is no external sign that I know of by which the ripeness can be known. In America these and the Pie Melons are usually, I believe, left on the vines till the first frost comes. The slightest freeze kills the vine of any of the Gourds, but the thick rind of the fruits protects them against several degrees of cold. No time is lost, however, before collecting them when once the vines are dead. One may often see collections of the various Gourds lying on the sunny side of a straw or hay stack (where they are covered up for protection at night), to perfect their ripening in the warm rays.

Pie Melon.—Cultivate the same as Citron. The seeds are black when ripe, but there is no other distinctive sign (see remarks above). The flesh of the Pie Melon is used to make sweet pickle. Cut it up in bits of various sizes, and lay it in glass or earthenware jars; boil in vinegar enough spices to give the liquor a strong flavour of them; remove the spice bag, and add enough sugar, or honey, or treacle, or mixture of these, to make a rich sweet syrup; pour this boiling hot over the pieces; let it remain several days; then strain off, reboil, and again pour hot over the flesh; repeat this process a number of times, adding sugar and spice at any stage as required, till the Melon is sufficiently soft and of a rich semi-transparent brown colour, and a satisfactory flavour. This is a capital sauce with hot or cold meat.

Water Melon.—This, I dare say, requires in England at least as encouraging treatment as the Melon usually grown here. I do not know if under these conditions it would be worth the room its extensive growth occupies, or would in any case thoroughly ripen. Perhaps it requires the heat of an American summer to perfect its sweet succulence, and make it thoroughly appreciated. When ripe the flesh is of a pinkish tint, and the seeds dark brown. There is no change of external appearance, but on being rapped the ripe Gourd gives a dull hollow thud, different from the sharper harder sound of unripe specimens. [We have never seen it grown well anywhere in this country.—Ed.]

Ground Cherry.—This plant (which is not a Gourd) somewhat resembles, in general appearance, the common Borage. Sow it thinly as soon as the risk of frost is past, or start the seeds under glass beforehand, and plant out then, giving to each plant about a square foot of space. The fruit is a round, amber-coloured berry, about as big as a Black-heart Cherry, with a tough, paper-like envelope about it. When ripe the berries fall in their husks. Make a collection every few days, shell out the berries (which will keep for a long time either in or out of their envelopes), and make them into preserve as you would Strawberries, but use less sugar. As the Cherries are naturally saccharine, I think a little Apple added improves the preserve. Thus prepared, the fruit has an excellent Pineapply flavour, but it is not very edifying in the raw state. I think this plant must have some other name, as I never saw "Ground Cherry" in the garden seed lists. Whether it is known in England I do not know. W. Simmons.

Improving shallow soils.—In this locality soil varies very considerably. It is no uncommon thing to find barely depth enough to support any kind of crop in one part of a field, and this of the lightest description, resting on a bed of gravel, and only a few yards off a good depth of vegetable soil resting on several feet of good clayey loam, such as is used for brick-making. Many cultivators of such soils turn this to account by digging out pits of loam and carting it to the light thin portions, spreading it out at this time of year like a coat of manure, and letting it lie for some weeks exposed to the winter's frosts or rains. It is then ploughed in, and is found to well repay the labour. Not only does it produce a marked and speedy improvement on the crops, but it permanently increases the depth of soil, and by this simple means alone land that a few years ago would hardly keep the scantiest herbage alive now produces fine crops of vegetables. The main thing is putting on little and often, rather than a great depth at any one time. It is surprising what fine crops fresh soil will produce without any stimulating manure. Old hedge-rows grubbed up, or banks levelled even where composed of soil of but moderate quality, will yield good crops for a long time.—J. G., *Hants.*

Storing seed Potatoes.—One of the most important items in successful Potato culture is storing the seed in such a way that vitality is not diminished through premature growth. Early kinds, if stored in close, warm buildings, or in large quantities, are very liable at this time of the year to grow rapidly. The difficulty of keeping them in a sufficiently low temperature, and yet secure from frost, is not easily overcome, and if they make long, blanched shoots that have to be removed before planting, they are irreparably weakened. I find spreading them out in large shallow baskets, such as those used for packing plants, answers well. By this means a large quantity may be stored in a cool shed, or in any glasshouse in which there are no plants, and they can be conveniently moved from one place to another. Temporary protection, too, is easily applied, and, as the days lengthen, any sorts not planted we set out-of-doors in a sheltered place, and put mats over them at night. Short, sturdy shoots, with the roots just ready to lay hold of the soil as soon as placed in it, are the ones to yield good crops. Kidney Potatoes should never have the shoots rubbed off; they do not start kindly a second time, and never so strongly as at first; therefore take care of the early shoots. Ashleaf Kidneys, Myatt's Prolific, and similar kinds should now be placed in shallow boxes or baskets, and exposed to light in a dry, cool place, so that they may develop sturdy shoots. This may appear to be unnecessary labour, but it will be well repaid when the time for lifting the crop arrives. For pits or frames, if they can be set in a genial warmth, so as to get them well advanced before they are planted, it will greatly forward the crop.—J. G. H.

The new Plume Celery.—There are conflicting opinions on this new variety. I have grown it here for two years, not largely, but merely as an early Celery, and am well satisfied with it. I grow it in small trenches, as ordinary Celery. I find earthing it up improves the flavour, and the young, white leaves give it a fine appearance at the table. It is undoubtedly the earliest Celery that I know, but I cannot speak as to its hardiness. If I were to attempt prophecy I should say it is not hardy. This point will, no doubt, be proved in due time.—R. Gilbert, *Burghley.*

Storing roots for winter use.—Although the storage of root crops in mounds simply seals them up until spring, yet there are a great many who still adopt the practice. It is well enough for those sections where the winters are mild, as no danger is likely to ensue from frost when the mounds are opened occasionally as the roots are wanted; but when the ground becomes frozen, and remains so throughout the entire winter, some other method must be provided. The Western farmers have adopted the plan of storing their roots in the barn, in bins, packing them in sand or dry dirt. The advantage of so doing is that the roots keep at an equal temperature, and are easily accessible at any time. They seldom freeze, and, when they do, they thaw gradually, which prevents them from being injured, while the sand or earth absorbes all moisture. In the mounds there is sometimes as much danger from over-heating as from frost, especially when the spring opens and the weather fluctuates in temperature. But little more labour is required to store them in the barn, which is more than saved when the facility of use is considered. By storing roots in the barn a saving of time is effected in using them, while they will also be more uniform in quality. Even sweet Potatoes may be thus kept, but they require more covering than Beets, Carrots, or Turnips. Sand is better than dry dirt, as it fills in better and is more convenient. If dirt be used it should be clean and free from filth of any kind. White Potatoes are also prevented from sprouting if so packed.—*American Farm and Garden.*

Sowing Peas.—For twenty years past I have always sown my early Peas in November and have always done well with them. The three great enemies to early Peas are mice, slugs, and birds. Now, it is almost astonishing how these three enemies can be successfully battled with and beaten. When the Peas are first sown we set half-a-dozen mouse-traps, which we make ourselves, baiting with a little piece of toasted cheese. These are the common figure-four traps. Our earliest Peas are just now breaking the ground, and eight mice have already been caught. These traps we look at daily. As soon as we can see the Peas in rows,

we cover them over with 2 inches of coal ashes. This effectually beats the slugs. When the Peas come through the coal ashes we draw a little soil on each side, leaving them in a semi-trench, and put the stakes to them at once. This not only baffles the birds, but screens the Peas from the cold surface-winds. This I look upon as a very important point. In staking early Peas use plenty of small brush-wood and a slight hedge of Bracken. I admit that the trouble is great, but to have early Peas six days in advance of your neighbour is worth it all. There is nothing so enjoyable, nothing so pleasing, to my mind, as a good border of early Peas. *Varieties.*—These are now legion, but I am writing for the guidance of the amateur gardener, who wants good Peas at a cheap rate. Doubtless the best early Pea is William the First, followed by Wordsley Wonder, Standard, and, latest of all, Omega. Speaking of the varieties of Peas, the year 1885 will be remembered by the advent of two of Mr. Burbury's seedling early Peas. These come out this year. I have grown both here for two years. No. 1 is Early Kenilworth, and No. 2 William the Conqueror, both green marrows. The two Peas have, I do not doubt, a great future before them. —R. Gilbert, *Burghley.*

A fine Cabbage.—I have seen several times a list of useful things published in Gardening, and this must be my excuse for sending a specimen of what I find a useful vegetable. I have grown it about fifteen years and find it come quite true. I first found it in some Cabbage that had got very much crossed, and have grown it every year since. It is of no use for summer, but is in season from October, often till the following April. It might be quite common, but I have not seen it anywhere else. It is not a Savoy or Cabbage, being hardier than either; it does not fly open like the Savoy with me. This one is grown in the ancient city of Bristol, not many hundred yards from its centre, so that it is not the most favourable situation that could be chosen for the purpose. Perhaps you could tell me through Gardening its proper name, for which I should feel much obliged.—J. B. **** The specimen sent by "J. B." belongs to the Cabbage section, but has not a solid heart as Cabbages usually have. It is very fine, and, without doubt, a very good vegetable.*—Ed.

An American Pumpkin.—A notable Pumpkin vine at Muncie, Ind., is mentioned by *The Farmer* of that State. "The stem where it came out of the ground" was 10 inches around, and the entire plant covered a surface of 236 feet circumference. The fruits, numbering eighteen, ranged in weight from 53 lbs. to 115 lbs., and aggregated nearly three-quarters of a ton. "The variety is called the Orange, excellent for pies and stock." It is thought that a decayed stump near its root "furnished nutriment necessary for such a wonderful growth."

REPLIES.

15355.—**Lettuce for exhibition.**—Paris White Cos and Victoria Cabbage Lettuce are large and good varieties for exhibition, market, or home consumption.—G. S.

15356.—**Celery for exhibition.**—Major Clark's (syn. Leicester Red) and Grove White are good varieties of the first quality. The local growers near some of our large towns, who sometimes grow Celery to a very large size, have particular strains of their own. The great secret, however, is to sow the seed early, and grow on without a check. Never allow them to get dry, and, when well established, give abundance of water at the roots.—G. S., *South Yorkshire.*

15364. — **Brussels Sprouts.** — Veitch's Exhibition is one of the largest and best Brussels Sprouts. Sow the seed in a cold frame early in February. As soon as the seedlings are large enough to handle prick them out under glass, or on a warm border; afterwards transplant them in the open garden. From plants thus treated we have for some months past been gathering large sprouts of the best quality.—G. S., *South Yorkshire.*

—— I can confidently recommend the Reading Exhibition Brussels Sprouts as the earliest and best in cultivation. The leaves, which are small, are of a pale green colour, and stand out from the stem; the buttons are large and solid, and of delicious flavour. They come into use from ten to fourteen days before any other kind. As an exhibition variety it is unequalled, and should find a place in every garden. They should be sown in March and April in the open ground, and transplanted, as soon as ready, 2 feet apart each way. The soil should be well trenched and liberally manured. If necessary the plants should be watered the first week or ten days to ensure a good start.—R. Gillmore, *Highbury.*

15375.—**Neglected kitchen garden.**—I should advise "Young Gardener" first of all to give his garden a good dressing of manure or old rubbish of any kind, and then either to trench it 3 spits deep, or, as my plan is, to bury the top spit a foot deep; then shovel the loose soil out, and put it on the top of the former. Then instead of bringing the next spit on the top dig it up as deep as possible, and let it remain, and so go on all over the ground. It does not take so much time as trenching, and, in my opinion, does as well. I always do all my spare pieces of ground this way every winter, thereby burying all weeds and manure, and bringing up to the top the manure that was buried the previous winter. I find this plan answers admirably in my soil, which is very light and sandy.—H. P., *Croydon.*

FRUIT.

Blackberries and Elderberries.—A peculiarity of the season 1885 in this quarter (lat. 56 deg., 50 min. N.; long. 5 deg., 46 min. W.) is worth noting, as I have not observed it before in thirty years' experience. At the beginning of September there was a prodigious promise of Blackberries, but they have not ripened. A very few ripened at the end of September, and a few swelled and blackened about the middle of November, but were, of course, utterly tasteless. The Elderberries also hung green on the bushes till the middle of November, when a few got purple. It would be interesting to know if the same phenomenon has occurred elsewhere.—Roshven, *Moidart.*

Grapes shanking.—This is at once the worst and the most incomprehensible disaster to the amateur grower of Grapes. It is usually referred to poor and uncongenial soil, which, I am firmly persuaded, has nothing whatever to do with it. For, if so, why do the berries shank on one branch and not on another of the same vine? They shank, as I feel sure, because the branch on which they hang was stopped back too hard and too soon, in the false idea of causing the Grapes to swell. Of course, in a cold and late house, where the berries are long in developing, this is especially disastrous. Just when the Grapes want full nutriment the leading and side shoots are stopped, the flow of sap arrested, the wood ripens, and the weaker berries fail and shank. As a moral, leave, at any rate, one strong leading shoot on each vine in order to draw the sap up till the berries have nearly reached their full development, and stop the laterals with a gentler hand.—A. Pictor, *Weymouth.*

Canker in Apple trees.—I agree with "G. S. S." (page 556) that Mr. Hiam's observations, though probably accurate, do not prove that the insects he has found are the cause of canker. The first step should be to submit them to some experienced entomologist. If he should send specimens to the Horticultural Society, or to the Entomological Society, or to the British Museum, he will, no doubt, get a decisive answer, and if it turns out that he has discovered some new insect it will be a step in favour of his theory. The next step will be to ascertain that these insects are never found except where there has been canker. Now, I have found minute insects in cankered holes, but I have always found just the same insects under loose portions of bark, or where it has been artificially cut—as, for instance, where a limb has been amputated, which, being my own pruner, I can distinctly affirm not to have been done by any insect smaller than myself. But in all these cases I find the insects, not upon the dead wood, but just where the new bark is pushing forward to heal the wound, and it is my conviction that the eggs are laid here that the insects may feed on the young wood. A difficulty in Mr. Hiam's theory is the large extent to which canker sometimes goes. I had one about a dozen years ago on the stem of a large pyramid tree, which was about 10 inches long by 4 inches or 5 inches wide. We discovered it before the bark was broken by its discolouration, and, on my gardener's advice, the whole dead bark was cut away. Still for some years I had to use washes to destroy aphides which found shelter in it, but now the new bark has nearly shut in the dead wood under it.—W. M. C., *Clapton.*

Influence of soil on flavour of fruit.—It is pretty generally known that soil influences the flavour of Pears a good deal. I never had this fact so clearly demonstrated as when judging at Exeter at the end of October and at Taunton in November. I then had an opportunity of tasting several different samples of Beurré Diel Pear grown in widely different places, and the flavour of some of the fruit was so superior to that of others, that one could hardly believe that all belonged to the same variety. This sort is, however, so well known, that a mistake is impossible. In the best fruit, which was highly flavoured, there was an absence of that grittiness in the flesh which is so characteristic of this sort in some soils. With us it is always hard, gritty, and flavourless. We, therefore, only value it for culinary purposes. But in a soil that suits it, it is well deserving of cultivation. Being a hardy, free-bearing sort, it may be grown on east or west walls, and in some favoured places it even does well as a standard.—J.

The Service Tree (Pyrus Sorbus) was, we believe, once used as a fruit somewhat in the same sense as the Medlar is. We had no experience of the value of the fruit till lately, when some of it was sent us. When ripe and fresh its astringency was most marked and unpleasant, but, putting it by for a week or two, for the sake of seeds, we happened to taste it again by the time it had got quite brown. The flavour was excellent, somewhat like that of a Medlar, but distinct from and quite superior to that of the Medlar. This tree is not only rare as a fruit-bearing tree in this country, but even planters caring for trees do not know it when they see it. Amateurs fond of curiosities might at least amuse themselves and puzzle their friends with this uncommon fruit. It is in condition in December, and would probably with care last over Christmas. Have any readers any experience of it? In shape it is like a little Pear, and some of the specimens are nearly as large as a small Green Chisel. With care and thinning no doubt it might be much improved. —R.

The best Apples.—Writing with reference to the recent notes in Gardening on this subject, Mr. W. Ingram says: "Bess Poole is one I would have recommended for quality, but it is an uncertain cropper. This and Lincoln Pippin are late in ripening, are local Apples, and not so well adapted for general culture. Apples that bear regularly, and are good for eating and for cooking, are the most desirable kinds for ordinary gardens with limited space at command. I find it an advantage, having plenty of orchard space, to grow many kinds, as in bad seasons we are almost certain to find some with constitutional strength to resist inclement weather, and to give partial crops. Bess Pool is the last Apple to bloom, and hangs on the tree until November—indeed, we only gathered the fruit last week. How very hardy Apples are! We had 10 degs. of frost, and those exposed to it on the trees are quite uninjured." Mr. Ingram sends us some specimens of the Bramley seedling; it is a very good Apple, of fine size, and with the true acid flavour which is so lacking in many Apples that come in at this time of the year.

Pruning pyramid Apple trees.—Permit me to express my obligations to J. Doman, J. Groom, and J. Grice for their obliging and instructive communications on the above subject in Gardening Illustrated for Dec. 5. The cultivation of fruit trees by amateurs is doubtless rapidly extending; but its progress will be greatly accelerated if those engaged in it are enabled to encourage others by manifest success. Such, we must hope, will be the result of the valuable communications referred to above.—W. W., *Staffs.*

REPLIES.

15371.—**Grape growing.**—You have ample time to raise your own vines from eyes, and to get them large enough for planting in your other garden two years hence. The best early white Grapes are Foster's Seedling and Buckland's Sweetwater, and the best black, Black Hamburgh. If you want a Muscat choose white Muscat of Alexandria. The best late keeping black variety is Lady Downe's, but as you have only one house

I do not advise you to attempt to grow early and late Grapes together, as the two last named require a much higher temperature than the others. Put in the eyes which are to furnish the plants early in March in a temperature of from 60 to 70 degrees, putting a single eye in a 6-inch pot; when it has grown 1 foot high shift it into another pot 10 inches in diameter. The compost should be three parts loam and one part rotten hotbed manure. The young plants may complete their growth in these pots for the first year. All the summer they must be grown in a temperature higher than that of an ordinary greenhouse, and be trained under the glass. In November cut them down, leaving only two buds above the soil, and a month later turn them out of the pots and shake away from the roots half of the old soil and put them into pots 14 or 16 inches in diameter. Treat them as in the summer previous, only stop them when they have grown 6 feet long, and at the end of the second summer you ought to have vines strong enough to bear a good crop of Grapes. But if you want to plant them out to make permanent vines you must only take a very light crop the first year.—J. C. C.

—— If fruiting vines are required two years hence, by far the best way would be to put in eyes next month, and grow them on in the pit all the season. They should be cut down and grown on into strong fruiting canes the following season. They should be grown the second season in 15-inch pots, and be planted out alternately with one-year-old canes, in the permanent vinery. When they have borne one crop of fruit they should be cut out, and the one-year-old vines will by that time have become strong enough to bear a light crop of fruit the following season. The best vines to grow by one who has not had an extensive experience are Black Hamburgh and Foster's White Seedling.—J. D. E.

15374.—**Black Hamburgh Grapes.**—As the Grapes have just been cut it will scarcely be possible to force the vines to produce Grapes in May. Prune the vines at once, wash the wood and glass work of the house, and paint the stems of the vines with a mixture of sulphur and soft soap. If it is not of the consistency of thin paint it should be made so by the addition of a little clay and soot. The vines should be tied up near the base of the rafters, but the upper portion must be bent down and tied up to the trellis, also near the base of the rafters. This is done to cause the buds to start regularly all over the vine. The border should have a surface dressing of rich manure and loam in equal portions; lay it on about 3 inches thick. To have Grapes ready in May the vines must be started to grow about the middle of November, and not be forced much in their early stages. Start with 45 degs. at night, increasing in two weeks to 50 degs., and at the end of six weeks to 55 degs. Atmospheric moisture should be regularly kept up by syringing the walls of the house, and sprinkling the paths and surface of the borders daily.—J. D. E.

—— As you want ripe Grapes in May or June your vines ought to have been pruned early in November. You must prune them at once, cutting the lateral growth back to within two buds of the old rods, then hang the rods in a horizontal position to the wires along the front of the house. If there are no insects on the vines or in the house, such as mealy bug or thrip, they will not want any painting. If you must paint them, dissolve 4 ounces of Gishurst compound in one gallon of water; then take a knob of clay and some of the liquid, mix it to the consistency of thin paint, and apply it to the rods with a brush. Give the border a good dressing of old hotbed or farmyard manure at once. As they are not yet pruned you had better not start them until the middle of January, and then they should be ripe about the middle of June. Before applying heat inside, cover up the border outside with dry leaves 18 inches deep, and if you have no shutters or other means of keeping rain and snow off the leaves you had better thatch them with straw. Start with a temperature of 60 degs. both night and day, and keep the vines well syringed, and the floor and walls damped three or four times a day. Continue this treatment until the vines break, when they must be taken up to their place on the roof. The day-temperature may remain the same by fire heat, but allowing a rise of 15 degs. to 25 degs. with sun heat, with a fair amount of air on the top of the house. From this time until the vines come into flower the night-temperature should be 55 degs. As the young growth gains strength, and the bunches begin to show themselves, the

GROUP OF BELGIAN OR FANCY PANSIES. (SEE ARTICLE ON PANSIES, PAGE 581).

day-temperature by fire heat may be allowed to rise about 4 degs. higher than the above figures. As they come into flower raise the temperature by fire heat to 70 degs. and the night to 62 degs., but as soon as the berries are all set the night-temperature should be about 58 degs. and the day 65 degs., allowing the usual rise by sun-heat. Of course you will understand that the disbudding of such shoots as are not wanted must be done as soon as it is seen which shoot promises to give the best bunch, and to leave off syringing altogether before the vines come into flower. I like to leave the coverings on the border until the Grapes are ripe, and then to remove them gradually—J. C. C.

PACKING FRUIT FOR CARRIAGE.

The following practical remarks on the packing and carriage of some of the more delicate kinds of fruit by M. Ed. Pynaert, professor in the School of Horticulture at Ghent, will, we have no doubt, be read with interest:—Fruits destined for carriage should not be too ripe, and all bruised or attacked by insects should be set aside, as they are certain to spoil the rest. They should be carefully picked over, one by one, each fruit being at the same time gently brushed over with a soft brush, except in the case of fruit covered with bloom, such as Plums or black Grapes, or those which are very soft, such as Raspberries and Mulberries. The fruit should be picked a day or two beforehand and laid in a dry, airy place in order to get rid of a portion of its superabundant moisture. The materials which are used in packing to prevent the fruit from rubbing should also be thoroughly dried. It is scarcely necessary to add that, in gathering, the fruit should be gently laid in a broad basket having in the bottom a thick layer of soft Moss covered with tissue paper, that they should not be allowed to touch, and must not be heaped on one another in layers. The boxes in which the fruit is to travel must not be too large, as it is an essential condition that it should be packed closely enough to prevent the least shaking, an arrangement which would render the boxes inconveniently heavy if they were of too great size. When several kinds of fruit, as Peaches, Raspberries, Cherries, Grapes, &c., are to be sent together, there should be a separate box for each, except when the quantity is very small, in which case they may be laid on trays or false bottoms in the same box. The strength and solidity of the boxes should be proportioned to the length of the journey and the amount of rough treatment they are likely to meet with. They should be made of any soft timber, except Deal, as, generally speaking, there is a resinous odour from it which might affect the natural perfume of the fruit. For constant use we would recommend boxes with hinged lids, and locks of which both the sender and the consignee should have keys. In winter the fruit should be protected from frost by covering the boxes with an outside coating or layer of Moss or straw at least 2½ inches or 3 inches thick and surrounding the whole with matting. Peaches, if picked two or three days before they are perfectly ripe, will bear a journey of several days' duration well. Clingstone Peaches and Nectarines should be quite ripe when gathered, and will keep longer than freestone Peaches. In packing, each fruit should be put up separately in tissue paper. The fruits should then be laid on a bed of bran or good dry, white sawdust, from which the finer particles have been sifted. They should be placed about ½-inch apart every way and covered up with bran or sawdust, which should be pressed into all the interstices. On this layer of bran or sawdust another layer of fruit should be placed and treated in the same way, but not more than three, or at most four, layers of fruit should be packed in the same box. The box should be gently shaken from time to time while packing, so as to settle the contents and fill up all crevices; it should never be more than 19 inches long, 13 inches wide, and 11 inches deep. A box of this size will hold about five dozen Peaches. When the quantity of Peaches to be sent is considerable, and more especially in cases where a supply has to be sent regularly to a great distance, the packing must be of a more elaborate kind. Each box should be made with a number of trays or false bottoms, so that the fruits may be placed in separate layers, with a space of 3 inches or 3½ inches between them. The trays or false bottoms rest on ledges nailed on the inside of the box, and the intermediate spaces are divided, like a chess-board, into small squares of 3 inches or 3½ inches, inside measurement, in each of which is placed one Peach, wrapped in tissue paper and carefully packed firmly in its place with tow or bran. Apricots and Plums, not being so delicate as Peaches, require less care. They are wrapped in tissue paper and packed in layers, with dry Moss between the layers. When the Apricots are large they should be packed like Peaches, and this should always be done when they have to travel long distances. Plums will keep for some time, some varieties longer than others. Apricots also will keep longer than Peaches. Cherries should first be washed in a basin of water with a very soft brush; they should then be wiped dry, laid between two sheets of tissue paper, and packed with alternate layers of tow. Grapes may be packed like Peaches, The bran or sawdust settling down between the fruit prevents injury from rubbing, but it has the disadvantage of always adhering to the latter to a greater or less extent. When the fruit is perfectly dry it may be blown off, or the fruit may be, in the first place, done up in tissue paper. When Grapes are sent by rail, and the distance is not very great, as from Paris to Brussels, it is generally considered sufficient to pack them in layers, two or three in a box, with a little Moss between them. Raspberries will not bear a longer journey than one of a couple of days' duration. They should be ripe, but not too ripe, and should be packed immediately after they are gathered. They are packed in tow, like Cherries, being first wrapped separately in tissue paper. They should not be packed in more than four or five layers, as they are very liable to become heated. The same remark applies to Mulberries and Gooseberries, but the last-named are not so delicate, and will keep longer. Figs will keep for some time. They should be packed in dry Moss.

15120.—**A meteorological question.**—The most certain way of predicting whether there will be a frost or not is by the aid of the hygrometer. By a comparison of the temperature of the dry bulb thermometer with that of the wet bulb towards evening, and with the assistance of Mr. Glaisher's tables, it is easy to ascertain what is the dew point at the time. If this be found to be below 32 degs., frost may be confidently predicted. Thus, if the dry bulb be 50 degs., and the wet 40 degs., the dew point is 29 degs. 4 min., and frost is a certainty, unless there be a change of wind during the night, causing the dew-point to be raised above 32 degs. On the other hand, should the weather be in all respects similar, but with the dry bulb standing at 50 degs. and the wet at 47 degs., the dew point will be found to be 43 degs. 8 min., in which case there need be no fear of frost, and the labour of providing against it may be saved. A little scientific knowledge is thus of the greatest importance, and too much stress, therefore, cannot be laid on the practical uses to which meteorology may be turned if it be diligently studied and rightly applied.—W. L. F., *Falmouth.*

15259.—**Right of removing potted Roses.**—A question embracing this enquiry was put in Vol. VI., p. 626, and answered in the same Vol. (p. 662), and of course, as the writer of that answer, I think it correct. I claim to have some experience as an amateur gardener, and *other* experience sufficient to make me venture to differ from "Lawyer Y.;" and I repeat that "Roses may be potted, as it is a common horticultural thing to do so, and may, as pot-plants, be removed." A tenant has full power—nay, is under the obligation—to cultivate his garden in a husband-like manner, and is entitled to sow, propagate, transplant, and pot, whatever plants and flowers it is usual or necessary so to raise or keep. All plants and flowers so treated, according to their habit and nature, are the tenant's, and may be removed by him on the expiration of his tenancy. It is not a question whether or not the plant, bush, tree, or shrub, is "useful" or "ornamental," as has been suggested in the pages of Gardening Illustrated; for the tenant cannot remove plants, shrubs, or young trees, &c., whether useful or ornamental, which from their size or nature are intended for permanent growth in the same place; but he is entitled to fairly cut and take for his own use the blossoms and annual increase or produce of his garden down to the day that he gives up possession, and to remove all plants which have been potted under a proper system of gardening, and that whether they have or have not at any time grown or been raised in beds or borders.—J. P., *Lancashire.*

15389.—**Keeping cats out of gardens.**—This constantly recurring question having appeared once more, perhaps you will allow me to describe a method I hit upon nearly two years ago, one, moreover, which I have had in successful operation ever since, and which inflicts no cruelty whatever on the animals so much objected to. I have the usual oblong garden at the rear of the house, bounded by oak fencing. Close along the top of this I stretched a strong cord, putting up uprights where necessary at the ends, and running the cord through screw-eyes fixed in them. A second cord was stretched in like manner about 2 feet 9 inches above the first, and a third midway between, but about 15 inches inside the others, so that three formed a triangle in section, thus— ⁝. I found the cords stretched a good deal after being up and exposed to the weather, so I allowed them to remain in position a day or two before I began the next operation, taking care to tighten them up as they got loose. Then I obtained yard-wide tanned netting, long enough to surround the whole garden. Untying one end of the top cord, I threaded it through the upper meshes of the netting, again making it secure when finished. The netting was then drawn over the centre cord, and the bottom one threaded through the lower edge in the same way as the top. After making all taut, I secured the bottom cord at short intervals along the fence with U-shaped staples; then I threaded the ends of the netting, and secured them against

Section of arrangement for keeping cats out of gardens.

the uprights in the same manner. In a long length it is necessary to put up an upright or two with an arm to take the top and centre cords. The section shows pretty clearly the idea, which, as I said above, has been successful with me for nearly two years, without further attention than an occasional inspection to repair breakages, and so on. To do the work nicely endeavour to get the cords without knots, as then they are much easier to thread, also in measuring for netting allow about one-fourth more than the total length of the garden walls for the diminution in length of the open netting as compared with it closed, in which state it is sold. I have got good netting at less than one penny per yard by taking a fair quantity, so that the expense of doing all this is comparatively small and is certainly repaid by the immunity from damage secured by it. Not having tried it on a brick wall, which would afford cats a better footing, I am unable to say how it would answer in that case; but even then, if fixed along the centre, I think the angles would bother them, especially as they could easily be made a little more acute by using a wider netting, and taking the centre cord more in. Some readers may object to the appearance of this, but really it is far less conspicuous than would be imagined, and I find it useful, moreover, for light creepers and climbers to run in, such as Convolvulus, Sweet Peas, &c. —T. J. Weaver, *Crouch-hill.*

Destroying wasps' nests.—Place diluted cyanide of potassium on a rag and put it with the hand at the mouth of the hole, so that the wasps must pass over it. The wasps which are outside the nests will not sting unless annoyed. This can be done in the daytime better than at night, and the nest can be dug out a quarter of an hour afterwards.—C. Ensor.

BEES.

SEASONABLE NOTES.

Bees will require but little attention during December beyond seeing that the floor-boards and entrances of hives are kept clear, to ensure ventilation, and carefully guarding against dampness within the hive.

Packing hives for travelling.—Excepting during a hard frost colonies of bees may now be moved long distances with safety. Care is, however, necessary in so packing, so as to avoid the breaking away and falling of the combs, such a calamity being almost a certain destruction to the bees. The secret of success in moving colonies of bees is the admission of plenty of air into the hives. The excitement and commotion of bees on being removed greatly increases the internal heat of the hive. In preparing straw hives for travelling, they should be inverted, and placed in cheese-boxes, having some hay at the bottom to prevent jarring. Before inverting the hive a little smoke should be blown into the entrance to drive the bees up amongst the combs. The hive should then be turned up, and coarse sacking or canvas tied over to confine the bees; they thus get abundance of air, and in that respect travel safely. To prevent the combs breaking down, a sharp-pointed stick should be passed through the sides of the hive, so as to pierce each comb. This should be done a few days before removal. The bees will fasten the combs to the stick, and so greatly increase their firmness. Another way to keep the combs steady and firm is to push wedges of crumpled paper between the combs. These paper wedges being elastic prevent the jarring of the combs. In cool weather there is not so much risk of combs falling, and the inverting of the hive is not so necessary. Hives of old, tough comb, with sticks passed through them, may be safely moved by first nailing them to their floor boards, covering the entrance and crown-hole with perforated zinc, and tying them with cord to their boards. In moving bar-frame hives the frames should be fixed quite firmly by notched strips of wood nailed to the floor boards, and placed at each end of the frames. The bees should be confined to the hive by perforated zinc nailed over the entrance, and also over the tops of the frames, in place of the quilt, the perforated zinc being so placed as to allow the bees to pass freely between it and the tops of the frames. In this way they get more air than they can if the zinc be fixed close to the tops of the frames, and some of the weight of the bees is thus taken off the combs. As soon as the hives arrive at their destination they should be placed where they are to stand, the zinc on their tops removed, the quilts and roofs put on, and the entrances opened.

Bees' enemies.—The chief enemies to guard against at this season are mice and birds. The following quaint remarks on the subject were written nearly two hundred years ago:—"The good bee, as other good people, hath many bad enemies, which she herself cannot overcome without the assistance of man, for whom she labours, and, therefore, the wise bee-man will take care to destroy the enemies of his friend, the bee, whose enemies are—The mouse (whether he be of the field or house) is a dangerous enemy, for if he gets into the hive he pulls down the combs, makes havoc of the honey, and so starves the bees. Some gnaw a hole through the top of the hive; some keep their old homes, and come to the hive only for food; and some make their abode between the hackle and the hive. To prevent this take care that your hives be well and closely wrought, for if the straw be loose and soft they will the easier make their way through the hive. The woodpecker and sparrow are both enemies to the bees; the woodpecker with his long, round tongue draweth out the honey, but he does more mischief to wood bees than to those of the garden; the sparrow doth devour the bee from the time of the first breeding till the wheat be kerned. The titmouse is another enemy, of which there are three sorts. The great titmouse, from his black head and breast, is the worst enemy of the bees. He always watches at the hive for the coming and going out of the bees. He will stand at the door, and there never leave knocking till one cometh to see who is there, and then, suddenly catching her, away he flies with her; and when he hath eaten her he flies back for more. Eight or nine will scarce serve his turn at once. If the door be shut that none can come out, he labours to remove the bar. If that be too heavy, he falls to undermining the door for a new way; and when these devices cannot get them out, some have the skill to break the daubed walls of the hives above over against the place where they lie, and there they are sure to have their purpose. The little russet titmouse in the winter feedeth only on dead bees, but in the spring he will take part with the great ones. The little green titmouse can only be accused of eating some few dead bees, and that only in some hungry time."

Boxworth. S. S. G.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXX.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Chestnuts.—The Spanish or Sweet Chestnut is largely imported into England from Spain and Italy. The tree is grown in some parts of Britain, but flourishes only in the warm parts of the island, and it is seldom, if ever, that the fruit arrives at maturity in any part of Scotland. The Chestnut is the least oily of any nut, and, besides containing a large amount of starch, it is rich in sugar. It is used as an article of food sometimes in its raw condition, but more frequently roasted, boiled, &c., and should not on any account be selected as food for persons of delicate digestion either before or after cooking.

Chestnut soup.—Take one pound of Chestnuts, one quart of broth, two ounces of butter, one pint of milk, one French roll, one gill of cream, the yolks of two eggs, one small lump of sugar, white pepper and salt to taste. Remove the outer rind from the Chestnuts, and throw them into a saucepan of hot water. When all are in bring the water quickly to boiling point, drain the Chestnuts, peel them and throw them into cold water to preserve the colour. Put the broth, butter, the roll cut in slices, Chestnuts and seasonings, into a saucepan, and let them simmer by the side of the fire for about forty minutes, when the Chestnuts should be sufficiently soft to be passed through a fine sieve with the broth. Return all to the saucepan with the milk and stir until near boiling point; have the yolks of eggs well beaten with the cream, mix all thoroughly, but do not allow the soup to boil after the cream and eggs are added.

Chestnut Pudding.—Take some good sound Chestnuts, remove the outer skin, and boil them in a saucepan of water with a small pat of butter until they are soft enough for a needle to pierce them easily, drain and remove all husks, and dry the Chestnuts first with a soft cloth and then before the fire or in a slow oven, pound them in a mortar and pass through a fine wire sieve. Take of this powder half a pound, a quarter of a pound of powdered sugar, the same weight of bread crumbs, six ounces of butter, four eggs, one cupful of milk, the juice of one Lemon, or a dessert spoonful of Orange flower water. Put the butter and sugar into a basin and beat them until they are of the consistency of cream; then add the yolks of eggs, Chestnuts, bread crumbs, milk, and seasoning, and beat all for fifteen minutes; place the whites of egg upon a clean plate, and whip them to a stiff froth, stir lightly in, and pour into a greased mould, cover with a piece of buttered paper, and steam for three-quarters of an hour, turn on to a hot dish; sprinkle profusely with pounded sugar, hold a hot salamander over the pudding for a few minutes until the sugar is browned, and serve at once; a jug of cream and sugar should be served with this pudding, when more convenient, this pudding may be poured into a buttered pie-dish, and baked instead of steamed, when it should be served in the same dish in which it is cooked.

Chestnuts glazed, or Marrons Glaces.—Take one hundred large and sound Chestnuts, remove the outer brown skin, and place them in a saucepan with the yellow rind and juice of two Lemons, a large handful of bran, and enough cold water to cover the nuts; put a lid on the pan, and stand by the side of the fire, and cook the Chestnuts gently until a needle will penetrate them easily. Pour off the water, and peel the Chestnuts quickly, throwing each one into cold water as it is prepared. Put two pounds of sugar with half a pint of water, and a wineglassful of Orange flower water, or the juice of two Lemons, into a preserving pan; boil and skim until you have a clear thick syrup; drain the Chestnuts, add them to the syrup, and place over the fire for ten minutes, but do not allow them to boil; take out the nuts, and let cool. Next day boil the syrup again until when a little is pressed to the side of the pan the sugar whitens; immediately add the Chestnuts, and let them just come to the boil; lift each Chestnut on to a slightly oiled slab or dish, and as soon as they are cold they should be hard; place each nut in a small fancy paper, and store in boxes in a dry room.

Roasted Chestnuts.—Cut a small piece of the brown skin from each Chestnut. This is done to prevent them from bursting as they become heated. Place them in a saucepan of cold water over the fire, and let them boil for five minutes; drain, and while they are still hot place them on a tin in a brisk oven, or roast them in a Dutch oven before the fire until they are quite soft, which will take from seven to ten minutes; serve hot on a folded napkin. Salt should be eaten with them.

Chestnut biscuits.—Take fifty Chestnuts, remove the shell, boil them until soft, take away the husk, and dry them thoroughly with a soft cloth; beat them in a mortar with one ounce of fresh butter, half-a-gill of cream, and the whites of two eggs (unbeaten). When this mixture is quite smooth add half-a-pound of powdered sugar, one tablespoonful of Orange flower water (Lemon-juice or Vanilla, according to taste), mix all well, and pass through a fine sieve. Roll in your hands small pieces of this mixture about the size of a Chestnut, free from cracks, and drop each biscuit on to some wafer paper placed on a baking tin, dip a broad knife in water, and flatten each biscuit, mark across the top with the back of the knife, and brush the biscuit well over with beaten egg. Place the tin in a quick oven, and cook the biscuits for about ten minutes a light brown colour, sift powdered sugar over, break the paper from around the biscuits, but leave it on the bottom; put them on a sieve to cool, and store in a tin, or they will become soft.

Pumpkins and Vegetable Marrows.—More than sixty years ago, when visiting in Essex, I well remember to have frequently seen Pumpkins suspended in many well-to-do cottagers and in middle-class houses. They were kept in store to furnish, it may have been, the winter's Pumpkin pie referred to on page 510. I have often partaken of it. Apples were frequently added, and sometimes a sprinkling of Currants. My recollection does not enable me to appraise it very highly. In fairness, I must add that a friend of mine always insisted upon having it on his table at intervals, and spoke as if it had been a dish prepared and used in his family for at least two generations. Whatever its position of merit may, as to the past, have been, I think it is now excelled by the Vegetable Marrow. This, with the addition of Apple and Sultana Raisins, makes a pleasant variation in the supply of our winter tarts, which will be acceptable to many. The Vegetable Marrow is a useful ingredient in the preparation of some soups, and I deem it to be worthy of extensive cultivation in gardens where there is a demand for soup in the household or for winter distribution. It does not contribute to acidity or flatulence as some vegetables do. My gardener, a man of delicate appetite and weak digestion, from individual choice prefers a potage made in the following simple way: Boil some sliced Marrow with a beef bone; when well done remove the bone, add pepper and salt, and pour over diced bread. This is plain and primitive enough; but I cannot gainsay it, for it certainly is palatable, wholesome, and very sustaining; moreover, it is not a bad preparation for work on a cold morning.—Berg.

15504.—**Touch paper.**—Would some reader kindly give me instructions for making touch paper?—Constant Reader.

15414.—**Obtaining Calvary Clover.**—If "J. C. T." will send us a stamped addressed envelope, we will forward him some seed of the Calvary Clover which a correspondent has kindly sent us for him.

FLOWERS FOR CHRISTMAS.

About this time of the year flower growers for market produce enormous quantities of white flowers. For church decoration alone large quantities are used, while for evening parties, and, in fact, for all kinds of floral decoration, the purest white flowers and Fern fronds form the bulk of all arrangements. Coloured flowers are by no means popular, and growers find it better to rely on well-known sorts than to go in for miscellaneous collections, such as are found in private gardens. Amongst the most noticeable at the present time may be mentioned Azaleas. Amongst these, the Old White, Fielder's White, and narcissiflora are forced early into flower every year; consequently they make their young growth and mature their flower-buds early, and therefore they are preferable to young plants that take much longer to unfold their blossoms. For very early forcing, large plants in comparatively small pots full of active roots are best, and in this respect the Azalea is an accommodating plant, but it must never be allowed to get dry, or it seldom recovers from the check. Abutilon Boule de Neige is one of the freest winter-blooming white flowers in cultivation; old plants of it trained up near the glass in houses in which there is a temperature of about 55 degs. yield abundance of snow-white blossoms at almost any time of the year, or even all the year round. White Camellias, too, are greatly prized. They are usually gathered from trees planted out in rather low span-roofed houses, which admit of a large bed in the centre and a row of plants all round; they grow in a compost of turf and peat, or one composed entirely of the latter, and when kept constantly under glass, as they must be on the planted-out system, there is little difficulty in getting them into full bloom at Christmas. The safest plan with Camellias is to prepare them for forcing when making their growth in spring. Plants that flower early one year can have their young wood pushed on by artificial heat, and when the buds are nearly ready to burst into flower they may be kept back or forwarded at pleasure, but the attempt to force buds partially developed into bloom, by means of strong fire heat, too frequently ends in failure. Amongst coloured varieties the old C. Donckelaari is a great favourite, as it blooms very early naturally, and semi-double flowers are really more effective than the symmetrical double flowers that come in with the lengthening days of spring-tide. The stately white-spathed Arum Lilies are exceptionally well suited for church decoration, a purpose for which they are largely employed. They are mostly plants put out in summer into open-air beds; they are lifted in September, and placed in gentle heat as soon as they are well rooted, a dry, warm atmosphere being necessary in winter to infuse into them the pure white colour for which they are distinguished. Eupatorium odoratissimum bears useful, feathery, white flowers, and requires but little artificial heat to get it into full bloom in mid-winter. Grown out-of-doors in summer, and kept closely stopped in, it forms a mass of flower-heads that open in a genial temperature of about 50 degs.; the blossoms must be kept dry, or their purity soon becomes spoiled. Gardenia blooms at Christmas are indispensable, but they are not such profitable flowers to grow in winter as one might imagine; they require a good deal of fire heat in order to get them to open during the dark days, and under the most careful management a great number of the buds rot at the base and drop off just as they appear ready to expand. They do best planted out on mounds of peat, and when well rooted, mulched, and copiously drenched with clear soot-water, that imparts to the foliage that dark glossy look that betokens good health. The Christmas Roses are much grown, especially the large white kinds; large clumps of them are lifted and forced in pots, or covered with cloches or hand-glasses where they grow, the latter plan being unquestionably the best for the plants, which do not like much root disturbance. Hyacinths of the white Roman variety are now very largely grown, yielding, as they do, their delightfully fragrant sprays of bloom with but little artificial heat, and thus doing away with the necessity for employing kinds that do not submit to early forcing so kindly as this useful variety does. Double white Primulas are still popular market flowers, being well suited for bouquets of all kinds; they are grown mostly in 5 inch or 6 inch pots in low span-roofed houses, having a bed in the centre and a border all round; a dry, warm atmosphere of from 55 degs. to 60 degs. suits them well. Early-flowering Narcissi, such as the Paper-white, are grown in boxes for the sake of their delicately-perfumed blossoms, which are in great request for vase decoration. Half-expanded Tea Roses are much used for button-hole bouquets, and for this purpose none are more popular than the white-flowered Niphetos. White Tulips, too, play an important part in most floral decorations, as do also Tree Carnations and Violets, the latter for their sweet scent. J. G. H.

POULTRY.

15505.—**Dressing poultry for market** (*Sage and Onions*).—We doubt whether you would get much information on this point from books. In *Farm and Home* for December 5th there is a long article on dressing geese, and, doubtless, in other numbers of the same journal you could without difficulty find full particulars as to the other birds you mention.

15506.—**To keep birds within bounds** (*Cheshire*).—Fowls may be kept from flying by pulling out a few of the flight feathers from one wing. This treatment does not interfere with the appearance of the birds; but "Cheshire" must not tamper with show-birds, or they will be disqualified at the next show to which they are sent. He had better fix another roll of netting at the top of the fence, but without a top-rail.—Doulting.

Prevention better than cure.—Nearly all diseases may be traced to filth. How many leave the droppings until they accumulate in large heaps cannot be numbered. Some persons clean out the coops weekly, while others, by the use of absorbents, defer the work to longer periods. The safest course is to clean out the houses and coops daily, as is done with the stables. It is not at all surprising that so many persons do not regard poultry as profitable, as they do not attach the importance to the business that it deserves. Any farmer who did not clean out his stables oftener than once a week or a month, no matter how much absorbent material he used, would soon find his stock falling off in condition or dying of disease, and yet, because hens are no exception to the rule, the raising of poultry is regarded by such persons as unprofitable. Poultry diseases may be prevented by cleanliness, but not otherwise. The cholera and roup may be cured a dozen times, but unless the houses and runs are kept clean such diseases will appear as regularly as the periods of the moon. Poultry is a profitable business, but not under unfavourable conditions.

Blue Andalusians. — Some of your numerous readers may be thinking of starting "Poultry," and perhaps my experience may be interesting to some, and further may help on my fancy the Blue Andalusians. I commenced three years ago with a cock and hen and have twice purchased a sitting of eggs from a good laying strain; I have now a yard of as fine looking birds as anyone could wish for. I find them hardy and very easily reared. I keep them in a good sized paved yard, they have no other run, and the sun shines on it only during the summer months. They are fed twice a-day—in the morning they get all the scraps from the house, a mixture of Potatoes, bread, bits of meat and a little pollard; near evening they get a little Oats; during the winter their house is shut up at night. Some of my hens and pullets are now (19th November) laying, and I expect they will all be in full lay in about another fortnight, and they continue laying up to the end of August; but I get from that up to the middle of October a fresh egg every day. I have fourteen birds at present. Last year I set thirty eggs, twenty-four were hatched out, and I only lost two chicks. Your readers may draw their own conclusions as to whether the Andalusians are good layers or not when I tell them that the season before last I kept a strict account of all eggs got from 1st January to 31st July from three hens and three pullets. They amounted to 752, and there would have been more if I could have always kept my fox terriers from the hen house. Last year my hens laid quite as well; but I did not keep an account. Any persons wishing to keep a few fowls will certainly find pleasure and profit from the Andalusian, provided they do not go in for expensive feeding and fittings up; and the Blue Andalusian is, to my mind, a very handsome bird.—Tip, *Roscrea*.

BIRDS.

15507.—**Canaries for breeding.**—I should be glad to learn how to treat canaries for breeding, and what is the best food for them?—D. V., *Bolton*.

15508.—**Food for larks** (*D. Valentine*).—A lark's chief diet should be the yolk of egg, hard-boiled, and mixed with grated bread-crumbs, varied with a meal-worm every day, ants' eggs, German paste, sponge cake, a little lean meat now and then, Watercresses, Lettuce, and Cabbage. In a wild state the skylark feeds on insects, seeds, and Oats. Young birds should not be placed in the room with other birds when they begin to sing, or they will take their notes. They sing best in a cage, and this should be placed in the open air on every sunny warm day, so that they may have plenty of fresh air. The floor of the cage should be covered with red gravelly sand and powdered chalk, with old mortar bruised. This the lark delights to roll in and dust himself with. He should have a fresh cut piece of turf every day, if possible, or at least three times a-week. This may be kept fresh by watering it, and putting it in a saucer. —S.

The Bullfinch.—In reply to the exception which "A. H." takes (p. 562) to my statement that the hen bullfinch sings as well as the cock, permit me to say that I referred to the natural song of this bird, in which the hen is certainly quite as proficient as the cock. I have kept a pair of them for the last three years in the room where I usually write. These birds are remarkably tame, and I sometimes open the door of their cage to let them have a fly round and amuse themselves. They seem to enjoy this very much, and I frequently have the hen bird singing almost at my elbow on the table at which I am sitting. I made a passing remark on the singularity of this, as in every other species of bird that I am acquainted with or have read of, the faculty of song is an exclusive attribute of the male bird. The relative capacities of the cock and hen bullfinch for being taught to pipe a "tune," however, is quite another matter which does not at all affect the truth of the fact that the hen bird *does* sing the natural song of the species, and so well that I, at least, can perceive no difference between her performance and that of the cock.—W. Miller.

—— In your paper of the 5th ult., I see that "A. H., Abergavenny," says that no amount of teaching will ever make the hen sing. I beg to differ, as four years since I had a nest of five young brought me, which I reared with the exception of one. The other three hens and one cock I kept, and taught two of the hens to whistle "Pop goes the Weasel." One hen and the cock would not take a note of it, although they were brought up in the same room. The cock took the nightingale's note, and would imitate it splendidly; the other hen was worthless. One hen I sold, making a good price; and, I am sorry to say, my other died. I believe they can be taught anything, but require a deal of time, and patience, and perseverance with them when young. I usually catch them in a trap-cage, as shooting them injures the trees. Many persons could endorse what I have said about my own birds, as they were quite noted.—A. J. H.

Loss of song in canaries.—It may be interesting to some of your readers who have canaries who are suffering from asthma and loss of song to know how I cured mine. It is two and a-half years old, and last winter caught a severe cold through being placed in a draughty room. I did not think he would be alive now, but I am pleased to say he is recovering his song, and seems to be getting all right again. He has not sung for twelve months. I have kept him very warm, and fed him on sweet biscuits, hard-boiled eggs, a little mutton suet, a few grains of cayenne pepper, and a few drops of oil of Almonds, well chopped up together, and occasionally a piece of Celery, of which he seems very fond.—J. M.

15357.—**Oil stove.**—The stove referred to in query 15262 is a small cooking stove, made by Wright and Butler. I have it fixed about 6 inches above the floor, and a 3-inch pipe made of tin fixed over the top, going straight up about 3 feet, and then running the length of the house under the front stage, with an escape pipe attached to the end running to the outside, to carry off the fumes.—Amateur, *Skrabane*

GARDENING ILLUSTRATED.

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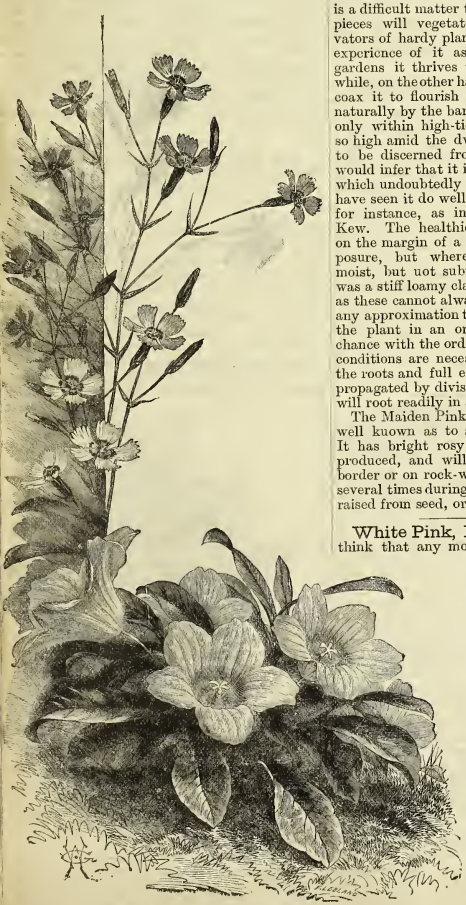
OUTDOOR PLANTS.

TWO PRETTY SUMMER FLOWERS.

No one can help admiring the pretty picture shown in the accompanying engraving, and it would be difficult to find two other hardy flowers that would blend so well together as the White Cup-flower (Nierembergia rivularis) and the Maiden Pink (Dianthus deltoides).



The Trailing White Cup-flower (Nierembergia rivularis) and Maiden Pink (Dianthus deltoides), both natural size.

The Nierembergia is charming in all its phases, but particularly so when its cushions of green foliage are studded with open cup-like flowers. These are creamy white, sometimes faintly tinged with rose, while the centres are invariably of a golden colour. It flowers during the summer and autumn months, often without intermission when the plants are perfectly flourishing. It is a trailing plant and forms a dense carpet of foliage in a short time, and when once the roots have got a firm foot-hold it is a difficult matter to eradicate them, for small pieces will vegetate. The majority of cultivators of hardy plant collections have had some experience of it as regards culture. In some gardens it thrives with little or no attention, while, on the other hand, some try their utmost to coax it to flourish without avail. It abounds naturally by the banks of the River Plate, but only within high-tide mark, its flowers rising so high amid the dwarf surrounding herbage as to be discerned from a distance. Hence one would infer that it is a moisture-loving subject, which undoubtedly it is, but, strange to say, we have seen it do well in a dry sandy border, such, for instance, as in the herbaceous ground at Kew. The healthiest tufts we have seen were on the margin of a running stream in full exposure, but where the soil was perpetually moist, but not submerged in winter. The soil was a stiff loamy clay. Though such conditions as these cannot always be obtained in a garden, any approximation thereto is better than placing the plant in an ordinary border to take its chance with the ordinary hardy perennial. Two conditions are necessary—plenty of moisture at the roots and full exposure. It may be easily propagated by division; in spring each portion will root readily in a short time.

The Maiden Pink is a pretty native plant, so well known as to scarcely require description. It has bright rosy pink flowers, rather freely produced, and will grow almost anywhere on border or on rock-work. It frequently flowers several times during the summer, may be readily raised from seed, or increased by division.

White Pink, Mrs. Sinkins.—I do not think that any more beautiful or useful plant than this has been sent out for many years. It is of the largest size, beautifully fringed, and exquisitely fragrant. The way we get a long season of bloom is to grow a good lot of young plants and lift a quantity in autumn, pot them in 5-inch or 6-inch pots, and set them in a cold frame or house until the spring, when they may be set on a shelf near the glass in a gently progressive atmosphere. Here they will soon throw up their flower spikes, and by having a succession in cold pits one may enjoy the blossom until the outdoor stock comes in. We grow these in beds 4 feet wide, the plants 1 foot apart, and as the blooms are large and heavy, they must be supported by stakes to keep them from breaking down, and the delicate blooms from getting splashed by heavy rains. One of the best and most distinctive characteristics of this variety is the way it keeps on blooming after the manner of Tree Carnations; in fact, in beds it is seldom one can look over them at any season without finding some blooms. This variety produces side shoots freely that may be struck as cuttings, or the larger shoots may be layered. Cuttings strike freely at any time, but spring and autumn are the best periods, and for layers July is the best month, when they will be well rooted by September, and may then be potted or planted out into fresh beds. Partly decayed turf, without much manure, is the best soil for them, but keep a sharp look out for wire-worms, as they are very destructive to Pinks. A cold frame, with a coal-ash bottom, is the best quarter for freshly-potted plants; and do not over water, or let the soil ever become dry. A moist soil, but not wet, and plenty of fresh air, are the first essentials to ensure success in Pink culture.—J. Groom, *Gosport*.

Stonecrops.—In addition to its merits as a permanent bed or border plant, Sedum spectabile has the advantage of being one of the best subjects for transplanting that we have, and a good quantity of it grown in the reserve garden will be found most useful for making up beds that have failed or become seedy-looking, as one of the effects of drought is to hasten the seed-producing powers of all kinds of plants that are reproduced in that way, and the effect of a garden is sadly marred by any blemishes in the way of seedy-looking beds. Sedum Sieboldi is one of the easiest plants to increase, either by division of the roots in spring or by using the old flower-stems as cuttings; they strike root freely, and in spring send up a quantity of shoots from the base that make fine flowering shoots in September. An open sunny position is the best for developing high colour in this plant; in the shade, although it flowers freely, it is much paler in colour.—J. G. H.

Marvel of Peru.—This is the Mirabilis Jalapa of catalogues, and represents a group of free-flowering perennials that are extremely showy at the end of the summer and in autumn. There may be found amongst the varieties rose, or deep rosy lilac, yellow, crimson, or bright crimson magenta, yellow, flaked with red, fiery red, or rich magenta, and tricolor. This last is a somewhat eccentric form, as some of the flowers are quite white, others are white, lightly or heavily flaked with magenta, and some self-coloured, of a deep magenta tint. This makes some six varieties, all showy and attractive. But, highly valuable as they are for decorative purposes, they are to be met with in but few gardens; and this is not because their culture is in any way difficult. The seed should be sown in March, making use of a gentle bottom-heat to raise the seeds in, and then potting off singly in small pots as soon as large enough, which should be in April. They should have another shift in May, as the plants are quick growing, and there should be no check to their development. They are planted out early in June, or earlier, if the weather is favourable, placing them fully a yard apart. Some persons treat this plant as an annual, sowing the seed every year; and, if the plants are smaller, they are very compact and effective. Those who

treat the Marvel of Peru as a biennial save the roots through the winter by placing them in a little sand; they plant them out in the open ground in April. In this way larger plants may be obtained, but they are not always improvements upon the neat and handsome specimens raised from seed. To do the plants full justice they should have a rich sandy loam to grow in, they should have plenty of room, and they like full exposure to sunshine.—R. D.

FEVERFEWS.

The Rosy-flowered Feverfew is by far the most important of the numerous species of Pyrethrums, and has yielded the innumerable varieties, both single and double, that have now become

The Rosy-flowered Feverfew (Pyrethrum roseum).

such popular border flowers. Pyrethrums have much to recommend them; they are extremely showy, very hardy, easy to grow, and invaluable as cut flowers for several months in summer and autumn, as they last so persistently and are little affected by either sun or rain. The colour of the blossoms is contin ally becoming more varied and their shape more refined, and though they are in their fullest beauty in June, they are seldom altogether flowerless at any time during the summer; by judicious stopping and thinning a succession can easily be kept up. They are also invaluable for autumn decoration, for if cut down after flowering in June they will flower again in autumn. They are easily propagated by division of the root and from seed, but the latter mode cannot be recommended, as the proportion of good varieties from the best of seed is remarkably small. The proper time for propagation is in spring. Take the plants up, shake all soil from them, and pull them to pieces, putting them in small pots, and placing them in a cold frame for a few weeks until they become established. Care should be taken not to keep them too close, as they are apt to damp. When established they may be planted out in their proper quarters. A good rich loam suits them best, although they will grow and flower freely in any good garden soil, and the more well-rotted manure there is incorporated with the soil the better the plants grow, and the more luxuriantly they flower. Mulching, especially in dry soils, is very advantageous, as it keeps the ground moist and cool. The varieties are numerous, and a good selection can be made from trade catalogues. T.

Spiræa palmata.—This is such a wonderfully attractive plant when grown to a good size that I only wonder that amateurs do not take to it more than they do. Perhaps it is that they are not aware how grand a specimen it makes, and I must confess that I did not know myself until I had proved it. Finding that it did not grow in a satisfactory manner in the borders I took up three large clumps, each clump being large enough to fill a pot 16 inches in diameter. This was done in November, and during the winter they were kept on the floor of a cool Peach-house—in fact, they remained there until they came into flower in May. All that we did to them was to give them plenty of water as soon as they began to grow, and to put them under the shade of a Rose tree trained under the roof. In this position they remained until they came into flower, when they were taken to prominent positions in the conservatory, and very attractive specimens they made. There is something peculiarly pleasing in the form and colouring of the heads of flowers, which do not fail to arrest attention. With the assistance of plenty of manure water when making growth and 3 inches of the old soil taken away round the top of the ball, to give room for a rich top-dressing every year, they were kept in good condition for several years. The conditions which I find to suit this plant best are—screening from strong sunshine while making growth, and plenty of root moisture at the same time. It may be increased by dividing the roots, which is best done just as they begin to start into growth in the spring. Whether my treatment has been wrong or not, I do not know, but I have signally failed to force it and bring it to a condition to please me; yet I have seen it recommended for that purpose.—J. C. C.

Erica carnea.—During the latter part of the winter and in early spring this Heath is at its best, being then thickly studded with pale red blossoms. The fact of flowering at this time brings it into prominence, as there is so little in the open ground; it is, besides, a very accommodating plant, and generally succeeds well in ordinary garden soil, unless too much shaded by trees; and even in that matter it is not very particular, as when partially shaded it often thrives satisfactorily. It is, however, most at home when employed in company with others to form an outer fringe to groups of the larger Erica, for which its low-spreading growth eminently fits it.—A.

15367.—**Lilium auratum outdoors.**—Fortunately for those who cannot afford the luxury of a conservatory the Lilium auratum (the grandest Lily by far of the Lily tribe) is perfectly hardy. It can be grown outdoors. To be grown to perfection, however, it requires a rich, free loam. Soil that contains a large proportion of, or indeed any, clay is unsuitable. The best time for planting is in November, the bulb being planted about 6 inches in the ground. For pot culture the bulb should be put into a pot just large enough to contain it, and repotted into a larger one as occasion requires, remembering, however, to instantly stop repotting the moment the flower-buds appear. Half fill the pot with the necessary compost, then put in the bulb, placing a little silver sand around it, then fill up with the compost to within an inch of the rim. Give it a plentiful supply of water until the flowering period is over, when watering should cease.—T. W. R.

15477.—**Defective hot-water apparatus.**—There is evidently an obstruction of some kind in the pipes. This is most probably a lodgment of air at some point, or some earth or a stone may have got into the pipes, or, lastly, in screwing up the connections, if small, the lead may have got squeezed into the bore. I have known all these to occur. First, is the highest point in the pipes the farthest from the boiler? Is the air-pipe, which is, of course, fixed at this highest point, clear, and in working order? Is the rise in the flow from the boiler even and regular—no sharp rises and dips? And, lastly, are there any rises in the return, where air may lodge? If these points are found correct, or are made so, then there must be some material obstruction at some point, and the only thing to do is to take the pipes apart, make all clear, and refix. If there is nothing to obstruct the current, the apparatus *must* work.—B. C. R.

15475.—**Management of heating apparatus.**—If the pipes heat round promptly and properly the fault must be in having an insufficiency of piping, and if the house is of moderate height, and contains a considerable air-space, this is probably the case. It would have been better if "H. W." had given a few more particulars. In any case, a single flow and return pipe is hardly enough to heat such a house properly, and it is certainly wrong to place them on one side only. In a span-roofed house there should certainly be a pipe, if only a single one, along each side, though in a lean-to it is sufficient to place the pipes along the front only. On the other hand, if the water does not circulate properly, there is something wrong with the levels, causing a lodgment of air somewhere, and, in this case, why not apply to the "professional" who put them in, and insist upon his making the thing act properly. If the draught in the furnace is good, little but smallish coke should be burnt; if sluggish, a little small coal will brighten it, but the less the better. Keep just enough fire to maintain the pipes moderately hot and the house at the desired temperature.—B. C. R.

15474.—**Heating small greenhouses.**—"H. R. H.'s" query is rather vague, but I will take the two points touched upon separately, and endeavour to explain. Regarding the position of the pipes, it does not greatly matter at which height they are placed, though, as a general rule, it is better to have them as low down as possible or convenient, as a house seems to get more thoroughly warmed through when the heating medium is well down near the ground; and in the case of an open or lattice stage over the pipes plants standing thereon will suffer less the farther the pipes are below them. A pipe along on the stage, of course, takes up valuable space, and everything near it gets more or less dried up if it is at all hot; at the same time, if the stage along the front is of slate, or other close material, or there is a solid bed, with the pipes along the pathway or elsewhere, there is some danger of a sharp frost striking in through the front glass, so that a small pipe (2 inches or 3 inches) run along the front curb is advisable. Of course the fire and boiler-power must be proportionate to the amount of piping to be heated, or trouble is sure to result. If there is not sufficient piping to keep the smallest sized coke-consuming boiler going, then a small gas or paraffin boiler should be substituted. Refer to p. 579, in Gardening for December 12, for fuller information on this head.—B. C. R.

The Bleeding Heart (Dicentra spectabilis) in towns.—This pretty heart-shaped flower is one that will bloom year after year within the confines of a smoky town. But though hardy, a position sheltered from the east winds should be chosen or its delicate leaves may become shrivelled. Well dug loam, with a little old stable manure, is a suitable soil, and the addition of a little silver sand will admit free growth of the roots, and ensure good specimens; but good loam, well turned over, will answer. Medium sized clumps or crowns afford excellent pot plants for the sitting-room or window-sill, and are the very thing to introduce among early bulbs. Being an easily cultivated perennial, it should find a place in every garden where an early flower is appreciated; and the

Bleeding Heart (Dicentra—Dielytra—spectabilis).

villa amateur may cover a good space with a few strong roots judiciously disposed. They may be planted from now till the first week of January, but, of course, the earlier the better, and old crowns, if at hand, should be divided and placed where it is intended they shall bloom.—Stamford Hill.

Gas boilers.—"Trinette" (p. 576) must obtain one of the patent flue-caps or cowls, to be had of any ironmonger, which will absolutely prevent any down draught whatever; in fact, the fiercer the storm outside the stronger the upward draught becomes with this admirable invention.—B. C. R.

FRUIT.

WINTER PRUNING OF FRUIT TREES.

December, January, and February are the three best months in which to prune all kinds of hardy fruits. Where much summer pruning was done much more may not be required at this season, but all should be gone over; nothing should be left unpruned for two or more years, as too much wood will cause the fruit to degenerate.

Apple trees which have not attained full dimensions should have upwards of 1 foot of the young wood left on the end of each of the leading branches, and where the centre is rather vacant allow some of the side shoots to remain to fill it up; as a rule, however, trees are more inclined to become crowded in the middle than too thin, and, therefore, crowding should be guarded against, as air and sunshine should be able to penetrate freely to the centre. The branches should not be allowed to cross or touch each other, and one-sided or lanky trees should always be avoided; but where pruning is done properly annually there is not much danger of such deformities occurring. Spurs and clusters of buds are the best for producing bloom and fruit, and these are the result of cutting in the young shoots to about two inches from the part from which they originate. In a large bearing tree I would cut all these in annually, except those wanted to replace any branches which had died. Every particle of dead wood should be cut out at pruning time, and so should cankered branches, if there are any clean young ones to take their places. Established full-grown trees are most easily pruned, as they require the same kind of restricting every year; young healthy ones need the greatest attention, as their form must constantly be thought of in pruning, which should be done in such a manner that the branches are all about the same distance from each other, all long sterile parts being removed. Sometimes it may be observed, in the case of old trees, that the centre branches are very high and destitute of buds until the top is reached, where they form a cluster; such trees have been neglected when young.

Standard Pear trees may be treated in the same way as Apples, but some of the more delicate growing sorts should not be pruned too much at one time. As a rule, we do not find Pears grow so freely as Apples, and shy growers should never be induced to canker by hard pruning when young. Thin out the shoots when too thick, cut back sparingly, but do not let any of the branches run up out of all proportion to the width of the tree. Pears on walls should have quite a clear space left between the branches. Allow any which are being extended to retain the young growth at the end of each branch, but cut back all side twigs. Through repeated pruning the spurs of some may extend further out from the wall than is convenient; these should, therefore, be gradually reduced by cutting one here and there hard back this winter, and some more the next. Branches of bad form may be cut out altogether and young ones put in their place. Very old trees which have not been pruned for many years may be an intricate mass of branches which bear a quantity of small fruit, and it may be difficult to prune these without doing more harm than good. In such cases pruning should be done carefully and by degrees, taking out the dead wood and most sterile branches to begin with; in time an improvement in the form of the tree and the size and flavour of the fruit will take place.

Plums grown as standards and also like Pears against walls may be pruned in the same way, as both fruit freely on spurs. With us the Green Gage never requires much pruning, as it seldom makes much superfluous wood. The Victoria, on the other hand, makes shoots innumerable, and these have to be thinned out and cut freely in at this time. Unless it is to increase the size of the tree, none of the shoots should be left longer than 2 inches, the main object in pruning Plums being to secure as many clusters of short bearing wood as possible. When the trees have filled up their space on the walls or reached their required height and width in open quarters, it does them no harm to restrict them rigidly to that size, as Plums do not canker so readily under hard pruning as some other fruits. Wall trees should be all cut in during the summer, shortening back the shoots to the parts where it is desired they should form fruit buds; therefore the pruning now need consist of no more than reducing the spurs in length where such is necessary and cutting out some of those that are oldest and most unfruitful where too much crowded.

Peaches require different treatment. In these it is to strong, healthy shoots we have to look for fruit, and not to spurs. The majority of Peaches are on walls, and it is to these we are referring. Supposing a branch to have thrown out shoots at every 6 inches apart during summer, there would be no space to accommodate them all; therefore many of them should be cut off, but they must not be taken from the bottom upwards, only allowing the one young shoot to remain on the point of each branch; that would soon cause all the fruiting wood to be at the extremities of the tree, while the centre would be bare. The shoots to be cut away are the intermediate ones, leaving the one nearest the bottom to furnish the centre and the top one to fill up that position. When the distance is considerable from the bottom to the top of the branch, some of the centre shoots should be allowed to remain, but there should be no necessity to tie them on the top of each other at training time, thin training being a great advantage in Peach growing. Weak shoots which would never produce bloom or fruit should be cut away; badly ripened wood and dead pieces must also be taken out. Branches which have gone on until some 5 feet or 6 feet of the stem is quite bare, with only a small portion of living wood at the top, should be removed and replaced by better furnished ones. The aim should always be to have the tree furnished throughout with thinly-distributed, strong young shoots. Nectarines should be pruned in the same way as Peaches, and as they both fruit and succeed under the same conditions, they may be treated in the same way now.

Apricots are mostly grown against walls, and as they fruit most freely on robust spurs, we train out the leading shoots to fill up their allotted space, and cut in the side growths. The branches of Apricot trees are more liable to die off in summer than those of any other fruit tree. These should, therefore, be cut out and others left to take their place. I have noticed old branches go off more frequently than young ones, and a few of these should always be left to fill up vacancies.

Cherries consisting of all the sweet ones should be pruned on the spur system, but the Morellos should not, as they fruit best on the long young shoots; we therefore allow these to remain. We never cut back anything in them, but thin out those shoots which are not wanted, and allow as many to remain as possible. We train our Morello Cherries closer than any other of our fruits; indeed, very often we tie the shoots on the top of each other, and get thereby very heavy crops. I do not think Morellos agree with close pruning. Medlars, Mulberries, and Filberts are not pruned with such care as the choicer fruits, thinning out and topping being all that any of them receive annually, and good crops are the result.

Bush fruits.—In these we have a class of fruits universally grown, and which always compensate for annual pruning. There are no fruit trees or bushes which will become a mass of shoots quicker than Gooseberries if left unpruned for a few years, and it is owing to this that so much small miserable fruit is produced. With a fair amount of feeding at the root and annual attention small fruits would be unknown; but feeding without pruning only causes the shoots to grow more and the fruit to become the smaller in size. All the young growths formed last summer, except those required to replace old branches or extend the main ones, should be cut in to three or four buds from the old wood, and where the shoots have sprung out in clusters they should all be cut closely in or right away, except two, which should be left the length just stated. Healthy spurs, when not too closely formed along the branches, are the best to produce good fruit, and plenty of it. Young bushes should be well thinned out, and some of the strongest shoots should be left to form the permanent plant. Gooseberries on walls should be treated like wall Plum trees. Black Currants should have none of the wood recently formed cut back; the best way is to thin out the old wood and those branches which push up to a great length with nothing but a few fruiting buds at the top. Well-furnished bushes will always bear and repay a good deal of thinning out, and this should be done freely if fine, large fruit are desired. Red and White Currants are both treated in the same way. The side growths should be cut into a few buds from the base, and a good many young shoots should be allowed to remain annually, as they produce finer fruit than the old branches, which are removed from time to time to give the young ones room. In pruning all small fruits it is a safe plan to keep the branches thin and allow part of the young wood, in the form of spurs and leading shoots, to replace the old ones annually. Raspberries are very easily pruned; they only require to have the old stems cut away at the surface of the soil, and the weakest of the young ones, where too close, thinned out to admit air and light to the strong ones. Where the tops are restricted to a particular height, they may be cut to that, otherwise they may be left full length.

Cambrian.

NEGLECTED FRUIT.

There are three kinds of fruit which, it is my belief, have for years past been much neglected—viz., Medlars, Mulberries, and Walnuts. They were extensively planted by our forefathers, but, according to my experience, the present generation of proprietors of gardens, as well as gardeners, very rarely think of planting trees of any of them. There may be some slight excuse for not planting Walnuts, as these take many years, perhaps not less than half a century, to attain a profitable size; but neither Medlars nor Mulberries are many years before they commence to fruit, and those who plant them, in addition to the satisfaction of feeling that they are making some slight provision for their heirs, may reasonably anticipate some return for their trouble. I believe I may safely assert that Medlars are only to be found in about 25 per cent. of medium-sized and large gardens, and very rarely indeed in small ones. The Medlar season, it is true, is not a long one, but Medlars are available during the latter part of November and December, a time at which dessert fruits are very limited. I do not say Medlars are appreciated by all who have an opportunity of tasting them, but, as it often happens with other comparatively uncommon fruits, there are some who acquire a very strong liking for them. The only variety we have here is the Nottingham, this being the smallest-fruited, but the best in point of flavour. The broad-leaved Dutch Medlar produces much finer fruit, and of very good flavour. A strong loam appears to suit Medlars well, but, as a rule, they will succeed with Apple trees wherever these may be grown. They are usually grown as standards, and require but little pruning beyond an occasional thinning out of the branches where these are at all crowded. The fruits should not be gathered till early in November, as, if gathered earlier, they are liable to shrivel. They may be stored on a cool shelf in the fruit room, with the open side downward. Part of the crop, if placed at once in a box, covered with glass, and set near some hot-water pipes, may be ripened by the middle of November, an acceptable dish of fruit being thus provided for any special purpose, and its season is also lengthened.

Mulberries, in spite of their longevity, are getting scarcer every year; they are liable to be destroyed by heavy gales, especially when in full leaf. When once a principal branch is blown off the rest of the tree soon shares the same fate, and all who possess a fine old tree will do well to anticipate this much-to-be-regretted destruction by simply chaining the principal branches to each other, in such a manner as to insure their mutual support. The Mulberry is essentially a lawn tree. Here Mulberries are of imposing appearance; the isolation causes a sturdy, fruitful growth, and the clean turf preserves the fruits as they fall. It is only in the southern counties, however, that lawn Mulberry trees may be depended upon for perfecting a crop of fruit; in the more northern counties Mulberries succeed surprisingly well when they are planted against a wall, and rather closely nailed in, the fruit being produced on spurs as well as at the points of short-jointed young growth, or the trees may be allowed to grow in a semi-restricted state, such as so well suits Figs when grown in similar positions. For lawns standard trees are

the best, and these, when properly staked up, require no further attention. A rather light loamy soil suits them, and little or no manure should be given young trees, or they will grow much too strongly to be fruitful. When well established they rarely fail to ripen good crops, and some healthy old trees yield bushels of fine fruit, considerable quantities of which are bought up and converted into a syrup by wholesale druggists. During the hot summer months the fruits are very refreshing, though rather too acid to suit all tastes; they are also rather too juicy for tarts, and are, therefore, best mixed with Apples. The black Mulberry is the variety cultivated for its fruit; when ripe the fruit should be quite black, and when fully grown 1½ inches in length.

Walnuts are too well known to need any comment, though, as it happens, very few people grow their own. At a farm-house near here there is a fine row of trees, which in some seasons produce heavy crops; and I have often wondered why more trees have not been planted in similar positions, or that avenues have not been more frequently formed with them. As park trees Walnuts are quite as ornamental as any other deciduous tree, young trees especially producing very fine foliage, and I should think that their timber is as valuable as any grown in this country. If planted in fairly good soil they are not at all slow growing, though in rather low positions both the delicate young growths and fruit are liable to injury from late spring frosts. The very large-fruited sorts are rarely of any use; the best for planting are Highflyer, Thin-shelled, and Dwarf Prolific. W. I. M.

PRUNING PYRAMID FRUIT TREES.

I should hardly have thought that J. Doman (p. 557) could have acquired his conceptions of the principles of pruning from "Nature's school." Nor does it readily appear how there can be but two principles—fruitfulness and form—that should guide the practice of the pruner. Granting that the object of the cultivator is fruit-producing as such, and not the fashioning of garden toys, the question arises—How can I grow the largest amount of fruit of the best quality with the least expenditure of time and space? Time is an important factor in economical fruit growing. It sometimes seems to be forgotten that the bearing capacity of a tree is not constantly in proportion to the number of fruit spurs with which it is furnished. It is limited, other things being equal, to the size and vigour of the tree. It is useless multiplying fruit spurs, without at the same time providing for a corresponding increase of root and leaf to mature the fruit thus obtained. As a rule, when a tree is allowed to grow naturally, nature forms fruit spurs fully in proportion to its fruit-maturing capacity. Pruning sometimes increases the number of fruit spurs relatively to the size of the tree, but I believe in no single instance does it augment absolutely the number that would have been formed in a given time had it been left to Nature. To illustrate my meaning—if we were to examine a number of fruit trees in an orchard on which the shoots have never been shortened, we should probably find that whilst, in some varieties, fruit spurs were placed regularly through all the wood, except the current year's growth, in the remaining instances there would be a vacant space at the base of each year's growth, varying from quarter to half its length, according to circumstances. Now, if the part destitute of spurs was that which formed the end of the shoot, by removing that part spurs could easily be secured the whole length of the wood. This the pruner endeavours to effect by removing as much from the current season's growth as he thinks will cause what would otherwise have been dormant buds at the base of the shoot to break into fruit spurs. But this cannot always be accomplished. The only way in which Nature will deign to swerve from her original intention is to cause those buds which she had intented to have become fruit-spurs to break into wood shoots. The only advantage I could ever see accruing from shortening the wood of fruit-trees is that pointed out by Mr. Groom in Gardening a year or two ago—it mechanically strengthens the tree to bear up its load of fruit. In the orchard here there are half-a-dozen trees whose branches have to be held up by sticks to enable them to support their crop of fruit; from the appearance of these trees, I should judge that no one ever pruned them. I find that some of our best bearing varieties are among those which have the longest intervals between the spurs, proving that Nature does not err in the matter; that she, as a rule, furnishes sufficient fruit-bearing organs to expend the vital energies of the tree. A common cause of unfruitfulness is failure in regard to the setting of the fruit—often the cause of impoverishment. The most important principles that should govern fruit-growing I consider to be a judicious selection of varieties, and carefulness not to debilitate the trees, either by overcropping or by an insufficient supply of manure. Of course, where size and shape are to the cultivator matters of prime importance, the practice must be modified accordingly. L. C. K.

Apples as wall trees.—Although Apples are freely acknowledged to be the king of hardy fruits, it is seldom that we find them receiving the attention they deserve; and it is singular that while people keep on year after year growing and failing with Peaches, Apricots, and other tender fruits on walls, they do not grub up the trees and plant really good dessert Apples, for wherever I have seen them growing as wall trees they have produced a good crop every year. It may be argued that a fruit that is so good on open bush trees does not need a wall, but this is a mistake, for the lovely Calville Blanche and other French Apples that realise such fancy prices in London are grown on walls; and if they need it in sunny France how much more do they need it here. If the whole wall cannot be devoted to their use they are especially adapted for filling up bare spaces at the base of walls, where a good portion of brickwork may frequently be seen unoccupied. The best form of tree for this purpose is the horizontal cordon, and, of course, only the choicest sorts for dessert should be planted. That fine Apple, Emperor Alexander, is really a most striking fruit from its brilliant colouring when grown against a south wall; and the Ribstone, Cox's Orange Pippin, and Margil, all deserve good treatment, and that good old sort, Scarlet Pearmain, makes a beautiful winter dessert fruit. In fact, if those who have failed with tender stone fruit will but give the Apple the same amount of attention, they will never regret the change, as they will get a regular and certain supply of fruits that will keep for months, and come in just at the time when fruit of any kind is in most request.—J. Groom, *Gosport.*

Caterpillars on Gooseberry bushes.—So many articles and receipts for cure of above have appeared in Gardening Illustrated that I am tempted to give my experience of a remedy which has proved successful in a garden infested with these plagues, and also with their first cousins, which attack Cabbages. Tobaccopowder, soot and lime, spent tan, and hellebore, are all both troublesome and uncertain. Picking the creatures is endless work. Removing the earth and supplying fresh proved with me a failure. I fully admit the luxury of picking your own Gooseberries, but all this trouble makes the game not worth the candle. Without going into scientific names, or attempting to give any reason for the result, my remedy is to plant five or six Beans or more round each bush in such a manner that when the Beans are grown they will be close to the branches. The Beans should be grown before the Gooseberries come into leaf. In Cabbage plots plant Beans a foot apart in each alternate drill. The Beans, of course, are available. I hope anyone benefiting by this simple and inexpensive remedy, as I have done, will some day express his gratitude.—Belvidere, *Co. Westmeath.*

Frost-bitten plants.—The uncertainty of our climate was never more forcibly illustrated than during the year now drawing to a close. At the commencement of this month (December) open air flowers were in great variety, yet in the second week we had frost sufficiently intense to permit of skating, even in the southerly parts of the kingdom; consequently many amateur gardeners were caught napping. Where it is no uncommon thing for Geraniums to live out in sheltered gardens all the winter, and Calceolarias to grow into good-sized bushes, it is difficult to realise the fact that in one night the whole stock of one's plants in a closely shut up glasshouse or frame may be killed; yet such is the case, for except where a good heating apparatus was employed, frost soon found its way into the glasshouses and frames, and many a rueful look was cast at the drooping foliage of plants that only the night previous had looked so fresh and fair. Now, the first thing that those of little knowledge of plant culture do under such circumstances is to make the house as warm as possible, or give the plants a shower-bath of tepid water in the hope of reviving their favourites; but this only makes matters far worse. The best plan is to cover the glass with mats, or anything to exclude light, and also to prevent a sudden rise of temperature, for the slower they are thawed the less will they show the effects of frost. If any water is used let it be the coldest that can be got, but if the house or pit is unheated keep quite dry until milder weather comes again. It is surprising what an amount of cold plants will endure, but sudden transitions from cold to heat are as fatal to plant life as they are dangerous to human life; therefore, avoid extremes of all kind.—James Groom, *Gosport.*

15415.—Best exhibition Chrysanthemums.—When a correspondent desires to have the names of these for any purpose it is most desirable that he should state the number required. "J. D." wishes for the names of a few for exhibition. The best twelve incurved are: Empress of India, Golden Empress, Golden Queen of England, Lord Alcester, primrose; Jeanne d'Arc, white-tipped lilac; Lady Hardinge, rosy lilac, the reverse of petals yellowish; Lord Wolseley, bronzy red; Mrs. G. Rundle, white; Mrs. Dixon, rich yellow—a sport from Mrs. Rundle; Princess of Wales, white, with a rosy tinge; Refulgence, rich purplish-maroon, very distinct. The best twelve Japanese are Belle Pauline, white, with a suffusion of rose; Carmien, rose; Elaine, fine white; Fair Maid of Guernsey, white, fine large flower; Flamme de Punch, yellowish; Gloire de Toulouse, magenta, light centre; Jaune Délaux, dark brownish crimson, very fine; La Purcté, fine white; Criterion, yellowish buff; Madame C. Andiguier, rosy lilac, one of the best; Simon Delaux, dull, reddish crimson; M. Henri Jacotot, brownish red or crimson.—J. D. E.

—— The following would suit "J. D.':—Incurved: Alfred Salter, delicate pink; Guernsey Nugget, primrose; Jeanne d'Arc, white, outer petals tinted purple; Queen of England, blush; Venus, light peach; Eve, sulphur yellow; White Globe, White Venus, Mrs. Rundell, white; Mr. Bunn, golden yellow; Mr. Brunlees, orange red; Oliver Cromwell, dark chestnut; Prince of Wales, Hero of Stoke Newington, rosy purple; St. Patrick, red. Reflexed: Chevalier Domage, bright gold; Christine, rosy pink; Golden Christine, buff; Garibaldi, reddish chestnut; Golden Empress of India, bright primrose; Dr. Sharpe, magenta; Mrs. Forsyth, white; Annie Salter, golden yellow; Julie Lagraviere, dark crimson; White Christine, creamy white. Japanese: Elaine, Fair Maid of Guernsey, white; Star, Golden Dragon, yellow; Red Dragon, chestnut red, tipped yellow; Orphée, crimson and red; The Cossack, maroon and yellow; Jane Salter, white-striped lilac; Hero of Magdala, blood red; The Khedive, light purple, shaded lilac. The above are some of the finest exhibition sorts. I shall be glad to give "J. D." any further information that he may desire.—T. J. M.

—— "J. D., Carlow," will find the following good for show purposes:—Japanese: Boule d'Or, amber; Comte de Germany, bronze and yellow; Thunberg, yellow; Fair Maid of Guernsey, white; Balmoreau, purple, spotted white; Mdme. C. Andiguier, deep mauve; Elaine, white; Peter the Great, yellow; F. A. Davis, dark crimson; Meg Merrilies, sulphur white. Incurved: Empress of India, white; Golden Empress; Queen of England, blush white; Lord Alcester, pale primrose; Lord Wolseley, bronze; Mr. Bunn, golden yellow; Mrs. G. Rundle, white; Barbara, golden bronze; Jeanne d'Arc, white, tipped lilac. Names taken at Liverpool Show.—F. H.

THE KITCHEN GARDEN.

EXHIBITION VEGETABLES.—ONIONS.

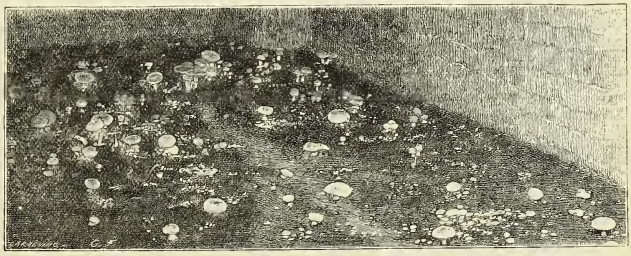
In nearly all cases prizes are offered both for spring and autumn-sown Onions, so that those who wish to compete in both classes must make a sowing of seed in the autumn as well as in the spring; the time is past, however, for making the autumn sowing, but there will be no difficulty in obtaining a few plants to put out in the spring. The best varieties to select are the Giant Rocco and the globe-shaped Tripoli, both of which grow to a large size, and are very handsome. The beginning of March is a good time to put out the plants, and it is best done when the surface is fairly dry, so that the soil can be firmly pressed to the roots. A single row of moderate length will furnish a sufficient number of bulbs from which to select a couple of dishes. If more are wanted, suitable provision must, of course, be made, but in all cases it is necessary to grow a considerable number more than will be actually wanted, as it is most desirable to have a good choice, so as to be able to select bulbs of a uniform size and shape. If more than one row of these large ones are required, they should be 2 feet apart, and the distance between the plants 18 inches. As regards

Spring-sown Onions, it not unfrequently happens that all sorts of devices are resorted to by exhibitors to secure the largest bulbs. Some have been known to sow the seed in autumn instead of the spring, others have raised their plants in hot beds early in the season, but such devices are not honest, and they generally meet with their merits when the judges know their business; for when only legitimate means have been used to secure the crop there can be no doubt that they stand out conspicuously against the others, as those obtained from seed sown at the proper time will be comparatively green and fresh, while the others will be nearly or quite ripe, and competent judges will reject them, and award the prizes to the greener samples, even if they are not so large. I mention these facts as a caution to intending exhibitors, because, after all, there is no necessity to endeavour to infringe the rules, as it is only necessary to make suitable provisions and to sow the seed at the proper time to secure bulbs large enough for any purpose. As for the best sorts to grow, among those with flattened bulbs there is none better than a good selection of White Spanish. If a globe-shaped sort is wanted, I should recommend the Brown Globe, but Williams' Magnum Bonum is a very handsome and a very reliable variety. As an old cultivator, I may say that I have never gained anything by sowing the seed too early; when I have sown early in March I have frequently had the plants so forward that they have been terribly crippled by the cold winds in May. I now sow the seed any time between the 12th and 20th of that month, and I find that the plants come through the soil quite as soon as the weather gets genial enough for them to make satisfactory progress. A deep mellow loam resting on gravel will produce the best Onions, but we must deal with the staple as we find it. If it is not deep and rich it must be made so, or all after efforts to secure a satisfactory crop will fail. If the ground has not been trenched up within the past two years it must be done now, and if the bottom soil is not of a kindly nature it must not be brought to the top, but it must be moved up with a fork and the hard lumps broken to pieces, and before the top spit is put on it a layer of well-rotted manure should be placed upon it, and a liberal quantity of manure should be spread on the surface to get incorporated with the soil nearer the top. There must be no delay in getting this work done at once, as the Onion requires a rather close medium for its roots, and if done now there will be time enough for it to settle down before the time comes to sow the seed. Even if the ground has already been prepared the surface will want treading with the feet before it is ready to receive the seed. It is much the best plan to

Sow in drills.—These should be 12 inches apart, and an inch deep. Very little seed will suffice, because it is not desirable to have many more plants than are to remain, for if they stand close together in the drills it is impossible to take out those which are not wanted without injuring the roots of the others. What thinning-out is required should be done as soon as the plants are large enough to handle, and the plants should be 15 inches apart in the rows, for it is a mistake to crowd them when wanted for such a purpose. The after-management consists in keeping them free from weeds, and well supplied with water in dry weather. Instead of using clear water continuously through a long period of drought it will be better to use a mild form of stimulating liquid, made by placing about 1 peck of soot into 30 gallons of water, allowing it to get clear before using it. The beginning of July will be soon enough to apply it, as they only want a little assistance to enable them to swell off their bulbs—strong stimulants must be avoided, or it will make them grow too much to neck and leaves. If there should be a tendency in any of them to grow on longer than is desirable any refractory ones may be made to stop growing by twisting the bulb half way round in its bed. But it is not so necessary to have them so ripe as some seem to suppose—a genuinely-grown article, with uniformity in the size of the whole number, with only the outer scales taken off, is more likely to attract the attention of the judges than larger samples about which there may be some doubt whether they are from autumn or spring-sown seed.

Somerset. J. C. C.

An amateur's Mushroom bed.—On page 342, August 22, we published a note from Mr. H. Shipley, jun., Nuneaton, under this heading. Accompanying his note was a photograph of his Mushroom bed, a portion of which is now shown in our engraving. Mushrooms are so highly esteemed, and their culture is so well within the reach of anyone who has an outhouse or stable at his disposal, that we have no doubt many of our readers will be anxious to follow Mr. Shipley's lead. In addition to the note referred to, therefore, we direct their attention to an exhaustive article on the subject by Mr. Hobday, in our number for May 23rd.



Mushroom bed in stable. From photograph sent by Mr. H. Shipley, jun., Nuneaton.

Tiles for Celery.—Experience confirms the decided merit and convenience of a piece of common earthenware drain-pipe to guide and save the stems of Celery and secure their perfect blanching. The mere setting over the growing plant of a short piece—a foot long or less, and three or four inches in calibre, according as the sort is dwarf or large—at once supersedes all the tedious and unpleasant work of handling and banking up. Less room is needed between rows, and the condition of the stems is visible at any time on merely lifting up the pipe a little. If snails attack it they are easily seen and picked off, or treated with Pyrethrum. Decidedly the finest of our Celery was the part of a row so piped with some pieces broken in drain laying. It has not a mark of rust or insect bite; every stem was whole, clean, and parallel, and when freshly exposed looked almost like polished ivory. Abroad they use glass cylinders to shape Cucumbers; it seems so much more worth while to have a few dozen of these opaque, strong pipes specially made for the Celery. They won't rot nor easily break, can be kept outdoors near where wanted all the season through, will last indefinitely, and, as the heavy tile will keep its erect position well, rows of them look well in the garden, topped by the graceful leaves. If any tile makers make such pipes they should advertise them "for Celery."—*New York Tribune.*

MUSHROOM GROWING IN WINTER.

At this season, when choice vegetables are not so plentiful as in summer, a good supply of Mushrooms is most welcome. We hardly ever attempt to grow Mushrooms in summer, as other garden produce is then so varied that they are not valued, and they are more easily grown in winter than in summer. Insects are apt to damage them then, and they do not develop freely during hot weather. Now they come up in abundance and as fresh as possible. There are not, I hope, now many growers who use fire-heat in their culture. Artificial heat for them at any time is superfluous. I am not one of those who care to attempt their culture in the open air in the dead of winter, but I would never desire a better place in which to grow them than a tool-shed, a potting-shed, or a shed of any kind. We have Mushroom beds in the potting-shed now and others in a cool house, and the crops which they produce are as abundant and lasting as anyone could desire them to be. Their quality, too, is exceedingly good, and I would now no more think of growing Mushrooms in a heated house than I would of growing midsummer Cabbages under glass. Some friends of mine near here who own cow-sheds and other buildings have been trying their hands at growing Mushrooms in them, and they are delighted with the result. One, an extensive farmer on the Margam estate, made up a bed with horse droppings; and another, by way of experiment, with manure entirely from the cow-sheds. This bed has produced a good crop of excellent Mushrooms. Another bed has been formed with the cow manure, and I have no doubt it will prove to be quite a success. It is very important that the manure be moderately dry and sweet before the bed is made up. When right in this respect, little danger need be apprehended from spawning too soon, or having it either too hot or too cold. If the manure is so wet as to stick together, it will not answer; but if two or three forkfuls are thrown into a heap and trodden on, and then when shaken out again are as elastic as if they had never been pressed, the bed may at once be made up. We have got into the habit of being very careful in this respect. Our beds are spawned the same day on which they are made up, and soiled over on the day on which they are spawned. We would rather have the manure half composed of short straw than have it wholly droppings. Mushrooms will not succeed well if the surface is very dry at one time and wet at another. A medium condition as regards moisture suits best. Direct currents of cold wind must not be admitted, and where there is no door to shut and keep the wind off, a thick layer of hay should cover the bed. We keep a little hay on the surface of our beds from the day on which they are spawned until the last crop is cut. Good spawn is absolutely necessary in order to produce Mushrooms; without this no one can be successful. I would strongly recommend all to try the shed system of culture. They will find it simple, interesting, and profitable. J. M.

Celery for exhibition.—I see that "J. C. C., Somerset," gives an article on growing Celery for exhibition in Gardening, page 565. I should like to state my experience of growing it this season. I grew Leicester Red; the seed was treated in every way the same as "J. C. C." treated his, till the time of planting

—viz., the middle of May. I had my trenches dug out 2 feet deep, and 2 feet 6 inches apart. The trenches were filled with well-rotted stable manure to the depth of 1 foot, the mould was then put on the top, and well soaked with water. I then put my plants in double—viz.,

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I always adopt this plan, as it gives you the advantage of growing double the crop you would otherwise do. If the season prove a good one I simply assist them with liquid manure and soot water (which should be at least eighteen months old) occasionally; if a dry season like this one I soak them well with soot water and liquid manure twice a-week, watering them every morning with plain water. I let my plants grow for at least two months before earthing them; each root is then taken by the hand, and the earth firmly pressed round; they are earthed to within about 3 inches of the leaves, and in about another month's time I complete the earthing. I am now digging them, and find that the average height, from the top of the ridge of the soil which was banked up beside the trench down to the surface in which the plants were growing, was about 24 inches. The bleaching is perfect and the quality magnificent.—A. Styles, *Kenilworth.*

15364.—**Brussels Sprouts.**—The most prolific variety that I am acquainted with is the Highworth, which grows with generous culture over 3 feet high, and the sprouts of which are very large. For quality, however, I should much prefer the old and smaller-growing kinds. To get Brussels Sprouts from the end of autumn onwards the seed should be sown early in March in a cold frame, inuring the young plants gradually to the open air. The best system consists in pricking out the young plants 3 inches apart, in well-worked soil, on a warm border, transplanting them a month later to their permanent quarters. The rows should be 2½ feet apart, with a space of 18 inches from plant to plant. The ground should be deeply dug and richly manured, and if a good watering can be given in hot weather so much the better.—J. C. B.

—— Sow the seeds in a cold frame in light, rich soil about the beginning of March. The plants should, when they have grown a little, be taken out, and transferred to the place where they are to remain. The seeds may be sown as late as the beginning of April in the open ground; the former plan, however, will be found preferable. The Reading Exhibition will, I think, be found one of the best varieties of Sprouts. The buttons are large and solid.—T. W. R.

Protecting glasshouses from snow slips.—We reprint the following timely note, which may prove of service: Not a few readers may have erected glasshouses during the present year, and some, in choosing the most eligible spot which attendant circumstances allowed, may have overlooked a somewhat important factor in the case, and have chosen to plant their bit of glass where, after a heavy fall, snow may chance to slide from the house-roof above, and, in a moment, wreck not only the greenhouse, but a goodly array of plants, the result of some months' attention and toil. It is not every winter, especially in the south and south-west of England, that brings snowfall sufficiently heavy to endanger the conservatory; but if the structure should lean to a house where a slide of snow from overhanging eaves would fall upon it, there is still danger, although several winters may have passed without mishap. Given a fall of say 2 inches or 3 inches of snow and a thaw to follow sufficiently rapid to loosen the snow and set it slipping, and sad would be the result. I have seen a glass structure 60 feet long covered with toughened glass three-eighths of an inch thick, shivered to atoms throughout its entire length in a very few minutes. The snow fell about 45 feet. Where no permanent protection exists, the readiest way, when danger threatens, is to cover the glass roofs with long boards, so as to spread the weight over as great an area as possible, and upon the boards to place matting or anything of a soft, thick texture, to still further deaden the blow. This is often insufficient, and the better plan is to prevent the snow altogether from falling. The way I have protected my own greenhouse (erected in a corner where it would receive a fall from two sections of the roof) is this. Into the wooden plate which runs along just under the eaves, and upon which the principals of the roof rest, I have driven firmly, about 3 feet apart, iron stays about 14 inches long and turned up at right angles 6 inches from the end. To the turned-up portion I have then firmly screwed a long board 5 inches wide, the whole being thus secured in such a position, that when snow slips down the roof it does not fall, but rests against the board and melts there, the water dripping into the rain-water pipe which is immediately beneath.—C. P.

15419.—**Garden nets.**—The best garden nets are those used by fishermen to catch herrings. They are sold at a very cheap rate when no longer fit to use for their original purpose.—J. D. E.

Anthracite coal for heating purposes.—I was pleased to see the letter of "W. C. T." on page 557, but it loses its value considerably owing to his not stating the price of coke in his district. I should be glad if he would do so. I am aware that in locomotives chalk is used to prevent clinkers, but then they have a tremendous draught, and I should hardly have thought it any advantage in a greenhouse boiler. I have noticed, in using any kind of fuel, that the amount of clinker is just in proportion to the draught. There is no doubt that the most economical way of heating is by a large furnace and slow combustion; very little heat is then lost up the chimney, and next to no clinker made. I am anxious to try this coal. Will "W. C. T." say whether it will burn with a slow draught? I should be glad to know if any experiments have been made to prove how much water can be evaporated by a given weight of this coal, and also with the same quantity of coke.—Vectis.

Floral fans.—Replying to objections that have been made to the use of the floral fans described on page 556, "A. D." says:—"They will never banish bouquets, but they are at least as pleasing, certainly far lighter, and they also serve the double purpose of being at once a fan and a bouquet. Probably Mrs. Smith's fans were not half the weight of any ordinary bouquet, perhaps not more than one-third, and whilst the floral dressing affixed to them lent beauty which could only have been found in some exquisite painting, it did not in any way interfere with the proper uses of the fans. It is a style of decoration which comes within reach of all; the mere framework may be obtained at a trifling cost, the covering of lace is simple and easily put on, and the sprays of flowers and foliage may be attached by dexterous fingers with ease. Thousands who could dress a fan neatly with a few flowers could not make up a respectable bouquet, whilst the quantity of flowers needed for the latter would dress a dozen fans. That artificial flowers may be employed is certainly no worse than is the wearing of them in hats or bonnets, but it is certain that for all these purposes natural flowers, where obtainable, would be preferred."

Big Chrysanthemums.—A recent Chrysanthemum show suggests to my mind that it is about time this gigantic growing of them should end. The world knows what growers can accomplish. Take, for instance, half-a-dozen of those monsters, five feet in diameter—where is the sitting-room or drawing-room that can accommodate them? Fancy using them in this state for table decoration, or window plants! Let growers now give attention to growing them, single stems, in six-inch pots, which can be grown as shapely as those giants. Those of your readers who have seen Pelargoniums grown in six-inch pots, single stems, and not a stake to a plant, at the Chiswick exhibition in London, know how much finer they are to the eye than our present craze on monstrosities, such as the Chrysanthemums. Those who have seen the New York exhibition will not have failed to notice a collection of forty plants grown in six-inch pots; they did not glare on the eye or revolt the feelings from flowers. Not that they were at all well grown—in fact, quite the contrary; but the general public could say, "Well, we can place such a plant in our rooms." The professionals laughed at this collection. Nevertheless, this exhibitor has struck the public taste; so I hope the days of growing giant Chrysanthemums are gone.—*Correspondent, Country Gentlemen.*

THE VEGETABLE GARDEN.*

This very important book has just appeared. It may be considered from a utilitarian point of view the best book on gardening published in England for many years, and for the simple reason that the subjects of which it treats have been neglected hitherto by writers. A sound knowledge of garden vegetables is very rare, and only to be acquired by persons possessing the high qualifications and peculiar opportunities of the authors of this book. Whatever foreign countries may do for us, it is not likely that they can supply us with vegetables, which deteriorate even when brought from our own gardens to our markets. The climate of Britain is admirably suited for vegetable culture, and is, perhaps, on the whole, unequalled by that of any other country in Europe. The tastes of the people encourage an abundant use of vegetables, and the greatly-growing demand in our large cities and towns is likely to make the work of the vegetable grower for market more important in the future than it has ever been. This being so, the value of a work such as this, which directs attention to many little-known kinds, and, of course, deals as well with all those in ordinary use, can hardly be over-estimated. Innumerable treatises on the cultivation of vegetables have been written, but "The Vegetable Garden" is the first work in any language in which are classified, described, and illustrated what are the most important of all plants to the human race. It is the production of men who in their work for many years past have had good opportunities of thoroughly studying the subject. No excuse is needed for "making English" such a book—for the benefit, not only of our own horticulture (increasing in interest and importance every year), but also for that of America, and of Australia, and our other colonies, in which, happily, the plants herein described may be grown. It will be an aid in enabling us to realise the wonderful variety of light, pleasant, and excellent food now within our reach, and in making many a good vegetable more widely known. That it may widen our views in this respect will be acknowledged by every one who, with the usual limited ideas as to French Beans, for example, takes note of the many excellent kinds described in this work.

DIET REFORM.

The relation of the plants this book deals with to the movement towards diet reform and the greater use of the vegetable world for human food calls for a word at the present time. A generation ago this question was the theme of a very few writers; now the movement has taken shape in actual practice, and there are restaurants in London to-day where over a thousand dinners daily are served, wholly composed of cereals, vegetables, and fruits. Leaving out of view any exclusive tendency of this kind, all agree that the greater use of the best of these in our food would be a decided improvement. So far as we have yet seen, the restaurants devoted to this class of food show a limited knowledge of cookery and of the garden stores from which they might draw. It is a pity it is so, for the neglect or poor cookery of such things, both in private houses and hotels, is a serious loss.

IMPORTANCE OF GOOD COOKERY.

The true reason why the more delicate and wholesome foods are neglected is that the cooks of Europe have served an apprenticeship of a thousand years on the carcases of ox, pig, sheep, deer, goose, hare, and other animals. We are meat-eaters because our fathers had little else to eat. The plains and green hills of the cold north were dotted with wild grazing animals, as an English park is now dotted with deer, or a Western prairie with antelope and bison. Men killed and cooked; there was little else worth eating. A few generations only have passed since our now commonest vegetables came from the Continent. We are adding to their number every day, and by the aid of cultivation we are winning back our way to a simpler, healthier food, and one more like that which man enjoyed in the tropical or sub-tropical regions whence he originally

* "The Vegetable Garden: Illustrations, Descriptions, and Culture of the Garden Vegetables of Cold and Temperate Climates." By M. M. Vilmorin-Andrieux, of Paris. English Edition. London: John Murray, Albemarle-street.

came. But the education of the cook bars the way to progress. Even when he gives us French Beans, they swim in butter. The French cooks, supposed to be the best, systematically make the natural flavours of the many delicate vegetables of their markets secondary to that of butter—now, alas! often mere grease or hardened oil. In our hotels the best fish and meat in the world are often procurable; the vegetable kingdom is usually represented by a mass of ill-smelling Cabbage and a sodden Potato. We ought to grow more kinds of vegetables than we do, but we need still more a radical change in our modes of cookery, in the direction of cooking and serving for their own sakes (and in most cases without animal substance) the more delicate green vegetables and fruits that are and may be grown. Old or inferior vegetables require the coarser devices of the cook, and must be saturated with grease and spices to make them edible. The true cookery is to deal only with the best and tenderest of every kind, and jealously preserve its flavour; this art is, in any general sense, as yet unpracticed. In ten years more every district in London will have restaurants wholly supplied without the aid of the butcher. At the same time, those who share no such views as to food are equally desirous to improve and enlarge our garden supplies; so it is clear that there will be a greatly increased demand for all such produce. This is a hopeful sign in the present day, when all seems so dark for our agriculture. Garden vegetables deteriorate enormously, even ours on the way to our own markets, so that clearly we cannot have rivals here from the Antipodes or across the Atlantic in them, unless, indeed, we grossly neglect our opportunities. And, apart from the important factor of distance, the climate of Britain has few equals for the growth of green vegetables.

VEGETABLE MARKETS.

In London the chaotic struggle and obstruction in Covent-garden tend much to deprive people of the good qualities of the garden produce grown so well in the suburban fields. One simple way to improvement would be the adoption of district markets for local supplies. To bring the vegetables grown at Chiswick to Covent-garden and cart them back to Hammersmith is a needless waste of force. For these markets it is by no means necessary that permanent structures should be built; a wide road, or square, or river embankment would suffice. As wholesale dealings of this kind are usually done in the morning hours, it is easy to make good use of open spaces for this purpose. Some of the useful little district markets of Paris are held in public squares and on the boulevards, and an hour after they are over, tents, stands, refuse, and all other signs of the market are so completely removed that one passing by does not suspect that the spot has served an important use before the general public is abroad. Regular all-day markets, where the householder could select, are also wanted. Some of our English towns and Paris have admirable examples of these. But while such must be waited for till public taste or enterprise creates them, the wholesale district markets could be established without cost or delay.

MIXED PLANTING.

One point deserves the serious consideration of every owner of a garden, and that is the "muddle" method of planting the kitchen garden with fruit trees and bushes, and so cutting up the surface with walks, edgings, &c., that the very aim of the garden is missed. It is quite a mistake to grow fruit trees over the kitchen garden surface. We cannot grow vegetables well under them, and in attempting to do so we destroy the roots of the trees. This induces canker and other troubles, and is the main cause of our poor garden fruit culture. One-fourth of the space entirely given to vegetables, divested of walks, large hedges, old frame grounds, old walls, rubbish, and other impediments, would give a far better supply. Such a spot well cultivated would be a pleasure to see. It is not merely the ugliness and the loss of the mixed garden which we have to deplore, but the troubles of the unfortunate gardener who has to look after such a garden, in addition to other work. How is he to succeed with the many things so hopelessly mixed up? Here a decaying Plum, there on one side a ragged patch of Black Currants, backed by a rank Privet hedge; and so on through the sorry catalogue. In fact, if the whole cost of the garden were doubled, and all expended on some of the kitchen gardens of this sort that we see, it would still be impossible to get a good result from this method. Put the fruit trees in one part—the higher ground, if any—and the remaining part devote to vegetables, cultivating the ground in the best way, and having it always a fertile, green vegetable garden. The vegetables, too, would be more wholesome from continual good light and air; for shade from ragged and profitless trees and bushes and hedges is one of the evils of this hopeless kind of garden. The broken crops, too (for the most part sickly patches), are not such as one can be proud of. Separation of the two things, complete and final, is the true remedy. There should not be the root of a fruit tree in the way of the vegetable grower.

THE MANIA FOR LARGE VEGETABLES.

All who have to do with gardeners and seedsmen should fight against the deterioration of some of our best vegetables through their mania for size. Although the flavour of vegetables may be more subtle than that of fruit, it is none the less their essential quality. A change in size, by adding to the watery tissues and fibrous framework of the plant, may entirely destroy the quality we enjoy in it. A certain degree of openness to sun and air may govern the flavour; this may be made impossible by doubling or trebling the size of the article itself, which has been done in the case of the Brussels Sprout. This is often no longer the true little rosette of green, but a coarse Cabbage sprout. This is a case of deliberate distortion of a favourite type. Less absurd, perhaps, but equally bad, is the raising of new varieties lacking in good flavour, and abolishing old kinds, from supposed deficiency in size. It generally means that the new ones are coarse; it sometimes means that they are useless. There has been, for example, for the last few years a French Bean observable in our markets, very large and symmetrical, but without any of the good flavour of the smaller kinds. However, its huge mawkish pod has become popular with the market gardener. Here is a delicate vegetable, the value of which depends entirely upon its flavour, and whether we get quantity in the shape of six Beans or one Bean matters little to the consumer, if the object of growing the vegetable is lost sight of. So again in Peas. Where is the good in a new Pea if it has not a good flavour? Mere size, or filling of a pod well, is a low quality from any point of view but that of the market grower, who wants his "stuff" to bulk up well. Sometimes a flavour may be made too rich; many good cooks in London prefer the little long Turnip of the Paris market, which has a truer Turnip flavour than some of the sweet kinds. We may lose much of what makes a garden worth having by not efficiently controlling the thoughtless and harmful mania for mere size, unless accompanied by other more desirable qualities. The striving among gardeners to increase the size of vegetables leads often to deterioration, and it so so common that those who have influence with them should protest. Some of the raisers of novelties have done a good deal to injure the Tomato by sending out huge and coarse kinds, which, instead of ripening in the natural way, burst into abscesses and "craters," and have a wretched flavour.

GATHERING CROPS WHEN RIPE.

An important subject for all owners of gardens, big or little, is the waste and loss through not gathering things in their best state. The usual way of gathering when wanted should, I think, be changed. In almost every garden, in summer and autumn, one sees Kidney Beans and Peas in quantity in a hard and uneatable state—useless themselves, while robbing the plant of the power to give a succession of eatable pods. All such crops should be gathered at the right time, whether wanted or not. Those who want vegetables in the best condition only would find it profitable to gather and give away rather than pursue the usual way of growing only to waste. It is a common practice with many market gardeners to allow things to get old and hard before cutting, so as to ensure their filling the baskets easily, instead of gathering them whilst tender. These men must be the best judges of their own affairs, but this practice is the cause of market vegetables being often useless as compared with private garden produce. It is a common error that those who grow their own fruits and vegetables necessarily pay more for them than than they would in the market. The pleasure of having them quite fresh and of a proper age would, however, be worth paying for if need be. The great advantage which all who are happy enough to live in their gardens enjoy might be much increased by growing only things delicate and good in flavour, and gathering them at the right moment, which is seldom done in the case of market produce.

CONFUSION IN NAMES OF VEGETABLES.

Loss to all and much confusion arises from the practice now common among seed-merchants of naming almost every good vegetable after themselves. It has of late become a nuisance, and England has almost a monopoly of the evil practice, which is not carried out in France. Honourable houses may do it for self-protection with us, but it is nevertheless a great evil to the public, and scarcely less so to the trade. To be able to secure pure stocks of long-tried standard vegetables is not easy for the public while the seedsman affixes a new name and the name of his house to almost everything he sells. I cannot give any just idea of the waste and confusion resulting from this practice. A common cause of failure in the vegetable garden is too many kinds—too many experimental plantings, instead of the garden being devoted to the things we know and like. The liability to fall into this trap is increased tenfold by the chaotic state of the nomenclature of vegetables, and by every one who publishes a catalogue having his own set of names. Seedsmen and growers, at home, in our colonies, and in foreign countries, are compelled again and again to buy old things under new names, and to test them before embarking in their sale. If the practice were confined only to the new kinds raised or purchased by the houses who use these names, it would be less objectionable; but, by adopting it generally, even their own children cannot be recognised in the incongruous list. A common way of giving these new names is to secure a pure, well-selected stock of seed of some old, good kind, and re-christen it, say, some one's "Champion" or "Favourite." Changing the name of a good old kind in this way is an evil which the seed trade itself should associate to stop. Houses that practise it may no doubt get a large number of orders from both the public and the trade, but I think the loss is as certain to the trade in the end, as it certainly is to the gardening public. Of late years we have seen in London, Orchid, Pear, and other conferences, which, while leading to interesting meetings, have had really little more serious reason to be than the vanity or amusement of their promoters. The disgraceful state of the nomenclature of our most valuable garden crops might well occupy the attention of a body composed of representative seedsmen and growers. It would not be a very difficult task to seek out and give their true names to all the older and finer types of our vegetables, and to find some way to prevent confusion in the future without interfering with anyone's right to name a real novelty in a fitting way.

The translation of "The Vegetable Garden" is wholly the work of Mr. W. Miller, author of the "Dictionary of English Names of Plants:" it could not be better done. Messrs. Vilmorin contributed a very large number of additions and corrections, which have all been embodied in the book. Mr. A. F. Barron, superintendent of the Royal Horticultural Gardens at Chiswick, read the proofs throughout; M. Henri Vilmorin did the same. Of all men in France and England these have probably the best knowledge of cultivated vegetables. Also, as the culture and supply of kinds is more important to the public than any questions of nomenclature, it was thought well to give the culture most generally practised in our gardens, both private and for market. This is printed in double columns throughout the book.

Smithfield market, Evesham.—List of prices realised Dec. 18, 1885:—Brussels Sprouts, 3s. to 4s. 6d. per pot; Carrots, 1s. 6d. to 2s. per cwt.; Celery, 8d. to 1s. per doz.; Onions, 3s. to 4s. per cwt.; Parsnips, 3s. to 3s. 6d. per cwt.; Potatoes, 1s. 6d. to 2s. per pot; Savoy, 6d. to 1s. per doz.; Sage, 1½d. to 2½d. per doz. bunches; Turnips, 1s. 3d. to 1s. 9d. per pot; Apples, 2s. to 7s. 6d. per pot; Pears, 3s. to 5s. per pot.

OUR READERS' ILLUSTRATIONS.

VIEW IN A GARDEN AT NEWARK.

Some of the most beautiful aspects of English gardens are those associated with our old churches and cathedrals. A most striking instance of this is Salisbury, where from many points of view the garden landscape is extremely pretty and refreshing. The fine old church of Newark comes well into this illustration, which shows a very pretty view in the gardens of Alderman H. Branston, of the Friary, in that town. Mr. Postles, the gardener (to whom one of our prizes was awarded), sends us the following note respecting it:—"The illustration is a view of part of a fine old garden, situate almost in the centre of the town of Newark, whose history can be traced down to the period of the Austin Friars. The garden is within two hundred yards of the parish church, of which the steeple can be seen in the distance. The trees to the left of the engraving are the pink Hawthorn and the Cherry Plum; on the latter we get a fine show of bloom in the spring, but have had no fruit this last ten years. On the right hand of the view runs the herbaceous border. The wall, of which just a glimpse is caught, is covered with Roses, Honeysuckle, Wistaria, Kerrias, Jasmines, and a fine plant of Aristolochia Sipho. The half-circle bed in front, with the three Cupressus Lawsoniana, has a ground covering of Periwinkle, mixed with bulbs of Hyacinths, Crocus, Narcissus, Lilium candidum, &c., for spring blooming, with annuals set for autumn bloom." The engraving is from a photo taken by an amateur, Mr. J. F. Warwick.

Our Readers' Illustrations: View in garden of Mr. H. Branston, The Friary, Newark, Notts. From a photograph sent by Mr. T. Postles, gardener.

15420.—**Early Chrysanthemums.**—Japanese: James Salter (rosy lilac), Lady Selborne (a beautiful white sport from it), L'Africaine, or George Gordon. Incurved: Mrs. Rundle (white), Mrs. Dixon (golden yellow); Christine (rose), a reflexed variety.—J. D. E.

—— The following will be found suitable, possessing the qualities required:—Incurved: Empress of India, Queen of England, Prince Alfred, and Nil Desperandum. Japanese: Elaine, J. Delaux (very large), and Carmen. Reflexed: Cullingfordi. This is of a beautiful, brilliant crimson colour, shaded scarlet, and one of (if not the finest so far raised.—T. W. R.

ROSES.

15418.—**Roses for button-holes.**—Among all the crimson-coloured Roses there is not one more suitable for button-holes than General Jacqueminot; but, if you want more, you may select Charles Lefebvre or the Duke of Teck. The best Moss varieties for your purpose are Eugénie Verdier and Frederic Soulier.—J. C. C.

—— Duchess of Bedford, H.P., and Madame W. Paul Moss.—J. D. E.

15416.—**The best Roses.**—The best twelve hybrid perpetual Roses are:—A. K. Williams, crimson; Barthélemy Joubert, cherry red; Duchess of Connaught, bright crimson; Duchess de Valambrosa, rose; Lady Sheffield, cerise; La France, rosy lilac; Madame Ducher, carmine; Madame Gabriel Luizet, satin rose; Merveille de Lyon, white, shaded rose; Mrs. Jowitt, rosy crimson; Prince Camille de Rohan, dark maroon; Marie Louise Pernet, bright rose; Violette Bouyer, white, shaded pink. The best six tea-scented are—Niphetos, white; Madame Lambard, rosy red; Marie van Houtte, yellowish white; Madame Falcot, buff; David Pradel, pale rose; Catherine Mermet, pale flesh. The best six Noisettes are—William Allen Richardson, apricot; Céline Forestier, pale yellow; Aimée Vibert, white; Jaune Desprez, bronzy yellow; Solfaterre, sulphur yellow; Madame Alfred Carrière, flesh colour. The best six Moss Roses are—Celine, dark crimson; Frederick Soulie, red; Reine Blanche, white; Lanei, rose; Luxembourg, purplish crimson; Crested, rose. The best six Bourbons are—Souvenir de la Malmaison, pale blush; Queen of Bourbons, fawn; Catherine Guillot, carmine; Acidalie, white, shaded rose; Sir Joseph Paxton, rose; Armosa, pink. The best climbing Roses are—Gloire de Dijon, fawn; Cheshunt Hybrid, deep red; Reine Marie Henriette, bright red; and the white and yellow Banksians.—J. C. C.

—— A few of the best hybrid perpetuals are Abel Grand, rose; Alfred Colomb, crimson; A. K. Williams, rather delicate but fine rich carmine; Charles Lefebvre, crimson; Dr. Andry, reddish crimson; Duke of Edinburgh, rich crimson; François Michelon, rose; La France, pale rose; Madame Lacharme, whitish; Madame Victor Verdier, rosy crimson; Mons. E. Y. Teas, brignt red; Prince Camille de Rohan, maroon crimson; Ulrich Brunner, cherry red; White Baroness, Victor Verdier, rose. Any of the above would give satisfaction. Tea-scented: Anna Olivier, flesh; Adam, rosy blush; Catherine Mermet, flesh-coloured; Belle Lyonnaise, yellow; Comtesse de Nadaillac, orange and copper colour; Devoniensis, creamy white, a lovely old Rose; Gloire de Dijon, buff and yellow; Jules Finger, reddish; Madame Lambard, red; Madame Willermorz, cream; Niphetos, white; Safrano, apricot; Souvenir d'Elise, straw with a rosy tinge; Souvenir d'un Ami, salmon with rose. Noisettes: Céline Forestier, yellow; Madame Caroline Kuster, canary yellow; Maréchal Niel, rich yellow; Rêve d'Or, orange yellow; Wm. Allen Richardson, coppery yellow, fine in bud. Bourbon: Souvenir de la Malmaison. Moss Roses: Common Moss, rose; White Moss. Climbing Roses: Dundee Rambler, Félicité Perpetuelle, Blairii, Rampant. Boursault: Amadis. Mrs. Bosanquet is a beautiful China Rose that should be grown in every garden.—J. D. E.

Hanging basket plants.—In a cottager's window I noticed the other day three Cocoa-nut shells suspended from the ceiling; the centre one contained a golden Creeping Jenny (Lysimachia Nummularia aurea) and was a little higher than the two side ones, each of which contained a beautiful trailing specimen of Viola gracilis, and bloomed, although not profusely, yet sufficiently to make a lively and pleasant picture. Thus treated these plants flower more or less all the year round. In summer they are taken down and thoroughly watered every day; in winter they only receive occasional sprinklings. Campanula garganica and its variety hirsuta are both pretty plants for window decoration. Substituting pots for Cocoa-nut shells and introducing saucers would doubtless be an improvement, and also lessen the attention needed, and, all of them being quick growers, the saucers would soon be hidden.—K.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15509.—**Propagating large-leaved Begonias.**—Will any reader kindly tell me how to propagate the large-leaved Begonias of the B. Rex type?

15510.—**Turnip tops.**—Will any reader of GARDENING ILLUSTRATED inform me how Turnip tops are grown so as to have them for a spring vegetable? The soil here is light gravelly, climate moist.—A. C., *Dumbartonshire.*

15511.—**Colour of Roses.**—Will "J. C. C." kindly tell me the colour of the following climbing Roses?—Ayrshire, Félicité Perpetuelle, Dundee Rambler, Prairie Bell, Princess Marie, and the Garland.—W. W.

15512.—**Carnations, Pinks, and Picotees.**—Will any reader be kind enough to explain clearly the distinctions between Carnations, Pinks, and Picotees and oblige?—DIANTHUS.

15513.—**Plants in sitting-rooms.**—I should like some instructions as to the management of plants in flower introduced into a sitting-room warmed by a stove.—LEIPSIG.

15514.—**Vines in tubs.**—Having put up, at my expense, a greenhouse, 25 by 8 by 5, I wish to put vines into it; but, not wishing to leave them in case of removal, shall be glad to know if it will be wise to plant them in butter tubs, and must tubs be quite above the ground to constitute them tenants' property?—W. G.

15515.—**Book on Australian gardening.**—Will any reader tell me which is the most reliable book upon kitchen garden produce, including vegetables of all kinds, fruit trees, and fruit bushes, and other things grown in a kitchen garden, suitable for New South Wales, Australia, as I am thinking of going there very shortly?—T. H.

15516.—**Straggling Hollies.**—I have several variegated Hollies in my garden which have been allowed to grow rather straggling, the lower parts of the tree being bare of branches. What is best to be done to improve the trees, and can anything be done to cause them to throw out branches lower down?—CABOON.

15517.—**Artillery plant in living room.**—How may I preserve my "Artillery" plant (Pilea) till next season? Is it advisable to cut it down, as it is now shedding its foliage, and seems to be withering? I have watered it very sparingly (about twice) during the last eight or ten weeks, and kept it in the living room, as I have no greenhouse or frame. I shall be glad if some reader will inform me.—AMATEUR.

15518.—**Culture of Blackberries.**—Now that the Blackberry is brought forward more prominently as a cultivable fruit, and must have been adopted by many amateurs like myself, I should like to ask through your journal if some competent fruit grower will kindly give full cultural direction as to aspect, soil, training, and pruning, so as to ensure the best possible results for the labour devoted therefor, for which I shall be deeply obliged.—J. T., *Stockport.*

15519.—**Upright tubular boilers.**—I have an upright tubular boiler to heat about 80 feet of 4-inch pipe (hot water system) in my greenhouse. Is this kind of boiler, which is very like Week's Patent, a wasteful one, and is it a very powerful kind? Or would a "Saddle," or a horizontal tubular boiler be more economical, powerful, and useful to an amateur? Perhaps some of your experienced correspondents will give me their advice. I burn anthracite coal.—CLIFTON.

15520.—**Defective boiler.**—Could any practical reader say why the water should cease to circulate properly in greenhouse pipes under apparently the same conditions? The boiler, heating about 300 feet, has done its work efficiently for three years; but now, unless on the boil, the water in the return pipes is almost, if not quite, cold, and never hot all the way back. Tried by the spirit level, the pipes are laid right. If the boiler is on full swing pumping goes on in the pipes, and water and air are ejected from the escape pipe. The pipes do not leak.—B.

15521.—**Damp greenhouse.**—I have a lean-to greenhouse, 15 feet by 8 feet, against a due south wall, not shaded by anything. The wall inside the greenhouse is quite covered with mouldy patches, although only Pelargonium cuttings are kept on the back shelves, so that there is very little watering. Can anyone kindly tell me the cause, and also the remedy for it?—BA-BA. *** *The mould is caused by excessive dampness in the wall. A mixture of sulphur and lime will remove the mould; but you should endeavour to remove the cause, otherwise you will again suffer from the same trouble.*—ED.

15522.—**Tennis court near garden.—Trespassing.**—My neighbour has let a portion of his farm for a tennis court; my walls are two sides of this tennis court. The obvious consequence will be that the balls will be constantly coming into my garden—in which, by the way, I have about fifty Pear, Apple, and Plum trees, besides bush fruits. If balls come over my walls—hardly 5 feet high—the players will probably come after them, being, of course, trespassers, and so promoting litigation. The privacy of my garden will be completely spoilt, and fruit stealers, always numerous near large towns, will be attracted as well as trespassers. Can any of your readers tell me whether I can put a stop to this nuisance, which is, in fact, a breach of the reasonable idea that no man should use his property to the annoyance of his neighbour?—AN OLD GARDENER.

15523.—**An amateur's gardening difficulties.**—Will any reader tell me what I can grow besides Wallflowers, Sweet Williams, common Tiger Lilies, Daffodils, &c., in place of annuals in a cold, exposed garden? I cannot grow annuals in my borders. It is not because the seed is bad, or the soil poor; for years have I worked, but have failed to flower annuals until the end of summer, and then they were very poor, miserable flowers. The reason, I believe, is simply that my garden lies low and exposed; the soil, dark but friable, contains a quantity of water—2 feet down, in places, you come to the water. In a late spring things will not move until June. If I sow annuals early most of the seed germs are killed with late frosts, and those I save by covering only struggle to exist; then comes upon them, all at once, the hot sun in June and July, and burns up what little root they have made. Those that can linger on until the end of August and September may flower a little, but they are hardly worthy the name of flowers. Should early frost come then all is cut down. The ground lies open to all the cold winds. I shall be glad of any assistance to make the borders look a little more lively with little expense.—AMATEUR.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15524.—**Scale on Pear trees.**—Use paraffin or Fir tree oil; wash well with a brush.

15525.—**The "Vegetable Garden"** *(T. W., Derbyshire).*—The price of this book is 15s.

15526.—**Sowing old seeds of vegetables** *(W. W. Wilkinson).*—We should advise you to get new seed.

15527.—**Cutting back Holly** *(J. F.).*—April is the best time to do this.

15528.—**Jersey Shallots** *(True Blue).*—Any seedsman will supply them.

15529.—**Pruning vines** *(H. Worley).*—You probably mean pruning vines; if so, this season will do very well.

15530.—**Life of rootless Ivy** *(R. D. Owens).*—We do not think it will live long; but you must wait and see.

15531.—**Moving Passion-flower.**—The best time to move your Passion-flower from the greenhouse to a position out-of-doors would be April.

15532.—**Repotting Fuchsias** *(J. F.).*—Yes; as you have not already seen to this you can repot them in spring.

15533.—**Treatment of Cissus antarcticus** *(J. F.).*—Repot in spring, and treat as ordinary greenhouse plants. Tie the shoots loosely as they are produced.

15534.—**Best patent manures** *(W. W., Liverpool).*—We cannot recommend any particular patent manures, and therefore we do not insert your query.

15535.—**Hydrangeas after flowering** *(Caboon).*—In spring cut out the old wood so as to thin the bushes; give a mulching now so as to protect the roots from cold.

15536.—**Orange tree** *(H. Worley).*—Yes; you can "do some good" with an Orange tree, if you give it fair treatment in a greenhouse.

15537.—**Obtaining Giant Cow Parsnip** *(H. Andrews).*—You can obtain Heracleum giganteum from any large hardy plant nursery.

15538.—**Coleus losing leaves** *(H. Worley).*—Your Coleus is probably suffering from cold. They go back in winter, unless they are grown in strong heat, and they enjoy a rest like other things.

15539.—**Hyacinths in glasses** *(T. W. R.).*—If the bulbs are still sound, and the crown has not begun to swell, you may expect soon to see roots developed. Until roots are produced keep the glasses in a dark place.

15540.—**Garden reference books** *(R. M. T.).*—The book most suitable for your purpose is Baines's "Greenhouse and Stove Plants," which treats fully of their culture.

15541.—**Propagating White Clematis** *(Eastwood).*—Yes; we shall be happy to assist you by answering any gardening questions that you send; but, in the present instance, we cannot help you because you do not tell us what Clematis you wish to propagate. Write to us again.

15542.—**Obtaining Michaelmas Daisies** *(Constant Reader).*—All the flowers mentioned by Mr. W. C. Leach on page 537 can be obtained at or through any good nursery. You should have no difficulty whatever. You will see that the question was answered on page 573 (December 12th).

15543.—**Stocking small conservatory** *(A. E. P.).*—As your conservatory is not heated at all we should advise you to wait a little while. There are scarcely any plants that you could put in at present, as you have no means of excluding frost. The only ones that would be satisfactory are Christmas Roses in pots.

15544.—**Vallota purpurea.**—*P. P. B.* wants to know why the Scarborough Lily, which has a red flower, is called Vallota purpurea. Like many other names this is a misnomer. Sometimes plants are named when first introduced, from the appearance of dried flowers. Red flowers would then appear purple; and perhaps this will explain the incorrect description.

15545.—**Cordon Apple trees** *(G. P.).*—Seedling Apple trees would not be worth training as cordons, for the simple reason that there is no certainty as to what they would turn out. Cordon trees on the true French Paradise occur in thousands in every French nursery, and are sold very cheaply; they ought to be got easily from any English fruit-growing nursery, but there is certainly no difficulty in getting them from the Continent.

15546.—**Classification of plants** *(B. F. Bewley).*—The Linnæan system of botany is not usually followed now; the classification is based upon what is called the natural system. We fear your suggestion cannot be carried out.

15547.—**A gardener's grievance.—Unfruitful vines** *(G. W.).*—Your letter is too long for insertion. The vines which prove so unsatisfactory are in a wrong position to begin with, and we should say the failure is due to unripened wood. The unfruitfulness could not be remedied by root pruning, or anything else of that sort, and it is, in fact, impossible to grow good Grapes in a shaded position. Judging from your description of the circumstances, and from your letter, as a whole, we should certainly not attribute the failure to want of knowledge of Grape growing on your part.

15548.—**The French Paradise stock** *(T. H. Bush)*—The Paradise is a stock that has been used by French nurserymen for ages; it is well known, and is raised by millions in France. It has a peculiar effect in dwarfing, and in causing to become fertile early, Apple trees grafted upon it. None but known and approved kinds are grafted on it, and you can easily obtain from French nurseries good Apples on this stock. For the benefit of various readers who have been interested in the article on cordon fruit trees we will shortly publish fuller information on this subject.

15549.—**Treatment of Hoya carnosa** *(T. A. Purcell).*—The plant is Hoya carnosa, the Wax flower. It will thrive in a warm greenhouse, and may be used for draping a pillow or rafter, or trained on a wire trellis. The soil should consist of about equal parts of good turfy loam and peat pulled to pieces with the hand, and the fine, light particles should be shaken from it, so that only the turf remains; to this should be added about a sixth part of sand and the same quantity of broken charcoal. Pot firmly, and in the growing season give a liberal supply of moisture; but do not allow stagnant water to remain about the roots.

TO CORRESPONDENTS.

Mrs. Morris, Bray.—The cutting from GARDENING that you enclose is not an advertisement, but a query, and we should be unable to forward your letter, even if you had enclosed a stamp for the purpose.—*H. O. W. and J. B. M.*—Try Barr and Sone, King-street, Covent-garden.——*A Constant Reader.*—Try Cannell, of Swanley.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*D. E. H.*—1, Ophiopogon Jaburan aureo-variegatum; 2, Nephrodium molle; 4, Selaginella Krausiana; others not fit specimens for naming.—*B. L.*—Libonia floribunda.——*T. Harding.*—Hedychium Gardnerianum.——*Carlos.*—1, Pteris serrulata; 2, Variety of Begonia Rex; 3, Diplacus glutinosus; 4, Shark's-tooth Cactus.

NAMES OF FRUIT.

Naming Fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*Geo. Mansfield.*—Beurré Clairgeau.

Catalogues received.—*General Catalogue.* Chr Lorenz, Erfurt, Germany.——*Flower, Vegetable, and Agricultural Seeds, &c.* Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, N.

Books received.—*The Vegetable Garden.* By MM. Vilmorin-Andrieux. (English Edition.) London: John Murray, Albemarle-street.——*The Praise of Gardens.* By Alfred F. Sieveking, with Proem by E. V B. London: Elliot Stock, 62, Paternoster-row.

15414.—Obtaining Calvary Clover.—I cannot tell "J. C. T." where to obtain seeds of this plant; but I notice his question to say that I think it a pity that seeds of such interesting plants are not more readily obtainable, and this one in particular, for I cannot imagine anything more interesting amongst curious plants than the prickly round seed balls of this Clover, which, if begun in the right way, unwind so mechanically that no one can fail to be interested in them. A few years ago I received seeds from a friend. "J. C. T." may get them in the same way; but I see no chance of his getting them from a seedsman.—J. C. C.

—— If "J. C. T." will forward me his address I will send him a few seeds of this Clover.—J. BUTLER, *Porter's Lodge, Newland, Great Malvern.*

—— H. S. Scott, Park-street Schoolhouse, St. Albans, and Sister Monica, St. Peter's Home, Kilburn, London, will also supply seeds of this.

HOUSE & WINDOW GARDENING.

SOLANUM CAPSICASTRUM.

The gardening amateur without a greenhouse now naturally turns his attention to indoor subjects. Where, for the purpose of room decoration, a bit of bright colour is needed, nothing better can be employed than a few specimens of this unique-berried Solanum, so distinct in character from all other indoor plants. Indeed, no apartment need lack a cheerful appearance at the present leafless season, when well-grown plants are to be had cheaply of such excellent subjects as the hardy Palms, the Aspidistras, such as A. elatior, and the familiar Parlour Palm, A. lurida, together with the green Dracæna—D. viridis australis. Introduced amongst such as these the exquisite colours of the berries of this Solanum, ranging from pale yellow to intense orange crimson, afford a pleasing variety. S. Capsicastrum is also one of the best of table plants, and highly useful for many purposes at the present festive season. Any light position, and an occasional syringing of the leaves, and the application of a little tepid water at the roots, to be regulated by the heat of the room, say once in a week or ten days, will maintain it in health during the winter. Though not a smoke-enduring subject, well-established specimens suffer no injury whatever as room plants in suburban air, where under the above simple treatment its fresh appearance can be assured till the end of the season; though the after treatment of old plants can only result successfully in open situations, where, for instance, Roses bloom fairly well.

Treatment of old Plants.—When the berries become shrivelled a few should be removed with a portion of the wood and ripened in a warm window. About the third week of February the plants should be pruned back, and at the end of May planted out in open ground in good loam, with a little old manure if at hand, choosing a sunny situation. During hot weather they require regular waterings, both at the roots and overhead, to keep down insects. Manure water occasionally during active growth will help the plants to mature a fresh crop of Berries. If grown in pots care should be taken to prevent the soil from being entered by worms; therefore, cinder ashes should be freely used upon the ground while the plants remain.

Seeds should be treated as those of half-hardy annuals, and may be raised in April in a frame, but a little bottom heat will bring the seedlings on rapidly, care being taken to protect them from late frosts by a nightly covering of mats, &c. A soil of equal parts of nursery loam and leaf-mould, with a little sand, should be used. Air on fine days should be given, and the plants kept near to the glass. When about 3 inches high pot off into sixties. They require an occasional shortening to induce bushy growth, and the same treatment as that recommended for the old plants should be followed. If at hand, bottom-heat may be employed about the middle of January, to raise a stock from cuttings, which should not be woody. Plants may also be raised entirely from seed in a warm window. We once collected a few seeds from the old plants, and sent them into the country. These were so treated, and produced several good plants—a fact, perhaps, worth the notice of the window gardener. Dropping of the berries should be guarded against. This may result from two causes—a check after potting up in September, or allowing the plants to make fresh growth at such a stage. Therefore, when taken from their outdoor quarters to ripen, in the case of being potted up from the open ground, they should be well shaded and watered until established in the pots; and in no case after the berries are fit to be ripened (in a warm window or greenhouse during the above month) should the plants make any top growth, and any tendency thereto should be checked by an occasional nipping out where necessary. In conclusion, these are in every way suited to the amateur, and deserve a wider cultivation than they at present enjoy.

Stamford Hill.

15430.—**Smoky heating apparatus.**—There is no means of consuming smoke from any heating apparatus. Before altering the chimney, try some smokeless kind of fuel, such as coke or anthracite coal, if you can obtain it, and I think this will obviate the difficulty, as there will be no smoke, except from the wood when the fire is first started.—K., *Southend.*

INDOOR PLANTS.

FAVOURITE FLOWERS AND HOW TO GROW THEM.—II.

The Pelargonium.

This is one of the most valuable greenhouse plants that we at present possess, especially for those who cannot afford more than one greenhouse. In fact, no garden should be without a selection of the best Pelargoniums; indeed, I may venture to say that no garden of any pretentions is without them. At present we possess a selection of most beautiful varieties, obtained by years of patient care and judicious selection. Those who remember the show Pelargonium, or, perhaps, to be more correct, if we follow the arrangements made by the now defunct Pelargonium Society, "The large-flowered Pelargonium, show section," of forty years ago, know what a vast improvement has taken place in those forty years. At that time many of the best horticulturists vied with each other to produce improved forms from seed. Nine notable names were—Foster, Lyne, Hoyle, Beck, Garth, Gaine, Catleugh, Topping, and Thurtell. During a period of fifteen years, commencing with the passing of the first Reform Bill in 1832, these and other growers had made such great and rapid improvement that the late Dr. Lindley, writing in 1849, says:—"If anyone compares the Pelargonium flowers that were known in 1827 with those common in 1847, he will find it difficult to believe that they can all have had the same origin, and that twenty years have sufficed to produce such a change as has really been effected. But if the varieties produced between 1842 and 1847 are examined, the ground of surprise will be changed, and the wonder will be that the improvement which was so rapid in the first fifteen years should have become so slow in the last five. Yet the reason is obvious. Hybridising in the direction followed by the raisers of Pelargoniums has reached its limit—we have obtained all the result that is obtainable. Therefore, we say—Gentlemen, you should now sail on another tack. Put your ship about; it is of no use to cruise any longer in these seas. You have done all that men can do in this quarter, and, if you are wise, you will steer in another direction." The learned doctor was not only a good botanist, but an ardent horticulturist, anxious to see progress in every department of gardening; but who shall say he was not mistaken when he gave such council as the above? None of the gentlemen named followed the advice so freely tendered; they kept on in the even tenor of their way, and proved by ocular demonstration that they had not obtained all the results that were obtainable. It is easy enough to give theoretical advice of this kind, but no one cares to follow it, although if crosses can be effected between different species they would at least be interesting. I have tried to hybridise the Cape Pelargoniums with the improved garden varieties, but so far without any good results; nor do I hear of anyone who has tried being successful. On the other hand, all the sections of the Pelargonium have been greatly enriched with new varieties during the last few years. The decorative section of the large-flowered type has been especially favoured with good varieties, the flowers well formed, rich in colour, and produced in the greatest profusion, forming heads of bloom most admirable, while they grow with greater vigour than the show type, and are, for that reason, better adapted for the greenhouses and gardens of those who have not had much experience in gardening matters.

For all practical garden purposes the two types alluded to above require the same treatment, which it is easy enough to sum up in a few words. The flowering period is over in July, and after that month the plants may gradually be dried off. They may be cut over in August, when the soil in the pots is quite dry; if the soil is moist the cut portions of the stem will bleed; they will also bleed if water is applied before the wounds heal over. It is better, therefore, not to give any water for four or five days. In two or three days after water has been applied to the roots the buds will be starting freely. In four weeks after the plants have been cut over it will be time to shake them out and repot them. Referring to a specimen plant in an 8-inch pot, the ball of roots ought to be reduced to such an extent that the plant can be potted in a 6-inch pot. By the end of October they will have well-filled the pots with roots, and at that time they must be potted into 8-inch, in which they will flower. It is astonishing what very large specimens can be grown in pots of this size. I have seen one specimen, 18 feet in circumference, splendidly in flower, and in perfect health, and not a root had been permitted to grow outside the pot. The potting soil had been prepared with great care, and the after management of the plant was in the hands of a skilful cultivator. This case is merely given as an illustration of what can be done under the most favourable conditions. Most of the readers of Gardening may exclaim: "What has the culture of such leviathans to do with us? We want plain and easy directions as to how we are to grow neat little plants for our small greenhouses." Well, then, obtain good yellow turfy loam, or, failing that, as good garden soil as possible; add to it a fourth part of decayed stable manure, as much leaf-mould, and a portion of rough silver sand. If leaf-mould cannot be obtained, light fibrous peat may be used—it helps greatly to keep the compost open; indeed, if neither plant nor leaf-mould could be obtained, I would use Cocoanut-fibre, as no success can be obtained unless the compost is open, to admit of the roots running freely; the fourth part of well-decayed manure is necessary to maintain the vigour of the plants up to the end of the flowering period.

During the winter months the plants must be placed as close as possible to the roof glass, and must be very carefully watered. Do not water any plant until it is really dry, and then give sufficient to thoroughly water the roots; the water should drain through the hole in the bottom of the pots; unless this is the case one cannot be sure the water has moistened every part. It is an error to allow the compost to become so dry that the ball of roots shrink from the sides of the pots. It is quite unnecessary to use larger pots than those 5 inches or 6 inches in diameter for decorative purposes. The plants should be potted into these in October, and will form large heads of bloom for the following season, to flower beautifully in May, June, and the early part of July. Arrangements for early and late flowering must be made when the plants go out of bloom the previous year. The plants flowered out in May should be rested by being allowed to become dry at the roots. Cut them over speedily, and allow them to grow on freely without being stopped. If the growths are stopped it would make a difference of ten days or more in the time of flowering. The latest plants, flowering in July, would not be cut down until the middle or end of August. Besides the above there is also the small-flowered type, or fancies, requiring the same treatment as the above, except that this section should be potted in a lighter, more sandy soil, and be placed in the warmest end of the house during winter, in order that the minimum temperature may be about 5 degs. higher. These fancies are not now so much grown as they once were, or as they deserve to be. The flowers are not only very pretty in themselves, but are also freely produced, and have a distinct and pleasant perfume.

The repotting of all the early-flowering plants should be done in October. Those that are to flower late may not be repotted until early in February. The winter management of the plants is of much greater importance than even skilled gardeners are prepared to admit. The plants ought to be placed near the glass, where they get all the light possible, and they should also have plenty of ventilation in fine weather, taking great care that they are not exposed to high winds, or frost winds of any kind. They must not be allowed to suffer for want of water; but if they are kept anything like moist, without at any time becoming dry, the shoots become pale green or yellowish, as also do the leaves. Well-cultivated plants do not make much growth in winter, while the leaves and shoots ought to retain the same colour as they do in the summer. This they will do if judiciously watered, and given plenty of light, with sufficient ventilation. The rest of the sections of the Pelargonium, including the zonals, must be treated of in a separate chapter.

J. Douglas.

WAX PLANTS AND THEIR CULTURE.

Many of the Hoyas, of which there are about a score in cultivation, have, strangely enough, for years been rather overlooked, although such species as the common H. carnosa, or the peculiar buff-coloured H. lasiantha, or even the old H. cinnamomifolia are certainly some of the loveliest of stove climbers. Amongst the most attractive kinds the Bornean H. imperialis certainly stands foremost. It is the largest and one of the most distinct. The peculiar deep purple-brown colour of the inside of the flowers, enlivened by the waxy white projecting staminal crown in the centre, produces a striking and singular effect. The flowers, which are 3 inches across, are stout in texture, thick, and smooth; they are produced on long pendent trusses, each consisting of about ten flowers. The leaves, as in the generality of the Hoyas, are fleshy, and set off the flowers to advantage. H. stenophylla is one of the smallest of the genus. It is quite a miniature, and altogether different from other kinds. It requires to be grown in a basket, because its numerous stems, about from 15 inches to 20 inches in length, are straight and pendulous, thin and flexible, and furnished with a few short aërial, nearly dry, roots. The leaves, which are numerous and alternate, are set from half an inch to an inch apart, and the trusses bear from twelve to fifteen tiny little flowers, which are greyish white, waxy, and downy, the central column being delicate and bright. It is an uncommonly pretty Hoya, which may be employed with advantage for filling up the often unoccupied spaces overhead in our stoves. It flowers in September and October. H. australis is a most vigorous and attractive climber, the leaves of which are glabrous, rounded, thick, and deep green with lighter nerves, being thus somewhat similar to those of the Stephanotis floribunda. The young foliage is tender and purplish. The pendulous clusters consist of fifteen to eighteen flowers set on long peduncles. In each flower the five waxy white divisions are star-like, and the base of each of them is adorned close to the central column with a small violet-purple blotch, which produces on the white ground a very striking effect. It is a free-growing climber, and well adapted for covering bare rafters.

The Imperial Wax Flower (Hoya imperialis); reduced.

H. bella may, perhaps, be described as the most lovely of all the Hoyas, resembling more than anything else a delicate piece of jewellery. It is epiphytal in growth, and should be treated like some of the Æschynanthuses and grown in a basket. Its branches are copiously covered with small, thick, ovate, deep green leaves, possessing some resemblance to those of a large-leaved Myrtle. They droop gracefully, and each bears an umbel of small, nearly white, flowers, with a violet-purple centre like an amethyst set in frosted silver. It was introduced from Moulmein many years ago, and is still one of the best of the family. H. Paxtoni seems to be only a variety of H. bella. H. campanulata is quite distinct from any species in cultivation; it has thin leaves and branches, and the corolla, instead of being reflexed, as in most species, is quite bell-shaped (whence the name); the flowers are of a delicate cream colour, and produced in umbels, each of which is composed of from ten to fourteen flowers. Hoya carnosa is too well known to need description, it being as popular as the Stephanotis. It is a valuable plant for placing in corners where nothing else will grow, or for covering bare walls, rafters, &c. Hoya Cumingiana is stiff and erect in habit, and forms a bush; its distinctness is its chief recommendation. All Hoyas are of easy culture, and although some require stove heat, it is now perfectly understood that nearly all of them succeed well in an intermediate house where the minimum temperature does not fall in winter below 45 degs. Great care should, however, be taken to prevent an excess of moisture at the roots, which is always injurious to Hoyas

J. S.

Forcing Lily of the Valley.—Few flowers are more generally appreciated than the Lily of the Valley, but with very few do more failures occur. In the first place, it is useless expecting good flowers from weak crowns; but with good, plump crowns there must be something wrong in the treatment if they do not produce good spikes of bloom. That this failure is frequently the case, even in gardens where most flowers are grown to perfection, is too well known to admit of argument. Now, I have tried all sorts of plans, but the following has proved the best for getting every crown to start regularly and well. As soon as we receive the crowns, or clumps of crowns, in autumn, they are potted, or buried in the soil until required for use, and the pots are set in any convenient position out-of-doors, and covered with coal ashes, as these keep them safe from extremes of all kinds, and they root freely. When they are nicely rooted we set the pots in boxes, about 1 foot deep, and cover them over with Cocoa-fibre or ashes, and set them in any position where they can get a gentle bottom heat, but very little top heat. Where there is a regular heating apparatus the boxes can be set on the brickwork, which is constantly warm. Give the roots a good soaking of water, and in about three weeks the flower spikes will push up an inch or more in length, when they may be removed to any warm house or pit with the certainty of every crown bringing a fine spike of bloom. If they are introduced direct to the forcing house, they will frequently start very irregularly, or not at all. I have had pots of the finest crowns that refused to start for months—in fact, the first put into heat have been the latest to bloom; but since adopting the bottom-heat plan we have had no failures. Of course, late in spring they start naturally without any special attention.—J. Groom, *Gosport*.

Rose-leaved Bramble.—Rubus rosæfolius coronarius is a desirable winter-flowering plant, but seems to be grown in only limited numbers. Its cultivation would, however, be greatly extended were it better known, as in the shape of small bushes studded with miniature double Rose-like pure white blossoms, it is at once singled out as a plant of especial merit. This differs from the generality of Brambles, inasmuch as it forms a small upright bush, or rather clump, owing to the profusion in which suckers are produced. The stems are thickly studded with spines, and clothed with pale green Rose-like foliage, while the flowers are borne in great profusion. It is nearly, if not quite, hardy in this country, but as it blooms at this season it is, of course, seen to greatest advantage when grown under glass; indeed, a temperature above that of an ordinary greenhouse is most conducive to its full development. During summer it can be grown out-of-doors (either planted out or confined to pots), the principal thing to guard against then being red spider, to which it is liable. It is readily increased either by means of rooted suckers, or, where required in quantity, by cuttings made of the roots.—T.

The Siberian Squill at Christmas.—It does not seem to be generally known that the beautiful little Scilla sibirica can be had in full bloom by Christmas as readily as the Duc Van Thol Tulip, and under much the same treatment. Here it is greatly valued for early forcing, as it supplies a colour but little represented, the brilliant blue of its blossoms associating well with the scarlet flowers of the Tulip and the pure white bells of the Lily of the Valley. If removed from the forcing house as soon as the flowers open and placed in a greenhouse temperature, this Squill will remain a long time in flower, provided the atmosphere is not too moist. In button-hole bouquets its spikes of blue bells are much appreciated. Bulbs of this Scilla are received from Holland along with our annual consignments of Dutch bulbs. They are potted pretty thickly together in 6-inch pots, the soil used being of a rich loamy character. After potting they are set on a sheltered spot, given a thorough watering, and then covered with coal ashes, in which condition they remain till the roots get into active operation. About the middle of November the first batch is removed into the forcing house, in which flowers are quickly developed. In common with most bulbs forced early into bloom, this Scilla often fails to push up its flower-spikes sufficiently for the lower blossoms to show themselves. Should such a thing appear likely to happen, invert a pot over them for a few days, thus keeping them in darkness, or nearly so, and under this treatment the flower-stems will become sufficiently elongated. When done blooming we place them in a frame and protect them from frost, which, owing to the forcing to which they have been subjected, would greatly injure them. This practice is carried out in the case of all forced bulbs, which come in useful for permanent planting in borders, on the Grass, or in the many suitable spots that can be found for them.—H. P.

THE SWEET LUCULIA (L. GRATISSIMA.)

In this fine evergreen shrub we have vigorous growth, a remarkably free habit of flowering, delicious fragrance, and a disposition to bloom through the autumn—a combination of good properties surpassed by few plants in cultivation. Considering the length of the time during which it has been known in this country—over half a century—it seems strange that it is not more generally met with than it is, and this can only be accounted for by the fact that it does better with a little more warmth than that of a greenhouse, and yet cannot bear so high a range of temperature as most of the occupants of the stove, where, if kept, growth is so much over-excited that it appears never to have time to flower, or if it does the bloom is of a meagre description. With sufficient room this plant attains a considerable size, reaching where desired a height of 14 feet or 16 feet when trained so as to occupy the end or back wall of the house in which it is located. For this purpose few plants are more suitable, and in such positions its clusters of pinkish-white flowers are most effective. It is equally suitable for training round a pillar, or it can be grown in a pot or tub, trained bush fashion, for which its natural habit adapts it. But although, from its free disposition to flower, it will bloom in a small state, to have it in a condition such as to exhibit its full beauty when grown as a bush, it should not be stinted for root-room, nor should the head be too much cut in.

It is propagated by cuttings of the young shoots, which should be put in early in spring—say in the beginning of March, for with this, as with most things of like character, it is of importance to start sufficiently early to admit of the plants attaining size and strength before autumn. There is one thing connected with this Luculia that it is necessary to impress on the cultivator—that is, the cuttings must never be allowed to flag, for if they do they rarely afterwards succeed. Insert them singly in small pots, drained, and half filled with a mixture of sandy loam and peat, the upper portion sand. Keep them moist, cover with a bell-glass, and let them have a night temperature of from 60 degs. to 65 degs. They take longer to strike than many plants. When rooted, gradually admit air until the propagating glass can be dispensed with altogether, when the young plants should be placed where they will receive plenty of light. As soon as growth commences pinch out the points so as to induce the formation of several shoots near the base. When the pots are fairly filled with roots shift at once into others 4 inches larger, using a mixture of two-thirds loam to one-third peat. A liberal sprinkling of sand is indispensable, as, being of fairly free growth, the plant requires a plentiful application of water during the growing season. A night temperature of 60 degs. through the summer will be sufficient, with a rise in the day proportionate to the state of the weather, for, being a native of the high, comparatively cool, yet humid, country of Nepaul, it will do better in such a temperature than if warmer. A little shade in the middle of the day during very bright weather will be an advantage. Syringe freely in the afternoons. So managed the young plants will make satisfactory progress.

Treat as already advised until the middle of September; then dispense with the shading, and give more air, but keep on syringing for another month, after which it may be discontinued. A night temperature through the winter of from 46 degs. to 50 degs. will suit the plants, which should be kept drier at the roots, but on no account should moisture be withheld even at this season to the extent that some things would bear, for it must always be borne in mind that the moisture-loving nature of these hill-region plants does not in any way change under cultivation, and if ever kept too dry they get into a languid state, and are made susceptible to the attacks of red spider and other insect pests, which appear to prefer preying upon plant life when under conditions that reduce its vital force. By the middle of March they may have a 3 inch or 4 inch shift, now using the soil in a more lumpy state, if possible containing more fibrous matter. Pot firmly by ramming the new material well in, which, with most plants, has the effect of inducing a more bushy habit of growth, with shorter-jointed wood, more disposed for an even production of flowers than the few gross, over-luxuriant shoots generally resulting from light potting. Pinch out the points of any shoots that are taking an undue lead, train the strongest growths out to sticks inserted just within the rims of the pots, and leave the weaker ones in a more erect position, by which means they will acquire strength to an extent that will more evenly balance the plants. All now required through the summer is to treat as recommended the previous season, giving them liberal applications of water at the roots and syringing freely. By the beginning of September the plants will push up strongly, and when in bloom they can be removed to a conservatory kept at a temperature in accordance with their requirements. When the flowering is over they may be moderately shortened back and kept on through the winter as before, giving them a liberal shift in the spring, and, to still further promote growth, supply them with manure-water during the summer. They will this season make fine decorative objects when in bloom, after which treat as previously, giving more root-room as required.

Where intended for planting out, a moderate extent of border must be prepared, sufficiently drained by means of a layer of 2 inches or 3 inches of broken bricks, pebbles, or anything of a similar character. The plants should be turned out in the spring just before growth commences; if delayed until later on, some check to the young shoots will follow the necessary disturbance of the roots, which, if coiled to any extent round the ball, should be loosened so as to be directed into the new soil; make this moderately firm, otherwise the water will pass through and leave the ball dry, a condition essentially opposed to free growth. When preparing the soil, if, in addition to sand, a sprinkling of broken sandstone or potsherds is added to it, it will benefit the plants, as we have always noticed that the material in inside borders is more disposed to get into a sour, unhealthy state than when it is fully exposed to the open air. The plants should be spread out to cover the wall or end of the house, as the case may be, so as to furnish the whole properly from the first, as where attention is not paid to this matter the growth is naturally directed upwards, leaving the lower space deficient, a condition which it is afterwards difficult to remedy. Where a pillar has to be clothed it will be well, instead of stopping the plants, so as to induce their branching out more than requisite, to allow one or two of the strongest shoots to take the lead so as to attain the required height, merely pinching the points at intervals that will cause them to sufficiently furnish the space as they progress.

Insects.—The less injurious kinds of insects will in a great measure be kept down by the syringing advised. If affected with scale or bugs, syringe and sponge with insecticide. T. B.

Plant houses in winter.—When the trees are leafless, and the outdoor garden has but few attractions, we turn to our glasshouses with renewed zest, and it is surprising how much may be done to make a cheerful and interesting effect, even when there is but little in the way of bloom, for even with foliage alone I have frequently seen houses, filled with Geraniums and other bedding plants, that, with a tasteful arrangement of the different kinds of variegation, and with such plants as Echeverias for edging the stages, have looked most interesting, while another house with equally good plants, but all jumbled together, without any attempt at arrangement, has been most depressing to look at. Then there is the ordinary mixture of greenhouse plants that are frequently arranged on a dead level, when, by elevating some of the best-shaped specimens on inverted flower-pots, a far better effect will be produced. In houses where fire-heat is constantly employed there is no lack of flowers to bloom at this time of year, and never do the brilliant colours of zonal Pelargoniums show to such good effect as in the dark days of winter, while Primulas, Roman Hyacinths, and Begonias make up a charming display, with a little tasteful arrangement of the foliage plants that luxuriate in an intermediate house. In each and all the most scrupulous cleanliness should be observed, the glass should be kept clean and bright, so as to utilise every ray of light, the floors scrubbed clean, and inside borders neatly raked, for it is upon attention to little things that the effect of a garden depends. It is by no means the largest garden that is the most interesting, but the one in which the best use is made of every item it contains. Plants speak for themselves of the fostering care that is lavished on them.—J. Groom, *Gosport*.

A useful Orchid.—I have a plant of Cypripedium insigne (Twin-flowered Lady's Slipper) in a 11-inch pot, with 23 flowers on; it has been in the same pot undisturbed for three or four years, but has not flowered so abundantly before. All through the summer it has stood in a small pit, near the glass (with Coleus, Ferns, &c.), that is heated with 2½-inch pipes only, and which has been shaded from bright sunshine. In September it was removed into a vinery, where it has stood ever since. For cut flowers I find this very useful—they last so long when cut, and then the fact that it comes in at this season of the year (December), when flowers are scarce, makes it all the more valuable—G. Harding, *Bolton*.

Coleuses in winter.—Although Coleuses are usually seen to greatest advantage in summer and autumn, they may be successfully employed as winter decorative plants where a brisk growing temperature can be given them. On dark winter days the beautiful colouring of their foliage is even more attractive than in summer, from the fact that there is then little that is brilliant to compete with it. Small plants are most serviceable where drawing-room and table decoration is carried out on a large scale, and, as plants used for these purposes get rather rough usage, it is best to employ, as far as possible, such as can be rapidly increased and grown on to a useful size. I put my cuttings of Coleuses in September and October in 2½-inch pots, and as soon as rooted set them on a shelf near the glass in a stove temperature. They soon acquire a serviceable size, and when seen under strong artificial light are even more effective than many plants of greater value. The varieties sent out during the last few years have been great improvements on those cultivated a dozen years ago, and their lovely foliage is always admired. Where, indeed, cut flowers are scarce, even the tops of old plants of Coleuses that have got too large for decoration may be utilised for filling the cut-flower basket, which at Christmastide usually taxes the resources of even the largest establishments.—Hants.

REPLIES.

15472.—**Treatment of Winter Cherry.**—Your Solanums ought to have berried well under the treatment described, that is, supposing they were properly attended to as regards watering, &c. If, however, the garden is situated in London, or any other smoky town, that would account for the failure, as these plants never set their berries in impure or town air. The beautiful heavily-fruited plants seen in the markets and shops are invariably grown in open country places—in fact, it is impossible to grow them thus anywhere else. With pure air, Solanums "set" abundance of berries with little or no trouble or care, either out-of-doors or inside.—B. C. R.

15365.—**Plants for hanging baskets.**—For a cool house, from which frost only is excluded, nothing can be better than Ivy-leaf Pelargoniums—they have a most elegant appearance, do not lose their foliage in winter, and do not resent so much as most flowering plants a little neglect in the way of watering. Both single and double kinds should be grown. There is also a variegated kind named L'Elégante, which has a most pleasing appearance, the variegation being distinct and constant. It flowers fully, and how easily it is managed may be seen from the fact that I had upwards of 200 trusses of bloom on a plant which has remained several years in a 6-inch pot without change of soil. I believe that Ivy-leaf Pelargoniums can be grown almost indefinitely without repotting, if given plenty of water and constant supplies of liquid manure when growing. Tuberous Begonias make good basket plants, but, of course, they die off in winter. The drooping habited varieties are most suitable, and they make a good show during three months of the year. Cereus flagelliformis is a capital basket plant, and will remain for years without change of soil, making good growth and flowering well if given a little liquid manure

when growing. The bright rose-coloured flowers of this Cactus are very effective, especially where a hundred or so are open at the same time. Othonna crassifolia is a neat habited succulent-leaved plant, loving strong sunshine and plenty of air, and producing its bright little yellow flowers through the winter; and the old Wandering Jew Saxifrage is still one of the prettiest of basket plants. If anything else is required there is Pelargonium, Rollisson's Unique, a most effective plant when well grown.—Byfleet.

15428.—**Carnation, Souvenir de la Malmaison.**—The ordinary type of Carnation, whether it is grown out-of-doors in pots or planted out in the open border, succeeds admirably in the English climate. Some few varieties must be excepted, and among them this popular variety. It is not a tree or perpetual-flowering variety, and is best propagated by layering in the month of July or August. In September the plants ought to be potted into large or small sixty-sized pots. Use light soil, with a little decayed manure added to it—not much; crude or undecayed manure injures the roots, causing disease. A good potting soil for this kind of Carnation is yellow loam three parts, one part light fibrous peat, one part leaf-mould, and a small portion of dried decayed manure. Stable manure is best, because lightest. The plants should be kept close to the glass during winter in a cool greenhouse. Early in March repot into 4-inch or 5-inch pots, to be repotted early in May into 6-inch and 7-inch; they will flower splendidly in these pots in July and August. By good management these plants may be repotted into 9-inch and 10-inch pots the following season, and will produce magnificent heads of bloom. This is one of the sweetest Carnations in cultivation, and is a general favourite. It can be easily grown when its culture is understood.—J. Douglas.

—— Although old plants of this fine Carnation will bloom fairly well, the blooms are never so fine as those furnished by young ones. The principal point is to get the layers rooted as early as possible, so that they will become well rooted by winter. The most satisfactory way of growing this Carnation is to keep it in pots, so that it can be protected at the blooming time, for the flowers, being so large and double, do not always open well in the open air, and in very hard winters the plants are apt to get injured. If grown in the open, the best position is at the foot of a warm wall, where the roots do not suffer from excess of moisture. As soon as the flowers fade, which is towards the end of July, the plants should be put in the open air in a sheltered situation for a week, and then the young shoots should be layered without loss of time. This cannot be done without laying the plants on their sides, as they attain a height of a foot or more before flowering. My method is to turn them out of the pots, first giving them a good watering, and bury the ball of roots so that the head of foliage lies level with the soil; then I take some good light sandy compost and spread it 3 inches thick under the shoots, the lower leaves of which are trimmed off, and a clean cut made half-through each one, about midway between the stem and tip of the shoot. Each shoot is then firmly pegged down so that it cannot shift. A good watering is given, and if attention is paid to moistening the soil in hot weather, by the middle or latter end of September every layer will have become well rooted, and should be carefully lifted and put into 2½-inch pots in fibrous loam, with a little leaf soil and a pinch of soot at the bottom to keep out worms. They are stood where they get the full sun and plenty of air, attending well to watering until the end of October, when they are placed in a cool frame. They remain there with plenty of air, and are not allowed to get too dry at the roots, until the end of March, when they are shifted into 6-inch pots, potting firmly, putting one good-sized crock for drainage, and a little of the roughest portion of the compost on that. Towards the latter end of May they may be put in the open air at the foot of a south wall, and will do fairly well there; but I find that they are happier in the shelter of a glass roof, for they seem to much dislike the cold, drying winds which are apt to prevail in spring. They must not, however, be coddled, but need abundance of air in fine weather. As soon as the pots get full of roots give plenty of water, and occasional doses of weak liquid manure will increase the size of the blooms.—J. Cornhill.

—— This beautiful variety of Carnation is by no means difficult to cultivate, and during last summer I saw some splendid plants growing in open borders, but sheltered by a hand-glass when in full bloom, to keep off heavy rains that spoil the large blooms by lodging in the centres and rotting them. The best plants I ever saw were grown in pans 15 inches in diameter and 6 inches deep, three plants being put into each. They were potted in September, being strong-rooted layers cut off from old plants put out in open garden border expressly for getting up "stock" by layering. They were treated as follows: The pans had about 1 inch of broken potsherds at the bottom, then rough soil, and then the compost, consisting of loam from an old pasture, cut about 6 inches thick with the turf, and staeked long enough to kill the grass; this was broken up by hand, but not sifted, and a little dry cow manure and silver sand added. After potting they were set on bricks in the open air and very carefully watered, and in November they were transferred to the front shelf of a cool orchard house to keep away from heavy rains. In spring they were transferred to cold frames, and during the summer, as they came into bloom, moved to the conservatory, and the blooms were more like large pink Roses than Carnations. If they are coddled up in too high a temperature, the growth gets weakly and the flower stalks drawn up long and spindly, and, above all, the blooms are nearly white. But kept in cool temperature, the leaves and flower stems are dwarf and sturdy, and the colour is of a rosy flesh colour, with the most exquisite perfume.—James Groom, *Gosport*.

15413.—**Striking Pelargonium cuttings.**—These, of all the zonal varieties, may be propagated in spring, summer, or autumn. We take them off below the third or fourth joint, trim them, let them dry for a few hours, and insert them in well-drained pots of loam and sand, with a little leaf-soil and Cocoa-nut fibre. If taken in February, they may be put in four or five in a large 60, and potted off subsequently; but if later we insert them singly in thumbs. Give one good watering, and place in a moderate warmth; the best place is on a rack or open stage over some hot-water pipes. After the first few days we water them rather freely, and in two or three weeks they will be well rooted. Pot off singly, or shift on as soon as possible. In summer or early autumn the pots may be stood out-of-doors on any hard bottom, either in or out of the sun, where they will strike readily. Show, fancy, and regal Pelargoniums should be put in in the same way, and placed on open stages or shelves in a close house at 60 degs. to 70 degs., lightly shaded in summer. These strike readily in spring (in moderate heat) or early autumn in the compost mentioned above, or in any rough loamy or gritty mixture. Above all, keep the cuttings clean.—B. C. R.

—— There are few popular flowers more easily propagated than these. The cuttings are usually put in when the plants are cut down in July. If a few only are wanted, it is best to plant one cutting in the centre of a small sixty-sized pot. Use good, sandy loam, and do not be too free with water at first. They will form roots freely on a shelf in the greenhouse; also in a light window in a dwelling-house. Any young shoots will do for cuttings; they should be cut under a leaf, and the two under leaves must be cut off close to the stem. The cuttings ought to be about 4 inches in length, and in planting them press the soil firmly round the base.—J. D. E.

15427.—**Cocoa-nut fibre for propagating.**—Almost anything will emit roots very readily in a bed of this material, especially on a gentle bottom heat; but as it contains no nourishment the roots dwindle very soon, and the young plant comes to a standstill. But a mixture of nearly equal parts of loam, fibre, and sharp sand (with a little leaf-mould, if this is available), forms about the best possible compost for striking cuttings in, the fibre keeping the soil thoroughly porous, which is one of the most important conditions of success. Cuttings of Chrysanthemums, Fuchsias, Coleus, Abutilons, and even Begonias, placed in pots filled with this mixture, and placed on a gentle heat or in a warm house, will hardly ever fail to strike quickly and certainly.—B. C. R.

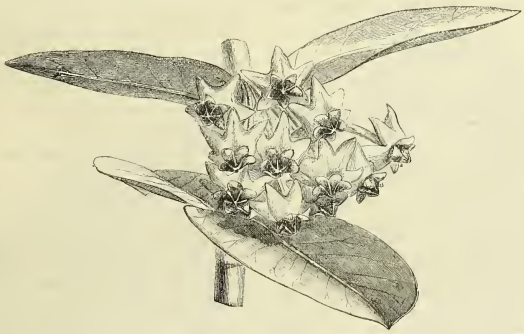
—— For all ordinary purposes this material is simply invaluable. I have used it for many years, cuttings of many shrubs, Roses, Fuchsias, Carnations, &c., rooting freely in it, and in quick time, compared with any other material that I have employed. Instead of layering Carnations in the month of July or August, I allow the plants to grow on and in every way mature themselves during the summer months; then in October the cuttings (or pipings) are taken off and inserted in a small propagating frame, heated by a hot-water tank, in a bed of Cocoa-nut fibre, mixed with about one-fourth of silver sand, the fibre used being well-decomposed and sweetened, having been used for plunging purposes previously. Under judicious treatment cuttings root almost as if by magic. Carnations taken from plants with the wood pretty firm (it must not be too succulent) will emit a handful of roots in about two or three weeks. I have potted good, strong, well-rooted plants after the cuttings have been in only about twenty days, the roots, with balls of the fibre attached, filling small, and sometimes large sixty-sized pots. In my opinion the fibre is a very valuable adjunct to the garden, as it can be employed for many purposes in garden manipulation.—George Fry, *Lewisham*.

15424.—**Climbers for cold greenhouse.**—The best of all plants for this purpose are Lapageria rosea and L. alba. Plant them out in deep beds of good fibrous peat.—J. D. E.

15425.—**Seedling Lilium auratum.**—They will produce flowers in from four years to six years of the time of sowing the seeds. Treat them the same as any other Lilies.—J. D. E.

15417.—**Pelargoniums.**—Presuming that zona Pelargoniums are referred to in "C. H. B.'s" query, the cause of the blooms going white at the edges is the impurity of the surrounding atmosphere. If this is very smoky, or if there are chemical works or railways in the vicinity, this discoloration is sure to occur. Does it take place in the summer?—B. C. R.

—— Want of sufficient air and too high a temperature.—J. D. E.



Hoya Cumingiana (natural size). (See article on Wax-plants, page 607.)

TREES AND SHRUBS.

DOUBLE-BLOSSOMED PLUM.

This is an excellent companion plant to the double-flowered Peaches, and both are admirably suited for amateurs and others who want early flowers and have not much time to devote to more tender plants. The double-flowered Plum is quite a hardy plant, and may either be grown in pots or be planted out in the open. I prefer the latter plan, and to have two sets of plants, so as to give them a rest one year and to force them the next. We raise our own plants from cuttings made of the tops of the young shoots in the spring; these are inserted in sandy soil, and then placed in a Cucumber or Melon frame where, in about three weeks, they make roots. They are then potted in single pots, one in each, and placed in the frame again. After a fortnight of this treatment they go to the greenhouse with the bedding plants, and get hardened off with them; a place is then prepared for them in the reserve border, by making the soil fairly rich and fine; the plants are then turned out of the pots and planted 18 inches apart each way, after which they get an occasional watering, if the weather should be dry. They do not make much growth the first summer, but they evidently are active at the roots, for the next spring they start into vigorous growth, sending up three or four strong shoots, which will flower the following spring, if they are allowed to do so; but, as larger plants are most effective, I find it best to let them make another season's growth before allowing them to flower. At the end of the second summer, therefore, I cut down all the growth to within 2 inches of the ground; when this is done the plant sends up eight or ten shoots in the place of four, as in the previous year, and fine bushy plants are the result. In the November following half of the plants are taken up and potted in as small pots as we can get them into without injuring the roots. I had better say here that it flowers on the wood made in the previous year, so that it is necessary to take care of the branches when potting them up. The remaining half of the plants left in the border is then cut down in readiness for the next year; after the plants have flowered the old branches are shortened back, and before they are again planted out they are carefully hardened off, and as soon as the press of work of bedding out is over they are planted out in the border again. We grow them specially for early forcing, as we want them in flower early in February; but they are as well suited for flowering in a cool house as for forcing. There are very few hardy plants which I have not forced for the sake of their flowers, but I never handled one that more readily responded to artificial heat than this. In a temperature of 55 degs. by night and 60 degs. by day it will expand its blossoms in about three weeks, reckoning from the beginning of the new year, and not many plants are more valued than this, as the flowers are in the form of rosettes and of the purest possible white, bearing a strong resemblance to miniature shells of the most delicate construction. J. C. C.

15476.—**Magnolia grandiflora as a bush.**—There is now growing in the grounds of Steephill Castle, Ventnor, Isle of Wight, a large Magnolia grandiflora, not a bush but a fine large tree, fully 15 or 20 feet in height, bearing every year hundreds of beautiful blooms, sometimes as many as fifty or sixty at one time. It is in a sheltered place, but not near a wall or building.—F. H.

15426.—**Scarlet Elder not fruiting.**—I may tell "Rothven" that I made a bon-fire with our plants of the scarlet-berried Elder several years ago, for even here, in the reputedly favourable climate of Somersetshire, I never saw more than three berries on one plant after having grown them for several years. It appears to me that they flower too early for all but the most favoured districts of England, for it is, I believe, the spring frost which prevents their fruiting.—J. C. C.

15465.—**Shrubs beneath trees.**—The Aucuba japonica, both male and female, will succeed in such a position as that described by "T.," but it must be remembered that the shade produced by Yews is very dense all the year round, and there will be more than ordinary difficulty in keeping shrubs presentable for any length of time. Rhododendron ponticum, a beautiful Evergreen, will probably live. Why not plant clumps of Ivy, which will make a very effective screen?—and Ferns and Mosses would be useful.—E. T.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXXI.

(By Annie M. Griggs, Edinburgh School of Cookery).

Beet-root.

This root is very largely grown, and serves as food for man and cattle. It is also greatly utilised in the preparation of sugar. Owing to the beautiful red colour of the Beet-root it is valuable as a garniture to many savoury dishes, and is excellent when introduced with other salads. The colour varies from a deep red to a pale yellow, but the bright red is generally preferred when appearance is studied.

Beet-root and sauce with small Onions.—Take two medium-sized Beets and twenty-four small Onions. Wash the former clean, but be careful not to break the skin before they are cooked, or the juice will escape while boiling, and the pretty red colour will be destroyed. When clean put them into a saucepan of boiling water, and cook them for one hour; then add the Onions, skinned, and previously steeped in hot salt and water for ten minutes, and let all boil another hour, when they should be tender. Strain and keep the Onions hot while you quickly peel the Beet-roots, and cut them into thick slices and stew for ten minutes in the following sauce:—Take one good-sized Onion, mince very small, and fry it a pale brown in one ounce of butter, add a tablespoonful of flour, and stir over the fire until it is slightly browned, and then pour on half a pint of broth, one tablespoonful of vinegar; pepper and salt. Stir until boiling, and add the Beet-root for ten minutes; place the Onions in the centre of a hot dish, with the Beet-root and sauce around, with a good sprinkling of chopped Parsley over all, and serve hot.

Baked Beet-root with cream.—Wash carefully two Beets, and bake them in a moderate oven until they are tender. When they are cold remove the outside skin, and cut them in thin slices and pour over two tablespoonfuls of vinegar, with pepper and salt to taste. Pound three or four slices of Beet in a mortar, with one Shallot, and add by degrees one gill of cream; when thoroughly mixed put this into a stewpan, and stir over the fire until thick, then add the Beet-root, put the lid on the pan, and stand by the side of the fire until quite hot, and serve at once.

Pickled Beet-root.—Wash some Beets free from dirt without breaking the skin, put them into boiling water, and cook them for one hour and a-half. Lift them from the water, and when cool remove the outside fibre, and cut them into slices about half an inch thick, and when thus prepared put into a stone jar or bottle; sprinkle salt, a few Pepper-corns, Cloves, and Allspice with the Beet-root until the jar is nearly full, then pour on enough vinegar to entirely cover all. Cover with a bladder to exclude the air, and in a fortnight the pickle will be ready for use.

Beet-root and Spanish Onion salad.—Take one large Spanish Onion and one large Beet-root. Cook them both in their skins until tender, remove them from the water, and let cool. Take away the outside skin from the Onion and Beet-root, and cut each one in thin slices; place these alternately in the centre of a dish, taking care to pile them rather high, and pour over all a sauce made as follows: Mix thoroughly two tablespoonfuls of salad oil, one of white wine vinegar, one teaspoonful of chopped Parsley, cayenne pepper and salt to taste. This salad is very good, eaten with cold roasted meat.

Beet-root soup.—Take three Beet-roots, two Spanish Onions, one small Carrot, half a white Turnip, a small bunch of Parsley, Thyme, two Bay-leaves, three pints of good white stock, one ounce of butter, pepper and salt to taste, one gill of cream, and the yolks of two eggs. Parboil the Beets and Onions in their skins, then peel them and chop small with the other vegetables. Melt the butter in a saucepan, add the vegetables, and toss over the fire until they have absorbed the butter, but not become coloured. Pour on the stock and seasoning, and let all boil until sufficiently soft to be passed through a fine sieve. Return all to the saucepan and stir until boiling. Have the yolks well beaten with the cream, pour the soup on to them, and back again to the pan, to mix thoroughly. Have a hot soup tureen in readiness, and serve very hot, with toasted bread cut in dice.

Preserved Beet-root.—Carefully peel and remove all fibre from some dark red Beets, and cut them into small dice. Weigh the Beets thus prepared, and to every pound allow one gill of water, three-quarters of a pound of sugar, the juice from two Lemons and one Orange, with the rind of each cut into fine shreds. Put these all into a preserving-pan, and boil until the Beet is quite soft and the syrup thick; then pour into dry jars, cover and store in a dry place. This preserve will be found very valuable for colouring jellies, creams, &c., if a little of the syrup is passed through a tammy, and added as required.

Beet-root fritters.—Boil a large Beet and medium-sized Onion, and when cool remove the skin and cut into thin rounds; place on a dish and season with pepper, salt, and a very little vinegar, and let them remain thus for one hour; then make sandwiches with two slices of Beet and one of Onion between, press slightly, and drain upon a sieve; dip one by one into frying batter, drop quickly, when thoroughly covered, into hot fat, and fry for about five minutes; drain on porous paper, sprinkle with white pepper and salt; serve on a folded napkin, and garnish with fried Parsley.

Sandwiches.—It seems hardly necessary to give any directions for making sandwiches, but the truth is that the process is so simple that sandwiches have become to be regarded as not worthy the attention of those who are able to make them well. This, at least, is the only explanation that can be offered for the existence of the indigestible, and in every way unsatisfactory, morsel that is so often seen. The old-fashioned and clumsy way of making sandwiches is to cut slices of bread from a loaf, regardless of shape, and to place between every couple of slices some ham or beef, without removing the skin or gristle which might form a part of it. The consequence was, teeth would come suddenly into contact with something unchewable, and away would come the entire inside of the sandwich, placing the consumer—especially if in company—in a very unpleasant predicament. Now there are rules which it is necessary to observe in making sandwiches. The first is, removing all objectionable parts from the meat. Second, the bread must be stale—two days old at least—and the loaf of proper shape. If this is not so, then there is bound to be a great deal of waste. The slices ought not to be cut thicker than the eighth of an inch, and should be buttered evenly and thinly. Thirdly, the meat must be cut very thin, and be nicely seasoned with salt, pepper, mustard, or whatever is required. After placing the meat between the slices of bread, press it gently with the hand to make the ingredients adhere, and cut the sandwiches into neat squares with a sharp knife. Nothing remains to be done if the sandwiches are for eating while travelling, except to wrap them up neatly in white paper; but if they are to form a dish for the table, serve them as follows: Fold a clean white napkin and lay it on a dish; place the sandwiches in a circle on the napkin, each one overlapping its neighbour. Garnish with sprigs of fresh Parsley, or make a salad with Lettuce, Watercress, &c., very finely shredded, and pile it up high in the centre of the dish. To give a little more colour, ornament the top of the salad with slices of boiled Beet-root, stamped out in pretty, fanciful shapes. Sandwiches ought to be eaten as soon as possible after they are made, or they are likely to become dry; if, however, they have to stand for some time, wring a napkin out of cold water—very tightly—and lay it over the top of the sandwiches.—C. G.

15550.—**Pastry without fat.**—There is a recipe for making pastry without fat. I should feel obliged if Miss Griggs, or any other correspondent, would give it.—Peter.

15504.—**Touch-paper.**—"Constant Reader" can make touch-paper by soaking coarse brown paper in a saturated solution of saltpetre and water, and then drying it.—F. H.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, December 28th to January 2nd.

Putting in Vine eyes in pit, and plunging them in fresh leaves; putting in another forcing of Strawberry plants, Mint, and Tarragon. Washing Stephanotis and Camellias, and syringing Azaleas for thrips, using 5 oz. of soft soap to a pail of water. Putting young Pelargoniums into their flowering pots. Beginning to prick over Asparagus land. Potting a few old Calceolarias to make large plants for conservatory; extra covering Celery; filling up bins in potting shed with manure, leaf-soil, and loam. Putting a layer of ashes in cutting pit in which to plunge cutting pots Pruning bush fruits; putting in Fuchsia cuttings, and plunging them in pit in heat; making edges ready for turf wherever the latter has got worn or died away. Covering seed Potatoes; giving large tree Mignonette a layer of manure as a top-dressing; making a bed in a frame for Carrots; getting in cow manure for Roses.

Putting in a few Petunia cuttings, and plunging them in bottom-heat. Putting stock plants of scented Verbenas into heat for cutting. Planting some young Gooseberry trees; also a bed of Peppermint. Shifting Pelargoniums, placing them in pits, keeping them cool and dry, and giving them plenty of air. Putting Forget-me-nots in heat, and keeping them at 50 degs. at night; also Seakale, Asparagus, and Rhubarb. Putting Musk into heat, and Mignonette on the back shelf of a cold vinery; looking round Hollies and Conifers, and dashing a little gas-tar against them to keep off rabbits. Cutting down autumn-struck Heliotropes, to induce them to break before potting them off. Pruning pillar Roses. Digging land for Onions; sowing Parsley; also Sweet Peas by hedge side. Shifting Nemophilas into 6-inch pots. Cutting Alicante and Lady Downes Grapes for bottling. Putting in cuttings of Justicias, Chrysanthemums, and Heliotropes; also some White Currant cuttings.

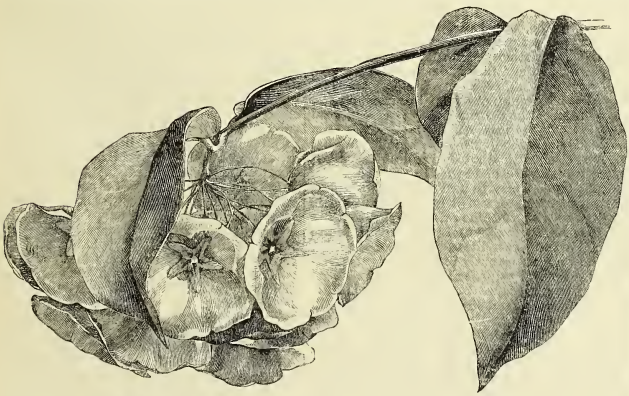
Work in the Town Garden.

During severe weather attention must be chiefly directed to keeping the frost away from tender or half-hardy plants. It is not advisable to maintain a very high temperature in the greenhouse; during severe frost the air is extremely dry, and if the pipes are made very hot the plants become so dried up that great harm will result, unless moisture is abundantly, yet judiciously, supplied. On the other hand, anything of the nature of steam or vapour will have a very injurious effect, particularly on a very cold night; so that, on the whole, the best course is to afford sufficient heat to well exclude frost, but no more, and to maintain a moderate degree of dryness, which will enable the plants to withstand the cold better. Things that are nearly hardy, and now in pits and frames, are best protected by a thick covering of mats or sacking, and by being kept dry. Care must be taken to cover up well on the first approach or sign of frost, so as to utilise the latent heat, and not to uncover until a thaw has decidedly set in. All watering, especially in cool houses or pits, should be done at this season during the forenoon, so as to afford time for the foliage to become dry, and any superfluous moisture dissipated before evening. As a rule, only sufficient moisture to keep the foliage fresh should be afforded during severe weather, waiting for a mild open day, with, if possible, a south or west wind, for a good all round watering. Of course, in warm houses a proper amount of moisture must be kept up, whatever the weather may be, but try to get the foliage, &c., dry before night even here.

Plants in flower.—If they were potted in time, and have received proper treatment since, a good batch of the pretty white Roman Hyacinths should be in bloom by Christmas, as well as a few early or paper-white Narcissus. It is too early yet to expect the ordinary Dutch Hyacinths to expand, at least in towns, and, under any circumstances, if these plants are forced into bloom before Christmas the spikes are invariably small and poor. But the Romans may be had in plenty, and these with Chinese Primulas, a few late Chrysanthemums, Epacris, Bouvardias, Solanums, and some early Cyclamens and Camellias, will make a nice Christmas display if nicely arranged among Palms, Dracænas, Grevilleas, and other foliage plants. If there is a warm house the foregoing may be supplemented by a few Justicias (which do well in town air), Poinsettias, Euphorbias, Begonias, &c., while in a cool or very slightly heated pit or frame, some roots of the common yellow, white, and red Primroses, as well as the charming Christmas Roses, will afford a quantity of very acceptable bloom, supposing them to have been planted out in good time in some sound rich loam.

Spring bulbs that have been potted and plunged in ashes or fibre out-of-doors, need not be disturbed during hard frost, as they will probably not move much, but directly a thaw sets in they had better be gone over carefully, and all that are fit be cleaned and taken into the house. If left too long in the plunging material the growth soon gets long and weak. Now that there is so little to do, it is as well to provide a supply of flat wooden boxes in which to sow and prick off Pyrethrum, Lobelia, and other annuals, which must shortly be got to work. For such boxes 12 or 14 inches long by 10 inches, and 2 or 2½ inches deep inside, is a very useful size.

B. C. R.



The Bell Wax Flower (Hoya campanulata) natural size. (See article, page 607.)

Glasshouses.

Bulbs, &c.—Where a stove or pit is available, so that the requisite heat can be kept up to bring into flower the various kinds of bulbs and other hardy plants, these should be brought in at intervals so as to come on in succession without hurrying them, for it is well to bear in mind that the hardier plants are naturally, the more they dislike being subjected to strong heat, the use of which invariably causes the flowers to come thin in texture and deficient in colour, the result being that if required for cutting they usually flag and wither up soon. In like manner their duration is proportionately shorter when allowed to remain on the plants. The same remark applies to hardy shrubs, which suffer in a similar way if hurried on too fast. In the case of all plants that bloom in the winter, either such as come in naturally at this season or are forced, it is a matter of the first importance that they should be kept, all through the time their flowers are developing, as near the glass as possible, in the lightest position that the house will afford. In the many places where there is no means of accelerating the flowering of plants in winter further than by the aid of a greenhouse, it necessarily follows that they are much longer in opening their flowers; but where the greenhouse is kept at a temperature of from 40 degs. to 45 degs. in the night, much may be done in having a display of bloom later on, as if the bulbs, shrubs, and herbaceous plants are placed in the house at once it will set them going, although the first movement may be scarcely perceptible. Such things as Dielytra spectabilis, Lily of the Valley, Solomon's Seal, Spiræas, Polyanthus, and Primroses of the different kinds, including the cortusoides section, should, with this view, be got in.

Rhododendrons are generally favourites for early spring flowering in the greenhouse, but much depends as to their time of blooming on the sorts selected. There are numbers of beautiful varieties that have a natural inclination to bloom so early that they open their flowers, even out-of-doors, before the season is far enough advanced to admit of their escaping injury from the cold. There are no plants better calculated for blooming in a cool greenhouse than these; if they are now placed in a house or pit where only enough warmth is maintained to keep out frost, they will begin to move at once. When brought into flower slowly in this way, they will last in good condition for several weeks, and during the end of March and onwards a greenhouse may be kept gay with flowers that give little trouble and do not easily get out of condition, even in the hands of those who have not had much experience in plant-growing.

Zonal Pelargoniums.—Where a good selection of these continuous-flowering plants has been prepared for winter blooming, including the white and the pink varieties, they will be found most useful in affording flowers now when the Chrysanthemums are getting over; for, although this section of Pelargoniums is common and devoid of the elegance present in many flowers, still, when associated with enough green garniture, such as Ferns, Myrtles, Aloysia citriodora (Lemon-scented Verbena), and Stag's-horn Geranium, they are not to be despised at a season when everything in the shape of flowers is acceptable. Amateurs who have not much glass accommodation wherein to grow flowers for winter, would find a small house that could be kept at about 50 degs. in the night, a source of much enjoyment. Such a house would accommodate several dozens of these Pelargoniums and numbers of other plants that would bloom during the dull season in the temperature named. It is in the winter that glasshouses, when rightly adapted for keeping up a supply of flowers, are of most use, as in summer there are plenty out-of-doors, and a house such as that described, even if it contained no plants of a more permanent character than the Pelargoniums named, Roses, bulbs, and other hardy plants, temporarily located in it, could be turned to other purposes in the summer.

Cyperus.—Among the plants with distinct, handsome foliage, suitable for room decoration, or to afford material for cutting, the different varieties of Cyperus rank with the most effective. C. alternifolius, C. alternifolius variegatus, and C. laxus, are all distinct-looking plants that associate well with other things, either flowering or fine-leaved. They are easily managed where a stove or intermediate temperature can be given them. Where the conditions under which they are grown are such as to answer best for them, their growth is made earlier in the season than most things. The old leaves, especially when the plants have been in rooms or cool greenhouses during autumn, generally get shabby about this time; and if the plants have grown so as to fill the pots, it will be well to turn them out and divide them. For most purposes these plants answer best when confined to small, say, 6-inch pots. If about this size, and they are strong, each plant will bear dividing into three, placing each piece in pots of similar size. They will grow in either peat or loam; the latter is preferable, with some sand added to it. As soon as potted, return them to a warm house, or pit where they will soon commence to grow. When the young leaves begin to move, raise the plants well up to the glass, so that the growth may be

stout, and not at all drawn, for on this depends their ability to bear standing in cooler quarters during the summer. It is always well with plants that have their crowns divided in this way to carry out the work before there is any movement in growth, otherwise the operation is sure to injure their appearance afterwards.

Crotons.—These plants, like almost all others that are from warm countries, are never seen in their best condition except when kept where there is plenty of warmth. They come originally from a climate where the temperature is always high, and in a cultivated state, unless they are subjected to something similar, they always have a starved, uncomfortable appearance. When well managed they grow fast, and when the plants arrive at the particular size which is considered sufficient, they require to be cut in each season. This is best effected before they begin to grow, and where the stock is treated in the manner above-advised all that require to be reduced in size had better have their branches shortened at once. The points of the shoots will make cuttings that will root in a few weeks if kept close, warm, and moist. They should be put singly into small pots, half filled with loam and sand, the remainder all sand. Young stock of this description, that gets established early in the season, has a much better chance of attaining a useful decorative size before the end of summer than when struck later. For standing in rooms, and for most decorative purposes plants confined to a single stem, such as obtainable from cuttings made of the shoots in question are the best; consequently they should not be stopped, but simply have as much root room as is requisite later on, taking care that their wants are well supplied, so as to ensure their leaves being retained in a healthy condition down to the base. If the plants are at all affected with insects they should be thoroughly washed with a strong solution of insecticide before they begin to grow, repeating the application two or three times. Thomas Baines.

Flower Garden.

General work.—Every operation that can now be performed should be done, by way of relieving the pressure of duties in spring, which will be very heavy. Trenching, digging, and draining can, of course, be done whenever the weather is open, and so can the planting of shrubs and trees in all but the most plastic soils, and when such work as this, through stress of weather, has to be postponed, there is the mending of coach roads and walks, the digging and carting of gravel, manure, soils, not to mention the clearing out of shrubberies, lopping of irregular and dead branches from trees, clipping hedges, and trimming into form all shrubs that are required to develop evenness of outline. Only by thus seeking out, as it were, all such jobs, and doing them at this comparatively leisure period of the year, can we hope to keep pace with the work at the busy season. The preservation of neatness by rolling and sweeping both turf and walks, is about the only routine duty at the present time, but on the due performance of this, it need hardly be added, depends much of the real enjoyment of a garden. Get, as soon as possible, some manure prepared, ready to be applied to the flower beds and borders as soon as the spring-flowering plants and bulbs are removed. The exhibitor of florists' flowers will have plenty to do in preparing his stands and boxes in which the stands or trays are conveyed to the exhibition; they may be painted and varnished, stowing them away when dry where they can be kept free from dust. Labels may be made and painted. Some persons like to write on dry paint, but wet is best, and the labels may be painted a second time before they are used. Sticks may also be prepared of various lengths and thicknesses; paint them green, and then dry them and tie them up in bundles ready for use. Pegs for layering Carnations and Picotees may also be cut out of any branches that may be most convenient. Beech and Hornbeam are amongst the best for this purpose.

Fruit Garden.

Raspberries should now be planted, and existing plantations pruned and tied; for this fruit the ground should be well enriched by digging into it a good dressing of manure previous to planting. Few crops will better pay for a liberal use of manure than Raspberries. Even old plantations of them that have become weak can frequently be brought round by enriching the ground and otherwise bestowing on them judicious cultivation. One of the principal things to be observed in the case of the Raspberry is never to use a spade amongst them; the greater portion of the roots lie near the surface, and if the spade be employed in digging, quantities of them necessarily get injured; even fork culture should not be too deep. In order to avoid pressure of work in spring let all manure and soil wheeling be finished, stakes cut and pointed, labels made, and trees that require it re-labelled. Nails can be cleaned, shreds cut, bunches of matting for tying, and small twigs for laying in the new shoots of wall trees—these, together with other jobs that will suggest themselves, may now all be done by way of forwarding operations when the busy time arrives.

When the air is dry and free from frost, open the fruit-room ventilators for an hour each day. All decayed fruit should be removed forthwith, and it may be worth while to wipe over the finer Pears with a dry cloth, in order to ensure their better preservation. Easter Beurré and Ne Plus Meuris, two kinds of Pears on which we depend for supplies in January and February, are sometimes so specky and subject to mould that they would not keep at all if not thus dried.

Early vines.—The buds in the early house will now be better for a slight advance in the day temperature, but no alteration must be made by night until we have genial forcing weather. Follow up the daily syringing until the bunches are well advanced, and all the buds are fairly on the move, but avoid constant saturation of the spurs at this dead season, as too much moisture often induces weak, elongated growths, and loose, straggling bunches which rarely set properly or colour well, while a light, buoyant atmosphere, with a gentle circulation of air and moisture in moderation, leads to the development of stout, leathery foliage, capable of laying up plenty of colouring matter, so essential to the perfect finish of early forced Grapes. If the inside borders have not been watered since the house was closed, another nice watering with diluted liquid at the maximum temperature of the house may be given, and the borders may be well mulched with fresh short horse manure, which will exhale ammonia when gleams of sunshine raise the temperature of the house. External borders, hitherto covered with Ferns, litter, sheets, or shutters, may now advantageously receive a good covering of moderately dry fermenting leaves.

Late vines.—Muscats, Alicantes, and other Grapes will now require cutting, as they will keep better in the Grape room than on the vines. When the vines are cleared, get them pruned and cleansed; dress the cuts with styptic, and throw the ventilators open in suitable weather to give them a month's rest before growth is again excited. If the internal borders are not satisfactory they should be put right immediately after the Grapes are cut. External or internal borders may be taken out alternately, and every particle of the old soil may be replaced with new, not only without endangering the succeeding crop, but with the certainty of greatly improving it. When cutting Grapes for keeping, always remove every doubtful berry, as the smallest spot is sure to end in decay. Choose a bright, dry day for bottling; never cut away any of the wood beyond the bunch without applying styptic, and avoid disturbance of the berries in the removal of the bunches. Lady Downes, Mrs. Pince, and Black Morocco are keeping unusually well, but they had a liberal share of fire heat early in the spring, and they will hang for any reasonable length of time without shrivelling. If the vines are not already clear of foliage all the leaves will be ripe enough for removal, and the Grapes will be in a fit condition for cutting and bottling, by the end of the month.

Kitchen Garden.

We are now cutting from under a few leaves some very fine heads of Snow's Broccoli, not large, but close and white; it is a vegetable that is in high repute here. Outside Lettuces, covered with the same material, are now green, fresh, and delicious. Of Black-seeded Brown Cos, the king of all hardy Lettuces I know of, we cut a constant supply outside, and have done so for many years past. The time is now at hand when leaves and manure must be put together for frame Potatoes, Radishes, early seeds of Lettuce, Cauliflower, &c. No labour is lost in having the heating material well looked after; when the beds are made tread them firmly. To build up manure beds from 3 feet to 4 feet, and set frames on them, is not only a waste of time in building, but a positive disadvantage to the inmates. The right plan is to dig out pits the size of the frame, 2 feet or 3 feet deep, and fill them a foot or so above the pit, to which they will sink level; every bit of heat is then utilised. Any kind of light soil enriched with manure will grow Potatoes well; but for Carrots and small seeds I use refuse from under the potting benches, mixing sand and mud-scrapings with it. Of Potatoes, we use the true Myatt's and other varieties. Early Scarlet and Shorthorn Carrots are among the best forcers. Do not be caught napping in not having a good supply of what are called little things, such as green Mint, Tarragon, Mustard, and Cress. In the case of Celery here, as elsewhere, Bracken is brought into use; it is so light and feathery that it makes the best of all protectors. Globe Artichokes should at once be protected, if this has not already been attended to. G.

NOTES ON DIFFERENT MODES OF HEATING.

The flue.—I will continue my remarks upon the merits of the various systems of heating greenhouses by enumerating the advantages and disadvantages of the flue, which, although old-fashioned, is not to be despised even in its present form. In damp, still weather a difficulty is sometimes found in lighting the fire, owing to the heavy air in the flue and chimney; but this may be at once set in motion by inserting a sheet of burning paper at the soot door, which there ought to be at the base of every chimney. The greatest drawback I have experienced is the rapid accumulation of soot, for, although every arrangement may be made for cleaning out the flue, that is an operation never agreeable, and, with a house full of plants, not at all times easy, and, be the stoking ever so careful, soot will be unavoidable as the furnaces are at present constructed. Attributable to the same cause is the annoyance to one's neighbours, especially those who "wash at home;" but this nuisance does not appertain to the flue alone, existing more or less with every furnace, particularly those requiring "banking up" to be kept alight for a length of time. A pan or two of water placed upon a flue will get rid of the, to a great extent, imaginary evil of undue dessication of the air, while the power, by forcing the fire, of drying the house is of as much importance as warming it. The escape of gas is the result of the want of care in building, and the chances of injury from that cause are much increased by a damper of ttimes placed in the chimney, an arrangement unnecessary with a proper draught-regulator at the ash-pit. The advantages of a flue are—it is simple, easily put up by any handy man, the materials are readily obtainable, and the cost is small. It is quick in its action, and retains the heat longer after the fire is out than any other system; and, utilising to a greater extent the heating power of the fuel, it is the most economical in working. It will burn any fuel—cinders from the house, slack, coke, or coal, bituminous or not. I am now working one satisfactorily with peat and coke. It is readily managed by any domestic, and when once lighted there is little chance of its going out until the fuel is consumed; and could a plan be devised for more perfect combustion and consequent diminution of soot and smoke, it would be, for small houses, equal to the best arranged, but more expensive, hot-water apparatus. As it is, I have found it answer admirably, not only for greenhouse work but for Melons and Cucumbers, and all that is needed by an amateur who wishes to study economy in gratifying his taste.—Caloric.

Heating from kitchen boiler.—The innumerable questions put and answers given in Gardening Illustrated, with a host of failures admitted, are my excuse for writing to you on the subject of how to heat a small greenhouse. My greenhouse is a lean-to and attached to my dwelling. Its distance is 14 feet to 40 feet from my kitchen fire. In the kitchen there is a good cooking-range, with an ordinary boiler, as usual. In the most distant part of my green-

house (40 feet from the fire) I have an iron tank, which contains about 6 cubic feet of water. A flow-pipe, 1-inch bore, passes from top of kitchen boiler to top of tank, and another pipe, same bore, returns from the tank to kitchen boiler at bottom. The tank is kept quite warm from 6.30 a.m. to 11 p.m. by the heat of the fire used in cooking, &c. At 11 p.m. about 6 lb. of coals are added, which would not be required but for the greenhouse, and this is all the extra fuel used. The water in the tank is quite warm every morning, although the fire is dead out and the range cool.—J. Weaver.

Heating small conservatories.—This question of heating by coal or coke seems to be as far from being solved as ever it was. Patentees there are in any number who profess to be able to supply exactly the thing that is required for heating these buildings, but when the test is applied they fail. Allow me to offer a few remarks and a suggestion. It does seem remarkable that what appears at first sight so simple a matter, and one that concerns so many people, should be so long left without a satisfactory solution. Some readers of this will be ready to exclaim, "Oh! the writer of this letter cannot have studied the subject, or has failed in obtaining the right sort of heating apparatus." I will ask them to notice the word "small" at the heading. All the enquiries that are made, and letters written, come from owners of small conservatories or greenhouses; with regard to large houses there is no difficulty whatever, therefore, I will confine myself in what I have to say to the former, or houses, say from 16 by 12, down to 8 by 6. I am not dealing with stoves heated by gas, but with the ordinary fuels—gas coke, oven coke, coal, and cinders; either of those singly, or any of them combined, for, be it remembered, this is not only a question of efficiency, but economy also. Perhaps it will be as well to relate my own experience. My conservatory is a span-roof, 14 by 10. Originally I had a Loughboro' boiler fixed in the wall, face outwards; two lengths of 4-inch pipe, flow and return, each 9 feet long—18 feet. I found, after repeated trials, that I had either too much fire, that the water boiled and overflowed the receiver at the end of the flow-pipe, or the fire went out during the night. I was then told that I did not manage the damper or draught-plate in a proper manner; that the fire ought to last. My friends were very kind in suggesting how this was to be done to give the desired heat all night; but, supposing it did last, how much fire would there be during the night? Certainly not enough to keep the water sufficiently hot to preserve the necessary temperature in the conservatory. I then, in order to remedy this defect, had the small boiler removed, a stoke-hole constructed under the conservatory, and a much larger boiler put in. This was cylindrical, with an additional piece at the top forming a reservoir for the fuel. This was connected to the same flow and return pipes, but failed to answer the desired end, inasmuch as the amount of fire was out of all proportion to the quantity of water in the pipes, the result being that with only about 9 inches of fire in depth the water boiled. I am quite well aware of the fact that if there had been, say, 180 feet of pipe instead of the 18, so much heat would have passed off during the passage of the water through the pipes that it would have returned to the boiler much reduced in temperature, and the working would have been a success. Failure No. 2 was removed, and a small copper boiler substituted, heated by gas. This I was fairly driven to, or else be content to sacrifice the contents of conservatory the first night's frost. Although I now have what is and must be a satisfactory and perfectly trustworthy heater, it is not an economical arrangement. What is wanted is such a proportioned stove that it will contain the necessary amount of fuel, not only to keep alight all night, but to burn briskly enough that sufficient heat, but no more, may be given out to keep up the required temperature. I don't say that this won't be done, or can't be done, for none of us know what the future may produce; but I am sure it cannot be done with the appliances at present to hand. Thinking much, as I have lately done, on this subject, it occurred to me that perhaps the following plan might prove to be a remedy: I would have the boiler of sufficient capacity to burn with attention for a few hours, and during that time keep up a good brisk fire, then, instead of the usual flow and return pipes for the hot water, I would substitute a tank of galvanized iron with the connections to the boiler, the tank to be of the largest dimensions that the conservatory would admit of under the staging (say equal to 300 gallons for a conservatory 14 by 10); the tank to be lagged or cased with felt and wood, or other non-conducting substance, sides, ends, bottom, and top, with these exceptions—the bottom to rest on the (say felt), except 3 spaces of 1 foot in length, sides to have same spaces, these to connect with similar spaces on the top, where portable doors or lids should be fitted in connection with the spaces in the bottom. The fire lighted, it would naturally take some time before the large body of water became heated, but this being once accomplished a sufficient reserve of heat would be present to last the night, and that, I think, without much, if any, chance of failure. At first it would only be necessary to remove or open one of the lids or doors, when a current of cold air would pass in at the bottom, become heated by contact with the hot surface of tank, and go out at the top hot. If you will allow this to appear in Gardening Illustrated perhaps one or more of your numerous readers who are interested in this subject, and who, like myself, have been bothered and put to much expense, will say what they think of the proposition.—F. H. H., *Reigate.*

BIRDS.

GARDEN BIRDS.—IV.

The Starling (Sturnus vulgaris) is one of the most useful of our native birds, both on the farm and in the garden, which he should be encouraged to frequent by every possible means. In the summer months, when insect pests are most troublesome, he is fond of resorting to dwelling-houses, where he will make his nest in the gutter-pipe under the eaves, or in any suitable hole that he may discover in the walls, and, if not molested, he soon becomes almost as tame and familiar as a Robin Redbreast. He is a great devourer of all kinds of insects and grubs, his rapid powers of digestion necessitating him to keep moving about with incessant activity in order to maintain the very large and constant supply of food which he requires. Although omnivorous as regards winged insects and their larvæ, and also earth-worms, he, like some other insect-eaters, has his favourite mouthful, namely, the "leather-jacket," or larvæ of the Crane-fly, or "Daddy-long-legs" (Tipula oleracea). The numbers of these grubs which he daily extracts from the soil with his powerful wedge-like beak must be something enormous. Some years ago Starlings abounded in this part of the country, a flock of several thousands of them being no unusual sight here in the autumn and winter months; but during the very severe winter of 1879-80 nearly all of them perished, and there are now comparatively few of these birds to be met with for miles round this neighbourhood. The result of their disappearance has been a most alarming increase in the numbers and ravages of the "leather-jackets" on every farm and in every garden about here. I have heard dismal complaints about them from the farmers on all sides, and in our own garden we often have nearly a whole bed of young Lettuces or other seedlings just planted out destroyed by them in a single night. No such plague was known here before the Starlings were almost exterminated by that terrible winter, six years ago; and it will, I fear, be a long time before these birds are again sufficiently numerous to check their ravages in any appreciable degree.

The Ox-eye, or Great Titmouse (Parus major), the Blue Tit (Parus cœruleus), and the Cole Tit (Parus ater), although only occasional visitors, must be included in the list of birds which are useful in the garden. All of these Titmice live on the insects which infest the bark, bud, leaves, and blossoms of trees, and the gardener should always be glad to see them at work among his fruit trees. The Long-tailed Tit (Parus caudatus), a much rarer visitor, only makes his appearance here once or twice in the year, when small flocks of this bird come trooping along our garden hedges in autumn, evidently on their way to some further destination. These, perhaps, hardly come under the denomination of "garden birds," as their visits only last for the time occupied by them in passing with yard-long flights along the hedges, and I have never seen one of them alight in the garden.

The Golden-crested Wren (Regulus cristatus), an occasional visitor in the autumn and winter months, may be classed with the Titmice as a useful bird in destroying insects which infest fruit trees. The visits of this bird to the garden, however, are not of very frequent occurrence, as it seldom leaves the plantations of Pines or Fir trees, which are its favourite places of resort all the year through. It is the smallest of all European birds, weighing only about eighty grains, Troy, the body (without the feathers) not exceeding one inch in length.

The Lesser Red-poll or Twite (Fringilla Linaria) is a pretty frequent visitor here, especially in the autumn and winter months, when this handsome little bird does all he can to prove himself a friend to the gardener by devouring the seeds of any plants of that pertinaciously troublesome weed, the Ivy-leaved Speedwell or "Winter-weed" (Veronica hederæfolia), that may have escaped the hoe, or sprung up and fruited, with their usual rapidity, here and there under the Cabbages or in the alleys. The Gray Linnet (Fringilla cannabina), although very plentiful about here and constantly flying over our garden, never alights in it.

W. Miller.

15507.—**Breeding canaries.**—The breeding of canaries requires a great deal of attention. Firstly, in matching your birds, as it is not all birds that will mate. Care must be taken in selecting suitable pairs—an old cock and a young hen, or *vice versâ;* the colours should be well contrasted—for instance, a Jonque cock should have a mealy hen, and a green bird a yellow mate; a deep clear yellow bird, without a spot of black about him, should be put with a variegated green and white hen to produce evenly marked and ticked birds; two crested birds must never be put together or the progeny will be bald-headed. When you have selected your pair place them in separate cages, and in a position so that they cannot see each other; the cock bird will probably begin to sing, attracting the attention of the hen, who will, if in a loving mood, answer him in return. When the courtship has arrived to this stage they should then be placed in a cage together. A day or two later they may be put into the ordinary breeding cage, and care should be taken to have the cage thoroughly cleaned; the best way is to mix up some lime and a small quantity of size, and well whiten the cage. Do not use whiting. The lime kills all small vermin, and is very healthy. All that is now required is to place a nest-bag in the cage, which, if not procurable, can be made of Moss, cow hair, and cotton wool—the last-named to be given sparingly, lest the birds should get their claws entangled in it. It is a very good plan to scald the materials before putting in the cage if there is any doubt about their being free from small insects. The hen lays four or five eggs as a rule, one every morning. Sometimes she will begin to sit as soon as the first egg is laid, but it is best to leave her to herself, and not substitute false eggs, which is the practice with some breeders, unless she shows a disposition to eat her eggs. If this is the case either with her or her mate, they are not likely to succeed in their nursery; but the attempt may be made to take them away until the hen is ready to sit, and then give them back to her. She will sit thirteen or fourteen days. If, after waiting a day or two, no young birds appear, the eggs should be put in warm water for a minute; if they float, they are, in all probability, addled and useless; but if they sink, they may be placed in the nest for a day or two longer. If not hatched then they should be taken away, for she will continue sitting in the vain hope of hatching birds which are dead; remove the old nest, and give her a fresh one. The egg-food, which I shall speak of further on, and which should be given to the birds as soon as they are mated, say, for the first week, should be replaced a few days before the time of hatching in readiness for the young brood. The young ones begin to see when they are nine days old, and generally leave the nest at the end of a fortnight. Should the hen commence nesting again, the young ones should be placed in the nursery, where the cock will feed them through the wires of the division for some time, but they must soon have some

egg-food placed within their reach, and in due time crushed Hemp and Canary Seed, and also clean water. The egg-food, which should always be freshly mixed, should be composed of hard-boiled egg, chopped very small, and stale bread crumbs grated, and mixed with a pinch of Maw seed.—S.

POULTRY.

REARING DUCKS.

15352.—There is nothing very difficult to contend with in the management of young ducks, provided they cannot break out of the enclosure in which they are kept. If they get their liberty they will wander far and wide in search of slugs, worms, &c., and cause no slight anxiety to their owner; or, if they once obtain access to water, which it is desirable to keep beyond their reach, they will never rest satisfied unless they can enter the pool or stream whenever they choose. It is this wandering propensity on the part of ducklings which causes so many of them to fall victims to rats and other enemies. Many a promising brood has been entirely swept away by rats. I have known the latter to enter a coop at night and kill the whole hatch. They will also lie in wait on the sides of a ditch and swoop down upon the ducklings as they are revelling in the mud below. Some years since, out of a lot of seventy ducklings, I did not get forty fit for market, nearly the whole of the remainder being captured by the rats in the manner just described. The reader, then, will understand that there are situations, such as near the banks of a stream, or in the neighbourhood of old barns and rick-yards, where the duck-breeder must be very careful or his profitable seasons will be few and far between. It is not enough to hatch good broods—they must be reared. I, therefore, advise anyone who contemplates duck-breeding to take a good look round before he commences operations, and, if the visits of rats are feared, let him adopt chicken-rearing instead.

As ducks consume a large quantity of food, it is necessary, if profit be the end aimed at, to hatch the ducklings as early in the season as possible, so that the full benefit of the high prices which prevail in the spring may be obtained. The birds, too, must be kept improving from the time they are hatched until they are ready for the spit. Large numbers of ducklings are, I know, hatched during the summer and remain about the yards for some months, and then are fastened up for two or three weeks to be fattened. It is impossible for much profit to be got out of such birds, and too often, I fear, they are reared at a loss. As to the time required for getting ducklings ready for market I may describe a case which occurred several years since in a southern county. Early in the spring a brood of ducklings was hatched at a farmhouse. Among the servants employed there was a young fellow who was himself the son of a farmer. When the ducklings were taken from the nest he offered to take charge of them, and pledged himself, on condition that he could use as much meal as he wanted, to get the birds ready for market at eight weeks old. His offer was accepted. He at once placed the hen in a coop near a small pool, and there the ducklings remained until they were sold. Bread crumbs, hard-boiled eggs, and curds were used for a few days, after which nothing but Barley-meal was given, and on this the ducklings were made fit for the table by the time stated. Such cases are perhaps exceptional, especially with ducks kept by ordinary farmers. Still, it is surprising what can be done in a short time if constant attention be given.

It is in something the same way that I advise "E. Gordon" to go to work. Supposing the eggs used for sitting are laid about the same time, and are fresh, the whole should hatch on the twenty-eighth day within a few hours of each other. If the ducklings are hatched by a hen, as is probably the case, I should remove them from the nest when they are about twelve hours old. Nothing will be gained by delay unless some of the ducklings are not thoroughly dry. Their first meal should consist of hard-boiled egg and bread crumbs. Very little will be eaten for a few days, but as soon as the ducklings begin to pick, Oatmeal may be given; and this may be followed by Barley-meal and sharps mixed together. The whole of the meals should be mixed into a stiff dough, which will break when thrown on the ground. As regards water, use as little as possible. According to my experience the more water the ducklings have the longer they are in getting fit for market. They thrive best when kept on a dry Grass run. No special fattening is necessary if the birds are well fed throughout, but scraps of meat, liver, Potatoes, &c., may be mixed with the meal, and are all good foods when thus used. The Aylesbury breeders, who send an enormous number of early ducklings to London every year, use boiled meat and greaves in addition to the meal. Their birds are speedily made fit, and fetch very high prices. After the Green Peas are done with ducklings decline in price, and, in my opinion, pay but little, if anything, for rearing. DOULTING.

Seasonable notes.—The last month of the present year having almost run its course, it is time for the poultry breeder to look forward, and begin to make arrangements for the next hatching season. If fresh blood be wanted, cocks or cockerels should be purchased without delay, so that the breeding pens may be at once made up. This is particularly necessary, where very early chickens are required for exhibition purposes. Even among ordinary stock kept to supply eggs and fowls for home consumption the same foresight is needful, for if eggs are to be forthcoming next November and December pullets must be hatched in March and April. The birds which are now laying should be well fed, and kept warm at night: attention should, therefore, be given to the fowl-house. All birds not wanted, whether cockerels or pullets, should be killed or sold at once, so as to get the chicken runs in good condition for the spring broods. If the cockerels run with the ordinary stock there is the more reason for parting with them, for they worry the pullets, and lose flesh themselves. This is also the best time to look over and repair the chicken coops. They can then be stored away, and be ready for use at a moment's notice.—DOULTING.

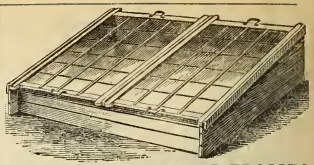
Liver disease in fowls.—There can be no doubt that liver disease is hereditary, but it can also be induced, chiefly by feeding on too rich foods, and by improper conditions of life. I am firmly convinced that the great increase of liver disease of late years has been due greatly to the use of Maize or Indian Corn. This grain, strong as it is in the fat-producing elements, is far too rich for poultry feeding, causing the development of internal fat, which is in itself an incentive of disease. For this reason I am strongly opposed to the free use of this grain. The symptoms of liver disease are a moping about on the part of the birds, an irregular appetite, and there is generally a yellowish hue on the comb, face, and wattles. The best treatment is to give some aperient medicine, preceded by a couple of grains of calomel every other day. The homœopathic tincture of podophyllum is also a most useful remedy for this complaint, and can be used after the first dose of the aperient and calomel. It is hardly necessary to say that all rich food must be abandoned at once, and the fowls put on the plainest diet, the healthy as well as the affected fowls.—*Country Gentleman.*

QUESTIONS.

15551.—**Disease in poultry.**—I shall be obliged for some information as to the nature of the disease that has taken hold of two fowls—namely, a swelling in the throat high up; the lump is as large as a bantam's egg. If some reader would state a cure I should feel grateful.—E. P. R., *Carlow.*

15552.—**Incubators as profitable investments.**—Will any poultry-keeping readers kindly inform me whether they have found the above a profitable investment—that is, do they pay their own expenses under careful management, and leave a fair margin of profit? Anyone giving me his personal experience will oblige.—T. F. F.

15553.—**Blue Andalusians.**—I am very much interested in the article upon poultry on page 596, by "Tip, Roscrea," and I think it would be of infinite service to intending poultry keepers and others if the writer would be good enough to give a few more particulars respecting the blue Andalusian breed. I, for one, should like to know if they are given to flying about much, and if a house, nests, &c., suitable for Brahmas would suit them; also if he considers a yard 26 feet by 20 feet large enough for six pullets and a cock? I should also like to know when the pullets were hatched that "Tip" had laying on the 19th November as stated? I have hitherto kept the dark Brahmas, and I considered they had done very well, but they will not bear comparison with "Tip's" account of his Andalusians,—H. H. R., *New Barnet.*



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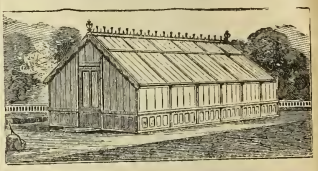

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VOL. VII. JANUARY 2, 1886. No. 356.

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FRUIT.

ARE INSECTS THE CAUSE OF CANKER?

ALLOW me to express my warmest thanks to Mr. Hiam for kindly sending as I requested specimens of the insects which he considers are the cause of canker in Apple trees, and for all the information he sent with them. Their names are as follows:— Nos. 1 and 2, the white objects are not insects but eggs, probably of an Acarus, or mite, belonging to the genus Rhizoglyphus, a few specimens of which I found among the crevices of the bark; No. 3 must have escaped, as I could not find any insect; No. 4 contained specimens of another mite belonging to the genus Nothrus; No. 5, the insects had vanished; No. 6 contained the American blight (Schizoneura lanigera); No. 7, the scale insect, so common on Apple trees (Mytilaspis pomorum); No. 8, one of the Springtails (Poduzidæ); No. 9, one of the plant bugs (Anthocoris nemorum); No. 10, one of the Springtails; No. 11, on the spur from the Ribston Pippin, are three kinds of eggs, what insects laid them I cannot say. There are, therefore, five different kinds of insects said directly or indirectly to cause canker. American blight, scale insects, Springtails, plant bugs, and mites. The first two cannot be the cause of canker as they may be found in abundance where there is no canker, and canker may be found where these insects are not. The Springtails are generally found among decaying vegetable matter, and in other moist situations. They are sometimes very destructive to soft-wooded plants in hotbeds, but the structure of their mouths would not allow them to gnaw the bark of healthy Apple trees. This plant bug has a mouth quite unfitted for piercing the bark of trees, and is said to live chiefly on other insects, probably they were on the look-out for the American blight. If, then, any of the insects submitted to me by Mr. Hiam are the cause of the canker, the mites must be the culprits. Many of the Acari (those sent to me among the number) feed on vegetable matter, but they usually only attack soft substances, and I should think were quite incapable of injuring the bark of trees, though they would no doubt take advantage of any injured or decaying places to feed on, and would certainly, with the other insects, be instrumental in causing decay or morbid growth to increase; but I cannot believe that they are the originators of the canker, though they may assist in its development. Such treatment of the diseased places as Mr. Hiam describes is no doubt most useful, as by destroying the insects the unhealthy parts have a much better chance of regaining their normal condition. What causes canker I cannot pretend to say, but it seems, as far as I can judge, to be a disease in the tissues of the plants, not set up by the action of insects. G. S. S.

[The following are the notes which accompanied the specimens:—1. Specimens of fresh canker and insects. With a magnifying glass the small white insects may be seen where the bark is removed. This kind of insect, which I cannot name, is usually found, but not always. This, I consider, is generally the first to start a canker by eating its way into a bud and gradually working its way until the branch is either killed or injured. 2. Specimens of the insects above referred to, with shavings cut from cankered places, suitable for putting under a microscope. 3. Insects generally found either in or near cankered places, believed to be the adults of Nos. 1 and 2. 4. An insect occasionally found on the bark in crevices near canker. 5. Contains specimens of a very tiny insect of the red spider type. These are almost invariably found in canker, and the larvæ are generally found in the dying wood on which they feed, and are believed to be the cause of much of the mischief. 6. American blight, which is generally found in old cankered places, and frequently in those of a few months' standing. 7. Scale insects, frequently found in cankered spots of old standing. 8. These insects are generally found in cankered places of old standing. 9. Insects frequently found in cankered places, presumed to have taken up their abode for shelter. 10. Often found under dead bark on canker. 11. Spur of insect-infested Ribston Pippin; on the bark are insects No. 2, and also eggs of red spider (red) and tree hopper (white). 12. Main stem of a Lord Suffield tree from graft. This was a bad place of canker two years ago. It was dressed with Gishurst compound and lime, or soft soap and lime, well rubbed in, which stopped the further development, and it is gradually closing up. A few American blight insects have taken possession, but another application would kill them and effect a cure. There are two or three more kinds of insects found in cankered places occasionally, but these are the chief.]

PEACH CULTURE ON OPEN WALLS FOR AMATEURS.

IF we start with the knowledge that Peach cultivation in the open air is somewhat precarious, the beginner will be prepared to meet with an occasional disappointment in the crops secured. The fact of the matter is that the Peach and Nectarine are rather tender subjects, and the English climate is not always favourable, especially during the time when these trees are in flower and making new growth, and then it sometimes happens that the best efforts of cultivators do not meet with the success they deserve. However, much may be done by them to mitigate unfavourable climatic conditions by affording the needful shelter to the flowers while they are open, and by other timely and necessary attention. The mode of procedure in these and other matters I will endeavour to make plain in the following remarks. I will first deal with the

BORDER FOR THE ROOTS, and, knowing well that the majority for whom I write must make the best of the soil they have, I may first state that rich and deep borders are not necessary. Assuming that special preparations cannot be made in the way of introducing good loam in the place of ordinary garden soil, I must insist, as they do not require a wide border for the roots, that they should be the only occupants of the limited area. At no time do I favour the cropping of Peach borders, even when the soil is of the most favourable description; and when it comes to a narrow space of ordinary soil, I think I am not asking too much when I say that this space should be devoted entirely to the Peach trees. A border 5 feet wide will suffice if it is properly prepared. Begin at one end, and turn it up 18 inches or 2 feet deep; and where there is not that depth of good soil, it must be made by taking away any of the inferior stuff and bringing fresh in its place. If there is nothing better to be had, some of the surface soil from another part of the garden will do to make up the required depth. Whatever the length of border it must be treated in this way. In regard to the aspect for Peaches and Nectarines in many sheltered gardens, they do as well on east walls as any other; but where there is a south wall, that is generally considered the best. In making a

SELECTION OF SORTS, it is best to confine one's-self to the well-proved kinds. My selection of Peaches would be Hale's Early, Early Grosse Mignonne, Stirling Castle, Royal Hâtive, and Barrington. These are named in the order in which they ripen. In a general way the first-named will be ripe early in August, and Barrington is known to be the best of all October Peaches for the open air. The most suitable Nectarines are Elruge, Pitmaston Orange, and Lord Napier. It would be an easy matter to name a score more, but I could not add one that would surpass these, and if there is space sufficient, it will be more satisfactory to plant two or three trees of each sort than to burden one's-self with a large number of doubtful sorts. In fact, the principle on which the amateur is recommended to act is a wide departure from the old lines. I want to see them ignore the expensive trained trees and plant only what are known as maiden trees. These are one year old from the bud, and if they have been grown in a good soil they will be 4 feet high, with several side branches to each. The cost of these will only be about one-third of trained trees, but the advantage which is gained by planting maiden trees is in another direction, and that is by filling up the wall more quickly and by the trees coming into bearing sooner. This form of tree may be planted 6 feet apart, and if two of one variety are put in together, as they fill up the wall one of them can be taken away if desired, and the space still be left well furnished with all the varieties necessary to give a succession of fruit. I do not advise the planting of Peach trees in mid-winter—it is better to defer that part of the work until the last week in February.

MANAGEMENT OF THE TREES.—The first point requiring attention will be the leading shoot of each tree; this had better be shortened back a few inches according to its length at the time of planting, but all the suitably placed side growths should be nailed to the wall. As regards the summer management the principal points that require attention will be the regulation of the growth, as much of the pruning required should be done in the summer, and this chiefly by pinching off the tops of the vigorous growing

shoots, with a view to checking any undue luxuriance in any particular branches, and by removing others for which there is not room on the wall. The trees will be sure to require this attention in a greater degree the first three or four years after planting, to balance the growth, as if one strong shoot is allowed to get far ahead of the others in growth, it will prejudice the the other parts of the tree. Any shoots showing a disposition to do so should have the tops taken off, but no shoots should be stopped unless they are doing so, or there is any space that requires to be filled up, as pinching of vigorous growing shoots will result in the formation of several others, and unless there are vacant spaces a great number of shoots is not wanted. It will, therefore, be seen that with a judicious system of pinching any tree may be had under perfect control without resorting to winter pruning, further than as the trees attain to a good size there will be exhausted wood to be cut out. My only fear is that as I have recommended summer pinching some may be induced to indulge in it more than is good for the tree; but if the directions I have given are followed, no harm will be done. Next to being injured by spring frost, the trees suffer from neglect in the early summer months, when they want most attention.

GREEN FLY is often allowed to get a lodgment in the leaves, and the insects do serious mischief before they can be got rid of, as they curl up the leaves, and so cause a check to the growth. The safest preventive is to keep the tree regularly syringed of an evening with clear water, and if there should be any fly upon them the trees must be syringed with soapy water—one ounce of soft soap to a gallon of water will be strong enough to kill either green or black fly. The best instrument to syringe them with for amateurs is a Holborn pump, which, when placed in a can of water, has a sufficient force to dislodge any insect. The summer management will not be complete without proper attention being paid to the removal of all young shoots that are not wanted to fill up the wall; and I must caution the cultivator against

OVER CROPPING with fruit. One fruit to every square foot of wall is the orthodox rule when exhibition fruit are wanted; in the case of healthy trees that number may be doubled with safety, but it should not be exceeded, or the trees will be prematurely exhausted.

THE WINTER PRUNING should take place in February, at which time any of the old branches may be cut out where they are crowded. As much of the previous year's growth should be left as will cover the wall, allowing a space of four inches between the shoots that are laid in. To nail them in closer together will be to unduly crowd them, and ultimately weaken the whole of the growth. An effort should be made to protect the trees when in flower. If a coping of glass, a foot wide, can be put on the top of the wall to project outward, it will be of great service, and, if nothing better can be had, two or three thicknesses of old fish net hung up in front of the trees will assist to keep off the frost; but a much better way of protecting them is to get some stout hessian, about four yards long, and nail it to two poles or strips of wood, and then, with two other poles placed against the wall, the hessian can be unrolled and placed in front of the tree. The upright poles will keep the curtain from beating against the blossoms in windy weather. This form of protection should be put over the trees at night, and taken away again in the morning all the time there is danger of frost. The hessian should be two yards wide, and it should reach to the top of the wall, as there is not much danger to be apprehended if, in the case of high walls, it reaches six feet down. J. C. C.

15313.—**When do Pear trees begin to bear?**—They will blossom and bear fruit the third year after grafting. The trees in question have blossomed well. There is no reason why the blossoms should not set and produce good fruit. Probably they are exposed to frost, which may have destroyed the blossoms. Some varieties do not set the fruit well. Try such as William's Bon Chrétien, Louise Bonne of Jersey, Beurré d'Amanlis, Beurré d'Aremberg, Passe Colmar, Seckle, Beurré Hardy, Beurré Bosc, and Doyenné du Comice, the best of all Pears.—J. D. E.

THE PARADISE, DOUCIN, AND CRAB STOCKS.

THE article on the "Cordon System of Fruit Growing," published in GARDENING of December 12th, has, if we may judge from the queries sent us, proved of much interest to our readers. We have been asked to give some further information respecting the Paradise and other stocks, and we think we cannot do better than give a second extract from the "Parks and Gardens of Paris," in which the question is fully dealt with:—

The stock is as important to the cultivated fruit tree as the foundation is to the house; if we have not the right stock all is wrong. The French Paradise stock is the only one that should be used to form cordon trees, except on the very poorest and driest of soils. Before the writer had seen the results of using this stock in France and called attention to its merits, it was condemned as useless by our authorities, who described it as "exceedingly dwarf in its habit, and too tender for this climate, unless in very warm and dry soils!" But, in fact, it is as hardy as the hardiest tree of the forest, not perishing even if thrown with its roots exposed on the surface of the ground, and allowed to remain there through a rigorous winter; and the soils above all for which it is peculiarly unfitted are those that are hot and very dry, while it flourishes on rich, moist loams, and even bad clays—the very soils which often present the greatest amount of difficulty to the British fruit-grower. As will be readily seen, this is simply a matter for experiment, and the horticulturists of Britain should settle the question by direct trial, a thing they can so readily do. The "English Paradise" is the Doucin—one that, as regards vigour, is intermediate between the Crab and the Paradise, well fitted for neat standards, pyramids, and large bushes, but growing too vigorously to furnish anything but disappointment if planted as a low cordon, except on very light calcareous or "burning" soils. To plant the Apple on the common or Crab stock, and expect to form a dwarf fertile tree, is folly. By mutilation and removals we may secure a crop, and keep the Doucin or "English Paradise" within bounds; but what is wanted is a stock that will furnish a dwarf and fertile growth, without any root-pruning or attention beyond that of slight pruning, according to their luxuriance. This we have exactly in the Paradise stock, grown by millions in the nurseries around Paris, and in many other parts of France. We have next to determine

Flowers of the French Paradise

WHAT IS THIS PARADISE STOCK. It need scarcely be said that a plant like this, which exerts so marked an influence on the trees grafted on it, and is so truly valuable for our gardens, deserves to be at least as well known as any one kind of fruit, however good. Yet this is so far from being the case that but very little is known about it. To most of the French botanists its origin is involved in obscurity; apparently the clearest account is that of Professor Koch of Berlin, who has paid a great deal of attention to the origin of all our fruit trees. He says: "The name Malus paradisiaca appears to have been first used by Ruellius in the year 1537. It is a native of South-Eastern Russia, Caucasus, Tartary, and the Altai Mountains. I have often seen this shrub in the Caucasus, and near the Don and the Volga, where it forms bushes and dwarf trees, frequently accompanied with suckers." Without attempting to throw any light on the origin of the Paradise, M. Carrière of the Jardin des Plantes has studied its characteristics, compared with those of the Doucin, and described both in the "Flore des Serres":—

"PARADISE.—Roots much ramified and tidy, short, remaining near the surface, and never tap-rooted. Shrub, bush-like, much branched, the branchlets rather long, and with a lateral tendency, the adults covered with a smooth bark of a reddish colour; lightly pubescent in the case of the young shoots. Leaves lanceolate, elliptical, of a light green above and velvety beneath, finely denticulated, acuminate at the ends, but principally at the base. Petiole broadish and channelled. Calyx, with divisions acuminated and recurved, often contorted, as long as the peduncle. Petals straightly elongated at the base, faintly keeled, borne on a thin base, prolonged into a sort of keel. Ovary on a slender base, pubescent. Fruit higher than broad, lightly ribbed, skin white, flesh sweetish, almost insipid; ripening in July." It flowers more abundantly, and eight days earlier, than the Doucin.

"DOUCIN.—Roots rather long and strong, tap-rooted. Tree not much ramified, straight in its growth, with branchlets short, large, in adult specimens covered with a deep dull brown bark; very tomentose, and whitened in the case of the young shoots. Leaves broadly oval or nearly oboval, lightly blistered, shining on the upper and pubescent on the lower surface, rather broadly denticulated, scarcely acuminate at the apex, abruptly contracted and round at the base. Petiole broad, scarcely channelled. Calyx with divisions usually horizontal, occasionally recurved, rather large. Petals suboval, nearly blistered, keeled, borne on a base short and rather broad. Ovary on a stout support, covered with a tomentose down, white and thick. Fruit depressed, broader than high, not ribbed, the skin of an intense green, marked here and there with brownish spots; flesh of a high and agreeable flavour; ripening in August."

The Paradise stock has been known in France for between 200 and 300 years. The Doucin would appear to be not quite so ancient, but has been known for at least 160 years. It is used to form low trees, pyramids, wall, espalier, and even standard trees less vigorous and more suitable for gardens than those grafted on the Crab stock, and occasionally for cordons on bad and poor, dry soils. It is most probably a vigorous and deep-rooting variety of the same species as the Paradise, healthy everywhere, and succeeding well where, in consequence of its habit of surface-rooting, the Paradise would suffer and prove useless. Apples grafted upon the Doucin come into bearing earlier than upon the Crab, and it is admirable for all forms of garden-trees in size intermediate between the very dwarf cordons and bushes and the tall and vigorous orchard-trees.

The Crab stock it is needless to describe. It is the stock on which our Apples have been grafted for ages, and which is the only one employed in the majority of British gardens. It is the natural stock for the Apple, and that on which it grows with greatest vigour; but it takes a much longer time to come into bearing, and the attempts to keep it of a size suited to gardens by pruning, pinching, and root pruning which may be seen everywhere, are all efforts thrown away. Thus it will be seen there are three distinct stocks, each suiting distinct purposes, and that those who experiment upon the cordon system of Apple-growing without acting upon or bearing in mind these facts as the most im-

portant in connection with the subject, cannot be said to try it fairly. Of these three stocks, the one which has been much abused and least known, but which will yet prove

THE MOST VALUABLE OF ALL as a garden stock for the Apple, is the true French Paradise. When fairly tried it proves to be of all stocks yet known the hardiest, most dwarfing in its effects, and most powerful in inducing early fertility. This stock, which has been characterised in England as a thing quite worthless, will, if planted in the coldest and wettest of soils, instead of sending long roots down into the sour clayey earth, like the Crab, and, in lesser degree the Doucin, keep its wig-like mass of small roots near the surface, and without root-pruning bear fruit long before the others. That is the way to best test its powers of withstanding cold, and the other merits claimed for it; on all ordinarily rich and cool soils it will be found to succeed perfectly without root-pruning of any kind. Growers have only to try it to prove that instead of dying in our cool climate, and on our moist soils, its general adoption will lead to marked improvement. It is necessary to observe that in trying this stock healthy plants should be secured to begin with. It has been ascertained that some of our nurserymen who have tried this stock import the Paradise from France in a very small state, and then graft it soon after it arrives. The consequence is that the little trees have no power to push forth a healthy graft. If imported in this state they should be allowed a year's growth before grafted.

Thinking that experienced growers in the colder parts of North America might be able to throw some light on the hardiness of this stock, I wrote to Mr. J. J. Thomas, a pomologist of long and deserved repute, author of a standard book on fruit culture, and pomological editor of the Albany "Cultivator," who replied as follows:—"The French Paradise stock grows well with us on strong soils, with suitable pruning and cultivation. Neglected, and on light soils, it frequently fails after a lapse of several years. The oldest trees with which I am acquainted in Western New York are on the grounds of Ellwanger and Barry, at Rochester. Trees which have been worked on it thirty years old still possess a fair degree of vigour, having stems 6 inches to 8 inches in diameter, and the trees are about 8 feet high, with about the same extent of branches. Twelve-year-old trees are 5 feet or 6 feet high, and 4 inches or 5 inches in diameter. On my own grounds, which are strong clay loam, trees which have been planted twenty-five years are 7 inches in diameter at the base, and are about 10 feet high, with 10 feet spread of top. These have been sparingly pruned. In these remarks I carefully distinguish the true French Paradise with its peculiar wood and small fruit, with a mixture of sweet and bitter in its flavour." On the same subject Mr. Such, of South Amboy, New Jersey, writes as follows: — "In my garden I have on this stock many little bush-like Apple trees that have endured the greatest extremes of heat and of cold. About 4 winters ago the thermometer fell to 20 degs. below zero, and last summer the heat was intense, reaching 106 degs. to 108 degs. in the shade. In spite of this my little trees are in perfect health. The Doucin stock is also thoroughly hardy. There is near here a small orchard of Apples on this stock, planted more than fifteen years ago, all of which are in full vigour. My trees on the Paradise are like very large Currant bushes; those on the Doucin are from 10 feet to 15 feet through."

Since the first edition of this book appeared, the Paradise stock has been figured in the "Florist and Pomologist" (May, 1875), with the following remarks: "We have much pleasure in submitting a figure of the true French Paradise Apple, the Pommier des Paradis, which, when used as a stock, is of such inestimable value in inducing dwarfness and prolificacy in other varieties of Apple. Mr. Barron has collected from various sources, British and Continental, a number of Apple stocks, which are growing side by side, so as to admit of easy comparison. Side by side, also, are various Apples worked on the several stocks. There are the Crab stocks (Pommiers francs), with long, spreading, rigid, wiry, tangled branches, of a deep purplish-black colour, and at the time of our visit (April 11), with no vestige either of leaf or flower to be seen. There is the Dutch Paradise, of straggling habit, with olive-coloured shoots, in full leaf, but without a flower. There is Mr. Rivers's Nonsuch English Paradise, destitute of leaf or flower, and Rivers's Miniature Paradise, equally late, and scarcely justifying its name. There is Mr. Scotts' Paradise, of very distinct, somewhat pyramidal habit, in full leaf, but with scarcely a flower to be seen. There is the Doucin, also of pyramidal habit, and producing flowers early. Then there is the true French Paradise, Pommier de Paradis, obtained from the most reliable sources in France, which must unquestionably bear away the prize for precocity of flowering and abundance of bloom. By precocity we mean not early flowering with regard to season, but with reference to age also; while other stocks of the same age have not reached the fruiting stage, this one has already done so. It is of rather straggling habit, but full of flower. While some stocks at the time of our visit were showing few flowers and others none at all, this one stood out in the row sheeted over with pale pink blossoms. These qualities it very markedly contributes to the grafts. Short, compact growth, and early and abundant flowering, characterises the scions grafted on this stock, as they characterise the stock itself. A long row in one of the quarters, consisting of various Apples grafted on this stock, side by side with rows grafted on other stocks, is one of the most striking illustrations of the effects and consequences of grafting it has ever been our fortune to witness. The difference in appearance is so great that it would almost seem as if one row were cultivated for fruit, the other for timber! By way of illustration we may mention the Rhode Island Greening, a vigorous-growing kind, but which, when worked on this stock, becomes subdued, assumes a short, bushy habit, and produces an abundance of early bloom. What was formerly grown at Chiswick, under the name of French Paradise, is quite a different thing, and relatively very inferior. Of course, this Paradise stock is not intended for orchard use, where the freer-growing stocks are preferred. The French Paradise stock is of spreading habit, with pale purplish shoots. The inflorescence is abundant, and precocious as to season, and also in relation to the age of the plant. The fruit, which is a really good early eating Apple, is, according to our notes, of medium size, oblate, somewhat angular, yellow, changing on the exposed side to deep golden-yellow, and sometimes having a thin flush of rosy-red. The eye is broad, but closed, sunk in a rather deep cavity. The stalk is short, scarcely projecting from the hollow, which is not so deep as that of the eye. The flesh is pale straw-colour, fine grained, solid, juicy, and with a brisk, agreeable flavour. It ripens in the middle and end of August, and would form a good, useful, early dessert Apple, independent of its value as a dwarfing stock for Apple-trees grown in the bush or pyramidal form."

IT IS IMPORTANT TO PROCURE THE TRUE STOCK —A correspondent of the *Garden* writes: "I find it to be a very difficult matter to procure it (the French Paradise) in this country; and, so far as my experience goes, nurserymen seem to discourage its introduction. Last year I wanted a number of trees on the French stock, and had a quantity sent to me by a nurseryman whom I knew; but the vigorous appearance of the trees made me doubt the stock. Acting upon my advice, the nurseryman wrote to another in the trade, who advertises one of the largest collections of Apples and Pears in England, and stocks of all sorts and sizes, and the result was a letter in reply condemning the French Paradise stock as useless, and recommending another variety of the English Paradise, which the writer of the letter had raised and named after himself, and which, it appeared, was superior to any other in existence. Not a little annoyed at being put off in this way, my friend took the trouble to procure the plants for me direct from France, and from an undoubted source; and fine well-ripened little trees they were, only about half as vigorous as those I had got before on the English stock. They were planted in March, and some of the trees, though only maidens, bore a few large fine fruit this season, and they are planted in the open quarters of the kitchen garden. They have also made a good growth, and promise to bear well next year. Besides these, I ordered another lot on the French Paradise, this time from a house north of the Tweed; but was informed they could not be got in England true, and that I must wait until the frost had gone in France, when I should be supplied. I did so, and had them direct from Orleans in April. This is my experience in trying to get the French Paradise stock, which I am desirous of experimenting with."

TRIALS MADE IN A VARIETY OF GARDENS, apart from that by Mr. Barron in the Royal Horticultural Gardens at Chiswick, have proved all that has been claimed for this stock. Among the most important of the trials were those at Paxhill Park, in Sussex, in the gardens of the late Mr. Northall Laurie; in Mr. Roger Leigh's garden at Barham Court; and in Mr. Dancer's fruit-garden at Little Sutton, Chiswick; where very satisfactory results were obtained. Trials were also made in the Duke of Portland's garden at Welbeck by Mr. Tillery, and as in the cases previously mentioned, with complete success.

Mr. Roger Leigh, of Barham Court, showed at South Kensington such a collection of dessert and culinary Apples grown on this stock as one rarely has an opportunity of seeing. Among the dessert varieties were King of the Pippins, Cox's Orange Pippin, Ribston, and others, not only large but especially handsome, owing to their fine colour; while the culinary sorts, such as Belle du Bois, White Calville, Reinette du Canada, and others, were remarkable for their great size. These fine Apples are gathered from trees growing in bush or cordon form on the true Paradise stock and in good soil. The fruit thus produced in a Kentish garden is fully equal to the best samples grown on the Continent—a noteworthy fact, and one well worth the attention of cultivators, and especially of those who grow fruit for market.

Utilising manure heaps.—Adjacent to or in most kitchen gardens there are leaf, manure, or other heaps which, during summer and autumn, might, much more generally than is the case, be rendered attractive mounds of living green, as well as turned to profitable account—not that such heaps in themselves are objectionable, for it fares well with that garden where they are both large and numerous. Nor do I mean heaps of such materials as it is necessary to turn frequently to bring them into usable condition, but there are often others, such as old hot-beds and the like, made to forward early crops, which are allowed to remain bare and ugly until wheeling-out time comes. Now these might be speedily covered and made pleasing instead of unsightly by planting them with Vegetable Marrows, for which no better position could be found. The growth they make is amazing, and the fruit tender and succulent, while with a little attention to pinching and regulating they will continue to bear abundantly until cut down by frost. Gourds and Pumpkins, too, may be grown in similar positions. The bright coloured, ornamental and fantastic Gourds are curious, and we find them much sought after for church decoration with other fruits at harvest festivals. We have here a form of the Turk's-cap Gourd, the fruits of which are liked for table use. Seeds of it were sent from Nice, under the name of Turban Grand Mameluke. I grew it on an old Carrot bed, whence it rambled a great distance, bearing profusely. The fruits were large, flat, and depressed at the end, with a raised ring or turban in the centre. The flesh is bright yellow, the skin very thin, and when cooked the flesh is tender and delicious. Tomatoes also, as I have proved, grow to perfection planted on hills of any decayed or decaying materials. The shoots should be led away from the top or middle of the mound, and fastened with strong pegs as they grow to prevent wind-waving. The main stems should be allowed to run without stopping, and also a few laterals as the heap widens—sufficient to cover it, but not too thickly, as it is necessary to be able to get about among them. All side shoots should be pinched regularly off. Wherever the stems touch the surface they root, thus imparting to them fresh vigour and luxuriance. Opposite or between every third and fourth leaf they throw out great clusters of fruit, which require to be elevated above the foliage by means of pieces of lath or tile, or anything at hand. Of course, the situation must be sunny and exposed.—A. M. C.

OUTDOOR PLANTS.

OLD-FASHIONED FLOWERS.

I AM sure many of your readers will be glad to learn a little about flowers which need not much attention, and look bright and gay for a good portion of the year. Amongst these there is the Azalea, which is often called the American Honeysuckle from its fragrance. It requires peat soil, and, once planted in this, and kept free from weeds, gives very little trouble. It blooms in May, and bears flowers in yellow, orange, buff, and scarlet. Of the Clematis, of this there are many varieties, the sweet-scented Clematis Flammula may be seen covering many an English cotter's porch and scenting the air with its delicious perfume. Then there is C. Jackmanni, flowers purple, C. Hendersoni, flowers blue, and many other varieties. All these are hardy, and should find a place in every garden; they are inexpensive, and a source of pleasure when bought. Daphne pontica is a beautiful evergreen shrub, well known for its agreeable perfume in the evening and the brightness of its red poisonous berries. It blooms in April in common garden soil, and grows about 4 feet or 5 feet high. The Honeysuckle is a favourite climbing plant for covering borders and the like. It blooms in spring and summer, and grows abundantly in common garden soil. It is easily propagated by cuttings, which seem to strike at any time of the year. The Jessamine—Who does not know and love this simple flower? which is alluded to by the poet Moore in the following graceful way:—

> "Many a perfume breathed
> From plants that wake when others sleep;
> From timid Jasmine buds that keep
> Their odour to themselves all day;
> But when the sunlight dies away,
> Let the delicious secret out
> To every breeze that roams about."

There are the white Jessamine, J. officinalis, and the yellow or winter, J. nudiflorum, which is now in full bloom, brightening our vision at this dull time of year. Both kinds strike readily in silver sand and grow in common soil. Lavender is too well known almost to need mention, but one thing I would impress on your readers, and that is that the flowers that are gathered from young plants retain their scent much longer; therefore, let those who have old Lavender bushes make cuttings, which grow most freely, and will thrive in any nook, without taking the room of more valuable plants. If grown out-of-doors sow Mignonette in April, when all danger of frost is over before it pushes through the soil. Sow thinly, as it spreads about it will then go on blooming until frost cuts it off. Pinks flower in June, and are worthy of a conspicuous place in every garden. A bunch of Pinks is a fit offering for a princess or a cottager; they can be propagated either by cuttings or pipings; the former are best. Carnations should find a place in every cottage garden. The varieties are too numerous to mention here; they require a richer soil than the plants mentioned above.

Rosemary is seldom seen in other than a cottage garden, but it has many useful qualities, and as it is said to thrive best when most neglected, it is not unworthy of some spare corner. Sweet Brier will always be sought after, and if you have no other place for it make a hedge of it, if you will, but do have it—the fragrance of its leaves, the beauty of its blossoms, and the brightness of its scarlet hips render it deservedly one of the most conspicuous of our shrubs. Stocks, Wallflowers, and Sweet Williams are all very old-fashioned, I know, but who does not love them? "I always have a bunch of Wallflowers on my study table in spring," said a country vicar to me, "and they help me to write my sermon better than all the books in the room." They teach us all, indeed, a lesson of humility and patience. A well-grown Stock too is equal to many Auriculas of fancy kinds and prices. Ten-week Stocks should be sown in April, intermediate Stocks, Sweet Williams, and Wallflowers should be sown in June, and they will become established before the frost sets in.

I have named only a few of the sweet-scented, old-fashioned flowers which should be in every garden, but which often have to give place to others newer and less beautiful. I hope those who have not some or all of the above will set about getting them. We all like old friends best, so let us not forget our old friends the old-fashioned flowers which breathe nothing but love and peace, and are grateful for ever so small a portion of our time and attention.

The Grange, Leatherhead. C. F. DAVIS.

PLANTING PINKS.

PINKS may be planted with success in permanent beds any time after the pipings are rooted in autumn, or the planting may be deferred till spring, when beds may be made for them as late as February or March; but autumn planting—*i.e.*, as soon as the pipings are well rooted—is best. Pinks need a rich loamy soil, thoroughly drained, being impatient of stagnant water at the root. If the soil is naturally unsuitable for their growth, rich loam, consisting of rotted turves from 12 inches to 18 inches in depth, should be substituted, and at 1 foot deep place 2 inches or 3 inches of rotten cow manure, to form a rich bottom in which the roots can run. The easiest method of managing Pink beds is to dig out the soil 1 foot deep and place the manure in the bottom of the bed, making the soil rich to the depth of 1 foot by forking into it some rotten manure and leaf-mould before putting in the pipings. If planting is deferred until spring—thus giving the plants a second move instead of bringing them direct from the striking bed—the roots must be carefully spread out, and after being well watered their roots should receive some protection during frosty weather, alternate freezing and thawing being against them—in some cases even pushing the plants out of the ground. Beds 3 feet wide are best, and the plants should be 9 inches apart in the rows, but when four rows are planted in each bed, 6 inches will be found to be a good distance from plant to plant. Leave alleys 12 inches wide between the beds. If comeatable, the plants will be greatly benefited by frequent applications of artificial manure. The end of July or beginning of August is a good time to put in pipings, which may be made in the usual way; they may either be dibbled into pots filled with sandy soil or pricked into a handlight filled with loamy soil, having a good portion of sharp sand mixed with it to keep the whole open. Shade from bright sunshine during hot days until thoroughly rooted, which generally takes six weeks to accomplish. When rooted give plenty of ventilation, and expose the plants to the open air before planting them out into the beds. W. C.

Protecting Christmas Roses.—The beauty of the Christmas Rose is only fully seen when the blooms are shielded from harsh drying winds and heavy rains. When fully exposed the blooms are not only disfigured when pelting rains bespatter them with dirt, but they do not come to their full size and purity of colour. Covered with a handlight, the more genial climate thus created favours their perfect development, the flowers coming large and being ready to gather when they are most required. Probably the best way to ensure an early supply of bloom is to take up the plants carefully about the last week in October, putting them into pots just large enough to comfortably contain the roots, and placing them in a position near the glass in a light airy house. Christmas Roses will not bear forcing, as the word is commonly understood, but, like Camellias, Cyclamens, and zonal Pelargoniums, they enjoy a temperature which does not fall below 45 degs. and which does not rise much beyond 55 degs., never exceeding 50 degs. at night. Give them this constant warmth, with abundance of air on fine days, and you will get plenty of good flowers for Christmas decorations. Those who can devote a frame or two to this useful flower will be well repaid for the accommodation accorded, as, there being no necessity to disturb the plants from year to year, the growth made by them will naturally be stronger and the individual blooms will come larger. But frames are often much required during the summer months, in which case it is easy to move the plants out in spring, but the best way is to plant them permanently in beds the width of the frames. Then, if some boards are fixed round—a layer or two of bricks will do—the lights can be laid on when the proper time arrives, and again replaced when the blooming time is over.—B.

REPLIES.

15314. — **Propagating Hart's-tongue Ferns.**—This Fern, Scolopendrium vulgare, may be propagated by spores. The right way to sow them is to wait until the spores begin to drop off; a pot should then be placed under the fronds, from which the spores will drop into a compost of equal parts loam and mortar rubbish. A frond with ripe spores may also be broken off, and laid over the surface. They take two or three months to vegetate in shady place. Place the pots containing the spores in hand-lights behind a north wall.—J. D. E.

15373.—**Filling flower bed.**—"R. J. W." has made a mistake in planting Rose bushes in a mixed flower bed. Roses require high cultivation, and doses of manure, both liquid and solid, which almost preclude other plants being grown amongst them. They also require the ground to be frequently hoed during spring. Roses should always be grown by themselves, in good, rich, well prepared soil, and nothing should be planted amongst them, so that their owner can walk between them and all over the bed, examine, syringe, and pick maggots and caterpillars off them without treading on any thing else. The ground should be covered with fat manure early in spring, which should be hoed in in March. Doses of liquid manure should also be given up to midsummer. The only Roses that do well in mixed borders are the strong-growing, old fashioned Damasks, Albas, and hybrid Chinas. The best thing "R. J. W." can do is to grow Phloxes, Delphiniums, Dahlias, Gladioli, Stocks, and Asters in the rest of the bed; these all require annual moving, and the same heavy manuring as the Roses do.—J. D.

15354.—**Herbaceous plants for chalk soil.**—Anything can be made to grow on chalk soil except Rhododendrons, the main difficulty being the water supply. If plenty of water is available there need be scarcely any restriction. The soil on the chalk is good, but often shallow; the chalk, however, retains moisture, and plants send their roots into it. The walks should be cut down to the chalk rock, and the excavated soil used to help the depth of the beds. Of dwarf plants the best are Arabis, Aubrietia, Alyssum, Sun Roses, double and single, Sedums, Saxifrages, Anemone Pulsatilla, and Erinus alpinus. All the Primrose family do with leaf-mould and a little shade, and with a little less shade Anemones and Pansies are among the finest plants available. Of taller plants Antirrhinums and Wallflowers, Campanulas, Delphiniums, Œnotheras, Pinks, Carnations, and the more tender Pentstemons will all do; Phloxes do splendidly if the soil is well enriched with good manure in the bottom spit. Everything should be done to promote deep rooting, and the ground should be mulched in hot weather. It is perfectly lamentable to see people in the autumn tidying up their gardens and burning every scrap of decayed vegetation; all that should be laid up in heaps to rot, and spread over the surface of the soil when required. Of annuals and biennials Stocks, Wallflowers, Sweet Williams, Indian and Japanese Pinks, Poppies, Lupines, Phlox Drummondii, and Portulacas do particularly well, but all do with the help of manure and water. As my present garden is on chalk, I shall be happy to help readers who are similarly situated.—J. D.

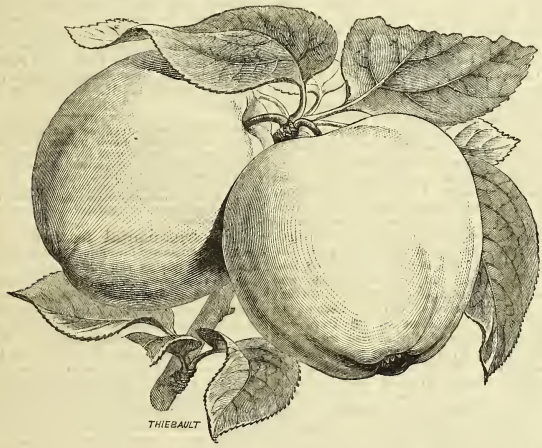
15470. — **Renovating lawn-tennis ground.**—A good coating of mellow loam is the best thing "Bagshot Sand" can do to renovate his lawn. It would have been better if it had been laid on an inch thick early in November, and then it would have been ready for another coat in February. It is surprising how quickly soil or manure disappears when spread on the surface of lawns during the winter. The rain and the worms work it down to the roots and then the Grass is permanently benefited. Nitrate of soda or any other chemical manure only benefits the Grass for a short time.—J. C. C.

15255.—**Draining lawn-tennis ground.**—Ordinary narrow drains should be dug out 2 feet 6 inches deep; they need only be wide enough to admit of 2-inch drain-pipes being placed at the bottom. A rather wider drain must be dug at the lowest point to admit of 3-inch pipes to carry off the water to the nearest ditch. In no other way can the ground be effectually drained.—J. D. E.

MANAGEMENT OF GARDEN SOILS.

THE cultivation of kitchen garden and fruit crops is annually becoming more important. Many amateurs are anxious to grow good vegetables and fruit, but in only a few cases are anything like successful results obtained. The question arises, As to why business men and others who own suburban gardens of moderate dimensions fail either to obtain much pleasure or profit from them. As far as I have been able to judge, at least, one cause of failure is to be found in the mismanagement of the soil. It is impossible either to obtain good fruits or vegetables unless the ground is in good condition. One very important part of the management, and one that is sometimes not even thought of, is draining. A sour, wet subsoil is not good for vegetables, but it is positively pernicious to fruit trees. Drains should be cut 3 feet deep, and they must have a fall to one 3 feet 6 inches deep at the lowest part of the ground. This main drain should be of 4-inch pipes; the others should be 3-inch. The next step to be taken is

PULVERISING THE SOIL.—This is most frequently done by digging; but in the case where new ground has to be broken up this is not sufficient. Trenching is necessary; but in doing this a serious mistake is often made, and



Fruit of the French Paradise Apple. (See article on page 616).

hat is the common one of trenching up new ground 18 inches or 2 feet deep, burying all the surface soil in the bottom of the trench, and placing 9 inches or a foot of sterile soil on the surface. The result of this is that the first crop is often lost, and no good results are obtained until the ground is retrenched and the subsoil returned to its old position. In some soils the subsoil is good to the depth of 2 feet, but in heavy clay soil it is almost impossible to grow anything in it until it has been thoroughly broken up and exposed to the weather for some years. The right way to break up such soils is one that will gradually bring them into cultivation without losing a crop at all. Our plan is to take out an opening at one end of the ground about 3 feet wide. An ordinary spit must be taken out, also the loose earth, which will give a depth of 9 inches or 10 inches. The bottom of this trench must be dug up, which will give 6 inches more. Over the loose bottom a dressing of manure should be placed. Then mark off a similar width, dig out another spit, and throw it over the manure with the loose earth. The bottom is again dug up, the manure placed over it, and the same process is repeated to the end of the garden. In this way the soil that ought to be on the top is kept there, while the subsoil is loosened, and thus made pervious to the air. Next season the ground may be worked a little deeper, the next year deeper still, until the full depth of 2 feet is reached, if the ground admits of it. In case it is intended to crop a part of the ground with

FRUIT TREES, this gradual pulverisation of soil is not so easily carried out, but it is not so essential for fruit trees. Some years ago I had to deal with a garden that might fairly be said to be the very worst possible for growing fruit. The ground varied very much, as it does in almost every garden of even moderate dimensions. The ground in this case was marked out for the fruit trees, and it was trenched about 20 inches deep. To do this it was necessary in some places to take out 9 inches of gravel and substitute for it 9 inches of soil. This might appear gardening under difficulties, but it was really not so, as the gravel was wanted for walks, and a large portion of it was used for that purpose; indeed, as it was taken out of the ground it was wheeled on to the walks. In some cases the depth of the ground was ample, but all through the piece it was necessary that the poor subsoil should come up to the surface. This was a case where not only were surface-rooting stocks best, but the use of them was the only means where anything like good results could be obtained, and the results were most satisfactory. All the trees were planted in the sub-soil, but half a barrowload of good decayed loam was placed round the roots of each. Next season we started at one end of the fruit borders Apples, Pears, Plums, Cherries, and Medlars. The Medlars were a great success; they have been bearing annually for twenty years; the Apples, too, were of excellent quality, though not large. The Pears were only of medium size, but the flavour good. Plums were large in size and the trees blossomed well. Pyramid Morello Cherries on the Cerasus Mahaleb stock were annually laden with their crimson fruit. I lately dealt with a heavy clay soil, getting it into good condition for fruits and vegetables. The soil referred to above did not require to be drained; it was drained naturally. Digging drains would not only have been a misapplication of capital, but might have been positively injurious. In the second case it was easy to see by the state of the soil that the ground must be drained; this was done, of course, and the soil was trenched 20 inches deep, and, being poor, some manure was added; but it does not answer to use too much of this in the preparation of the soil for fruit trees, as it causes them to produce vigorous wood growths instead of fruit-bearing wood. If the trees should not be sufficiently vigorous, this can be remedied by mulching round the roots with rich, partially decayed manure. The different kinds of kitchen garden crops require treatment suitable for each. Take Asparagus, for instance; this requires very deep and very rich soil; if the ground can be trenched 3 feet deep, so much the better. I made six Asparagus beds just twenty-one years ago, and they are now producing excellent Asparagus, quite as good in quality and quantity as they did at first. A piece of ground was chosen that could be trenched 3 feet deep. In the bottom of the trench a good layer of stable manure was placed, over this a foot of earth, then another layer of manure, more earth, manure again, and the spit of earth from the bottom of the next trench finished off the work; this was continued trench by trench until the work was finished. We planted in March, but I should have preferred to crop the ground lightly with something else the following season and retrench it in the autumn, planting it out with one-year-old Asparagus the following spring. I did not intend to go into the culture of crops, but may remark in passing that the young plants should be carefully supported with sticks the following season to prevent their being snapped off by winds. The ground for Globe Artichokes may be prepared in the same way, although it is not quite so essential to cultivate so deep for this crop as it is for Asparagus. Heavy soils are, as a general rule, much improved by a dressing of quicklime—a bushel to the rod is a good dressing. It can be slaked and thrown over the ground at once, and forked in without loss of time. Seeds can be sown or Potatoes planted on the ground immediately; they are not injured by the lime.

THE MARKET GARDENERS near London use a great deal of gaslime to throw over the land, but it must either be applied very sparingly, or, if a good dressing is used, the ground must not be cropped for a few months after. It is not a bad plan to use it on ground that has to lie fallow during the winter and be cropped in the spring. Perhaps the best way to use gaslime is to mix it with weeds, trimmings from ditches, or the roots of Couch Grass gathered from fields. The lime will kill any sort of weeds or seeds of weeds, mixed in the proportion of two parts of the weeds to one of the gaslime. A great deal of mischief, is done by working the ground when it is not in good condition. When soils, especially heavy soils, are wet, it is best to let them alone; it is better almost to be idle than to dig or trench heavy soils in a wet state. Take advantage of the surface being dry to do the digging. Another mistake made by gardeners and amateurs alike is that of hoeing and raking waste ground in summer. It would not take longer to dig the weeds into the ground than it does to hoe the ground and rake them off; and the ground, after being dug, is in a much better condition than it is after being hoed. The more heavy soils are dug or forked over during the summer months the better are they prepared for the reception of the crops. If lime rubbish can be easily obtained, this makes an excellent dressing for stiff soils. Stable manure is also to be preferred to any other; we find that from stables where peat or Moss litter is used the best. D.

15466.—**Ataccia cristata.**—I have seen the above advertised in a catalogue of plants issued by Ant. Roozen, and Son, Overveen, near Haarlem. The London agents are Mertens and Co., 3, Cross-lane, St. Mary-at-Hill, London.—M. A. A.

Keeping frost out of small greenhouse.—None of your correspondents appear to have noticed the utility of overhead protection in this matter. I have a small lean-to greenhouse, facing south. Last summer, as I found the sun made it excessively hot, I put up an overhead horizontal blind, made of green calico, to draw when the sun shone overpoweringly. When the late frost began I drew this blind in the afternoon and left it drawn all night. I found that the thermometer in the greenhouse did not go below 45 degs. at any time, though the temperature outside was as low as 27 degs. I had no heating apparatus whatever. On the third night of frost I thought it better to use a stove. I lighted the very smallest oil-stove I could get (cost 3s. 4d.), and found that the thermometer remained above 50 degs. with the little stove turned down to a very moderate flame. On this night and the following the temperature outside was 24 degs. It may seem strange that so thin a material as calico could have much effect in keeping out cold. But a very slight protection overhead prevents terrestrial radiation, and it is also to be remembered that between the glass roof and the blind there is an air space of 6 inches to 2 feet in height.—J. B. S.

THE KITCHEN GARDEN.

New and old seeds.—New seeds always germinate more quickly and stronger than old ones do, and there are some kinds that are comparatively useless after being kept one year. Many old seeds will germinate well in heat that would have perished in cold ground, or, at any rate, have produced but a very poor plant. Sound seeds of Peas, Broad, Kidney, and Runner Beans, Carrots, and Parsnips that have been kept in a dry place for another season will germinate fairly well in heat, but in the open they are very unreliable. The same may also be said of seeds of Onions, Leeks, Salsify, Scorzonera, Mustard, and Cress that have been kept two seasons. Artichokes, Lettuces, Endive, and Tomatoes keep three seasons, and Broccoli, Cabbage, Kales, Brussels Sprouts, Savoys, Spinach, and Turnips keep four seasons, while Parsley, Beet, Celery, Melon, and Cucumber seed may be kept six or more years—the two last, indeed, retaining their vitality for a much longer time.—W. J. M.

American Gourds.—Mr. Simmons has furnished readers with a very interesting paper on the above subject. That part of it which treats of Water Melons is to me the most interesting. I well remember something like thirty-five years ago seeing them noticed in a gardening paper, where Dr. Lindley described them as "mountains of sugar," and, I believe, sent a packet of seed to the then gardener at Arundel Castle. The seeds were duly sown, and treated exactly as ordinary Melons. They grew most luxuriantly, but the great point was the setting of the fruit, some scores being set in the ordinary way by using the camel's-hair brush, and distributing the pollen; but only three could our foreman get to swell. The first Melon cut was a long-shaped fruit, weighing 18 lbs., and this was sent in for dessert, but proved worthless. The second and third weighed respectively 10 lbs. and 12 lbs. One of these the gardener gave to the young men; this also proved worthless. Since that time I have grown Melons from many parts of the world, but never found them in quality anything like so good as our own English varieties.—R. GILBERT.

SHY-STRIKING CUTTINGS.

REVERTING to this subject, allow me to say, in reply to "A. Boyle" (page 562), that I don't subject Rose cuttings to the treatment described on page 529 for the simple reason that even moderately strong cuttings offer a most obstinate resistance to the operation. Weak shoots, it is true, may be easily manipulated, and grow readily, but then weak cuttings mean, as a rule, weak plants. I have experienced no difficulty, however, in propagating hybrid perpetuals from slips put in in the usual way. These slips are taken from the prunings in February or March, rejecting those with unfolding buds, and choosing strong, healthy shoots of the previous year's growth which are torn off with a "heel" at their junction with the old wood. The base of the slips is lightly smoothed with a sharp knife, and the tops are shortened to about 8 inches or 10 inches when they are ready for insertion. I put them in rows 4 inches apart, the rows 7 inches asunder, on a narrow north border used for miscellaneous cuttings. Holes are made 6 inches deep with a dibber, such as is used for planting out Cabbages, a small handful of sharp drift-sand is put in each hole, and into this the heel of each slip is thrust and the soil pressed firmly around them. All the care they require is to prevent injury from drought by timely watering, and the hoe drawn between the rows occasionally to loosen the surface soil and keep down weeds. The following February they are planted out permanently. I do not say that I have no failures, but they are so few that the result may be fairly called a success. Cuttings with a considerable portion of exposed wood at the base have been proved by experiment to root much more readily than those prepared in the usual way. This explains the utility of the "heel" in slips, and of the slit in the base of cuttings. The success of the twisting and bending-up plan described on page 529 may also, doubtless, be ascribed to this cause, as the bark is loosened, and the wood partially exposed by the operation. I fail to see, however, in what way the rooting of cuttings can be assisted by planting Oats among them, unless, indeed, it is by affording shade, which could, of course, be supplied by other means. If plants, like animals, possessed the faculty of imitation, the matter might be easily accounted for, because we could then believe that the cuttings grew because the Oats did!

F. MARTIN.

A BIT OF LANDSCAPE GARDENING.

THERE are two common extremes of sentiment in regard to the value of forest and ornamental trees which are always opposed to rural beauty. The one extreme has to do with the immediate neighbourhood of the residence, the other with more distant views of landscape.

It is certainly the common fault with country homes, where any attempt is made toward ornament, that too many trees and bushes are allowed to grow. It is perfectly proper—indeed, highly necessary—that in the first days and years of ornamenting a barren home, one should plant thickly of a variety of trees and shrubs. There should be small groups of Spruces and deciduous trees of the rapid-growing sorts, which will soon afford shelter and privacy. But it is none the less important that those clumps should be thinned just as fast as the individual trees begin to crowd each other. To be sure, one loves the trees which he has planted and nourished, but it must be borne in mind that sentiment should never stand in the way of beauty and utility. I do not like the hackneyed advice which urges us to plant ornamental trees at such distances as will be proper for them to occupy twenty years hence. Such advice is discouraging; we must live in large part for the present. Moreover, twenty years hence is but a point of time, and it does not pay to forego the pleasure of nineteen years in order to enjoy the perfection of the twentieth. What I always recommend to owners of unadorned places, is to plant thickly; get an immediate effect. And immediately thereupon I urge the injunction, strongly underlined—*do not neglect to thin out as soon as the trees begin to crowd.* One symmetrical and vigorous tree is worth three one-sided, stunted ones. Clumps of trees soon grow into tangled thickets, the delight of moulds and vermin. They shut out sun and health, and shut one in from enchanting glimpses of distant views. The attractive clump has become an unsightly tangle, and soon all the trees will have become so lop-sided that one cannot be removed without laying bare an unsightly side of its neighbour. This is no exaggeration. The most difficult matter to press home to most people, in the way of ornament, is the fact that there should be constant and systematic thinning. It is a mistake to suppose that the surroundings of a home should be fixed. The universal law of exchange applies to the private grounds, as well as to the orchard or garden.

Not long since I visited a worthy farmer who desired my advice in regard to the improvement of his front yard. I looked it over, and advised him to remove a great Norway Spruce, a Balsam Fir, an Apple tree, a large Horse Chestnut, three smaller Norways, a large Red Cedar, a fringe tree, and several bushes. He discussed the trees *seriatim.* The great Spruce he could never spare, because it was the first one set in the township; ditto with the Fir; the Apple tree bore good fruit; the Horse Chestnut was the largest specimen in the neighbourhood; the three smaller Norways were thrifty and attractive; the Red Cedar had in an early day been "backed" in from the woods at a great expense of muscle; the fringe tree cost him a dollar, and the bushes were all attractive when in flower; therefore he could spare none of them. I could not improve his yard; and when he must look at the evening sky to note signs of to-morrow's weather, and when his wife must know who it is that is passing along the highway, they must either go some rods away from the house or "scrooch" under the trees. An attractive house on a distant hill is entirely hidden; in fact, there is no great outside world from the windows of that residence.

This is all radically wrong. The landscape gardener is often upbraided for his so-called impractical notions, his "fine theories of beauty," but woe to the gardener if he ever entertains notions so much at variance with laws of happiness and health as does he who hibernates in a prison of tangled trees. No; rather have an open field with the fresh verdure of the greensward and the crisp play of winds, and an over-abundance of sunlight, than a house hidden in gloomy foliage. But let us have the golden mean. Keep the front of the house open to the world, and never allow a tree to hide a desirable view. Last spring I moved into a new house. From the front porch I could see nothing but an ordinary grove, although but a few rods beyond it were fine college buildings with their constant play of life and frolic. I cut many trees from that grove, none to its detriment either, and now as I sit at my dinner table I can see through the grove to an attractive view beyond. This vista may be "impractical" as the common phrase goes, but I am confident that I can relish my meal better than I could if I were shut up to my own dining-room and the bit of gravel path which lies in front of my window.

Now it is singular that these same people who would cling tenaciously to every old tree about the house, would often mercilessly sacrifice every beautiful great tree in a distant landscape. Rural landscapes are pre-eminently beautiful when there are drooping Elms and rotund Maples dotted here and there over little eminences in pastures and Cornfields, and along highways. He is a reckless tenant who would rob nature of these isolated beauties for the sake of the stove-wood they contain. In rocky New England, where the farmers cannot covet every foot of land, the grand old trees are picturesque. In our western country it is not always so. It requires some judgment, to be sure, to know when to cut a tree and when to let it alone, but it is judgment, nevertheless, which pays the effort it costs.—L. H. BAILEY, in *Country Gentleman.*

15429.—**Hot-water pipes for greenhouse.**—3-inch, or, better still, 4-inch piping, flow and return, carried round three sides of the greenhouse would be sufficient to maintain a temperature of 60 degs. It would be safe to have the boiler inside if it is one of the Loughboro' type that can be fed from the outside, but not otherwise. A slow combustion stove might answer if carefully worked, but a hot-water apparatus would be far preferable. —K., *Southend.*

The ornamental features of fruit trees.—There are few objects more beautiful and interesting during the spring or early summer months than our common cultivated fruit trees; and there really does not appear to be any good reason why the fruit garden should not constitute a necessary portion of the pleasure grounds of every country mansion. What can be more beautiful than the Apple, the Pear, the Plum, and the Cherry tree in full flower? And they are, in fact, exceedingly interesting objects at all seasons. But it rarely happens that they are placed in positions where their beauty can be appreciated and enjoyed. They are too frequently to be found in the vegetable garden, where they are entirely out of place (unless it be in the form of espaliers or cordons), or they may possibly be found in a somewhat neglected and out-of-the-way locality known as the orchard. But as an advance or an improvement upon this state of things, might not these useful and ornamental trees be cultivated with more pleasure, and at least equal profit, in a tastefully-designed garden or compartment by themselves, and forming at the same time an essential part of the pleasure grounds? Clumps or groups of varied forms and dimensions could be formed of pyramidal or otherwise trained Apple, Pear, Plum, and Cherry trees, &c., which might be margined by low single cordons of their respective kinds, while single standard trees of various sorts might, in suitable situations, be allowed to assume their natural habit and dimensions—the whole area to be traversed by winding and comfortable walks, to afford every facility for the examination and enjoyment of the beauty of the various fruits in all stages of their development. Altogether I am inclined to think that by adopting some system of grouping such as I have endeavoured to describe, and by adhering to an arrangement which would associate the fruit garden with the pleasure ground in such a manner as to constitute, as it were, a necessary and important portion of the same, and to some extent effect a combination of the useful with the ornamental, we could hardly fail to give additional interest to the surroundings of a country mansion or residence at all seasons of the year. Perhaps this hint may be followed during the present planting season.—P. G.

ROSES.

BUSH ROSES.

It has been often said, and truly, that the greater the extent to which a mistaken practice is carried the more decided the progress in the opposite direction will be when the change sets in, and the extent to which bush Roses are taking the place of standards goes to confirm the truth of the statement.

The fashion of growing Roses in standard form may be traced to two causes—a disposition to favour something fresh, as the natural bush-shaped plants, and the facilities for standards undoubtedly were from the old propagation which the standards presented. It was an easy process to go into the hedgerows and woods to get stocks ready made by the thousand without the time and trouble and forethought required in raising stocks from cuttings or seed. Besides this it was a cheap way of proceeding, as those who got the stocks were often ordinary out-of-work labourers, who otherwise would have had nothing to do, and would procure them at a nominal price. So the practice went on until people seemed to almost forget that a Rose could grow on its own roots, or could be so managed in its infancy by the use of a foster-parent as to ultimately get established on roots of its own. Yet, although the fashion for standards was such that for a long time nearly everyone was content to grow Roses in that way, still there were always those who neither admired their appearance nor were oblivious of the defects from a cultural point of view which are inseparable from growing Roses in this way, and which are too well known to require repeating.

There were not a few connected with Rose growing for sale who imagined that the preference for standards was so far a fixed principle with buyers, that nothing else would satisfy them. I well recollect a few years back one of the great growers telling me that I and others who were so far heretical on the subject as to advise the adoption of the bush system of culture in preference to standards might say as much as we liked, but the public would always stick to the standards. Yet the outcome of following this opinion by propagating nearly all standards and few in bush form has been that an immense number of the former have had to be got rid of at any price. To unlearn in such matters is always a slow process, and there will no doubt be a good many of the public who for a time will continue to grow standards, but the combined advantages, in both appearance and general results, attending the bush system of cultivation are such as to insure its ultimate general adoption. B.

15479.—**Roses for Kent.**—For your garden you should get the best Hybrid Perpetuals, and for growing in pots in your house the Tea-scented varieties. I give you the names of twelve Perpetuals that will be sure to suit you:—A. K. Williams, La France, Charles Lefebvre, Merveille de Lyon, Duke of Teck, Heinrich Schulthers, Jules Margottin, Baroness Rothschild, Madame Clemence Joigneaux, Grandeur of Cheshunt, Marchioness of Exeter, Lady Sheffield, and Duchess de Vallombrossa. The best Tea-scented varieties are:—David Pradel, Catherine Mermet, Niphetos, Madame Falcot, Marie Van Houtte, Madame Welche, and Perle de Lyon.—J. C. C.

15511.—**Colour of Roses.**—There are nearly a dozen varieties of Ayrshire Roses, the colours ranging from blush through various shades up to pure white. Dundee Rambler belongs to the Ayrshire, its colour is white, faintly tinged with pink; Félicité Perpetuelle, cream colour; Prairie Bell, rose; Princess Marie, deep pink; The Garland, fawn colour.—J. C. C.

Bramley's Apple.—Mr. Merryweather, of Southwell, Notts., who makes a specialty of this Apple, and has a good stock of it, sent us some very high-coloured and handsome specimens on Christmas Eve. They were excellent in quality, and full of a fine tart juice, often missing in Apples even at this season. We have a very high opinion of this Apple: it is really worth bringing out, which many of the new Apples are not. It is also a very handsome fruit; but this quality we think quite secondary to the flavour.

TREES AND SHRUBS.

RENOVATING CONIFEROUS TREES

From time to time accounts appear narrating the advantages which coniferous trees derive from applications of new soil to the surface of ground occupied by their roots, or by trenching in new material round the circle already occupied by them for the roots to run into, with a view to arrest a premature want of vigour which the trees exhibit; but, looking at the growth of a tree from a reasonable standpoint, that is, taking into consideration the length of time it takes to reach maturity and the proportions which it should ultimately attain, I would ask, Can such advice be set down as sound? Are not such operations manifestly devoid of enduring effects? The thousands of acres of fine old woods with which England abounds, and the countless magnificent trees that adorn the grounds round old mansions, owe their existence to forethought in providing for the embellishment of the land, and also to correct judgment evinced in choosing suitable trees wherewith to effect it by bygone generations of planters; but the least possible amount of foresight cannot fail to discern that the operations in question cannot have more than a passing influence in helping the trees so treated. If tree life were short, there might be some shadow of reason in planting kinds in places that necessitated the adoption of means of the description under notice to keep them going. But the lifetime of trees, where soil and climate are suitable, must be reckoned by centuries.

As a matter of course, in grounds of an ornamental character no tree should ever be planted where the presence of a tree is not required to improve their appearance, or to shut out the view of some object that it may be desirable to hide. If in tree planting these points were kept steadily in view and acted upon, there would not be much fear of the disappointing failures now to be seen in the numerous places where the selection of the kinds used shows that a liking for novelty has ruled instead of sound judgment. It may be said that if everyone had only planted such species and varieties of trees as had proved their ability to thrive in the situation selected, we should have had few, if any, beyond native kinds. But, as I have before said when speaking on the subject, by all means try all newcomers that show a chance of thriving, but confine them, until proved, to positions where their failure will not cause a gap that will take at least a considerable slice off a lifetime to fill. In half the gardens in the kingdom, from those confined to half an acre each to such as may be reckoned by scores of acres, may be seen examples of some or other of the kinds of trees for which the invigorating process is usually recommended, in a condition of lingering failure whilst yet, literally speaking, they are in their infancy, although, perhaps, a score of years or more are lost by their inability to thrive, and even if kept going for a time, by means such as those spoken of, failure would only be deferred, as, by the time they have got large enough to give a forecast of their natural size and character, they will be beyond the limits when such assistance can be continued. In the case of such species as Araucaria imbricata and Cedrus Deodara in the greater part of England, excepting in the comparatively few spots where the nature of the soil is such as to induce a more than ordinary cold-resisting condition, they are doomed to permanent disfigurement by the severe frosts that from time to time occur, and through such inability they are unfit for planting, except in places where the influences named favour them. Respecting other kinds of Conifers that may be hardy enough to bear uninjured our severest winters, but for which the natural soil in places is unfitted, they are equally useless. If there was any scarcity of kinds that have proved their ability to thrive where trees at all can grow fairly well, there might be some excuse for planters yielding to the temptation to introduce these unsuitable trees, but as matters stand there is none.

Other mistakes, too, are made in the treatment of trees liable to suffer in exceptionally hard winters. A very common practice is to prepare stations for them, when young, consisting of rich soil in considerable quantities; by the use of this strong free growth is secured thus giving the trees a luxuriant appearance; but a hard winter comes, cold enough to send the mercury in the thermometer down to zero, and occasionally a few degrees lower, and with it goes the delusive appearance of the trees, never to return, and all through the mistaken assistance given in the shape of over rich soil. It would be difficult to devise any means more mischievous in its effects than adding anything to the natural soil calculated to induce exuberant growth in trees or plants at all susceptible to injury from low temperature, to which our climate is subject, and more particularly is this so with trees expected to become important features in ornamental grounds. It may be said that such severe winters as injure the trees in question only come at long intervals, frequently not oftener than once in a score of years or more; this is doubtless correct, but such a consideration is a very insufficient reason for planting them. The seldomer, indeed, such unwelcome visitations occur, the more visible are their effects consequent on the larger sizes which the trees have reached.

Species of so decided a character and distinct appearance as Araucaria imbricata naturally cause a longing by those who are fond of trees to have them even where the conditions of soil and climate combined are not such as to give a prospect of their standing exceptionally low temperatures. In many places where this and some other trees suffer from occasional low temperatures the natural soil is quite good enough to grow them, but through its being somewhat too retentive of moisture, the growth made from year to year is too soft to endure much cold. In situations of this kind, if, instead of adding loam or compost of any kind, the ground, as far as the roots were likely to extend, had plenty of rubble, brickbats, burnt ballast, or similar material, mixed evenly through it down as low as the roots were likely to descend, much good would be effected, enabling the tree to bear without injury an amount of frost that under ordinary conditions it would be unable to bear. It is needless to say that where such a course is taken there should be no half measures. Enough of the material ought to be used to give the required porosity to the soil; under such conditions the growth would be proportionately slower, and on that account so much more to be depended on. In the southern half of England, where the land is of ordinary fair quality and where the subsoil is gravel or rock, this tree and others of a like nature rarely, if ever, fail to pass through the severest winters without the least injury. Additions to the soil, such as here suggested, that will to some extent bring it to a condition like that present naturally where trees of this description are found to continue to go on without injury from frost, are more likely to attain the end desired than the use of matter that produces growth of too spongy a character to stand a trying ordeal. To say anything against such trees as those under notice may possibly be susceptible of misinterpretation, through a supposition that it implies an indifference to the desirability of having as much variety as possible in the trees used in decorative planting; but such is not the case. Absence of ability in a tree to keep on in a healthy thriving state, and of enough hardiness to stand the lowest degree of temperature to which the country is ever subject, are defects that no careful planter can overlook. Within the last forty or fifty years there has been a great increase in the number of species and varieties of coniferous trees and their allies introduced to this country; but many of them, after being tried, fail to uphold the opinions formed in their favour, or even to maintain the appearance of which the early stages of their growth gave promise. And although some amongst them, so far as can be judged by their appearance up to the present time, have turned out most acceptable additions to our hardy trees, still, taking the whole of them, good, bad, and indifferent, their presence has not been an unmixed gain, inasmuch as their numbers have been perplexing to many engaged in planting for decorative purposes, the unwary amongst whom have had reason to regret giving preference to them in prominent positions before others that had given proofs of their merits. Lessons of this kind—taught by experience dearly bought—are not likely to be

forgotten or go unheeded by those who are conversant with tree life. Not a few, however, will most likely still go on planting kinds that are fashionable simply because about them there is a certain degree of novelty. T. B.

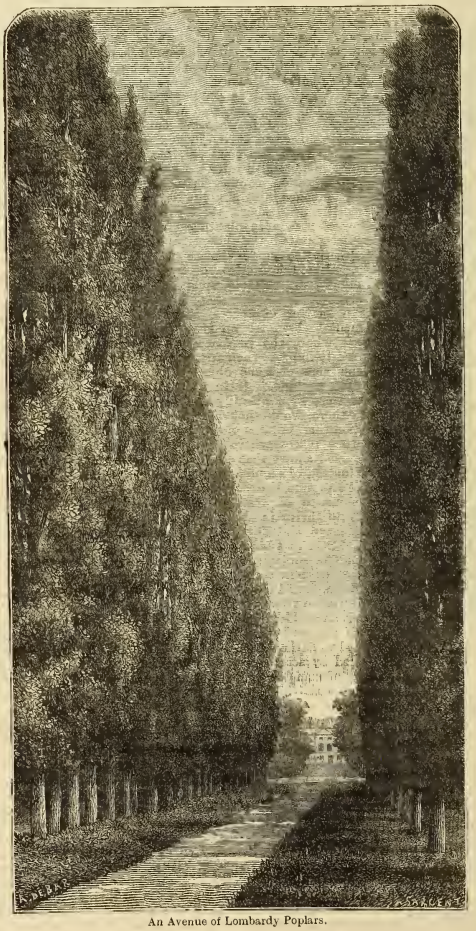
FORSYTHIA SUSPENSA.

AMONG hardy deciduous shrubs few are more attractive when in flower, or more useful, than Forsythia suspensa, or the Japanese Golden Ball tree. It is one of the best of wall plants, as it grows very quickly, and the slender shoots hang down naturally in a graceful manner, or may be tied in loosely as thickly as may be desired. The bright yellow flowers are borne in the greatest profusion in spring throughout the whole length of the preceding summer's growth, and the slight protection afforded by a wall is of material importance in protecting them from spring frosts, the plants themselves being quite hardy. Some placed singly amongst shrubs of an evergreen nature in various prominent positions of the flower garden or pleasure grounds produce a charming effect in spring, and are by no means unattractive in summer, the leaves being of such a bright shining green. Again, any spare plants kept in the reserve ground or lifted from the open shrubbery about this time, and placed in large pots may be had in perfection in the greenhouse a month in advance of those outside. Before touching Forsythias with a knife, a knowledge of their habits and mode of flowering should be possessed by those about to use it. To cut and nail them in when most other deciduous wall plants are attended to, say in February, would of course mean the destruction of nearly all the flowers; yet it is questionable if this is not a practice of annual occurrence, even in the case of many whose position should entitle them to the credit of having more than ordinary intelligence. It matters not how thick the shoots are, they should all be allowed to remain at this season and until flowering is past, when pruning may be attended to without delay, by removing the whole of them nearly close back, unless they are required for enlarging the size of the plant as a bush, or for covering more space on a wall. No leaves appear until the flowers begin to decay; consequently the young shoots may be encouraged from the first without detriment to those of the previous year—*i.e.*, if the latter are removed at the proper time. These remarks on pruning apply to the plants wherever grown, but their application is too frequently neglected in the case of those in the outside shrubbery border. F. viridissima has more of an erect, slower-growing habit, and is inferior in every way to F. suspensa. It has one point in its favour—namely, that of flowering later, and so continuing the season. The flowers are not so plentiful, neither are they so evenly distributed along the shoots as in F. suspensa, but individually they are both very similar. These desirable shrubs are natives of China and Japan, and were introduced to this country about forty years ago. A later introduction, named F. Fortunei, is synonymous with F. suspensa, or is at least not sufficiently distinct to merit a separate specific name. J. K.

15465.—**Shrubs beneath trees.**—If the Yew trees in "T.'s" garden are large ones no kind of shrubs will grow immediately beneath them; under any deciduous trees he may plant the golden-leaf Euonymus, Aucubas, Portugal Laurels, common Laurels, Laurustinus, green Box, green Holly, Berberis Aquifolium, or the ground may be carpeted with Ivy or St. John's Wort.—J. C. C.

AVENUE OF OLD LOMBARDY POPLARS.

THE Lombardy Poplar is a grand tree in the English landscape, but it is very seldom seen in the form of an avenue, as shown in the accompanying woodcut. Great beauty is obtained by the disposition of trees in an avenue, the essential character of which is that it should be composed of single species. Trees gain character by this fellowship, and the attention is at once arrested by the uniformity which, however, if not confined to certain limited parts of the ground, would be intolerable. In the avenue here pictured the well-ordered ranks of stately Poplars give a striking and unique effect to a flat and otherwise featureless piece of ground, and their grandeur and formality have an effect which would be absent if the road were bordered by ordinary masses of mixed planting. The effect to be produced by such an avenue should, however, be strictly localised, and the contrast should be sharply defined between the formal lines and the open park or gloomy tangled wood.—S.



An Avenue of Lombardy Poplars.

Thymus carnosus is a handsome little shrub. Few would take it for a Thyme who had not had some former acquaintance with it. A plant here several years old is but a foot high, and resembles a miniature Conifer, or it, perhaps, may be better compared with a very dwarf Rosemary, and the scent of the evergreen foliage is all but identical with that of that sweet herb. Its minute, almost white, summer flowers have no merit as bloom, but the Lombardy Poplar-like habit, the sage-green, fleshy, cocoon-shaped leaves, not much larger than a groat, all go to make it a distinct object for rockwork. In a cut state it forms a sweet contribution to the scent jar, and as I have proved it to be capable of enduring drought at the roots, it would make a useful winter green for the dwelling-room windows. Many things as we have, we cannot yet well afford to neglect hardy sweet-scented Evergreens of such neat habit as this. As herbaceous plants lose their foliar parts day by day the garden grows darker, and what remains of verdure becomes more noticeable.—J. W.

15179.—**Tree Pæonies.**—This magnificent flowering shrub, botanical historians tell us, is indigenous to the mountains of northern China, and has been cultivated in the southern provinces of that country for upwards of 1,400 years. With the Chinese its cultivation at one time became a mania, some choice varieties, it is said, having been sold for 100 ounces of gold. It was first known and described to Europeans on the return from China in 1656 of the Dutch East India Company's first embassy. The description, however, though doing no more than justice to the plant, was treated as a "traveller's tale," so that it was not till about the year 1789 that the Tree Pæony was introduced into this country through the instrumentality of Sir Joseph Banks. It is easily increased by layers and cuttings, but the readiest way is by means of the suckers that often spring up around old plants. If the soil be carefully removed from these suckers any time after the leaves fall, they may be separated with a sharp knife without causing any material injury to the parent plant. I have just taken from a single bush half-a-dozen of these suckers, each furnished with a circle of healthy roots. It is inadvisable to lift the plants for division as they thereby receive a serious check, from which, as "J. C. C." truly remarks, they are very slow to recover.—J. MARTIN.

Destroying woodlice.—It is useful to remember that woodlice can breed and exist only under very favourable conditions—that is, in warmth and dryness; and, therefore, if the places in which they hide are made wet their increase is at once stopped, and they make off to seek more comfortable quarters, or they may be trapped readily after being disturbed. The way we got rid of ours in a large indoor fernery was to give a lot of water behind the rock and down amongst all the fissures where the heat came up from the pipes, from which places they turned out in quantity and were killed as fast as they showed themselves; after that we trapped constantly by having a lot of flower-pots baited with boiled Potatoes, and Beet, and Turnip scooped out, the pots, and Beet, and Turnips being filled loosely with wisps of hay, which were renewed from time to time when they became wet. By looking at the traps every morning and emptying out the woodlice, their numbers became reduced. Like crickets and beetles, they will eat almost anything, and poison ought to make short work with them if they can get it. Arsenic being tasteless, it is most likely they would take that, if mixed with cooked Potatoes or meal, but these things require much care in their use, and to be put where nothing but the woodlice can eat them.—S. D.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15554.—**Sowing Mistletoe berries.**—Will someone kindly tell me what is the best time to sow Mistletoe berries on Apple trees, and how I should proceed?—A YOUNG GARDENER.

15555.—**Carrot for exhibition.**—Will any reader kindly tell me the best Carrot to grow for an exhibition the end of July?—T. C.

15556.—**Turnip for exhibition.**—Will any vegetable grower kindly tell me the best yellow fleshed Turnips to grow for exhibition at the end of July?—T. C.

15557.—**Duke of Albany Pea.**—Would any reader kindly tell me if the Duke of Albany Pea would be a good sort to grow for an exhibition at the end of July, or what would be the best kind?—T. C.

15558.—**A plague of caterpillars.**—Could any readers tell me how to get rid of caterpillars in my garden? The last two years I have had everything green—including Pears, Kidney Beans, Rhubarb, and even Horse-radish—eaten up. The caterpillars are all sizes.—G. M., *Tipton.*

15559.—**Pruning pot Roses.**—I have a Tea Rose (W. A. Richardson) about 14 inches high, which I am going to grow as a pot Rose. I have planted it in good stuff in a 8-inch pot. Will anyone tell me when I should prune it? I want flowers as soon as possible off it.—W. A. R.

15560.—**Fixing coil in greenhouse.**—I have read with much interest the various notes on heating small greenhouses. My house at present is heated by a brick flue, which I think is a failure. I should be very glad if some one would kindly give me some information as to how a coil of pipe should be made, and how it should be fixed?—W. S., *Accrington.*

15561.—**Indoor climbers in outside borders.**—I propose to have a small greenhouse just warm enough to keep out frost and for Chrysanthemums. Will it answer to plant a Maréchal Niel Rose and common Passion-flower outside and grow them inside?—J. C. C., *St. Andrews.*

*** *Yes; you can do so. Be careful to protect the stems of each from the border to the house when necessary.*—ED.

15562.—**In-arching vines.**—I have some Muscat and Hambro' vines which were planted three years ago in a cool greenhouse, but the fruit does not ripen. I am advised to in-arch them with cuttings of Lady Downe's vines, but my gardener has never performed this operation. Will any Grape grower tell me the proper method of in-arching, and when is the most suitable time for doing it?—CHELT.

15563.—**Value of timber.**—Can any of your readers give me an idea as to the value of a French Oak which I felled a year ago? It is straight, and, I think, pretty sound. Its diameter at foot is 23 inches, at upper end 13 inches, and its length is 21 feet. I purposely give measurements well within the mark. I don't know whether to sell it as it lies, or to have it cut into lengths and sawn up at the village saw-pit. A carpenter I employ suggests my digging a pit for the purpose, but I can scarcely think that that course would pay.—AGRESTIS.

15564.—**Pears as cordons.**—Will any of your correspondents tell me which of the following Pears I may plant as cordons on Quince on a north-west wall? I live on the Welsh coast, within half-a-mile of the sea. I shall have about 90 feet of south wall and 80 feet of north-west wall to plant. Williams' Bon Chrétien, Louise Bonne of Jersey, Brockworth Park, Beurré Superfin, Beurré Hardy, Thompson, Conseiller de la Cour, Doyenné du Comice, Van Mons, Leon Leclercq, Prince Consort, Winter Nelis, Glou Morceau, Chaumontel, Victoria, Knight's Monarch, Josephine de Malines, B. Esperen.—J. E.

15565.—**Plants for cottage gardens.**—I am anxious to improve the cottage gardens of a village far away from any town, where wages are low, by sending packets of flower seeds, and should feel it a favour if any readers would give me lists of those plants and flowers which may be raised from seeds, in packets varying from 1s. 6d. to 2s. 6d. each, which would add beauty to the gardens, and, perhaps, be of advantage in a pecuniary way to the cottagers. To this end, perhaps, perennials would be best; but I am quite open to advice from any quarter, and those kindly supplying information may be greatly helping to give pleasure to many villagers.—SPARE EVANS.

15566.—**Outside window case.**—My back sitting-room window faces almost due west, and it is my intention to have fixed outside of same one of those glass cases which are now becoming so deservedly popular. My object in writing is to ask for information as to how, in such an exposed position, I can successfully cultivate therein a few Ferns along with flowering plants, and what particular kinds are most likely to last well into the winter. I fancy part rockwork, and the bottom covered with pebbles or sand, but a kind suggestion on the whole subject from readers who have had experience in the management of these cases would be esteemed by one who is a lover of Ferns, but a novice as to their cultivation.—WINDOW FRAME.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15567.—**Transplanting Hyacinthus candicans** *(J. E.).*—Like most bulbs, Hyacinthus candicans is best transplanted soon after dying down; but with care you may transplant it now.

15568.—**Making use of rubbish-heap** *(S. L.).*—The rubbish-heap will be useful for almost all crops, and may be used for garden purposes generally.

15569.—**Procuring Asplenium bulbiferum** *(W. G. D.).*—We cannot name any particular house; but you should have no difficulty in getting it from any good nurserymen who has glasshouses.

15570.—**Cordon Peach trees** *(J. E.).*—The article on Cordon fruit trees is an extract from "The Parks and Gardens of Paris," published by Mr. John Murray, Albemarle-street. The price of the book is 18s.

15571.—**French Campanula after blooming** *(E. J. Manier).*—We suppose you mean Campanula pyramidalis. Cut the stem down, and, no doubt, tufts of new growth will spring up and form the flower-stem next year.

15572.—**Increasing the White Garden Heath** *(T. R.).*—This is generally raised from cuttings. If you ripen seed you may propagate them by the thousand; but it is rather tedious work.

15573.—**Ornamental plant for high south wall** *(North Staffs).*—We should say that, unless there is something adverse in your climate or soil, the yellow Banksian Rose would be as suitable as anything.

15574.—**Plants for vase** *(L. Townsley).*—Ivy or Smilax will suit your purpose. You must send your other queries according to our rules. Each query should be distinct; you have mixed up half-a-dozen together, and you will see that we have dealt with some of them.

15575.—**Strawberry bed** *(Mabor).*—The soft and spongy character of the bed is probably due to the frost. We should do nothing to it until later in the season, when the ground may be trodden well to firm it, for without a solid ground the plants will not root firmly.

15576.—**Propagating Mistletoe** *(Constant Subscriber).*—Save the berries, get them well dried, and insert them in the bark of the trees after the fashion of budding Roses. Mistletoe, it should be remembered, injures the trees upon which it grows.

15577.—**Hedge as a screen** *(B. P.).*—We doubt whether you can beat Holly or Yew; they are not so quick as some others, but much prettier and more effective, and if you begin with healthy and strong plants you will not lose much time.

1578.—**Hardiness of Marechal Niel Rose** *(L Townsley).*—We notice this out-of-doors doing well enough in the south of England. Perhaps some readers will kindly tell you the area over which it is quite hardy in the open air. Correspondents should always mention the counties from which they write as a guide to the climate.

15579.—**Training Peach trees** *(Boz).*—Peach trees form all their blossom buds on the current year's wood, and it is always desirable to remove old wood where it can be replaced by that of the current year. The pruning may be done in February; but, should severe frost set in, do not touch the trees until it is gone.—D.

15580.—**Beurre Clairgeau Pear** *(Longfield).*—We cannot well tell you what measures to take to improve the Pear tree unless you give us some information as to its present size and condition. We ourselves do not think much of the Beurré Clairgeau Pear; a great many Pears are grown which are not worth growing.

15581.—**Climbers under "drip"** *(Sphinx, Sevenoaks).*—There is not the slightest difficulty in growing the hardy climbers that you mention under the eaves of the shed. Hungry climbers, which soon exhaust the soil, would be rather grateful for the "drip" if the soil is in any way poor and dry.

15582.—**Flowers for contrasting with Gladioli** *(L. Townsley).*—Any low hardy plants will do well in contrast with Gladiolus—say Carnations or Pansies; but the selection must, to some extent, be governed by your own taste and your own knowledge and love of colour. To have any good effect with Gladioli you cannot put less than five bulbs in each clump.

15583.—**Pruning Currants and Gooseberries** *(Junius).*—Prune as soon as you can. People often pay too much attention to times and seasons; expert gardeners do things when they can. Any time during the autumn or winter is suitable for the work you want to do. Some people, however, leave the Gooseberries rather later, so that some of the buds may be saved from the bullfinches.

15584.—**Grapes retaining leaves** *(Mabor).*—We should say it is a case of non-ripening of the wood. You do not say whether your Grapes are good, or whether they are not coloured. If the wood, however, is thoroughly ripened it would do no harm to prune them now, although it is better to do so when they are devoid of leaves.

15585.—**Chrysanthemum sport** *(G. G. G.).*—This is a frequent occurrence in large collections of these plants. Tokio is a bronzy-red, with a yellow shade, not a crimson. If one of the branches has produced flowers different from the others that branch has sported. The only chance to save the sport is by inducing some growth from the sported branch, and propagating those growths; that is the manner in which all the sports in cultivation have been obtained.—D.

15586.—**Clematis Jackmanni** *(F. S.).*—The culture of this plant is very easy; it only requires a good friable loam and annual pruning. You can put the plants out in any open weather from now to the end of April. In pruning, favour the development of the vigorous summer shoot, on which the flowers are formed. Cut the summer growths back early in the season, as soon as the frosts have disfigured the plants—say about November—to within about 6 inches of the soil. If late flowers are required leave some of the plants over at the November pruning, and do not cut them back till the end of April.

15587.—**Cultivation of Roses, Fuchsias, and Pelargoniums** *(Weekly Reader).*—Your question is very wide, as you ask for details of culture of Roses, Fuchsias, and Pelargoniums. You will find abundant articles on these subjects in GARDENING, and the Pelargoniums, particularly, is dealt with fully in last week's number and the present one. You might make a better beginning in your house than by using cuttings; you may be able to purchase a few plants grown on. Look through the last index, and you will find further details than we could give you in a short reply to a query. Then, if you meet with any difficulty, write again to us. You may use a gas-stove provided there are no fumes.

15588.—**Naming fruit.**—*S. C. O.* writes to ask why we require more than one specimen of each Pear for the purpose of naming. The reason is simply that the varieties of Pears are very numerous, and the points of difference in many instances not very striking. The question of size is sometimes an important factor, and if several specimens are sent the variations in size can be seen. Again, it frequently happens that one fruit has not the special characteristics of the variety sufficiently well marked for positive naming, and hence, to avoid disappointment, we advise readers to send two or more specimens of each variety. This is more especially necessary in the case of little known kinds.

TO CORRESPONDENTS.

Lover of Flowers.—Of course you are entitled to the use of the garden during the whole of the period for which you pay rent; if you pay rent till May you are not called upon to give up possession in March.——*J. K. 100.*—We cannot decide the question from the specimen that you send.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*S. P., Ruabon.*—Amaryllis reticulata; stove treatment is right.——*W. J. A.*—It appears to be a leaf of Nicotiana affinis; it is impossible to speak with certainty.——*Mrs Axtell.*—The Christmas Rose you send is Helleborus altifolius; the flowers have now become pink by age, and this we consider one of its most beautiful characteristics.

NAMES OF FRUIT.

Naming Fruit.—*Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its identification. Local varieties should be named by local growers, and are often known to them alone. We can only undertake to name four varieties at a time, and these only when the above condition is observed.*

Names of fruit.—*Agrestis.*—We cannot name the Pear; it appears to be a small specimen of some kind of Bergamot.

Catalogues received.—*Spring Catalogue.* Messrs. Webb and Sons, Wordsley, Stourbridge.——*Forest and Ornamental Trees, Shrubs, &c.* Lawson Seed and Nursery Company, Edinburgh.——*Garden and Agricultural Seeds.* Carter Page and Co., 53, London-wall, City.

Books received.—*Poultry Ailments and their Treatment. For the use of Amateurs.* By D. J. Thomson Gray London: L. Upcott Gill, Strand, W.C.

15463.—**Plants for shady border.**—Bulbous flowers such as Daffodils, of various kinds, Hyacinths, Tulips, Snowdrops, Crocuses, Scilla sibirica, Triteleia uniflora, will do well in a shady border. Other suitable things are Spiræa japonica and palmata, Primroses and Polyanthuses, Saxifraga umbrosa, Lilies, such as the Orange, the Tiger, and the Japan varieties. If the situation is not too much deprived of light by overhanging trees, a great many of our best hardy perennials will do well in a north border. A number of hardy flowers do not seem to require much sun if they get an abundance of light. We have seen herbaceous Phloxes, Anemone japonica, Coreopsis lanceolata, and other similar showy things doing remarkably well in a shady border; indeed, in a hot, dry summer they seem more at home there than in a sunny place. The Periwinkles, both plain-leaved and variegated, love shade, and Ferns are, of course, quite at home there. The double Primroses only seem to thrive in the southern counties—at least, in a cool, shady situation—and there are many beautiful forms of them well worthy of the attention of lovers of hardy flowers.—BYFLEET.

CHURCH DECORATION.

IT will be generally admitted, I think, that the floral decoration of churches has greatly improved of late, not only as regards the quantity of material used, but also in quality; the arrangements are lighter and more graceful than hitherto. The old heavy masses of commonplace Evergreen have given place to light festoons or delicate tracery. Well-berried Holly, of course, we must have, and Ivy, with its jet-black clusters of berries, and long graceful sprays; other Evergreens that in winter give our gardens such a snug look we must also have, and especially those that bear berries. Among flowers, white ones predominate, with just a sprinkling of brilliant colour to give life to the whole.

On entering, the first thing that attracts attention in most churches is the font; this is mostly decorated at the base with Ferns, Lycopods, and dwarf foliage plants plunged in fresh green Moss, the other ornamentations being some brilliant-berried Solanums, white and red Primulas, white and red Tulips, and that most appropriate and fragrant of bulbs, the early Roman Hyacinth. The windows are generally festooned with very small-leaved Ivy, and on the window-sills a bed of fresh green Moss makes a capital groundwork for cut flowers. The columns or arches are lightly wreathed with long sprays of Ivy, as are also the candelabra, and various devices in variegated Holly and other handsome foliage surround the texts that are placed on the walls. The pulpit and reading-desk are generally prettily decorated with wreaths made of the very finest-leaved Conifers, Box, or Ivy, associated with dried Cape flowers or Everlastings, and designs in brilliant Holly berries. At the base plants of dwarf habit are used with good effect, notably Ferns and other fine-foliaged plants intermixed with white and red flowering plants. But it is on the altar and reredos that we find the most lavish display of flower, and although some still adhere to formal gilt stands and flower holders, with water tubes for the stalks, many have adopted more natural styles of arrangement, consisting of zinc or tin troughs for holding water, in which flowers and foliage and good-sized branches of hardy shrubs or Fern fronds are inserted, the tins being hidden by flakes of fresh green Moss. Bold and striking arrangements consist of Arum Lilies associated with their own foliage, late-flowering Japanese Chrysanthemums, Poinsettias, and Amaryllises. In large decorations in which plants are employed very effectively Palms are most useful, especially tall, graceful kinds, such as Seaforthia elegans and Cocos Weddelliana.

Amongst hardy flowers white Christmas Roses might be employed with advantage. In mild seasons and in sheltered localities they are sometimes produced in profusion, and if protected with a hand-glass, their blooms may be had untarnished by the weather. If there is one flower better suited than another for church decoration, it is certainly the Christmas Rose (the Helleborus niger), and especially that form of it well named maximus, and sometimes called the Scotch variety, and altifolius. The flowers are produced in twos and threes on stout, erect stems fully 8 inches long; they measure 4 inches across at least when fully expanded and, rising well above the soil, in addition to the natural protection afforded by the autumnal leaves lying on the surface of the ground, the broad dainty cups of lovely white ness remain unsullied by even a speck of the closely adjacent soil, though quite unprotected with cloche or handlight. I ought to mention that the flowers do not all expand at one time, but follow each other in rotation.

HAMPSHIRE.

15031. — **Bedding Geraniums.** — The following are some of the best dwarf bedders, named in the order of their height, commencing with the dwarfest: Distinction (pink), Harry Hieover (scarlet), Flower of Spring (silver leaf), Vesuvius (scarlet), Lucy Bosworth (rose), Laura Strachan (salmon), Admiration (bronze leaf), and Henri Jacoby (crimson). This last-named variety bears a remarkably large truss, and, I think, a deeper coloured bloom than any Geranium grown.—J. MARTIN.

INDOOR PLANTS.

FAVOURITE FLOWERS AND HOW TO GROW THEM.—III.

ZONAL PELARGONIUMS.

THE double and single varieties of what we must, for want of a better name, term the zonal Pelargonium, are now a very numerous family. The term zonal was applied to them because of the brownish zone in the form of a horse-shoe on the leaf, but some of them have not this mark on the leaves, so that the name does not correctly describe the green-leaved varieties. Then there are tricolor, variegated, and bronze-leaved, which have all sprung from one original source. As a boy I can well remember the first variegated Pelargonium of this type, Flower of the Day, raised by Mr. Alexander Kinghorn, now of Sheen Nursery, Richmond. It is nearly a quarter of a century since Mr. Peter Grieve, of Culford, Bury St. Edmunds, raised Mrs. Pollock, the first golden tricolor. It is still one of the most useful varieties for bedding-out; Lady Cullum is, perhaps, the best for this purpose, and this also is one of Mr. Grieve's productions. The golden bronze varieties also gained a considerable degree of popularity; and the finest varieties in this section were raised by Mr. John Laing, of Stanstead-park Nurseries, Forest-hill.

THE MOST USEFUL SECTION for furnishing our greenhouses, gardens, and window-sills with beautiful flowers are the single and double varieties with green leaves, or green leaves with a zone upon them. The cultural require

Tricolor Pelargoniums.

ments of the single and double varieties are the same, and they may be obtained in flower during every month in the year, being specially valuable during the month of December and early in January. There are now not only a very great number of varieties, but the colours are of many tints. Pure white is well represented both in single and double; rose colours and pink of endless shades; crimson, scarlet, and purple are blended together in endless array. Besides their great value as decorative plants, the flowers are well adapted to use as cut blooms indoors. Their culture is so simple that it may almost seem superfluous to go into details.

PROPAGATION is very easy. Cuttings may be taken off any time during the summer and autumn months; and if inserted in the open ground most of them will form roots, whether they are placed in a shady or sunny position. During the spring months they can be propagated quite as easily in pots, if the pots containing the cuttings are placed on a shelf near the glass. Our winter-flowering plants are propagated in this way. The cuttings are taken off some time in April. They are planted separately in small sixty-sized pots, the compost being of a light, sandy nature; not much water is given to them, either before they form roots or afterwards, the object being to promote a stout, short-jointed growth; it is not so easy to obtain this as an over-vigorous succulent growth. The latter is a grave error of culture which will be seen in a class of plants that are neither ornamental nor useful. When the plants are established in these small pots the season has considerably advanced, and they may either be placed out-of-doors, or, what is better, in cold frames where the lights may be quite drawn off, if necessary, but may be placed over them again to shelter them from drenching rains, or any other inclement weather that may be injurious to them. In June they are shifted into 4 and 5-inch pots; and I do not use very much manure in the compost—not more than half as much as it is thought best to use for large flowered Pelargoniums. The plants should not stand very close to each other, and they must not be allowed to produce flowers. By the middle of August they should again be repotted into 6 and 7-inch pots, and in these they will produce their flowers; but all trusses that appear up to the end of September must be removed, the object being to reserve all the strength of the plants to produce winter flowers. They will not do this satisfactorily in an ordinary greenhouse, from which frost is merely excluded; they require a heated house, and from what I have seen in the nursery of Messrs. Cannell and Sons, at Swanley, as well as in our own garden, I would advocate roof heating, as well as the ordinary hot-water pipes. The house where our plants are flowered is a span-roofed one, about 10 feet wide, with a path down the centre and stages on either side; the length of the house is 50 feet, but that is a matter of no consequence—it may be longer or shorter, according to the means of the cultivator. The roof is heated by two rows of 1-inch pipes; they run the whole length of the house, and are fixed near the base of the rafters about 1 foot apart. There are two rows on each side. When it is known that all flowers in winter suffer from damp, and die off most frequently from this cause, and that frost first takes hold of the glass near the base of the rafters, aggravating this state of things, it must even be theoretically admitted that the roof pipes are an excellent suggestion. Tried by the more certain test of practical experience, they have been found to develop more perfectly the flowers of all winter-flowering plants, especially Pelargoniums, and to keep the trusses for many weeks practically uninjured by damp. When two trusses have been formed on a shoot during the winter months the point ought to be pinched out of it; if this is not done the flowers may go blind—at all events, they will not develop so well if the point is not stopped. People stood in amazement before the splendid bunches of Pelargoniums exhibited by Messrs. Cannell during the late autumn and winter months, longing to be able to produce such flowers in their own gardens, while all the time the prize is quite within their reach. At Swanley they are just beyond the reach of London fogs; their houses are roof-heated, but in other respects are ordinary home-made structures. The winter temperature should be from 50 degs. to 55 degs. as a minimum. I may here also say a few words about the culture of

LARGER PLANTS FOR THE SUMMER AND AUTUMN.—In our own case—and ours would be that of many others — the winter-flowering Pelargoniums are removed about the end of January to any house where frost can be kept from them. By that time spring-flowering plants, Hyacinths, &c., are in flower, and a succession of bloom is easily kept up without Pelargoniums. These are kept rather dry at the roots, and pass through what may well be termed the resting period. In April they begin to make growth, when they are shaken out, and repotted into 6-inch pots. They will do nicely if placed in cold frames at that time, where they can have plenty of air. In June repot them into 8-inch pots, and they will make most handsome flowering specimens during July, August, and September. They make all their growth out-of-doors, and may, if carefully trained out, form specimens 3 feet across or more, and furnished with scores of fine trusses. They are also very valuable to plant out in borders where spring flowers have been, such as Narcissus, which die down before midsummer.

The golden and silver tricolors, bronze-leaved varieties, &c., are all useful for planting out in suitable positions during summer, or for arranging amongst greenhouse plants at any season of the year; but it is scarcely worth while to grow large specimens of them. Small plants in 4-inch or 5-inch pots are the prettiest. Ivy-leaved single and double varieties are exceedingly well adapted for garden culture or under glass in pots. If planted in vases they hang down the sides; and those who have hollowed out tree stumps filled with soil in their

garden will find them as good plants to fill them with as can be obtained. We generally have a few grown in pots, which are very effective grown this way. About five sticks stand about 9 inches out of the pot, the shoots are tied to these, and they are also encouraged to straggle over the pot, and to hang as much as a foot or eighteen inches over the side of the stage. The single flowers are the most elegant, but we find the double flowers last longest, and are most useful as cut flowers.

VARIETIES.—It may be useful to give a list of the best varieties in each class—twelve varieties in each. *Large flowering show varieties.*—Martial, Britomart, Amethyst, Ritualist, Fortitude, Joe, Virgin Queen, Illuminator, Ruth, Claribel, Prince Leopold, Sappho. *Large-flowered decorative varieties.*—Gold Mine, Defiance, Decorator, Nellie Hayes, Mrs. Ashby, George Tavener, Graham Bell, Madame Charles König, Lucie Lemoine, Duchess of Bedford, Duchess of Edinburgh, Kingston Beauty. *Small flowering or fancy varieties.*—Princess Helena, Cloth of Silver, Mrs. Mendel, Princess Teck, Roi des Fantaisies, Duchess of Edinburgh, Fauny Gair, Countess of Dudley, Nelly Fordham, Miss Emily Little, Janette, Sarah Bernhardt. *Zonal Pelargoniums with single flowers.*—Dr. Denny, Dr. Orton, Edith Pearson, Queen of the Belgians, Evening Star, Ferdinand Kauffer, Guinea, Henri Jacoby, Leone Dare, Mrs. Leavers, Rose Little, Sophie Birkin, Sunbeam. *Zonal Pelargoniums with double flowers.*—Aglaia, F. V. Raspail, Henry Cannell (Thorpe), La Nymphe, Lord Mayor, Madame Michael Buchner, Marie Lemoine, Madame Leon Dalloy, Roi des Violettes, Sargeant Hoff, Madame Thibaut, Wilhelm Pfitzer. *Ivy-leaved varieties for trailing, double flowers.*—Comtesse H. de Choiseul, Gloire de Orleans, Isadore Feral, Mrs. Moore, A. F. Barron, Rosa plena, König Albert, Madame E. Galle, Galilee, Candeur, Sarah Bernhardt, Viscountess Cranbrook. *Single-flowered Ivy-leaved Pelargoniums.*—Beauté de Lyon, Masterpiece, Madeleine Reiterhart, multiflore, Bridal Wreath, Mrs. H. Cannell, Dolly Varden, Plutus, Gem, peltatum elegans, La Vesuve, Princess Thyra. *Golden tricolor-leaved Pelargoniums.*—The best are Mr. Henry Cox, Masterpiece, Macbeth, Lady Cullum, Mrs. Pollock, and Mrs. Turner. *Silver tricolor varieties* are—Mrs. Miller, Mrs. Laing, Eva Fish, Mrs. Clutton, Prince Silverwings, and Mrs. W. Masters. *White-edged varieties.*—Princess Alexandra, Miss Kingsbury, Flower of the Spring. *Golden bronze varieties.*—Black Douglas, Maréchal Macmahon, Zulu. J. DOUGLAS.

PETUNIAS.

IN recent years these greenhouse evergreen herbaceous plants have been so much improved by the careful selection of seedlings that have sprung from the original South American species introduced in the early part of the present century, that a good strain of seed may be depended upon to give flowers of the single varieties little inferior to named kinds.

Seed may be sown in March in pans filled with sifted loam, to which has been added one-fifth of leaf-mould with some sand; cover the seeds slightly and stand in a temperature of 60 degs., and they will vegetate quickly. When the little plants are large enough to handle move singly into 3-inch pots, giving them soil similar to that in which they were sown; keep close for a few days, when admit more air, and put them where they will get plenty of light. Nip out the points of the shoots as soon as they begin to grow freely, giving a little shade in the middle of the day, with air, and water to the roots as required. In six weeks move them into 6 or 7-inch pots, now using the soil without sifting, and adding to it some rotten manure; again stop the shoots, and after they have grown so as to need support put small sticks to each. They will flower through the summer, and will keep on blooming louger if assisted with manure-water once or twice a week. Young plants are best, and it is better to discard the old ones after flowering, and to propagate young stock either in autumn or early in spring. Through the winter keep them in a temperature of 40 degs. in the night, give less water to the soil, and let them be near the light. The double varieties are best increased from cuttings, which may be struck in August, and treated subsequently as advised for the seedlings, keeping them in 3-inch pots through the winter, giving more root-room in spring; single varieties that are good enough to keep on may be treated in like manner.

Although, as we have said, a choice strain of seed of the single varieties may be relied on to give handsome flowers, the following varieties are of great merit, being the selection from thousands of seedlings:—

SINGLES.—P. Bacchus, crimson-purple and white; P. Cannell's Favourite, red and purple; P. Clairvoyant, white and mulberry; P. Distinction, purple and crimson; P. Dr. Denny, crimson-maroon; P. Dr. Hogg, magenta, white, and purple; P. elegans, white and crimson, beautifully fringed; P. marginata, rosy-purple and white; P. Marie Seabrook, white and crimson-purple; P. Mr. R. Owen, white and magenta; P. Mrs. A. Mayes, white and purple; P. Mrs. H. Cannell, white and maroon; P. Mrs. H. Wellam, magenta, white, and purple; P. Mrs. S. Hibberd, white, maroon, and purple; P. Mrs. Elder, white and bright purple; P. the Hon. Mrs. Legge, pure white.

DOUBLES.—P. Adolphe Weicke, crimson-magenta and white, fringed; P. Alice, rosy-purple and white, fringed; P. Antagonist, white; P. Beauty of Runnymede, Plum-colour and white; P. Crépuscule, crimson-purple and white, fringed; P. Duchess of Edinburgh, light rose, white, and dark crimson; P. Emblème, rosy-purple and white, fringed; P. Fascination, white, purple and rose; P. Lady of Plymouth, rosy-purple and white, fringed; P. M. Buchner, white; P. Madame de Poultevoy, rose, white, and purple; P. Madame Rendatler, claret-purple and white, fringed; P. Minnie Evans, rosy-purple and white; P. posthumia, white and rosy-purple; P. reticulata, white and dark rose, fringed; P. roseate, rose and dark maroon-purple. Aphides, which are often troublesome on Petunias, should be destroyed by fumigation. B.

PLUMBAGO CAPENSIS.

THIS is one of the most generally useful hard-wooded greenhouse subjects, not nearly so much cultivated as it deserves to be on account of the numerous ways in which it may be grown; for it succeeds equally well in a large pot, as a trained specimen to twine round a pillar, planted out to clothe a wall or to hang loosely from the roof of a cool conservatory, or confined to the limits of a 6-inch pot, in which way it will flower freely, forming one of the best possible window plants. To this size it may be restricted for years, occupying a very limited space in winter, and amply repaying the little attention it requires by flowering for weeks in succession. The flowers are produced from the extremities of the young shoots, and are borne in large bunches. Individually they are like a small Phlox in form, but of the most lovely pale blue colour. There are few plants grown that offer such a pleasing contrast in both colour and form of flower to the generality of other blooming subjects, as does this Plumbago. It is a free grower, and not at all difficult to manage, either in a small or large state. There is no way that it can be grown in which it is more useful than in

SMALL POTS, for general decorative purposes, as, if a number be at hand, a portion, if desired, can be brought into flower in a little heat earlier, to precede such as are allowed to come on gradually in the greenhouse. By this means a succession may be kept up for three months in summer and autumn. Being a strong-rooted plant, it will succeed well in loam, as, in common with most things that will thrive in this description of soil, it has in it a greater disposition to flower than if in peat; but the loam should be good in quality, and contain plenty of vegetable fibre, and should have added to it one-sixth of sand; the pots should be well drained.

PROPAGATION.—This Plumbago strikes readily from cuttings made of the young shoots taken off in spring when 4 inches or 5 inches long. These will be forthcoming from plants that have been cut back earlier, and if they have a heel attached, all the better. Put them singly in little pots filled with loam and sand, the surface all sand. Keep under a bell-glass, or in a propagating frame, moist, and shaded in moderate heat. They will soon root, after which inure them to the full air of the house. When well rooted move into 3-inch pots, using ordinary loam and a little sand; syringe overhead in the afternoons; pinch out the points of the shoots, stand them where they will get plenty of light, and now give more air. The young plants will grow fast, and by the end of July should be moved into 5-inch pots. Continue to treat as advised after the first shift until the middle of August, when leave off syringing and admit more air, with a drier atmosphere. Winter this season at about 45 degs., and towards the end of March, just as they begin to grow, let them be potted. It is necessary now to determine to what size they are intended to be grown. If the object is to keep all or a portion for flowering in a small state, these should be moved into 6-inch or 7-inch pots. If the intention is to grow them larger they ought to have pots at least 8 inches or 9 inches in diameter. In other respects the treatment they require is the same, except that the smallest-sized may need to be kept stopped in closer, so as to induce a proportionately more compact habit of growth. Pot them moderately firm, and if the shoots are at all straggling, shorten them back to about 8 inches or 10 inches in length, tying them out horizontally well down so as to induce them to break back, in which way they will push almost every eye. Place them in a house or pit, where they can be kept at a temperature of about 45 degs. in the night, with proportionate increase in the day with sun heat. Close the house early enough in the afternoons while the sun is up, so as to raise the temperature, syringe them overhead at the same time, and as the season advances and the weather gets hot, give a little shade, and use sufficient water under the stages and about on the paths to keep the atmosphere in a moist condition to promote free growth. All that will be required through the spring and early summer will be to pinch back any shoots that may show a disposition to outgrow the others, and tie to sticks so as to keep them in shape. About August they will commence to bloom, and as soon as the flowers begin to open cease syringing. They may then be moved to the conservatory, or any place where flowering plants are required, where they will receive a moderate amount of light and air to ripen up the growth, no more of which for the season should be encouraged.

WHEN THE BLOOMING IS OVER give less water, and place the plants for the winter in an ordinary greenhouse temperature of from 35 degs. to 40 degs. in the night. They may be cut back at once, or this can be deferred until nearer spring. The shoots of such plants as are intended to be grown on in the small pots should be cut to within a few eyes of where they were shortened to the spring previous. Again, about the end of March, before they begin to grow, turn them out, shake three-fourths of the soil from them, replace them in the same pots with new soil, and in every way treat as in the preceding summer; so managed annually they will last for years, flowering freely. They may during the season of active growth have manure-water given them once or twice a-week, which will enable them to make stronger shoots and finer heads of flowers. Such as are intended for larger specimens should not be cut in nearly so close; the shoots may be shortened to within about 12 inches of where they were cut back to in the spring previous. If the plants have made satisfactory progress they will bear a 4 inch or a 6 inch shift. Remove a portion of the old soil, and now use the new material in a more lumpy state than in the first potting. The after treatment through the spring and summer in other respects should be the same as the season previous. Attend to training the shoots as they progress. As the plants get strong, they will make comparatively lengthened growths that will require the use of either a wire trellis, or a number of moderately strong sticks round which to train the shoots. Do not tie in the points too closely, or they will have an objectionably formal appearance. After flowering they will again need cutting back. Winter them as before, and repot in the spring. They may be confined to the same pots, shaking away a portion of the exhausted soil, and replacing it with new, or, if they are required to be grown into large specimens, they can have more root-room given them. So managed they will last for a number of years, and will be much assisted by the use of manure-water during the growing season

This Plumbago is an excellent plant for

training to a conservatory pillar, where, if allowed to hang somewhat loosely, it has a fine appearance. In such a position it may either be kept in a moderately large pot, and the soil partially renewed every spring, or it can be planted out. When it is wanted to cover a back wall or a considerable extent of rafter, the most satisfactory method will be to plant it out in a prepared border. This must have the usual sufficient drainage, and should be composed of 8 inches or 10 inches of good turfy loam, with enough sand to keep it open. In planting see that the roots are not allowed to remain in the curved state which the pot has necessarily kept them in; when any plant of this description is turned out in an open border, and the roots are allowed to stay in such a position they do not usually make satisfactory progress. Restrict the quantity of water until the plants have commenced growing freely, after which they will require a good supply both at the roots and overhead by the syringe. Attend regularly to stopping and training, especially in the first stages of growth, so as to furnish the space regularly, cutting back every winter to induce the production of young flowering shoots over the whole portion the plants are wanted to over. When the soil becomes exhausted, remove a few inches of the surface each spring, replace it with new, and still further encourage growth by the use of manure-water.

The plant is somewhat liable to the attacks of red spider, if not sufficiently syringed overhead, but when this is attended to regularly, as advised, no trouble is likely to be occasioned by it. Aphides will live upon the young shoots, and may be destroyed either by syringing with Tobacco-water, or by fumigating. Scale sometimes affects it, and is most effectually removed by washing with a strong solution of insecticide when cut back in the winter. T. B.

THE BLUE LESCHENAULTIA.

THIS fine greenhouse plant, which has so many good points to recommend it, is yet rarely seen grown to perfection. It is an admirable plant for decorative purposes, lasts long in beauty, is suitable for exhibition, and in every way repays the care and attention that is bestowed upon it. The variety biloba major is that which I should recommend to those who are about to commence its culture. Nice specimens, which have a clean, healthy appearance, and are strong and stocky and not over-potted, should be selected. As soon as the plants can be procured, they should be repotted and placed in an intermediate house, where a temperature of from 50 degs. to 60 degs. is maintained, placing them near the glass and encouraging growth; give air on the sheltered side of the house on every favourable opportunity, but avoid ventilating, so as to cause dry cold currents. As they progress, attend to stopping the stronger shoots and tying out the branches as may be necessary to secure a compact, regular growth. Plants obtained in March, and which have done well, will be ready for a second shift by July, and, if all goes well, the plants will have taken to their second shift by the middle of August, and will then be nice specimens. In order to

PREPARE THEM FOR WINTER they should be gradually exposed to a free circulation of air, removing them to a cool dry house for a week, and then placing them out-of-doors for a fortnight or three weeks, which will ripen and harden the wood and render them much less liable to suffer from damp during the winter; while out-of-doors they must be laid on their sides if heavy rains occur, and be carefully watched, so as to guard against the soil getting saturated, and, if wet weather should set in, the plants had better be placed under glass, allowing them all the air possible. During winter they should be placed in a cool house where the temperature will not exceed 40 degs., keeping them near the glass and giving air whenever the weather will permit; but this should not be done so as to cause currents of cold air to rush through the plants. Except on very mild days air should be given on the sheltered side of the house only; drip, too, must not be allowed to fall on the plants. If, during damp weather, the foliage shows any tendency to fog off, a little fire-heat should be applied, giving air at the same time to dry the leaves. Treat the plants the second season exactly as has just been recommended, taking care to stop any over luxuriant shoots, and to put them nicely into form before starting into growth in March. By the end of the second season they will be fair-sized specimens, and should be placed out-of-doors early in August, for, unless the young wood is ripened, there will be little chance of their blooming. In my opinion it is better to have a moderate-sized plant covered with bloom than one twice as large, with only a few straggling flowers on it.

THE SOIL in which I have found this plant to do best is good fibrous peat, nicely broken up, mixed liberally with silver sand. Care should be taken to have the ball in a properly moist state, and also the fresh soil in as nearly as possible the same condition as to moisture; the new soil should be regularly and rather (but not over) firmly pressed about the ball. Care should also be exercised to secure perfect drainage, and this should be done by nicely arranging a moderate quantity of thin crocks and covering them, so as to effectually prevent the fine soil from stopping up the drainage.

WATERING.—I have said nothing about watering, but the proper application of this is a very important point with respect to securing

An old type of Pelargonium (P. inquinans). (See page 624).

success in the culture of this plant. When in an active growing state, a liberal supply is required, but the soil must never be saturated; and, when the season's growth is completed, the plant should be very sparingly supplied with water; in winter I find it a good practice when the plants are dry to place them for an hour in a pan filled with water, so that the crocks may be covered. This feeds the active roots and moistens the bottom soil without saturating the mould towards the surface, where the thick fleshy roots are, which are liable to suffer from excess of moisture at any season, particularly in winter. I have also said nothing about shading during summer, but I suppose that nowadays I need not say that it would be hopeless to expect vigorous growth from a plant exposed to the full influence of the sun's rays in a dry atmosphere deprived of the health-giving influence of night dews. I need hardly state, likewise, that if free rapid growth is expected shading must be applied as early in the season as the weather, &c., may render advisable, and constant care must be exercised to maintain a moist atmosphere during dry weather. This should be done by sprinkling the passages, and not by syringing the plants overhead, which ought only to be done during the summer months, and then only in the evening and when the weather is very bright and dry, and neither shading nor moisture should be used in excess unless large plants without bloom should be desirable. M.

Striking cuttings of the Sweet Luculia.—Many complaints are made of the difficulty experienced in striking cuttings of this fine sweet-scented shrub, but for our own part we have always found it to root freely. Our method is to take the cuttings in the spring, consisting of the tops of the young growth, and insert them singly in small, well-drained pots in a soil composed of a mixture of peat, loam, and sand in equal parts. They should be put in as soon as possible after being severed from the parent plant, as if allowed in any way to flag it will seriously tell against their chances of success. The after treatment consists simply in watering, if necessary, in drying the lights every morning, and in removing decaying leaves. —B.

REPLIES.

15311.—**Training Regal and show Pelargoniums.**—Small specimens are usually trained to a circular piece of wire fixed under the rim of the pot, the shoots being tied down to this as far as they can be bent without breaking. Large specimens must have sticks laid across the pots and tied down to this wire, the sticks, two or three in number, should project over the rims of the pots. If they project over the pots from 3 inches to 6 inches, two sticks would be sufficient; if from 6 inches to 12 inches, three sticks are required. A larger ring of wire is tied to the end of these sticks, and to it the shoots are tied out. As soon as the flower trusses are sufficiently advanced sticks must be placed to them.—J. D. E.

15250.—**Ferns for cool greenhouse.**—The hardy Ferns would do best, such as Adiantum Capillus-Veneris, evergreen; A. pedatum, deciduous, but very handsome; Asplenium Adiantum nigrum, evergreen; Allosorus crispus, the pretty Parsley Fern; varieties of Athyrium Filix-fœmina; Ceterach officinarum; Cystopteris fragilis—the variety Dickieana is the prettiest and most easily obtained; Lastrea dilatata spectabilis; Lastrea Filix-mas—varieties Barnesii, crispa, and Pinderii; Onoclea sensibilis is interesting and very handsome for a large house; varieties of the common Polypody—the variety, P. vulgare cornubiense is not readily to be distinguished from the Irish Filmy Fern. This also—Trichomanes radicans—should be grown in a shady corner under a hand or bell-glass. Some of the varieties of Polystichum angulare are very handsome, and all are evergreen—the best are grandiceps, plumosum, proliferum, and rotundatum; Scolopendrium vulgare in variety is also very distinct and handsome, all are evergreen; the best is crispum multifidum. Kelwayi and cristatum-digitatum. Struthiopteris germanica, is a remarkably handsome deciduous species. The common Maiden-hair, Adiantum cuneatum may also be tried.—J. D. E.

15312.—**Geraniums withering.**—It is easy enough to flower these plants in the winter, but they sometimes fail to do so from two causes, viz., too much heat, or too little; and to these a third cause may be added—heat improperly applied. The night temperature should be from 50 degs. to 55 degs., and in the day during mid-winter it would rise 5 degs. above these two numbers. Seventy-five degs. is far too high a temperature either by night or day at present. The right way to apply the heat to Geraniums in winter is from the roof. In a house we have devoted to them the two rows of inch pipes for the hot-water are fixed to the roof near the base of the rafters. They cannot be trusted to produce such trusses as the best growers exhibit unless the houses are roof-heated. A flue or hot-water pipe is required as well.—J. D. E.

15305.—**Amateur's town greenhouse.**—The best climbers for such a house are Lapageria alba and rosea. Other plants are Acacia armata, Drummondii, and grandis, Genista

fragrans Hydrangea, Lilium auratum, and L. lancifolium. Camellias would succeed; the Daphne indica is easily grown and very sweet; make use of Chrysanthemums in winter, Fuchsias in summer. Early-flowering bulbs would form a good feature—Hyacinths are the most esteemed, Tulips are showy. Narcissus tazetta in variety, Jonquils, and Persian Iris; Dielytra spectabilis, Spiræa japonica, and Lily of the Valley would come in; and one of our most esteemed plants is Solomon's Seal. Ericas of the E. hyemalis and gracilis type are very hardy, very pretty, and easily grown; so, also, are the hardiest varieties of Azalea indica.—J. D. E.

15243.—**Cuttings of Allamandas.**—These may be grown as trained pot specimens or as roof climbers, either planted out or in pots. They require the temperature of a stove, and will flourish best in good fibrous loam, to which a moderate sprinkling of sand and one-sixth part well-rotted manure has been added. They are among the best of stove climbers, and should, when so used, be freely cut back every season before they are started into growth.—W. Y. N.

15472.—**Treatment of winter Cherry.**—Repot your plants at the same time as you did last year, using 7-inch pots instead of 48's. The reasons the flowers did not set is that they had not root room enough, and that they suffered at the roots for the want of water. If from any cause you are not able to attend to the watering regularly you had better plant them out in a rich soil in a sheltered place about the end of May, and about the middle of September take them up and pot them; supply the roots liberally with water until the berries are well coloured.—J. C. C.

15258.—**Creeper for fernery.**—In order that the creepers should be in harmony with the Ferns, "Amateur" should still plant climbing Ferns, of which there are now several suitable kinds. For instance, Lygodium palmatum makes a dense covering; the beautiful Lygodium scandens is a more graceful plant; and then there is the Stenoclæna. Flowering plants, as "Amateur" probably knows, would not succeed well in a fernery, which requires a rather subdued light, and, besides, it will be more harmonious to have the walls covered with plants of a similar character to the other occupants of the house.—W. G. C.

15294.—**Grobya Amherstiæ.**—This is a stove Orchid that can probably be obtained from any of the nurserymen who send out Orchids. It should be grown in a shallow basket in Sphagnum and fibry peat.—W. Y. N.

15120. — **A meteorological question.**—I confess I was somewhat surprised at the announcement of "W. L. F.," page 594, that towards evening, if there be no change in the direction of the wind, it can be confidently predicted by means of the hygrometer, as to whether or not a frost will occur in the night. If he had furnished with this (if correct) most valuable fact, its why and wherefore, I feel sure that many readers of GARDENING would have been gratified, as well as interested, and have been much more likely to profit by his instructions. It is not so much the province of science to state facts as to point out and interpret the principles on which these facts are based. A law without its why is but an empirical law. The following considerations, in my view, make it difficult to accept on trust the information given us by your correspondent. It is well known to every practical man who has to preserve plants from frost that the wind blowing or a beclouded sky tends to prevent frost. Now the motive power of wind being high pressure, and the cause of atmospheric disturbance being often a long distance away from the most remote places affected by the disturbance, the question arises—What connection has the dew point with this cause of disturbance which, maybe, existed thousands of miles away from the place of observation? Again, the higher regions of the atmosphere are often in a different state as to its amount of moisture and the direction of its currents from that which obtains at the surface of the earth. We often notice when the air is dry near the ground that the atmosphere in the higher regions is below saturation point, as made manifest by the overcast sky; also by the direction the clouds are taking that the winds above are blowing in a different direction from that indicated by the weather vane or by the smoke from the chimneys. Now comes the question—How is the dew point an indication of the state of the atmosphere in the higher regions? Let us suppose a drying March wind, with an overcast sky and a thermometer a few degrees above freezing point. This points to a dew point below freezing point, for air near saturation point is not active in taking up moisture. By the theory in question there should be a frost; but, if I am not mistaken, if one were to fire up under the circumstances he would find that he had erred on the side of waste of time and fuel. Further, most practical men, doubtless, have observed that a dewy nightfall (if through the night the weather keeps calm and clear) is often the precursor of a frosty morning. The fact of dew being on the grass unfrozen is a proof that dew point is above freezing point; so in this case, if one were to allow himself to be guided by "W. L. F.'s" theory, he would err on the side of danger if not of disaster. Howbeit, it must be conceded that frosty weather is always accompanied by a low dew point, for a dew point cannot exist above the temperature of the air without condensation of moisture taking place; also that watery vapour retards radiation of heat. But, this being conceded, much more, I fear, remains to be cleared up before the theory will be entertained by the readers of GARDENING.—L. C. K.

Group of zonal Pelargoniums (See page 624.)

15477.—**Defective heating apparatus.**—At the highest part of the piping a small air-pipe should be fixed to carry off any air that may accumulate in the pipes. If this has not been done it would account for the pipes at the further end being cold. If the water surges about in the supply tank and steams the house you have got too powerful a fire, and must regulate it by the damper. The water should not boil.—K., *Southend.*

—— "F. P." has not put in an air-pipe at the highest part of the flow-pipe. Let him tap the pipe and put a ¼-inch air-pipe, rising a foot higher than the tank, and his trouble will cease.—D. SMITH, *Manchester.*

—— We have to thank several other readers for replies to this query.

15504.—**Touch paper** is made by dipping blotting paper in a strong solution of nitrate of potash (common saltpetre).—G 162.

—— Several other readers have kindly replied to query 15504.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, January 4th to January 9th.

Putting in cuttings of Chrysanthemums, Alyssums, Salvias, and Fuchsias; throwing out trenches, and filling them with manure on which to plant Seakale for forcing. Planting Sweet Bays, and throwing out holes in which to plant Pear and Nut trees after having trenched the ground. Fumigating Gardenias and Calceolarias to keep down fly; turning manure in order to get it heated for Potato pits, and pruning Roses on pillars. Sowing some more pots of Mignonette; putting cuttings of Salvia patens in heat, and also putting in some Gooseberry and Currant cuttings. Planting some Apple, Peach, Apricot, and Pear trees; also Raspberry canes. Digging amongst bush fruits.

Potting Nemophila and Saponaria for baskets; putting in cuttings of Gnaphalium lanatum and Begonias. Planting out Schizostylis coccinea. Wheeling a portion of the rubbish-heap on to the Gooseberry quarter; digging vacant ground; potting off autumn-struck Petunias, and shifting autumn-struck Centaureas into 6-inch pots; striking cuttings of Lobelias in heat; also cuttings of Oxalis and Heliotrope; shifting herbaceous Calceolarias into larger pots; transplanting some Ghent Azaleas in order to prepare them for forcing. Manuring Roses liberally; also any Plum trees that annually bear heavy crops, giving two barrow-loads to each; turning the rubbish-heap in order to hasten decay, so that it may be ready for use when wanted. Putting ashes over Peas just coming up; pruning wall Roses, having finished those on trellises; potting Gladioli in two parts loam, one part manure, and one part peat and sand; sowing Cyclamen seed.

GLASSHOUSES.

SCUTELLARIA MOCCINIANA.—Wherever there is a stove this plant should be grown. It is one of those subjects that have no particular season of flowering, for where there is enough warmth to keep it going, and a sufficient stock is kept up, it may be had in bloom all the year round, as it goes on growing, and every shoot that is made will flower. Its bright heads of bloom are well adapted for cutting, lasting for several days in water if the room in which they are stood is not too cold. For decorative use in the stove this Scutellaria has few equals, as it flowers in any state, when small, in 6-inch or 7-inch pots, as freely as when larger; it does not require so much root room as many things—a 10-inch or 11-inch pot will accommodate a large specimen. It is easily grown, so that amateurs little acquainted with plant culture need not fear being able to manage it. It is readily increased; where there is a deficiency of stock, and there is enough warmth to strike cuttings, these may be put in at any time when young shoots that are not showing flower can be obtained; such as will root readily are generally produced from the branches after they have bloomed just below where the heads of flower spring. If cuttings are put in now they will root in a few weeks, and have more time to make good plants during the spring and summer than if struck later.

IMANTOPHYLLUMS.—These, again, are among the best plants that amateurs can take in hand; they are as easily managed almost as an Agapanthus—in fact, they submit with little injury to an amount of bad treatment such as would kill most things. So accommodating are they that they will succeed either kept wholly in a moderate stove temperature or continuously in a greenhouse. In the former they naturally increase in size much faster and produce proportionately more flowers. They also bear forcing as well as any plant in cultivation. Examples that, after completing their season's growth, have been in a greenhouse temperature and kept dry at the root should have the soil well soaked with water and be placed in heat, where they will soon begin to push up their flower-stems. The flowers are naturally of an enduring character, but they will last longer if the plants are brought into bloom slowly.

CALLAS.—Where there happens to be a forcing house a few plants of these should, about every three weeks or so, be put in, so as to give a succession of bloom; they should have a fairly light position, and not be too much crowded, for if subjected to conditions the reverse of these the flower-stems get drawn up weak. Plants of these that have been brought into bloom early had better, as soon as the flowering is over, be kept quite cool, as it is not well to get them into growth for some time yet.

KALOSANTHES.—The many amateurs whose glass accommodation is limited, and who have not had much practice in plant growing, will not find many plants better calculated for them to try their hands on than Kalosanthes. They are no easily killed or liable to get out of order,

and if a few matters connected with their culti vation are attended to they are certain bloomers. The flowers, produced in quantity, are very effective and last a considerable time in good condition. Another thing in their favour is that the plants will flower equally well in a small state, say when grown in 6 or 7-inch pots, as if much larger. From the succulent nature of Kalosanthes they require much less water during the winter than some things; if the soil is kept too wet at the time when little growth is going on the roots frequently rot, yet beginners in their cultivation will do well not to err in the opposite direction by allowing the soil to get over dry: the plants will not show the effect of any want of moisture they may be subjected to in the way that many things will by flagging, but, nevertheless, the lower leaves will suffer, and may shrivel up and die, leaving the plants in an unsightly condition. Another essential in the cultivation of Kalosanthes, which it is not well to lose sight of, with a view to their flowering satisfactorily, is that all through the winter they should be kept well up to the glass.

EPIPHYLLUMS.—These are among the best greenhouse subjects that amateurs can take in hand, although they are now comparatively little grown. The larger-growing kinds, such as E. Ackermannii and the speciosissimum section, are second to no greenhouse plants in cultivation for the gorgeous colour of their flowers, whilst the smaller truncatum section are alike deserving of cultivation by those who have any glass accommodation. The stronger-growing kinds are better for not being allowed to come into flower until spring, through the gradual influence of the returning sun heat, keeping them for the time being in an ordinary greenhouse temperature, with their roots quite dry, giving no water, unless the plants shrivel much, and in this case only sufficient to cause them to plump up somewhat; for if the soil is kept as moist during winter as it should be for the generality of greenhouse plants, either the roots will suffer, or there will not be that complete cessation from growth necessary to their flowering well. The different varieties of E. truncatum require to be kept only slightly moist at the roots while in cool quarters; but where there is the means of giving them warmth to bring them into flower, a few plants should be started at intervals of three weeks, giving water so as to make the soil moderately moist, but not too wet, as the roots of these, like the rest of the Cactus family, are impatient of too much moisture.

POTTING SOIL.—The different kinds of soil required for potting—peat, loam, and leaf-mould—are better stored out exposed to the weather than kept under cover, as when in sheds they get unnaturally dry, a condition that cannot afterwards be set to rights by the use of water, as the drying process seems to injuriously affect the food elements which the soil contains; plants rarely do so well in material that has been allowed to get too dry in this way. Yet it is necessary to have the various soils under cover long enough before they are wanted, to admit of their getting rid of the superabundant moisture with which the heavy autumn rains have saturated them, for if plants are potted in soil that is too wet, the roots never take to it kindly. An open shed is the best place to put the soil in, laying it thinly, so that the air can act upon it. With this object it should also be turned over occasionally. It will be well to attend to this at once, as the time for potting some things will arrive shortly, and it is advisable to have everything in readiness. Regarding sand that is required for mixing with potting soil the case is different. In a general way it is better under cover, as even if quite dry it will be none the worse, and in that condition if the other materials happen at any time when required to be somewhat too wet, the dry sand will materially assist in bringing them into the right state. THOMAS BAINES.

FLOWER GARDEN.

GENERAL WORK.—The best of all walk preservers is the roller; when this is used freely weeds and Moss have a hard time of it, and firm walks are the result. In the event of frosty weather setting in, plenty of work may be found in carting out soils and manures to spots where they are required, throwing together leaf-heaps, and burning up prunings or other rubbish, the ashes of which form a valuable manure for any crop. We are now at work among the shrubberies, cleaning out all leaves that would be likely to blow out and cause untidiness; where possible, without injuring the roots, preference is given to forking them in, but before doing this the plants are regulated as to space, either by thinning out and replanting them in other positions or else by cutting out straggling growths, so as to keep each plant from injuring its neighbour. The margins of turf are then cut, and any vacant ground in front furnished either with hardy bulbs or spring-flowering plants, such as Wallflowers, Forget-me-nots, Polyanthuses, Primroses, and similar plants.

IN FORMING NEW BEDS for shrub planting the ground should be trenched as deeply as the nature of the soil will allow; plenty of decayed manure should be worked into it, and for those beds that are intended for what are generally termed American plants—*i.e.*, Azaleas, Rhododendrons, Kalmias, &c., peat soil is desirable, but by no means essential, as they do almost equally well in pure loam, provided it is not too heavy, and is free from chalk, which seems to be rank poison to American shrubs and Conifers—their growth should never be attempted in soil of this character. See that the plants are not buried deeper than they were previous to removal, and also that the soil is well worked in and consolidated about the roots.

HERBACEOUS PLANTS show off best in wide shrubbery borders with low evergreens to back them up, but the evergreens ought not to be of a kind that root far about, or they rob the other plants, and so spoil their growth. Rhododendrons, Berberis Darwinii, B. stenophylla, and such like, do not do this, and, therefore, should be largely made use of, as they are not only valuable for this reason, but they are more desirable than most others on account of their moderate habit, and the great beauty of their flowers, which they bear so profusely in spring. For variety of foliage, Aucubas, Euonymus, and Hollies are the most suitable, and to these may be added the variegated Dogwood and Acer fraxinifolium, and, by way of contrast to these, one or two of the dark-coloured Nut, which, with its rich coppery leaves, shows up well. To make sure of old borders being perfectly free of roots from trees and shrubs near, it is a good plan to trench up the same, and when doing so to work well up around, cutting, and removing all in the way. As most herbaceous plants are fond of rich soil, the opportunity afforded when trenching of giving a good dressing of manure should not be lost. The kind of manure most suitable for the purpose is that of a mild nature which has been lying by for some time to get well decomposed.

FRUIT GARDEN.

VINES.—In early houses where the vines have been bent down horizontally to insure an even break, they should be tied up to the wires as soon as the most backward buds begin to move. When the temperature begins to rise syringe with warm water; give air at 68 degs., and syringe again, if the afternoon is fine. If inside borders are well drained, a second supply of water at a temperature of 80 degs. will help the young growths rapidly forward, and old vines will benefit by the addition of a little clear liquid from the tank, or a dash of guano in the water, while vigorous young canes will produce more compact "shows," and set their fruit better if stimulants are withheld. Pay timely attention to disbudding, or rather the removal of weak breaks, from which bunches of Grapes cannot be expected, and when the best shows become prominent raise the night temperature to 58 degs. or 60 degs. on mild nights. If forcing has been commenced with fermenting material on the borders, make frequent additions, turn the whole mass, mixing the old with the new, and aim at a temperature of 70 degs. to 75 degs. on the surface of the soil.

TOP-DRESSING HARDY FRUIT.—The top-dressing of fruit trees should be delayed no longer, as the value of a timely application of a good covering to newly planted or root-pruned trees cannot well be overrated. Where Pears are grown on the Quince stock and the roots have not been disturbed, the annual top-dressing of good, rich manure may be wheeled out on frosty mornings as soon as the nailing is finished. It is well known that the successful culture of Pears on the Quince stock greatly depends upon rich top-dressings; and as the borders in course of time become too high, old top-dressing and exhausted soil may be forked off and placed on the vegetable quarters to make room for the new. After a few years heavy cropping puts an end to extension, blossom buds only are formed, and as many people cannot thin their own fruit, the annual removal of old spurs at pruning time should not be neglected. Push on the pruning and cleaning of all kinds of fruit trees.

KITCHEN GARDEN.

In many instances the first sowing of Peas is now above ground. They should be covered all over with coal ashes to ward off slugs. Birds may be prevented from doing damage by strings of worsted placed half a dozen inches or so above the Peas. The second lot must be got in at once. Laxton's Earliest of All, Ringleader, and William I. are good varieties to sow. Successional sowings of Broad Beans—Early Mazagan and Old Green Windsor—should be made. This is a good time to make plantations of Horseradish. We merely sink the tops with an inch or two of the roots attached to them a foot deep in good land. Get ground for Onions dug up roughly and deeply—our site for them is the Celery quarter. Where these useful esculents go off from mildew or other causes, give the land a good dressing of soot and lime, allowing it to remain on the surface until the seed is to be sown. About the second week in March will be quite soon enough to get the seed in. Sowing early in February is a mistake; the young seedlings come up, and the March winds turn them yellow, and cripple them so much that good bulbs cannot be expected. Land for Carrots should also be dug and treated in a similar manner to that for Onions. Working or turning over leaves and long manure, filling the pits for spring vegetables, salads, &c., will now be useful work. Keep up good supplies of Seakale, Rhubarb, Mushrooms, and French Beans, and small things, such as green Mint, Tarragon, and Mustard and Cress should not be forgotten. G.

WATER BOUQUETS.

THESE are ordinary bouquets preserved in water from which the air is excluded, and which keep fresh and beautiful for periods of a week or a fortnight, or even three weeks, according to the character of the flowers or foliage used, the care with which they are made, and the purity of the water employed. Water bouquets, formed chiefly of Ferns and other foliage, such as Crotons for example, so rich in colouring, and so diverse in form, may be preserved in perfection for a month or more. The beauty of each leaf and sprig is also displayed to the utmost perfection in water bouquets. There is no huddling of the flowers or foliage into masses; on the contrary, each branchlet, leaf, or flower may be allowed to float gracefully in the water while seen throughout its entire length in all its natural beauty. This extreme grace and lightness forms one of the chief charms of water bouquets. But, it may be asked, how are they made? Thus:—Take a shell, a piece of coral, a flint, or other stone, or bit of metal—the two first are the best—and construct a bouquet of any handy size upon or around it, securing, however, all the materials of the bouquet to whichever one of these substances may be used. The weight of the coral, shell, or stone, should be sufficient to hold the bouquet in one position in the water; if coral be used, it adds to the beauty of the bouquet to allow part of it to be seen through and among the flowers; if stones or other weights be employed, they may readily be hidden with the flowers or foliage of the bouquet. A piece of lead drilled full of holes, to allow the bouquet wires to be passed through them, forms a handy base for water bouquets. It is easy to place each flower and leaf exactly where the eye of cultured taste may direct in such a base so as to form bouquets of any desired character, colour, or size. Every part of the bouquet and its base must be perfectly clean; no Moss or other material that would cause the slightest sediment must be used in its formation or arrangement. If any dust or dirt adhere to leaf or flower it should be washed off, either before or immediately after making the bouquet.

HAVING FINISHED THE ARRANGEMENT OF THE FLOWERS, three things are needful for the comple

tion and display of the water bouquet: these are —a bell-glass, or glass shade without a knob, a china or other plate or dish with a flat, even surface, and of course waterproof, and a tub or pailful of clean water. Glass, shade, dish, and water must all be thoroughly clean; the pail or tub must be sufficiently large to allow the bouquet, glass, or other dish, and bell-glass to be all submerged in water together. With bouquets of any size, the simplest mode of proceeding is to bare the arms beyond the elbow, place the dish in the tub, set the bouquet carefully in the centre of it, and, holding it in position with one hand, place the glass shade in the water with the other sideways and deep enough till it is perfectly full of water, then turn it over the bouquet and on to the dish without emptying it of water, or exposing any portion of the glass to the air; if properly done, there will be no air bubbles or empty space at the top of the glass; should there be any, the glass must be turned back again, refilled with water, and turned over again till it is entirely filled with water. There can, however, be no difficulty if the tub or pail be large and deep enough to admit of the whole process of placing and covering the bouquet being accomplished under water. The dish must then be grasped firmly on each side, and lifted out of the water, pouring a little of it from the outside rim of the dish in taking it out, so that it may be carried easily anywhere without spilling any, which it would be difficult to prevent were the lip of the dish beyond the globe full to the brim. The inexperienced, however, had better use a sponge for this purpose, as the change of level necessary to get rid of this outside water is apt to let out some from the inside also, and to let in the air, which spoils the effect. A little water should also be left outside the bell-glass, as it tends to make the union between the glass and its base more secure. Dish and glass should then be wiped dry, and the bouquet placed on a drawing or sitting-room table. The whole bouquet floats in the water above the level of the dish, and the effect, if everything be perfectly clean, is most pleasing. The air in the leaves and flowers comes out and remains like crystals on their surface, and almost every sort of flower and leaf, too, seems to vary in the amount of air expired by them. These aerial crystals form rapidly during the first hour or two, continue bright and beautiful for several days, and then many of them seem to collapse in the water. Bouquets of this kind must, of course, be handled and moved with care, and the dish on which they stand must be held nearly level. Those to whom their management is entrusted must be cautioned not to hold them on one side in dusting, or not only will the water come out with a rush, but the glasses will often break into fragments with the pressure of the atmosphere upon the internal vacuum caused by the loss of the water. Of course it will be understood that in such bouquets the water is kept in the glass by atmospheric pressure, and that being the case it will be obvious that the air outside would support a column of water under the conditions described as high or higher than the ceilings of most sitting-rooms, therefore glasses of any size may be used with safety.

IN RENEWING SUCH BOUQUETS some care is necessary. The only safe course, in fact, is exactly the same as that pointed out for enclosing them in the glasses. Remove dish, glass, and bouquet just as they stand, plunge them overhead in water, and the whole will fall asunder. To the careful observer the bouquet and water alike give obvious notice of time for removal. When the flowers lose their brightness, and the water becomes a little cloudy, the bouquet should at once be removed. Glass, dish, and weight must all be scrupulously cleaned, and a new bouquet made and placed in position, as already pointed out. The lasting qualities of such bouquets are not wholly owing to their submersion. They also escape all gas and fire-dried air, and enjoy a much more uniform temperature than they would do under other conditions. They likewise admit of the use of flowers that may be injurious or disagreeable to many from their excess of sweetness or of disagreeable odour. For example, many have a positive dislike to the odour of Chrysanthemums; these, especially the Japanese ones, with their long, thread-like petals, are among the most interesting flowers for water bouquets. Pancratiums, again, Eucharis, Nymphæas, and other Liliaceous plants are excellent for the purpose, as are also Narcissi, Hyacinths, and Snowdrops. Many of the Begonias and Moss Rose buds are remarkably beautiful in water bouquets. But any or all flowers may be tried; and those who have few or no flowers may make chaste and pleasing water bouquets with nothing but leaves and berries, such as Mosses, Ferns, Grasses, Holly, Retinosporas, or even Hips, Haws, and Ivy leaves. Water bouquets would be useful in smoky towns and crowded dwellings, where flowers droop and fade almost as soon as they enter them. Constant complaints are made that cut flowers sent to London and other large towns droop and die on their arrival. A few at least of these may easily be preserved in water bouquets for several weeks. D. T. F.

15475.—**Management of heating apparatus.**—Your boiler is one of the best kind, and your pipes are all right; but you have not length enough in the house. It ought to have gone round,

Pelargonium Konig Albert (double flowered Ivy-leaved) in basket. (See page 624.)

if convenient, giving it a good rise to the highest point of your flow (where your air tube is), with plenty of fall for return, and your cistern should be 2 feet higher than the boiler and pipes. The water ought not to overflow the cistern, and your supply cistern or boiler ought not to be in the house. The best coal for saddle boiler is the smooth steam kind. Put a lump in in the evening, and cover that with ashes from the fire; will keep up fire 12 hours or 14 hours, without attention, and it is best to keep a fire night and day now. I have a saddle boiler heating 500 feet; the quantity of coal used is according to heat required. This reply might assist "F. P., Cheshire (15477)."—EAST SUFFOLK.

—— A 4-inch flow and return pipe should be ample for a house of 10 feet by 15 feet. I think possibly you are in too great a hurry; a reasonable time should be given—say an hour—from the time the fire is started for the heat to get up properly, and then, having obtained the desired temperature, bank up the fire and regulate the damper carefully, so as to ensure slow combustion. Do not use bituminous coal, if you can get coke or anthracite. —K., *Southend.*

—— "H. W." says it was set up and mounted by professionals, and it seems difficult to believe they have not put an air pipe in; but the water being driven out of the cistern points only to this, and the remedy is to put one in at the highest part of the flow-pipe, and carry it higher than the tank.—D. SMITH, *Manchester.*

15474.—**Heating small greenhouse.**—"H. R. H." says the great difficulty is the water returns to the boiler nearly as hot as it left it. To me this would be very satisfactory; but if "H. R. H." cannot get sufficient heat in his house with plenty of hot water, he wants more piping. He can run it round the house twice, or if it is a lean-to to an old wall or building, so that there is a dry side; it will be best to run the pipe at the low side and the two ends, and not at the back. Of course, he must be ruled somewhat by the position of the boiler. "H. R. H." can, if he require more pipe, run it backwards and forwards twice being sure to give a good rise, and have a small air-pipe at the highest point of the flow pipe, and a good fall from that for return-pipe. For all ordinary purposes lay pipes near the floor, as the heat will ascend.—EAST SUFFOLK

—— The best position for the piping in a lean-to greenhouse is along the front lights under the stage and near the ground, say 9 inches from it. This is the arrangement usually adopted, and for ordinary purposes is the best.—K., *Southend.*

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXXII.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

JERUSALEM ARTICHOKES.

THIS vegetable has been miscalled, as the product is derived from a plant of the "Sunflower tribe," and is really a native of Brazil. The word "Jerusalem" is a corruption of the Italian "Girasole" (Sunflower), and the name Artichoke has been added in consequence of the resemblance of the flavour to that of the green Artichoke. This root somewhat resembles the Potato in appearance, and was cultivated in England at a much earlier date, but is neithe so useful nor so palatable. It is not a digestible food, owing to the watery condition which it still maintains after cooking; for, owing to the absence of starch, there are no granules to swell and absorb the moisture, consequently no amount of cooking will render the vegetable mealy. Frost does not injure the roots, so they may be allowed to remain in the garden, and gathered when required for use.

BOILED JERUSALEM ARTICHOKES.—Wash some Artichokes very clean, and with a sharp-pointed knife peel them very thinly, and as each root is peeled throw it into cold water containing a little vinegar; this is to prevent the cut surface from coming in contact with the air, which would have the effect of turning the root black. When all are peeled, throw them into plenty of boiling salt and water, and let them boil very fast (without a lid on the saucepan) from a quarter to half an hour, according to the size. They should be quite soft when probed with a fork, and, like Potatoes, as nearly as possible all of one size. The small ones should be cooked one day and the large ones another. When sufficiently cooked, drain the Artichokes, and turn them into a hot vegetable dish, and pour over them a good white sauce.

ARTICHOKE FRITTERS.—Take half-a-pound of cooked Artichokes, the same weight of boiled Potatoes, three ounces of grated cheese, a pinch of cayenne pepper, one teaspoonful of salt, one teaspoonful of vinegar, a little made mustard, and the yolk of one egg. Pass the Artichokes and Potatoes through a wire sieve, and then mix all ingredients well together; form small rolls about three inches long, slightly flour them, and then dip each one separately into a beaten egg; next toss well in bread crumbs until they are covered, and fry them to a pale yellow in boiling fat; drain on porous paper, serve on a folded napkin, and garnish with a little grated cheese and fried Parsley.

PUREE OF JERUSALEM ARTICHOKES.—Take two pounds of Artichokes, three ounces of ham, two Leeks, a small bunch of Parsley, two Bay-leaves, one white Turnip, a small Carrot, three pints of broth, two ounces of butter, white pepper and salt to taste. Wash, pare, and slice the Artichokes, Turnip, Leeks, and Carrot, and cut the ham in small pieces. Melt the butter in a saucepan, add the vegetables and ham, and toss them over the fire for about ten minutes, then add the Parsley, Bay-leaves, and seasonings with the broth; stir until boiling, and then put the lid on the pan, and let all cook gently until the vegetables are sufficiently soft to be rubbed through a wire sieve. Return to the pan, and continue to stir until boiling, and serve hot with toasted bread cut into dice. To

vary this soup: after it has been passed through a sieve, return it to the saucepan, with one pint of milk, stir until boiling, and then throw in the yolks of two eggs, well beaten, with a gill of cream, but do not allow it to boil after the addition of eggs and cream.

ARTICHOKE PUDDING.—Take 1 lb. of Artichokes, a ¼ lb. of Rice, 1 pint of milk, 2 eggs, 2 ounces of butter, half-a-teaspoonful of powdered Cinnamon, and two tablespoonfuls of moist sugar. Boil the Artichokes until they are quite soft, and then cut them into slices. Wash the Rice and boil it for ten minutes. Butter a pie-dish, put a layer of Artichokes at the bottom and then some Rice, more Artichokes, and next Rice, until both are used up. Beat the yolks of the eggs with the Cinnamon and sugar; add the milk and pour over the Artichokes; break the remaining portion of butter on the top, and put the pudding in a brisk oven for about fifteen minutes. In the meantime, whip the whites of eggs to a stiff froth, with a very little sugar. Pile them on the top of the pudding as rockily as possible, return to a cool part of the oven to become slightly brown, sprinkle a little sugar over the top, and serve at once.

FRIED ARTICHOKES. — Take some boiled Artichokes and cut them in halves, place them on a dish or plate and grate over them the rind of a Lemon, also sprinkle a little sugar and let them stand a short time while you make a batter as described for Salsafy in GARDENING, December 5th. Dip each piece of Artichoke into the batter and drop into boiling fat. Fry a pale brown, drain on paper. Sprinkle with powdered sugar and serve hot. Cinnamon may be used instead of Lemon rind, and the slices dipped into egg and then bread-crumbed before frying, instead of the batter.

ARTICHOKES TO BE SERVED AS A SECOND COURSE.—Take one pound of Artichokes, half a-pint of milk, one ounce of butter, half an ounce of flour, the yolks of two eggs, a little grated nutmeg, white pepper and salt to taste. Peel the Artichokes and trim them flat at one end, and pointed at the other; boil them until tender, drain them, melt the butter in a saucepan, add the flower, mix thoroughly, pour on the milk and stir until boiling, season and put in the Artichokes when they are quite hot. Add the yolks of the eggs, and stir until thick; pour on to a hot dish, and garnish with croûtons of toasted bread and boiled Brussels Sprouts. Serve hot.

Pumpkin pie.—Since reading the note on this in GARDENING of Nov. 14th, page 510, I have been making inquiries with the view of tracing the history of this somewhat inferior but useful fruit, and must confess to some little surprise that the plant is not more widely distributed, considering the number of years it has been cultivated by the cottagers of Suffolk. When I was a boy it was more general even than now, and I can remember old men at that time speak of their defeats and successes when pitted against their neighbours in its culture, but I never heard one, however old he was, speak of the first time he grew or saw it grown—from which I infer that their acquaintance with it must have commenced with their life. If this were so the plant must have had an uninterrupted run of at least a century. As to the kind grown, I can only say it is a Gourd, catalogued sometimes as the Pompion or Pumpkin Gourd. Its culture is of the simplest character—a spadeful of manure, a sunny place, and plenty of moisture are all they require. The term "Pumpkin pie" certainly did not originate in this part of Suffolk, where it has always, with few exceptions (and those are of recent date), been called "Millyun pie," which, I suspect, is merely a corruption of "Melon." But I can remember hearing my old master, with whom I was apprenticed, speak of his confusion when, in Essex, he was asked to take some Pumpkin pie, and, to his surprise, found it to be Suffolk "Millyun pie." Perhaps Essex will confess to the paternity?—what have readers there to say to it? The pie of "W. M. C., Clapton," appears to be what we call Pumpkin custard. The pies are made in the same way as Apple pies, with the addition of Plums, Currants, or Apples, and sometimes with butter and spices, without any other fruit. —J. S. LANFIELD.

BIRDS.

GARDEN BIRDS.—V.

The PIED WAGTAIL (Motacilla Yarrelli), the YELLOW WAGTAIL (Motacilla campestris), and the TITLARK or MEADOW PIPIT (Anthus pratensis), also visit our garden occasionally. The Wagtails are exclusively insect-eaters, and, therefore, useful in the garden, while the Tit lark, which lives partly on insects and partly on the seeds of wild plants, is, if not a useful, at least a harmless, bird there, as he chiefly frequents it during the winter months.

The SEDGE WARBLER (Calamodyta Phragmitis), a migratory bird, was seen in our garden on two occasions only during the last three years. Its visits were entirely accidental, as this bird seldom leaves its summer habitat among the Sedges, Reeds, Willows, and Bramble thickets on the margins of brooks and pools. The song of the Sedge Warbler is singular, consisting chiefly of the most accurate imitations of the notes of the Swallow, House-Sparrow, Chaffinch, and some other birds, curiously mixed up together.

In addition to the foregoing birds, which more or less constantly frequent our garden, may be mentioned the SWALLOW (Hirundo rustica), the HOUSE-MARTIN (Hirundo urbica), and the SWIFT (Cypselus apus), all of which may be seen continually skimming through it in the summer months. As these birds destroy immense numbers of insects on the wing, they must render no small amount of service to the gardener. The MISSEL THRUSH (Turdus viscivorus), the MAGPIE (Pica caudata), the ROOK (Corvus frugilegus), the FIELDFARE (Turdus pilaris), and the REDWING (Turdus iliacus), frequently perch on a tall Sycamore tree growing in the hedge at the end of our garden. I have never seen any of these birds alight in the garden (their operations being altogether confined to the adjacent fields), so that I may class them amongst the birds that do no harm there. I may add, however, that the Magpie is a great destroyer of the Crane-fly, or "Daddy-long-legs" (Tipula oleracea) in the winged state, at the time when the female flies are depositing their eggs in the ground. I have often watched a Magpie industriously pursuing these insects through short meadow grass in the same manner as a Wagtail hunts flies, the long tail of the Magpie enabling him to make rapid short turns in seizing them, acting in this way exactly as the long vibrating tail of the Wagtail does in effecting the same purpose. W. MILLER.

POULTRY.

SEASONABLE NOTES.

THE first of January is the date selected by many business men, not only for taking a valuation of their stock and ascertaining the profit or loss for the preceding twelve months, but also for making new arrangements connected with their business, such as opening an extra department, extending their operations in another district, and so forth. To the poultry-keeper New Year's Day is also the most suitable time for making any sweeping change in his system of management, for not only should his stock at this period of the year be made up solely of laying or breeding birds, but the hatching season is close at hand, when a new breed of fowl can be introduced at the least expense. Let the fancier, then, look over his stock, and if he discovers any hens more than two years old at once sell them for what they will fetch. I am, of course, supposing the readers of GARDENING generally to keep poultry for profit, not for fancy purposes. It is, perhaps, needless to say that the poultry fancier, who exhibits his birds at the shows held about the country, does not expect to be repaid in the same way as the ordinary poultry keeper, who merely wants eggs and birds for the table. The latter should get rid of his cockerels as soon as they are fit to kill. The former, if he does not require them himself, will keep them until he can find a purchaser. So with old hens. A valuable specimen of any breed will, from the fancier's point of view, be worth keeping for several seasons, although she may only lay a few eggs each year; but the householder, to whom one hen is worth no more than another, will, except in rare cases, sell her, if he be wise, in the autumn after she completes her second year. Some will clear the hens out a year before, and depend entirely on a new batch of pullets every year.

In addition to selling off the very old hens it is good policy, as I have recently remarked in these pages, to dispose of all the young stock not really wanted at home. They only eat the dainty morsels which the older birds ought to get. The cockerels, too, worry the hens and pullets unnecessarily, and the chickens of the year will possess weaker constitutions in consequence of the intercourse between birds so closely related. Of course, if there are chicken runs in which all young fowls can be placed apart from the regular stock, it will be different. Even in that case, however, there is a point worth considering. Chicken raising is most successfully carried on when the coops are placed in such a position that the young birds can run on fresh ground. But if the run has been recently used, so that the ground is foul with the droppings of other birds, the probability is that the chickens will not thrive, and there will be a large percentage of deaths. The breeder should therefore endeavour to keep his chicken runs as sweet as possible, and this he cannot, as a rule, do if he uses them throughout the winter for late-hatched chickens of a previous season. If it be determined to introduce fresh blood into the yard, the purchase should be made without further delay? If an old cock be bought, means should be taken to test his eggs from the hens mated with him, before the season is far advanced. Such birds are sometimes useless, and their purchasers are ignorant of the fact until the hatching season is well nigh over, and then it is too late to repair the damage.

INTRODUCING NEW BREEDS.—I have said that this is the time of year at which a new breed of fowl can be introduced at the least expense. Suppose, for instance, that the fancier does not again wish to breed from his present stock, but proposes to replace them in the autumn with pullets of another variety. His best plan will be to buy a cock and three or four hens of the breed he wants, and place them in a roomy pen apart from his other stock. Of course he must take care to get birds not related to each other. From this pen he will get eggs sufficient to satisfy his wants, and his other hens can be used for sitting. The outlay in getting together the breeding pen may be rather a heavy one. The plan is, however, a cheaper one than buying eggs for sitting, and more satisfactory in its results, for purchased eggs are always unreliable, owing to the shaking they get in travelling. Those who keep a large stock of hens of no particular breed, and have a lot of mongrel cocks running with them, should act in something the same way to that I have just mentioned. It would be too expensive a business to replace the whole of the cocks with birds of a pure breed. Instead of doing this, I should sell all but one, merely keeping him as a leader, for I consider hens do better when a cock runs with them. Then, I should select a few of the best hens in the flock, place them in a good sized pen, and mate them with a cock of some pure breed bought for the purpose. In this way the largest stocks may, in course of a year or two, be considerably improved at a little expense.

DOULTING.

Houdans.—It is to be hoped that no one will be persuaded to follow the advice of "T. C., Kent," page 580. No breed of poultry can be worse for a wet run than Houdans. Their crests are always dirty (when there are any crests, for they are generally pecked off and the bare scalp covered with blood); and to call a non-sitter a good all-round bird is rather a straining of that cant phrase. The statement, even with the qualification of "I think," that "it does well on a wet run," is one that I must take the liberty of questioning, and I speak after an experience of more than ten years in the wettest of wet counties, Carmarthenshire. —R. K. P.

Smithfield market, Evesham.—List of prices realised Dec. 23, 1885:—Brussels Sprouts, 1s. 9d. to 3s. per pot; Carrots, 1s. 3d. to 1s. 11d. per cwt.; Celery, 6d. to 10d. per doz.; Gillyflowers, 5d. to 10d. per doz.; Onions, 3s. to 3s. 9d. per cwt.; Parsnips, 2s. 9d. to 3s. 6d. per cwt.; Potatoes, 1s. 3d. to 2s. 4d. per pot; Savoy, 3d. to 8d. per doz.; Sage, 1½d. to 2d. per doz.; Turnips, 1s. 2d. to 1s. 6d. per pot; Apples, 2s. to 7s. 6d. per pot; Pears, 3s. to 6s. per pot.

GARDENING ILLUSTRATED.

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INDOOR PLANTS.

CULTURE OF THE EPACRIS.

The Epacris is undoubtedly one of the most easily grown of all fine-rooted, hard-wooded greenhouse plants. It is also one of the most elegant and ornamental objects, when well-flowered, that can be imagined. It blooms at a season of the year when a flower of any kind is most acceptable, the colours of the different varieties are very varied and exceedingly delicate; and, lastly, the spikes of bloom when cut will stand a long journey better than almost any other flower we possess. Yet another advantageous point may be mentioned—which is, that this plant may be successfully grown and flowered in situations where the Erica, which the Epacris resembles in habit and inflorescence, could not be done at all. No Heath can be grown—indeed, can barely be induced to exist at all for any length of time—in the smoky air of a town or large suburb, but the Epacris will continue to increase in size and bloom freely, with judicious treatment, in the most unlikely places.

Plants should be obtained established in 48 or 54 sized pots, some time during the autumn, when the flower buds will be just visible in the axils of the leaflets. They will cost from 1s. 6d. to 2s. each, if of good named sorts, or rather less by the dozen. They must be kept well watered, never allowed to get so dry as to flag, though any superfluous water must be allowed to pass away freely. A light airy position will suit the plants best, and a warmth of 50 degs. to 60 degs. will enable the blooms to expand freely; they will come into bloom in October or November, and continue in beauty till February or thereabouts, though some of the later flowering varieties will not come in until the New Year. When fairly open, a dryish atmosphere and a rather lower temperature than that named above will tend to preserve the flowers. After blooming keep the plants rather dryer for two or three weeks, then cut out all weak and superfluous growths, and head back the strong shoots to within about 2 inches of their base. After this, keep, as far as possible, close and rather warm, with gentle syringing overhead twice a day in bright weather, but comparatively little root-moisture should be afforded. This treatment will induce the formation of fresh growths from the old wood, and if these are toonumerous the weakest should be rubbed off. Remember that a few strong well-ripened shoots are much preferable to a quantity of thin weak wood, which will probably bloom either very scantily or not at all.

Repotting.—When the young growth has attained the length of 2 inches the plants should be repotted—that is, if they require it, which will probably be the case. In this operation break away only the surface soil—round the edges principally—and any loose or spent material, leaving the main ball, and almost the whole of the roots entire. The fresh pots should be new, or at least perfectly clean, and not more than 10 inches larger in diameter than those that the plants previously occupied. The soil should be a good quality of black or dark brown peat, moderately fibrous in quality, but not too much so, mixed with a good proportion of sharp silver sand, and broken up moderately fine. Well crock the pots, place a handful of the rougher part of the compost over the drainage, set the plant on this, so that the collar will be just below the rim of the pot, fill in with soil a little at a time, which must be rammed firmly round the ball by means of a flat potting-stick, being careful to leave no cavities or loose spots anywhere. Finish off with the collar of the plant rather higher than the rest, but not so much as to cause the water to run away round the sides of the pot. Give the plants one fairly good watering through a fine-rosed pot, and, if possible, set them in a pit or low house where they can be kept close for a few days until the roots are working freely in the new soil, which will be readily seen by a rapid growth taking place. When this occurs, gradually inure to abundance of air, and afford all the light possible to strengthen the growth to the fullest extent.

Early in June the plants should be set out-of-doors in the most open and sunny position available, placing them upon a hard bed of ashes or slates to prevent worms entering the pots. Supply liberally with water, never allowing an hour's flagging, but do not give any until really required. If, however, the situation be very confined or smoky, it would be better to keep the plants under glass, at least until August; but in this case they must have the lightest possible position close to the glass, with air in abundance blowing through them both night and day. During August and the early part of September a thorough ripening of the growth is essential. Abundance of sunshine and free air will alone accomplish this, and as by this time the shoots will have attained their full length, somewhat less water will be required, and this partial (but by no means excessive) dryness will assist in consolidating the tissues. Too much attention cannot be given to this "ripening" process, for, in the case of the Epacris, it makes all the difference between bloom and no bloom; if the growth is late, soft, and immatured, there will be scarcely a flower, while if well ripened in time to allow a short resting period before flowering, shoots wreathed in bloom from base to point may be expected. House the plants before the cold rains that we so often get towards the end of September can injure them, but by no means shut up closely or apply any appreciable amount of fire heat until the buds are required to swell up, but keep cool and airy. Little or no manure of any kind is required by the Epacris; an occasional dose of soot-water, or a solution of sulphate of ammonia, may be given while growth is in progress, or even to assist a heavy development of bloom to expand, but too much will do more harm than none at all. The Epacris is

Propagated by means of the young tops, or side shoots with a slight heel, inserted in sand over sandy peat, in a pot half full of drainage. The cuttings are generally put in in December, or early in the new year, and the pots, each containing forty or fifty cuttings, are placed on a bottom heat of about 70 degs. in a close propagating house or pit, and covered with glasses until nearly rooted. It is, however, rather a delicate matter to get any fair proportion of the cuttings to emit roots, and no one who is not a professional can expect to be very successful in raising young plants. The colours of the Epacris range from pure white to rich crimson, embracing nearly every shade of pink, rose, scarlet, &c.; and some are very sweetly scented. A good selection may be obtained at almost any first-rate nursery.

B. C. R.

PLANTS IN A COLD HOUSE.

Many a one who loves a few plants, and has them in flower during the summer has to face the difficulty how to preserve them during winter without the aid of artificial heat. Much, of course, depends upon the position of the house and the degree to which it is exposed. When suburban villa residences are built, and small greenhouses are added, they are almost invariably attached to the building, either at the front or back. I have seen a street of villa residences of the same pattern, running from east to west. On one side of the street the greenhouses are on a north aspect, on the other side they have a south aspect. Very often these houses are constructed much more as ornaments than as adapted for the culture of plants, a circumstance which adds to the difficulty of keeping plants in them through the winter. The houses in a north aspect—*i.e.*, that lie due north—may get a little sun early in the morning and late at night just before and for a brief time after midsummer, but only for a brief period, and that only in the event of no building or trees interposing. It is obvious that ordinary flowering plants will fare badly under such circumstances, and the best thing to do would be to convert such houses into

Cold ferneries, or use them for the culture of certain hardy evergreens as permanent occupants—plants such as Aucubas, Retinosporas, Aralia Sieboldi, Aspidistra, Fortune's variegated Bamboo, &c., that do not need much sun, and so make brightly-marked foliage, as far as possible to do duty during the summer months with such flowering plants as would be likely to remain in bloom for a time. Houses that have a sunny aspect are capable of being made gay in spring, summer, and autumn; but as they are exposed to the full glare of the sun, watering during hot, drying weather has to be attended to twice and thrice a day. These houses, being constructed as much for ornament as for use, are very frequently sadly deficient in ventilation, and especially towards the roof, where the hot air congregates, and causes the house to become almost unbearable. Roof-ventilation becomes a matter of urgent necessity, and it should be provided as an indispensable condition of successful plant culture. Blinds and other shading can also be extemporised with which to lessen the internal heat during the height of summer. It is often very difficult to heat such structures. It can occasionally be done by means of a gas apparatus; but the remedy, through defective management, is sometimes more destructive than the result intended to be obviated. Then there are petroleum lamps, and they can be made to keep a good deal of frost away, but they cause an offensive smell, which is disagreeable in the extreme, and is certain to find its way into the

dwelling-house. And thus it is that the villa gardener is frequently found saying, "I will abandon all thoughts of artificial warming, and allow the plants to take their chance." When this latter alternative is adopted, what is best to be done? I find in my intercourse with villa gardeners that many of them place a high value on plants they have been able to keep through the winter. Now, one of the best things a villa gardener can cultivate in one of the houses we have described is a collection of

ZONAL PELARGONIUMS. It is surprising what a large measure of frost some of these will stand if they are allowed to go dry in the middle of November, or, if the weather is likely to be severe, earlier. In my own experience young plants bear the ordeal of winter much better than old ones, and so I put in cuttings of the old wood of the previous year in May, placing them singly in small pots. In July they are potted in 5-inch pots, and they bloom until quite late in the year. All the oldest of the old plants are thrown away in the autumn; they are not worth troubling with. When the young plants are allowed to go dry they lose some of their leaves, and these should be picked off and the surface soil kept a little stirred. When a thaw follows a spell of frost and a little bright weather ensues, the house is thrown open, air freely admitted, and some water given to the driest. Such plants will bear dryness of the roots better during winter in a cold house than they will excessive moisture. When the plants are watered it is done early in the day, so that the shelves and floor of the house may dry before night comes on. Fuchsias are similarly treated, only that the old ones are retained longer than in the case of the zonal Pelargoniums. By placing Heliotropes on the warmest shelf, I have kept plants through a sharp winter, and, by careful attention, made good plants of them the following summer; but they will not bear so much dryness at the roots as the Pelargoniums and Fuchsias. Tuberous-rooted Begonias are allowed to go quite dry, and they are then covered up with newspapers to keep them safe from frost.

SOME OF THE HARDIER FERNS, such as Pteris cretica, P. serrulata, &c., can be preserved in the same way by allowing the roots to go dry in the winter, but not sufficiently so to injure them. This can be prevented by giving them a good soaking in mild weather, and then allowing the pots to drain freely. I am able to keep some of the finer Cannas in pots, Eucalypti, Pachyphytum bracteosum, fine plants that flower freely in summer, and Marguerites in this way. And in winter there are Christmas Roses to give flower; berried Aucubas, variegated Box, Retinosporas, Aralia Sieboldi, Yucca recurva, the green and variegated forms of different Aloes, Latania borbonica, and other hardy, or nearly hardy plants, green and variegated, to furnish the house and make it pleasant to the eye when the days are shortest, as well as dull and dismal. Attention—daily, if necessary; weekly, certainly—is a main factor in the prosecution of such work successfully; only let there be present a love for plants and a desire to preserve them in the most successful manner, and due attention will be readily given and success be raised to the level of a certainty.

R. D.

Paris Daisy Etoile d'Or.—I do not think that I over-estimate the merits of this plant when I say that everyone having space for a score of plants should include it in his collection. It is one of the few things that bloom in winter in a house which is only heated to keep out frost, and for this reason it should be valued by those who, desiring flowers in winter, have no warm house in which to bring them along. There is scarcely a plant in cultivation that can equal this Marguerite in continuity of bloom; the same plants will flower uninterruptedly during nine months of the year, but this is, however, more than should be expected of them. Plants intended for winter blooming ought not to flower in summer, but should have the buds picked off until the end of September, after which time they may be allowed to develop, and will open from the beginning of October onwards through the winter and spring. Cuttings strike with the greatest freedom either in warmth in early spring or later on in a cool house or frame, and, growing freely, will come into 4½-inch pots early in autumn. In the form of bushy specimens, clothed with healthy foliage and full of bloom, this Paris Daisy is very attractive, but its great value lies in the fact of the flowers being so admirably suited for cutting. They are symmetrical in form, and have long, slender, but strong foot-stalks. Those who need plenty of cut flowers should grow this plant in quantity, as, if kept in a constant temperature of from 50 degs. to 55 degs., the beautiful clear soft yellow blooms will be continuously and freely produced all through the dullest months of the year.—B.

CALATHEA (MARANTA) ZEBRINA.

LIKE many other good and handsome plants, this has the fault of being somewhat common in our gardens; but with those who appreciate plants for their intrinsic beauty, it will surely be a favourite. Few species of this ornamental genus, and, indeed, few fine-foliaged stove plants of any description equal this when it is well grown, either in stately habit or in rich colouring. When liberally treated it produces leaves fully 2 feet in length, of a rich, bright green tint, heavily barred or striped with dark velvety maroon, nearly approaching black. It is valuable alike for stove decoration and for purposes of exhibition; it is the most robust of all the Marantas, if we except M. Veitchii, and, as it is a rapid grower, a small plant soon develops into a good-sized specimen. A compost, consisting of one-third fibrous loam, one-third peat, and one-third leaf-mould, with the addition of sufficient sand to keep the whole porous, suits it admirably. The pot in which it should be grown should be well-drained, and when growing it likes a liberal supply of moisture at the root. Keep up the humidity of the atmosphere, and if syringing is resorted to use pure water only, as the slightest amount of mineral or earthy matter held in solution will spoil the rich freshness of its elegantly-arched, velvety foliage. There are several other valuable species in cultivation.

R.

Calathea (Maranta) zebrina

Clematis indivisa.—This charming plant should be grown by all who have a greenhouse or conservatory. It is of free growth, and when in flower during the dull winter months is most useful for cutting. When better known it will be extensively grown. Its lovely pure white flowers are bell-shaped, sweetly scented, and produced not by tens but by hundreds, and for covering a wall, or training to the roof or pillar, this Clematis is one of the finest plants ever introduced. No time should be lost in obtaining it. If planted now it will cover a large space in twelve months. A good rough open compost of turfy loam, with good peat and well decayed manure, suits this plant. Do not forget to add thorough drainage, and when in growth it should be given plenty of water.—W. C. LEACH, *Clapton*.

Flowers and Grapes.—I often hear it said that Grapes and flowers cannot be grown well in the same house. I have a lean-to greenhouse—30 feet by 12 feet, east aspect—in which I have a good show of flowers all the year round, and grow about 150 pounds of Grapes and a good supply of Tomatoes. I sent off to friends this Christmas six boxes of flowers, a dozen bunches of Grapes, and two or three dishes of Tomatoes, and have a good show of flowers left, and plenty coming on. I have still five sorts of Grapes hanging—Esperione, Grizzly Frontignan, Dr. Hogg, Black Hamburg, and Trentham Black—all with healthy green stems, and only the Esperione at all shrivelled. Wasps come into the house, but they have never touched a Grape since I grew Tomatoes. I have at present Petunias, and plenty of Heliotrope in flower, though I have not closed the upper lights of the house, winter or summer, for three years.—R. H. W., *Co. Cork*.

TUBEROSES.

I CANNOT help thinking that many amateurs and others with limited room for the growth of tender plants have a wrong impression about the requirements of the Tuberose, or they would more often undertake its cultivation. The impression seems to be that it can only be grown by those who are well skilled in the growth of tender plants, and where there are expensively-constructed houses. But this is to a great extent a mistake. If a long succession of the flowers be wanted I know there must be warm houses to bring on the earliest blossoms, but those who would be content to have them towards the close of the summer may do so if they have a brick pit, or the corner of a greenhouse, that is not too much shaded, and is kept moderately close, to devote to them. Besides these conditions, they will also want careful attention. For such cultivators as I have in view a small brick pit is perhaps the best structure, particularly if it can be wholly devoted to them, for with careful ventilating a pit can be almost turned into a forcing medium from the middle of May to the end of August. In regard to potting the bulbs, this had better not be done until the middle of April. They do not require a large amount of pot-room; three bulbs may be put in a 4½-inch pot; and as regards soil they are not very particular—equal parts of loam and peat, or loam and leaf-soil, suits them admirably. I know a lady who has only a cold frame to devote to them, who uses ordinary kitchen garden soil, and she is fairly successful in flowering them. When Tuberoses cannot be placed in a heated structure directly they are potted, the soil in which they are placed should not be watered—in fact, it ought not to have any water until the bulbs show signs of making young leaves, and then it must be only in moderate quantities. When the flower stems begin to rise they will have made more roots, and will, therefore, use up more moisture. The best plan for those to follow who have a greenhouse or similar glass structure is to pot the bulbs at the end of March, and place them on a warm shelf, and allow them to remain there until the middle of June, until they are taken to the pit I like to grow them in pits during the hot summer months, because the flower stems do not get so much drawn as in a house, and by standing them on inverted pots the plants can be kept up near to the glass by simply changing the size of the pots on which they stand. When they are in the pit the principal point to attend to is the ventilation, as this must be managed so that the plants get the full benefit from the sun As they like a high temperature, the light should remain

closed in bright weather till 9 a.m., and closed again at 4 p.m., and in cloudy weather, if the pit is ventilated for four hours during the middle of the day, they will get all the air they want. A tapering wedge of wood is the best thing to use for the purpose of giving air; this should be placed under the light at the back, so that little or much air may be admitted, according to the outside temperature. As near as it can be managed by judicious air-giving, the cultivator should aim at maintaining the temperature in the pit between 85 degs. and 95 degs., and to prevent it going down too low at night the lights should be covered with mats. In bright weather it is very essential to syringe them with clear water of an evening, also to damp the walls of the pit with a view to creating atmospheric moisture after the lights are shut up, as red spider is rather partial to them, and that terrible insect pest revels in a dry, airy atmosphere, but cannot exist long in a damp one. Those potted in March, and treated as I have advised, should be in flower at the end of August, but those grown altogether in pits will probably not be in flower before September and October. As soon as the flower buds begin to form a dryer atmosphere is necessary, or the buds may damp off before they expand. Bulbs which have once flowered are not worth growing on again. J. C. C.

Forcing Spiræa palmata.—"J. C. C.," page 598, recognises the difficulty of forcing this lovely plant. The only way in which I have succeeded is by taking it up early and potting without disturbing the ball or roots any more than can be helped, and, after that, standing it in a cold frame with a covering of half-rotten leaves over the crowns. Under this treatment they come on slowly and almost naturally, as all the warmth they get is that from keeping the lights close till the young leaves begin to show through, after which the plants will gradually bear a little more heat till they come into bloom.—S.

—— I know no hardy plant more useful for forcing into flower in the early months than this, and its requirements are of the simplest kind. It may be taken up one year and forced, and, after flowering, planted out and allowed to rest a year. It is especially valuable to those who require rather large plants for conservatories, as specimens of it in 14-inch or 16-inch pots make striking objects. I have also had it in excellent condition in 7-inch pots; but it is the larger specimens which furnish the gracefully arching branches for which this plant is remarkable. It flowers freely at every joint on the young wood, and a sufficient number of its pea-green leaves expand with the flowers to set them off to advantage. Although it does not last so long in good condition, when cut, as some other flowers, its gracefully arching branches are nevertheless invaluable for household decorations. As regards culture, it is only necessary to say that, as soon as the leaves have nearly all fallen, or not later than the end of November, it should be taken up and put into as small pots as it is possible to get the roots into without mutilating them in any way. As soon as potted let it be placed in some cool glass structure until wanted for forcing. In order to get well-developed flowers, the temperature should not rise above 60 degs.; 45 degs. at night, and 55 degs. by day would even suit it better, and in this temperature it may be had in flower in five weeks, commencing at the new year. As soon as it goes out of flower, prune back all the long straggling shoots, and let the plants be gradually hardened off before they are planted again in the reserve border.—J. C. C.

Brachysema lanceolatum.—For forming a screen, say at the end of a greenhouse or conservatory, or as a pillar plant therein, this native of Australia commends itself to favourable consideration, more especially from the fact of its flowering at this season of the year. It is of a rambling rather than a climbing habit, and when well established will quickly cover a considerable space. The leaves are green on the upper surface, but silky white beneath, while the flowers are of a rich scarlet-crimson, and borne freely during winter. Its roots are by no means gross feeders; therefore, in potting, care must be taken to have a good open compost combined with thorough drainage—indeed, such conditions as those in which its allies, the Chorozemas, delight. If planted out in the conservatory the same rule must be observed, for if kept too wet large plants will sometimes go off without any preliminary warning.—T.

Violets for winter blooming.—My method of growing Violets for blooming in the autumn and winter has been very successful, and, perhaps, a short description may be of use. In April the young runners for next season's supply were selected from plants that had ceased flowering; only sturdy single crowns were used. These we planted on good rich soil in a partially shaded border, and kept them well watered when the weather was dry, and the soil frequently stirred to keep down weeds and prevent it from getting crusted and impervious to air. After bright days a damping overhead with a syringe or garden engine was found to be of great benefit in promoting healthy growth and keeping down red spider. The greatest of all aids to early flowering, however, is to concentrate the energy of the plant in one single crown by cutting off all runners as fast as they appear, with a pair of sharp-pointed scissors, such as are used for thinning Grapes. This must be frequently attended to, or the plants soon get exhausted, but if rigidly carried out the crowns will become plump and full of flower-buds. About the middle of September the plants should be transferred to their flowering quarters. Cucumber frames answer well for this purpose; they should be set on a hard foundation in a sheltered position facing the south. The frames should be raised well up at the back, so as to catch every ray of sunlight; fill them half full of manure, treading it in quite hard, so as to give a gentle lasting warmth to the roots; on this put a layer of fine soil, such as could be got from an old Cucumber or Melon bed; then lift the plants with a good ball of earth and set them on the bed, filling in between them with the same kind of soil as that just named. Finish off by giving a good soaking of water, and, when the plants are dry, mulch with Cocoa fibre. The frame lights should be tilted up at the back to allow a free circulation of air both night and day, except when frost sets in; then cover thickly with mats and long litter or straw—that is, if very severe, but remove such coverings directly the sun is up, and give a little air, for if shut up closely the foliage soon suffers. Look over the frames frequently, and remove decaying leaves. Fully expanded blooms will be ready for picking during November, December, and January, and very plentifully in February and March. As regards sorts I find Marie Louise superior to the Neapolitan for early winter flowering; in fact, it is the best I have yet tried. I do not think Belle de Chatenay is well adapted for early work; it takes too long to expand. Of single blues, Czar is as good as any I have yet tried. A good bunch of Marie Louise garnished with leaves of the single kinds makes a choice floral gift during the dark days of winter.—HANTS.

Nemophila insignis for hanging baskets.—In no way does this Nemophila appear to better advantage than when grown in a wire or other basket, and suspended from the roof of a greenhouse or conservatory during the spring months. It is scarcely eligible as a summer bedding plant (although its habit and colour are all that could be desired) on account of its somewhat transient character during hot dry weather; but it is exceedingly effective as a spring-flowering bedding plant, and when intended for this purpose it should be sown early in August, and the portion of plants required for indoor decoration should be potted into small pots about the end of September or early in October, and placed in a cold pit or frame. About the beginning of November they should be transferred to their flowering pots, which need not be larger than 5 inches or 6 inches, and the soil used should consist of light turfy loam and about a fourth or fifth part of leaf soil. The plants should then be placed upon a shelf near the glass in any ordinary greenhouse temperature. Thus treated they will generally begin to show flower about the middle of February, when they may be placed in wire baskets and have their pots neatly surrounded with green Moss and suspended from the roof of a light conservatory or other structure. If well supplied with water they will soon become very ornamental, and will continue to flower until the beginning of May, or longer if desired, producing in profusion their beautiful pale blue white-eyed blooms, larger and in every way in better condition than they generally do in the open air. Other varieties of Nemophila may also be grown in a similar manner and with equally good results.—P. G.

Grafting Clematises.—A few years ago I was in a nursery in which we had to work up about 1,000 Clematises yearly, and we never experienced any difficulty in obtaining that number. About the middle of February a few plants of each kind were placed in a slightly-heated greenhouse, and syringed once or twice a-day. This treatment soon caused them to start, and as soon as the shoots were firm they were taken off and cut up into lengths for grafts, the two leaves and the piece of stem forming the internode being quite sufficient for each graft. The stocks were the string-like fleshy roots of Clematis Vitalba or C. flammula, every root thick enough to take the graft being used. Either wedge or side grafting will answer, and the tying should be done with grafting cotton. Each grafted root was then potted into small 2½-in. pots, the root being twisted round in the pot so that the point of union was just buried. They were then plunged in a propagating frame, and very soon were ready to be hardened off. Clematis indivisa may be freely propagated in this way.—B.

REPLIES.

15480.—**Deutzia gracilis.**—It would indeed be curious if the plant bloomed well under the treatment described. Planting out after blooming was right enough—in fact, the best thing that could be done—but to take up the plant in August, and cut back the shoots, was the way to deprive it of the chance to flower. Put your plant in a cool room and keep it there till the end of May, then plant it out in good soil in a sunny place, allowing it to remain undisturbed till the end of October. Then take it up carefully and pot it, not pruning, and place it in a cool room until April, when it will do in a living room.—J. C. B.

15509.—**Propagating large-leaved Begonias.**—If a few plants only are required, as is probably the case, the best way is to propagate them from cuttings. They are easily propagated in the plant stove. They may also be propagated by inserting leaves or bits of leaves in fine sandy soil.—J. D. E.

Protecting glasshouses from snowslips.—I have commenced erecting a small lean-to greenhouse, which, but for such a snow-guard as that mentioned on page 602, would come to grief. After the first heavy snowstorm a falling slate is also a dangerous thing. My guard is of corrugated wirework, 1 foot deep and 2-inch mesh; it is sold at about 4½d. per square foot. It may be fixed as suggested for the boards, and does not look so unsightly as the boards, being, in fact, scarcely seen at all. It is used in warehouses in the town to protect the people in the streets, and for mill roofs to protect weaving-sheds, which are built one storey high with glass roofs. The guards are also made of copper wire, but it is very expensive. Any wire-worker will supply these at about the above price.—WIRE-WORKER, *Bradford.*

Mossy lawns are, as a rule, a sign of poverty in the soil, and of a cold climate. Here we cannot manure the whole of the lawn as it ought to be, and the consequence is that where the soil is thin and poor, and the Grass has been long cut by the lawn mower, there is little or no Grass left, and a carpet of fine Moss has taken its place, which looks almost as well as Grass in summer and better in winter. Where mossy lawns exist they are sure to be detected about this season of the year, as the Grass disappears, leaving the Moss exposed. Top-dressings of some suitable manure will do more to remove Moss than anything else [under such circumstances, and the poorer the soil, and thinner, the oftener the dressings must be applied. Seed might be sown and scuffled in at the same time. I notice in a deer park, which is high and cold, and where plenty of Moss (fog, as it is called) exists, that near the deer sheds where the animals congregate in winter to be fed, and near which the soil is well manured, as fine and close a sward is formed as could be seen anywhere.—J. S.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary, January 11th to January 16th.

Planting remaining fruit trees; repotting plants of Calceolaria aurea floribunda into 8-inch pots for spring flowering. Sowing a few rows of Little Gem Peas close to a south wall. Putting in cuttings of Nasturtiums and Heliotropes, and putting in vine eyes. Painting Apple and Pear trees with three parts lime and one part soot, mixed with water to the consistency of paint. Sowing a border of Parsley, Carrots, Radishes, Alexandra and Paris Cos Lettuces, and Walcheren Cauliflower in frames. Potting some Tuberoses, and placing them in heat to force. Putting in cuttings of Coleus, Crotons, and Alyssums; also a little Musk in slight heat weekly. Putting some red worsted over Peas that are coming up to keep off birds; also sooting Gooseberries for the same purpose. Nailing Roses on walls, and finishing the pruning of Gooseberry trees. Putting in cuttings of Ageratum and Solanum Capsicastrum, and getting all Roman Hyacinths in flower into the greenhouse.

Cleaning scale off Camellias and one or two other plants. Putting Kidney Potatoes into hampers to sprout. Loosening shoots of Peach trees on wall ready for pruning. Clipping Privet hedges. Digging vacant ground. Sowing Peas, Long-pod Beans, some Dutch Turnips, and Melons. Shaking out and repotting Daturas and Erythrinums; putting in more cuttings of Salvia patens, Fuchsias, Nepetas, Alyssums, Agathæa, and Coleus. Forking among Gooseberry trees, and giving them a sprinkling of guano. Removing suckers from fruit trees. Sowing Golden Feather Pyrethrum, Centaurea argentea, and more Mignonette in pots. Planting Potatoes in pits; also Ash-leaved Kidney and Myatts' under Peach wall. Sowing Auricula seed, and putting it into greenhouse; also a few Tripoli Onion seeds in heat, and red and white Celery under glass on a manure bed. Dividing Maiden-hair Ferns, and putting them into 3-inch pots. Layering Tree Carnations; covering Celery with straw to protect from severe frost, and nailing Apricots.

HARDY PLANTS IN FRAMES.

MANY who are in possession of a garden have no houses wherein to grow plants, and are deterred from having them by the care and attention which they entail in looking after the fires in the winter. Yet they would be glad of the means of growing plants that would afford flowers at a time when they are not to be had out-of-doors. A good deal may be accomplished in this way with hardy plants grown in ordinary garden frames with, in the case of some things, protection during severe frost, and in others no protection at all, simply keeping the lights closed in hard weather. A few hints as to the kinds of plants that will answer grown in this way, and a brief account of the treatment required, may not be out of place.

PANSIES AND VIOLAS are general favourites, and there are few things that admit of pot culture that can be managed more satisfactorily in a cold frame. All that is necessary is to have good plants that were struck from cuttings early enough in the latter part of summer to allow of their acquiring the requisite strength. They may be potted two or three together in 6-inch or 7-inch pots. They are better for being placed in the pots in autumn, yet they will succeed if potted any time now when the weather is open, so that they can be taken up from the ground where struck; they like rich, moderately light soil, such as ordinary loam, to which about one-fourth of rotten manure and leaf-mould in equal proportions has been added, with some sand, pressing the soil tolerably firm in the pots, but not making it so solid as in the case of some plants.

There are now many varieties of the common Primrose, double and single, of Primula cortusoides, P. amœna, and P. japonica that are excellent pot plants, requiring nothing but simple treatment, and succeeding well in a cold frame. Of Polyanthuses innumerable varieties can be grown from seed, or bought cheap, which, so far as their general appearance goes, are little inferior to the somewhat tender exhibition sorts. In no way can these pretty plants be induced to produce such fresh, clean flowers as when cultivated in pots in a frame during winter. Of Auriculas the easily-grown Alpine varieties are among the most beautiful; in fact, those who are not conversant with the properties which exhibitors of these flowers require would generally prefer the ordinary alpines. Of Pinks and Carnations, again, there are now no end of lovely varieties, including the perpetual-flowering Carnations, that for all ordinary purposes are preferable to the show kinds, and that, when grown in pots and kept through the winter and spring in frames, will, like the plants previously named, flower much earlier than they can be induced to do in the open ground.

HYACINTHS AND POLYANTHUS NARCISSUS, potted and kept in a frame in a sunny position, may be had in flower a month before they will bloom out-of-doors. The frame, if a large one, consisting of several lights, should have each light divided from the others in compartments, so that such plants as require more or less air—consequent on the different stages of growth they may be in—may have it admitted to them. If several single light frames are used, a like result will be secured. The position for the frames should be sheltered from the north and east winds, and where they will catch all the sun possible, as it is through the solar warmth acting on the glass that the flowering of the plants is to be accelerated. All the above-named plants must have their pots plunged up to the rims in fine coal ashes, so as to protect the roots from injury during severe frost.

CHRISTMAS ROSES AND LILY OF THE VALLEY can be had in bloom in frames before their respective times of flowering in the open ground, and in a much better condition than when exposed to the weather. In the case of these plants all that is required is to take up the roots from where they have been grown and transfer them to a frame, placing them closely together and filling up the interstices between the roots with fine soil. If desired, some of the plants may be potted.

VIOLETS—Kept in frames through the winter and early spring yield their fragrant flowers in much better condition, and at a time when they are not obtainable in the open ground. For them the frame should be filled up with soil to within 9 inches of the glass, and the plants put in closely, so as to cover the surface. With these, as already advised for the other plants thus to be flowered in frames, the position chosen should be where every glimpse of sun will act on the glass; to secure this, the ground on which the frames stand should be made to slope to the south.

All that is necessary in the way of attention to the plants named is to see that a moderate amount of air is admitted, when the weather is not frosty, by tilting the lights at the back. In frosty weather keep the frames altogether shut. Little water will be required in the winter time, but care must be taken that the roots do not get too dry. In spring the soil will dry more quickly, and the roots will absorb more, consequently more water must be given. Any of the plants in pots mentioned can, when in bloom, be moved into living rooms, where their appearance will bear comparison with many things of a less homely character. After flowering they should be returned to the frame, and be given plenty of air, so as to harden them preparatory to their being planted in the open ground. The above plants are not all, but they include the best of the hardy kinds, which, by the aid of garden frames, will produce an acceptable supply of flowers for a considerable time when none are to be had in the open ground.

Most of the Lilies that, although hardy enough to bear the climate, fail to thrive when planted out in many parts of the kingdom, can be grown well in pots with the help of frames, where the pots should be plunged in coal ashes from the time they are potted in autumn until there is no danger of injury from frost in spring, after which they do best in the open air. Of these may be mentioned L. auratum, the different varieties of L. speciosum, and of L. longiflorum, than which there are no plants that amateurs with limited accommodation for pot-plant cultivation will find calculated to give a better return for the attention bestowed on them. Of other bulbs suitable for pot-culture in frames may be named Bulbocodium vernum, Chionodoxa Luciliæ, Schizostylis coccinea, Tritonias, Crocuses, and Scillas; the flowers of each of these plants are larger and finer when grown in a frame than out-of-doors, and when in pots can be used for room decoration.

THOMAS BAINES.

VEGETABLES.

Our winter Tomatoes are looking well, and we get from ten to twelve pounds a-week of very good fruit. Plentiful supplies of Asparagus, Seakale, and Rhubarb should be kept up, and Mustard and Cress, Tarragon, and Chervil, all want attention now. All Ashtops and early varieties of Potatoes should now be exposed to the light. The main object is to keep them back. Long white growths not only weaken the tubers themselves, but have a tendency to invite disease. Look over quarters of Snow's Broccoli, cutting close to the surface of the ground all heads that are showing, and stack them up close together in a shed. In this way they last for a very long time in the best condition possible at this season. It should be borne in mind that 4 degs. of frost on Broccoli or Cauliflowers will spoil their colour and their flavour. Let all land as it becomes vacant be dug and trenched.

WORK IN THE TOWN GARDEN.

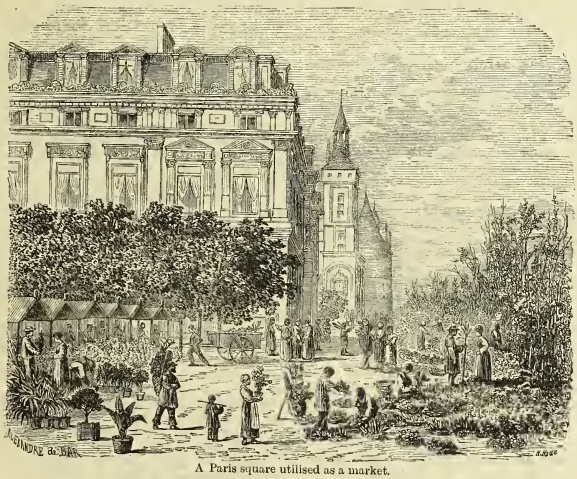
In many places there will probably be a considerable demand upon the resources of the greenhouse about the present time for the purposes of indoor decorations. No great amount of cut bloom can be expected at midwinter from a small, or moderate-sized town greenhouse, though we are acquainted with a gentleman residing in the centre of one of the most thickly populated suburbs of London, who at all seasons of the year cuts most exquisite bouquets and buttonholes of Roman Hyacinths, Narcissus, Lily of the Valley, choice Orchids, Primulas, Azaleas, and other forced and seasonable flowers from a comparatively small garden; but this can only be done by constant attention and a large expenditure. However, even a few well-grown pot-plants, Dracænas, Ferns, Myrtles, Primulas, and so forth, are a great addition to a sitting, or drawing-room, or dinner-table. Towards anything of this kind, a well-kept greenhouse is a great assistance, as fresh plants can be brought in constantly, for a sojourn of more than two or three days in rooms heated by fires and gas, to the extent usual at midwinter, will be almost sure to injure anything less hardy than an Aspidistra. Even the hardier varieties of Palms, when well matured and hardened, though they may not show it at once, will suffer eventually by being keep long in the dry, hot air of a room. At the same time it should be borne in mind that home-grown plants of this description, well matured in growth, and inured to a low temperature and comparatively rough treatment, will stand much better than the bright, fresh, handsome, specimens obtained from professional growers. In the case of Palms, more particularly, these have been rapidly grown in a very high moist atmosphere, their tissues are soft and immatured, and a few days in a dry, gas-heated room will often completely spoil their appearance, if not kill them outright. In forming banks or masses of plants for table or other similar decoration, small Palms, Ferns, Primulas, Hyacinths, &c., grown in small pots (3 inches or thereabouts) are exceedingly useful, almost indispensable, in fact. Such plants are very easily grown—any late batches simply not shifted on, afforded a place on a light shelf, well attended to, and supplied with liquid manure to afford the extra nourishment required. These can be packed in, with plenty of fresh, green Moss, very closely, and, where space is limited, exquisite masses of foliage and bloom can be produced. If necessary, as for very small groups, for filling baskets, vases, or troughs, such plants may even be turned out of their pots, and packed closer still; it is little trouble to pop them back in the pots again afterwards, and they will not be much the worse for it. Attend particularly to affording a good supply of water to plants in heated rooms, as evaporation is very rapid, and they soon begin to suffer. For edgings and filling in of such groups or banks, small pots of well-grown Selaginellas, or Lycopodiums of the small-growing varieties, are extremely useful—in fact, about the best thing we have for the purpose; we often lay them down on their sides between the other pots for an edging. These Lycopods grow rapidly from mere scraps in a warmish greenhouse temperature, if well supplied with water. B. C. R.

Birds in gardens.—I see that many people complain of the small birds destroying their seeds and fruits. I have heard a friend of mine say that he is never troubled with these little torments because he has a raven, which keeps them all away. Perhaps this suggestion may be of some value.—E. J. M.

15564.—**Pears as cordons.**—It will be better to omit the following varieties, as they do not ripen well, except in a favourable position: Chaumontel, Victoria, Knight's Monarch, Josephine de Malines, Bergamotte d'Esperen, and Winter Nelis. Instead of these add Jargonelle, Urbaniste, Beurré d'Amanlis, Marie Louise, Beurré Bosc, and Beurré de Jonghe.—J. D. E.

UTILISING PUBLIC SQUARES AS MARKETS.

A propos of the remarks in our notice of the "Vegetable Garden" (page 603), as to the necessity for district markets for the sale of vegetable produce, we may introduce this cut of a market in Paris, showing how a square or public place may be utilised as a market in the early hours of the morning, without in the least interfering with its utility in other ways. The market is held on certain days only, and the stalls, tents, &c., being easily removable, everything is cleared away early, and the square resumes its ordinary appearance in the afternoon. Instead of being detrimental to the place the market is an improvement, making it more animated, filling it with beautiful flowers and shrubs, and adding a great and varying interest to the district around. The same thing might be done in London to a great extent, and a large useless space like Trafalgar-square might be so utilised with the greatest benefit to the public. One of the most ignoble ways in which a fine open space can be used in a wet country like ours is as a site for a costly, and useless fountain such as we see in Trafalgar-square, and at the top of the Serpentine, in Kensington-gardens; but if these places were open and dignified, markets might be held in them. Surely it would be better that some work useful to the city and its inhabitants should be carried out there, than that they should be left to the few Arabs who play in them. There are many places in London that could be made useful in this way once the idea attains its fair value in the minds of our civic rulers.



A Paris square utilised as a market.

SPRING PROPAGATION.

IN large private establishments, and also in the majority of nurseries, it is often found impossible to secure the desired amount of plants for summer flower gardening and other purposes, by the ordinary method of autumn propagation. It frequently occurs that in hot, dry summers, such plants as Verbenas, Calceolarias, tricolor Pelargoniums, &c., fail to grow with that freedom which is necessary for the production of an abundance of healthy cuttings. If, too, through some unforseen cause, the stock of any particular plant happens to run low at housing time, there is no remedy but to resort to a speedy method of working up a stock in the spring. In the case of novelties, it is desirable to have the means of being able to quickly increase them. The wood of many plants is in a better condition in spring for cutting than later in the season. A small propagating house heated by hot water, or a brick pit filled with tan, is indispensable for this purpose, The chief point is, the means of creating at will, and steadily maintaining, a brisk, moist heat both night and day. If this accommodation can be commanded, then there will be no difficulty in rapidly increasing all the so-called soft-wooded material. Such plants as Verbenas, Celosias, Alternantheras, Cupheas, and Lobelias, will, of course, be wintered in store pots, and if they have been kept perfectly cool, and are fairly healthy, they will be in good order for introducing into heat the first week in January. But here caution must be exercised not to increase the heat too suddenly, as too great a change will debilitate the plants to a serious extent. During January the day temperature may be 55 degs., and that of the night 45 degs. As the days lengthen, the average temperature may be increased until, in March, the maximum of 70 degs. by day and 60 degs. by night is attained. On bright sunny days the thermometer will naturally run up much higher, when a corresponding rise of temperature may be given. Great caution must be exercised in giving air, as draughts of any kind are very injurious, and so is hot sunshine. The cuttings being tender, must be screened from all vicissitudes of climate. In a house devoted to propagating purposes there should be some kind of provision made for bottom-heat, which is best furnished by a hot-water pipe to be heated independently of the rest of the house. The stage on which the pots are placed should be quite close and covered with ashes, or Cocoa-nut fibre, which must be occasionally turned over and well wetted so that a gentle, dewy moisture may continually arise therefrom. About the beginning of February propagation may commence by taking off the most advanced cuttings. If a large stock be required do not cut too closely. There is nothing gained by undue haste. If the plant from which the cuttings are taken be checked at the outset it will have a vast influence on the after produce. There are two methods of

STRIKING THE CUTTINGS; they may either be inserted in pots specially prepared for them, or they may be dibbled into a bed of sand and potted after they have become rooted. Both plans have their respective advantages; the latter requires the least amount of labour and demands less care in watering, but the former is handiest if the space be limited, as each pot may be removed to other quarters as soon as the cuttings are fairly established, where they may remain until convenience is found for potting them off. 4-inch pots are best for this purpose. They should be filled about one-third of their depth with drainage, and then to within 1 inch of the rim with free, light soil, covering the whole with silver sand and filling the pots quite full. Verbenas are easily propagated. If only a piece of stem with a pair of leaves attached be inserted they will root all up the stem. Lobelias, Alternantheras, and many such plants do not require to be cut to a joint; they root freely up the stems if in sufficient heat. Ageratums, Centaureas, Petunias, and all such plants as are more or less of a woolly character are best cut to a joint.

Spring is a good time to propagate many kinds of flowering shrubs, such as Spiræas, Lilacs, Deutzias, &c. Plants that have been forced for bloom will furnish good cuttings which will readily strike at that season. Pelargoniums of all kinds will also strike freely, but they require different treatment. They should, when inserted, be put upon a shelf near the ventilators, where they get a circulation of air around them, Do not insert them deeply, and only water them when quite dry and on fine days. All the tricolors, bronzes, and variegated kinds do well thus treated. The old plants will break again freely, and will form better material than if not headed down. The Lemon-scented Verbena will also root readily, but cuttings of it are easily affected by fluctuations of atmosphere, and, if once they flag, they inevitably damp off. Covering them with a hand-glass in the day-time will ensure them against accidents of this kind. April and May are good months to propagate the double Primulas. Place them under a hand-light in 2½-inch pots, taking the glasses off for an hour in the morning, and leaving a little air on at night. Thus treated, ninety-five per cent. may be relied on to root. Centaureas strike well from spring cuttings; the wood, then, is devoid of that woolliness for which the genus is remarkable. They make roots as freely as Verbenas. They should, however, be inserted in small pots, the roots being so brittle that they break when potted off from store pots. Fuchsias, too, should be struck in small pots, and they should not be allowed to become potbound, but should be grown on without check.

If a large quantity of any one kind of plant be required, then, as the cuttings root, they may be removed to the cooler end of the house, when they, in time, will furnish others. Considerable attention is necessary in the way of watering, as, although they must never get dry, excess of moisture amongst them will have to be guarded against. They will require constant supervision in the way of cutting out dead and decaying leaves, for which a small pair of sharp scissors will be found the most useful. Watering should always be performed about the middle of the day, as it is then better seen what is in need of watering, and the foliage dries before night. With respect to the admission of air, there will be need of but little, except what can be given at the top of the house—the air merely requires changing, no brisk circulation being allowable. If the front part of the house be of brickwork, a wooden flap here and there is all that is necessary, and, in the earlier period of the season, these will scarcely be needed. The main secret of success in propagating is attention; a slight amount of neglect, either in watering, shading, or ventilating will produce such effects as the initiated know full well cannot be remedied by any amount of after care. The successful propagator is generally the first at his work, and the last to leave it. I have known some who carried their attention so far as to prefer making their own fires, and attending to them themselves the whole winter through, and it is only fair to say that they achieved great success. Propagating probably taxes the ingenuity and exercises the faculties more than any other branch of gardening, and, if tedious, and causing at times some anxiety, there is intense satisfaction in finding that one's care is required by the increase of useful plants. J. B.

15522.—**Tennis-court near garden.—Trespassing.**—An "Old Gardener" cannot prevent his neighbour from letting a portion of his farm for a tennis-court. Tennis playing, in the cases he mentions, probably would be an annoyance to him, but there is a distinction between annoyance and nuisance. If persons entered his garden without his permission they would be, of course, trespassing, and he would have a right of action for loss or damage to his trees, &c. Could not "Old Gardener" prevail upon his neighbours to put up a net, say 8 feet or 10 feet high, just outside his fence? This would be sufficient to prevent any balls being hit over into his garden. If the matter be fairly put before the neighbour I should imagine he would do something to prevent any annoyance to "Old Gardener."—T. W. R.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XVI.

Spiræa japonica and S. palmata.—The first-named of these is of such exceptional merit as to be worthy of a high place amongst window plants, and as it is of very easy culture, and succeeds very well in towns, it may safely be taken in hand by novices in plant culture. Few flowering plants have such an elegant appearance, the plume-like masses of bloom, so pure in colour, being set off to the best advantage by the fresh green, much-divided, elegantly-disposed foliage. As regards habit this Spiræa is the ideal of what a pot plant should be, and it is not to be wondered at that it should be in such great demand for decorative purposes. Many thousands of it are annually disposed of in Covent-garden market, and it is equally in favour in other countries. The important point is to obtain well-grown roots, for small weakly pieces yield but a faint idea of the beauty of this Spiræa. These should be obtained at the close of autumn when growth has come to an end, and be potted at once in their blooming pots, in free but rich soil, such as loam with a good addition of decomposed manure. From the beginning of November till the middle of March a cool room is the best place. After the last-mentioned date they will do very well in a living room, and will, of course, come into bloom earlier, but if allowed to come on in a cool temperature, the flowers will be much finer. As this Spiræa is a coarse rooted plant, the pots become well filled with fibres by the time the spikes are thrown up; therefore, they require an abundance of water during that time onwards, and some weak liquid manure at frequent intervals. It is absolutely necessary that the growth be made in the open air; therefore, the last week in May plants which have bloomed in the dwelling should be turned out. Do not neglect to water them, and, if you have a garden, you cannot do better than plant them out in rich soil for the summer. As they will be too large for the same pots the following year, it is best to cut the clumps in two when setting them out. If they are to be kept in pots they will need dividing and repotting in rich soil, and in this way Spiræa japonica may be successfully grown where there is no convenience for planting out. S. palmata resembles its congener in manner of growth; it is not quite such a graceful looking plant, but the flowers are of a fine rose colour, and it is well worthy of careful culture. The treatment required is identical with that described for S. japonica.

Deutzia gracilis.—When in good bloom this is one of the most pleasing plants in cultivation, the numerous pure white flowers contrasting admirably with the delicate green foliage. Although by nature a hardy shrub, and therefore of easy culture, it does not seem to be so well grown as one would think it ought to be—a fact attributable to the want of liberal culture after the blooming season. I would advise window gardeners to grow this little shrub in a cool room; it blooms much better when it comes along very gradually, and in the confined atmosphere of a living room the flowers are apt to come very small and deformed. Like Spiræa japonica the Deutzia enjoys a free root run in good soil throughout the growing time, and this is the way florists and market growers treat their plants. At the same time good results are obtainable when the plants are ripe in the pots, but they require strict attention in the matter of water and feeding when making their growth. Deutzias often suffer much when they are turned out-of-doors after blooming, and cold nights and biting winds cripple the growths, which are more tender than those of any flowering shrub that I am acquainted with; and therefore they should remain under cover, and where they get plenty of air until quite the latter end of May. Those who possess a cold frame will have no difficulty in giving their plants the treatment they need after blooming; but when this accommodation fails, select some sheltered, rather shady position, allowing them to remain there for a week or two, and then placing in the full sun. Another equally important point is not allowing them to want for water and food, as such neglect induces a crippled condition, which it takes a month or two of liberal culture to remove; and I may add that unless these little details are observed, there will be but little use in attempting to grow the Deutzia.

BYFLEET.

THE PRESERVATION OF CUT FLOWERS.

How often at this season do the flowers on a dinner-table look quite faded, even before the guests have risen from the table? Hard forcing is sometimes the cause of much of this annoyance, but in that case it is to the gardener that we must look for the remedy, or rather prevention, of this failure; but more often, as many will agree, flowers will flag, in spite of all our efforts. Hot rooms, especially where much gas is burnt and an extra dry atmosphere maintained, are the most speedily fatal to many flowers, and no remedy has ever been suggested that is sufficiently powerful to counteract this evil. It is well, therefore, resolutely to face the difficulty, and avoid such flowers and Ferns as cannot be induced to last for twenty-four hours at least. It is surprising how many very effective bouquets or graceful combinations can be managed with a comparatively small variety of flowers and greens. No one who lives in a town will cut Maiden-hair Fern to mix with his cut blooms unless he is prepared to renew it daily, but this most refractory of beauties will last much longer (sometimes for days) if it is plunged in water, so as to cover it entirely, and allowed to soak for a day before being used. Another most simple rule is—

NEVER CRAM YOUR VASES WITH FLOWERS. Many will last if only they have a large mass of water in the vase and not too many stalks to feed on the water and pollute it. The importance of this simple rule is really very great, and it is one of the healthy signs of the improved tastes and perceptions of the day to find vases that hold a large quantity of water now preferred to the spindle-shaped trumpets that lately were all the rage. Flat dishes, filled with wet sand, are also useful for economically using up short-stalked or heavy-headed flowers; even partially withered blooms will revive when placed on this cool, moist substance. Moss, though far prettier than sand, is to be avoided, as it so soon smells disagreeably, and always interferes with the scent of the flowers placed in it. When flowers in winter are brought out of warm houses into the dry air of a house, after being exposed, on their way, for a shorter or longer time to the cold outer air, and are put into ice-cold water, no wonder many poor victims succumb to such ill-treatment at once. If, on the other hand, they were popped at once into a good large basin of blood-warm water (or even still hotter) till they could be arranged properly, and the water in which they are finally placed be also warm, many people would be surprised to see how great a saving in trouble would result. With regard to plants whose juice or sap is milky, this precaution is invaluable, for this thick milky sap readily coagulates in the tissues, and prevents the flower drawing up the necessary supplies of water. It is needful, therefore, to prevent this by thinning the sap as much as possible, till it becomes so thin that it can no longer clot and choke up the passages in the tissues; this can be done by slitting the stem, pulling off the leaves, and then putting the flower in hot water, when so much sap escapes as to render it free from all chance of thus clogging the tissues, and the flower in consequence will not flag. Poinsettias, with their showy heads of bracts, are a good example of this class of plant, and when treated in the manner described will last for weeks in an ordinary room without becoming unsightly, and without any such preparation they fade the first evening. Stephanotis also is much benefited by the same means, and with the further help of a drop or two of water in the throat of each flower will last delightfully. With some subjects another course of treatment must be adopted—for instance, in the case of flowers that only grow in a cool temperature, and suffer when they get into warm and dry air. In this instance all that we can do is to

LESSEN EVAPORATION as much as possible, and when such flowers have hairy stems and leaves to dip them overhead for a minute, so that by capillary attraction they may continue to keep themselves moist and cool; but this is dangerous to table-cloths or polished surfaces, unless care be taken that the points of the leaves do not hang down. Another means of preventing such delicate and sweet-scented flowers as the now well-known Luculia gratissima from flagging is to cut it with several leaves on the stem, and when the flower-head is placed in water to allow only the flower-head to remain above the water, while the leaves are entirely submerged; by this means the leaves seem to help to support the flower, which will then last for three days in a fairly cool room. Perhaps no hardy flower succumbs sooner to heat than the Christmas Rose—just now in welcome beauty; in this instance it seems that frequent cutting of the stem is of greater use than any other precaution; but with all such subjects by far the best plan is to put them outside, exposed to dew or rain during the night, when they will regain strength enough to last on for days. All New Holland plants, and particularly flowering Acacias, benefit wonderfully by this apparent cruelty, and will even stand a slight frost far better than a hot room at night indoors.

AMONG FORCED FLOWERS none are more useful than Tulips, on every score, and as yet they have not been used for cutting as freely as they might be; they are, however, so cheap as well as lasting, that there is nothing to compare with them at this early season. The other day one of the most telling table decorations I ever saw was made with heads of Poinsettia bracts, with a white Tulip in the centre of each to fill up the vacuum caused by the little flowers that had dropped, and a couple of spikes of Roman Hyacinths to back each head. The big creamy white Tulips reminded everyone of Magnolia buds, and caused quite a murmur of admiration. The series of vases were all linked one to the other by sprays of Cissus discolor—an old favourite stove trailer, which will last longer both in and out of water than any other fine-leaved climber—and in the centre stood a fine plant of variegated Cyperus. Such an arrangement will last for days even at this season, and is far more useful than wasting energy and flowers in more fanciful fashions that need renewing every day. Those who live in the country have such an infinity of Evergreens at their disposal, unless the garden be quite recently made, that a much smaller quantity of flowers is needed than in towns, where outdoor Evergreens are too precious (and too dirty) for general use.

WHERE THERE IS A GOOD-SIZED COOL HOUSE or conservatory it is well worth while to plant in a border the exquisite and very free-growing Acacia dealbata, if only for the sake of cutting its lovely sprays of silvery green foliage. All who have wintered in Australia or basked in the winter sun on the shores of the Mediterranean know well the beauty of this tree, both in leaf and flower, but if it never flowered at all it should be grown for its foliage. Yellow Chrysanthemums in big bunches, with bold sprays of this delicate blue-green, make a most effective and lasting winter decoration. Another most lasting trailer is the comparatively new Asparagus plumosus, which, when planted out and not restricted to pots, makes such vigorous and continuous growth, as to supply more sprays of its fern-like green, if needed for cutting, than any other plant I ever saw. How handsome, also, a big vase looks draped with a Calla, whose white spathe is contrasted with Poinsettia bracts, backed by the firm fronds of Polypodium aureum, another useful winter green, and with the fresh green sprays of Asparagus plumosus to lighten and soften the whole.

Primulas, when placed in a flat dish where their blooms will not readily drop off, are, of course, much used, and where a large quantity is grown can be used very effectively for table decoration by placing single pips on the cloth where such arrangements are liked. Camellias, while very lasting, unless bruised, are of all flowers the most difficult to arrange gracefully. No surer test of taste could be contrived than by proposing an exhibition of table decorations made with specified materials—all thus starting as fairly as possible in the matter of material, and that material to be the Camellia—so neatly folded, so bright in colour, but oh! so stiff. In private gardens, if well managed, there is now no longer the need for cut blooms of early forced Azaleas, Spiræas, or Roses, which can never be really satisfactory till days are longer and sunshine stronger, and so they can be kept in

reserve by utilising flowers more truly winter flowering, among which various Geraniums and winter-flowering Orchids, such as Calanthes and Cypripediums, should not be forgotten.—E. H. W.

THE GARDEN IN THE STREETS.

WE never pass the latter (a house near the Park end of Piccadilly) without being grateful for the beautiful show of Nasturtiums—a plant which it is an elegance itself to have so much regard for. There is also something very agreeable in the good-natured kind of intercourse thus kept up between the inmates of a house and those who pass it. The former appeal to one's good opinion in the best manner, by complimenting us with a share of their elegancies; and the latter are anxious to acknowledge the appeal, for their own sakes as well as that of the flowers. Imagine (what, perhaps, will one day be the case) whole streets adorned in this manner, right and left; and multitudes proceeding on their tasks through avenues of Lilies and Geraniums. Why should they not? Nature has given us the means, and they are innocent, animating, and contribute to our piety towards her. We do not half enough avail ourselves of the cheap riches wherewith she adorns the earth. We also get the most trivial mistakes in our head, and think them refinements, and are afraid of being "vulgar!" A few seeds, for instance, and a little trouble would clothe our houses every summer, as high as we chose, with draperies of green and scarlet; and, after admiring the beauty, we might eat the produce. But then this produce is a *Bean*; and because Beans are found at poor tables, we despise them! Nobody despises a vine in front of a house; for vines are polite, and the Grapes seldom good enough to be of any use. Well; use, we grant, is not the only thing, but surely we have no right to think ourselves unbigoted to it, when it teaches us to despise beauty. . . .

There is an art even in the shutting and opening of windows. People might close them more against dull objects and open them more to pleasant ones and to the air. For a few pence they might have beautiful colours and odours, and a pleasing task emulous of the showers of April, beneficent as May; for they who cultivate flowers in their window (as we have hinted before) are led instinctively to cultivate them for others as well as themselves; nay, in one respect they do it more so; for you may observe that wherever there is this "fenestral horticulture" (as Evelyn would have called your window-gardening), the flowers are turned with their faces towards the street.—LEIGH HUNT (*From "The Praise of Gardens"*).

The Metropolitan Public Gardens Association.—The report of the committee of this association (83, Lancaster-gate, W.), will shortly be issued. It would be difficult to over estimate the value of the work which the Metropolitan Public Gardens Association has taken in hand. The throwing open to the public of the many open spaces in various parts of the metropolis is a boon that has been highly appreciated, and if the association's labours were confined to this the success they have achieved would entitle it to the gratitude of the public. But there are other useful tasks, all having for their object the benefit of the many, to which it has applied itself, and we trust it may not be prevented from carrying out its work by want of the necessary funds. The following summary of successful work during the year speaks for itself:—1. The laying-out and opening to the public of twelve gardens and playgrounds, including five squares, four disused burial grounds, and three church gardens, "unemployed" labour being generally used. 2. The providing of seats and a caretaker temporarily in three open spaces. 3. The planting of trees in two thoroughfares. 4. The placing of seats in five public gardens, on an open space in Rotherhithe, on another in Hackney, and in five thoroughfares. 5. The providing of "unemployed" labour in the laying-out of two churchyards. 6. Grants of money to six public gymnasia, a promised grant to a seventh, and a grant to one public garden. 7. Plans supplied for the laying-out of three open spaces. 8. The enforcing of certain Acts of Parliament for the preservation of disused burial grounds as open spaces. 9. Assistance given to public and private bodies in the utilisation of several plots of ground as open spaces.

FRUIT.

OUTDOOR VINES.

As a rule, outdoor vines are sadly neglected, especially in regard to pruning. Well managed, there can be no doubt as to the possibility of ripening good crops of the hardiest kinds of Grapes on south walls every year, and during warm summers they are ripened in perfection, but it would be unreasonable to expect outdoor vines to produce anything more than leaves and unripened fruit if sun heat never gets to the wall on account of a crowd of useless foliage. Winter pruning, instead of being simply confined to removing the summer growth, ought to be a thorough pruning out of all exhausted wood and the retention of the best ripened canes of the current year for replacing those cut out. The present is a good time to get such work done. If mild weather prevails with the lengthening days, the sap gets excited and bleeding follows, thus weakening the vines considerably. The best course to adopt is always to prune as soon after the fall of the leaf as possible. The best mode of training out-door Vines is to lead a main shoot right and left about 1 foot from the ground, and from this to train up young shoots about 2 feet apart for bearing; this will allow space for the fruiting shoots to lie close to the wall, which will, moreover, not be so densely covered with foliage as to prevent the sun's rays from warming the bricks. On this depends much of the success attending the undertaking, as it is the latent heat absorbed by the bricks during sunshine and given off again at night that helps the crop to ripen. Disbudding should also receive attention. This should be done directly the buds swell sufficiently to see which are the most promising; it is sheer waste of force to allow more shoots to grow, even for a short time, than are really needed; one shoot to a spur is plenty, and one bunch to a shoot ought to be the rule. Remove the others directly they are visible, then stop the growing point of all the bearing shoots at one joint beyond the bunch, except the leading shoots, which may be allowed to extend to the top of the wall. Fasten the shoots by tying if the wall is wired, or by nails and shreds if not. As soon as the fruit is set and swelling, thin out the berries according to the variety. Small-berried Sweetwaters do not need so much thinning as Black Hamburghs and similar kinds, but it is wrong to leave them as thick as they usually are. Keep all lateral shoots pinched in close; it is the large leaves on the fruit-bearing shoots that should be taken care of. Keep them clean by washing them well with the garden engine or syringe after hot days, and give the roots plenty of liquid manure when the berries are swelling. If these simple rules are adhered to, fine bunches of at least 1 lb. each may be thoroughly ripened in our average summers of the following sorts: White Sweetwater, Royal Muscadine, Black Hamburgh, Foster's Seedling, Miller's Burgundy, Black Cluster, and Esperione. I have seen good crops of outdoor Grapes year after year in old-fashioned gardens. Success is simply a question of attention to trifling details in the way of culture.
HAMPSHIRE.

The Cranberry.—Perhaps it would be difficult to ascertain the exact amount expended on imported Cranberries, but it would be interesting to know what it is, as it might induce some of us to see what could be done with it in this country. My own impression is that the aggregate amount now expended on foreign productions of this fruit is considerable, and that those who are interested in the cultivation of the land should turn their attention to the Cranberry, on the same lines as we would advocate the production of any other article that would lessen the money expended on imports. It is clear that with a continual depression in the way of land produce we ought to seize upon every available article that would suit our soil and climate, in order to alleviate the distress now so general. I am aware that the Cranberry is not the kind of fruit that is likely to become universally popular with the English public, owing to its peculiarly acid taste, but one can hardly realise to what extent it may become popular if it were made better known. Certain it is, that at the present time not many have even heard its name mentioned, and possibly not more than 5 per cent. of the public ever tasted it. It is, therefore, impossible to say what the result would be if it were profitably brought before the fruit-consuming community. Being a North American plant, we have little to fear as regards climatic conditions. Given a fairly moist soil for the roots, the other conditions for its successful cultivation are not difficult to find. In fact, there are hundreds of acres of land which are not suited to the production of Corn that I believe might be profitably occupied with this fruit. But as regards cultural details, one does not like to write too confidently. I can, however, remember that when a lad it was part of my duties to pick Cranberries when they were in season, and I can call to mind the fact that a large space was not cleared by several hands in two days, so thickly was the fruit set on the low-growing plants. Therefore, if such facts are worth anything, surely they serve to prove that the Cranberry is amenable to being cultivated more largely in this country than it is. About the time just referred to they were also successfully grown at Berry-hill, in Surrey; but I am writing of thirty-five years ago, and it is possible they may not be grown there now. With regard to the plants, I feel certain that they do not require to be grown in a swamp, nor in a constantly irrigated bed. In neither of the cases to which I have alluded were they under such conditions, and, as I have shown, they bore fruit abundantly.—SOMERSET, *in Field*.

15536.—**Orange tree.**—Many persons are not aware that Orange trees will bear fruit in England of far better quality than those that can be purchased in the shops. The little Tangerien variety, the Maltese Blood, and the St. Michael's, are the best varieties to grow; but were I confined to one variety only, I should choose the Tangerien. They will not ripen their fruit in a greenhouse, but must be cultivated in a hothouse, and should be well exposed to the sun. The potting soil should be good turfy loam, to which has been added a fifth part of decayed manure, some crushed bones, and bits of charcoal. Let the trees stand in a sunny position in any hothouse and be well syringed to keep the leaves clean and also well supplied with water at the roots. The blossoms would perfume the house in February, and produce ripe fruit in September, if the Tangerien variety. The other sorts take six weeks or so longer to ripen their fruit.—J. D. E.

Red spider on Peach trees.—The following is a good recipe for destroying this pest: Put about a pint of guano in the evaporating troughs, then have the pipes made very hot; this will cause the ammonia to rise, which will soon destroy both spider and thrips. This should be done every evening for a week; after this the Peach trees should be syringed with clean water twice a day until the leaves are perfectly clean. I have done this with the desired effect, both in Peach houses and vineries.—R. N.

15475.—**Management of heating apparatus.**—"H. W." asks how to manage a heating apparatus. He does not say how high his greenhouse is, and I expect he has about 1,500 square feet of air, which would require at least 38 feet of 4-inch pipe to keep out the frost. One foot of 4-inch pipe is wanted to every 40 feet of air. "H. W.," according to his description, can have only 30 feet of pipe, which is not enough. The coal or stoking has nothing to do with it.—R. D. W., *Linton, Cambs.*

Anthracite coal.—I have seen several enquiries lately in your paper about this coal. Some time ago I was very much taken by the accounts of this fuel for greenhouse purposes, and made many enquiries about its uses, and where it could be obtained. The result of my enquiries were that it was quite unsuitable for all ordinary purposes, on account of the very extreme heat it gave off when once lighted. Boilers in which it was burnt had to be specially constructed to stand the fierce heat. It was stated that in a very short while it would crack an ordinary saddle boiler, and that even in our large locomotive engines it is not safe to use it unless the boilers are specially constructed. Under these circumstances I discarded the idea of using it, and shall not look out for it any more.—W. C. C.

OUR READERS' ILLUSTRATIONS.

FINE LEAVED PLANTS IN LONDON CONSERVATORY.

OUR readers' illustration this week is from a photo sent by Mr. A. J. Tubb, and shows well what picturesque effects may be obtained even under the dismal conditions and drawbacks of London gardening. Mr. Tubb states that the conservatory is situated in his back garden, adjoining the drawing-room window. "The back wall faces north, and a line is fixed with about 3 inches or 4 inches space for peat and mould in which to grow Ferns, Begonias, and Mosses of all description, so that it makes a very pretty ornament to the place, and it always looks green and healthy. This arrangement is carried to the top of the conservatory, and also underneath the shelves and on the top of hot-water pipes, for the purpose of covering brick walls. The temperature is always kept 50 degs. In the other part of the house are various Tree Ferns, Palms, and any flowering plants that are always coming on, such as Camellias, Azaleas, Lilies, &c., during the season. The vase with a large Adiantum growing in it also makes a good ornament at the side of the aquarium, which is not shown in the picture."

Fine leaved plants in London conservatory. (From photograph sent by Mr. A. J. Tubb, Shrubbery, Ashchurch-terrace, Shepherd's Bush).

OUTSIDE PROTECTION FOR GLASS-HOUSES.

THE short note on page 619 touches upon a subject which is worthy of greater attention than it receives. It is strange that so little attention has been given to this matter of outside protection for glasshouses. Whole lifetimes, and no inconsiderable sums of money, have been devoted to inventing boilers of all sorts and forms for heating horticultural buildings, and all kinds of expensive and sometimes not very serviceable fittings to the same have been from time to time brought forward for the production of warmth inside the house, but very little has been done in the way of outside covering to prevent undue waste of heat. How is it that this point has been so long neglected, seeing that the cultivator is more interested in it than the engineer? One would have thought that, for one's own convenience, some effort would have been made to prevent this waste of heat, as by retaining it in a more uniform manner we should have secured two important conditions that would have exercised considerable influence for good in cultivating all kinds of tender plants. One of these conditions would be a more regular temperature, and the other a more genial atmosphere, consequent on a reduction of dry heated air given off from the heating medium. All the arguments that can be cited point clearly to the benefits that must attend a proper system of outside protection. Setting aside for the moment the question of saving in fuel and the attention required in stoking, I maintain that the improved conditions which we should secure for our plants are alone enough to impress every interested person with the importance of this matter. The sudden fluctuations of temperature to which the inmates of glasshouses are exposed, and, worse still, the dry atmosphere which surrounds them in severe weather, resulting from the highly heated medium which is necessary in order to keep up the temperature, might in a great measure be avoided if the roof were covered with some portable non-conducting material, in the form of roller blinds, or some equally convenient simple means of placing such protection on the glass. Of course, I am quite aware that there are many houses, such as large conservatories and others, not constructed so as to admit of being so dealt with, and, fortunately, this kind of house does not require it. It is our pineries, vineries, Cucumber, and other forcing houses that demand attention in this matter. A very little experience and observation are sufficient to show the advantages of such protection. Most of us know what amount of frost a single Russian mat will exclude when spread over the light of a pit or frame; therefore, it is only necessary to extend the same principle to our houses to reap still greater benefits.

There is not only a direct saving in the fuel consumed, but the internal air is more agreeable to the occupants, and, what is equally important, there is far less anxiety in maintaining the temperature at any particular point when the onside of the roof is covered with blinds. Whether anything better than blinds can be substituted is, however, an open question. What I maintain is that the few cases in which blinds have been used thoroughly establish the fact that the principle of outside covering is right, and therefore deserving of extended adoption. Wishing to practically test this matter, I had our pinery fitted with stout Hessian blinds at the commencement of last winter. This structure is span-roofed, 38 feet long and 18 feet wide internally. The result was a wonderful saving of fuel. To such an extent, in fact, was fuel saved, that we had either to let the fire burn out early in the evening, or else not pull down the blinds on mild nights, and, even with 6 degs. or 7 degs. of frost, a small fire and the blinds down, we could command a temperature of from 65 degs. to 70 degs. without any attention after 9 p.m., and then find the internal temperature had not varied more than a degree or two during the night.

With a good bottom heat obtained from leaves, I feel certain, with the aid of blinds, that there could be a considerable saving of fuel through the year. The introduction of a suitable non-conducting material is, however, a question that should first have attention. Up to the present I am not aware of anything more suitable than frigi domo canvas, which, being chiefly composed of wool and hair, is fairly suitable; but, to my mind, it hardly meets the case as a non-conductor, pure and simple. What is required is an article of not greater bulk or weight, but with more consistency.

SOMERSET.

15558.—**A plague of caterpillars.**—I am afraid that there is no "royal road" by which caterpillars can be driven out of a garden, but that they can only be got rid of by waging a persistent warfare against them. At this time of year, most of the insects which trouble "G. M." are in the chrysalis state. The chrysalides may often be found in the earth, under the plants on which the caterpillars have been feeding. The ground should be turned up for a depth of a few inches and carefully searched. Some of the caterpillars which feed upon Cabbages are the progeny of the white butterflies, these, when full grown, generally crawl to some paling or wall—under the eaves of an outhouse is a very favourite position—and then becomes chrysalides, which should be searched for and destroyed. The grubs, or caterpillars, which attack Gooseberry bushes become little oval black chrysalides, scarcely half-an-inch long, in the ground under the bushes; removing the soil for a depth of 2 inches or 3 inches, and thus bringing it at least a foot below the surface, or burning, is the most certain way of destroying this insect; but if this cannot conveniently be done, the ground should be turned up and carefully searched, when many will be found. Birds will destroy some, and exposure to the weather will kill others, still some will probably escape. Fruit trees should be carefully looked over, and all leaves still hanging on the trees removed. They often contain chrysalides rolled up in them, and have been prevented from falling by threads spun by the caterpillar. On the young shoots eggs of various moths may often be found. If "G. M." will send specimens of the caterpillars which annoy him next season, I shall be able to give him more definite information as to the best means of destroying them.—G. S. S.

Ground Cherry.—The plant described under this name by "W. Simmons" (p. 591) is a Physalis, probably either Physalis pubescens or P. peruviana It is also known as the Winter Cherry, Strawberry Tomato, Small Mexican Tomato, Barbadoes Gooseberry, and Cape Gooseberry. The plant is well figured and described in "The Vegetable Garden," recently published by Mr. Murray, Albemarle-street.—W. M.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15589.—**Annuals for exhibition in August.**—I should be glad to learn the names of the six best annuals for show in August?—COCOS.

15590.—**Cucumber for cold frame.**—Will anyone kindly tell me what is the best Cucumber for a cold frame? —G. MARSH.

15591.—**Best Tomato for pot culture.**—Will anyone kindly tell me what is the best Tomato to grow in a pot?—G. MARSH.

15592.—**Silver-eyed Tick Bean.**—Will any reader kindly inform me where I can purchase a small quantity of the Silver-eyed Tick Bean?—F. T. CURTIS, *Sussex.*

15593.—**Roman Hyacinths.**—Will anyone kindly tell me whether Roman Hyacinths will bloom again next year, and, if so, how I should ripen the bulbs? I have no heat.—M. A. M., *Ross-shire.*

15594.—**Orchids for button-holes.**—Will any reader kindly tell me the names of the best 12 orchids for cut bloom for button-holes, to grow in a house kept at about 50 degs. or 60 degs. in winter?—F. R.

15595.—**Striking Oleander cuttings.**—I want to strike some Oleander cuttings. Will any reader kindly give me hints as to time of year to take the cuttings, and soil most favourable?—JACOB.

15596.—**Adiantum Farleyense under glass shade.**—I should be glad to know whether Adiantum Farleyense will do well under a glass shade 2 feet high and 18 inches wide? I live in west Cornwall, the climate of which is very mild.—M. ANTHONY.

15597.—**Gas tar.**—Will any reader tell me what is the best way of neutralising the injurious action of gas tar upon greenhouse plants; or, in other words, what can be done to the pipes, which have been recently painted with gas tar, in order to distroy the smell?—A. GODWIN.

15598.—**Everlasting Flowers.**—Will anyone kindly inform me what other kinds of Everlasting Flowers there are besides the Helichrysums, Rhodanthe, and Acroclinium that are really worth growing for bouquets?—A CONSTANT READER.

15599.—**Propagating Sage.**—I should like to know how to propagate Sage from cuttings without a frame?—KENT. *** *We should put in cuttings in a fine sandy bit of ground on a border when the wood is half-ripe. You may also divide the roots.*—ED.

15600.—**Euphorbias.**—I have a Euphorbia splendens which does not flower freely, and the leaves and flower-stems of which turn yellow and drop off. It is in a temperate house. I should be glad of a few hints as to repotting and general treatment.—LIMES.

15601.—**Heating by hot water and hot air.**—I am anxious to learn the principles that govern the application of hot water and hot air to the purposes of heating buildings, and shall feel obliged if any reader will kindly tell me what is the best book on the subject.—CALOR.

15602.—**Chrysanthemums.**—I find great difficulty in flowering the following Chrysanthemums: King of Anemones, Fleur de Marie, Bronze Jardin des Plantes. Will any Chrysanthemum grower tell me whether these require different treatment from the other varieties?—ROCHFORD AMATEUR.

15603.—**Diamond-shaped hoe.**—In reading Shaw's "Kitchen and Market Garden" I find mention made of a diamond-shaped hoe. I cannot get it from any local ironmonger, neither do I see it mentioned in any nurseryman's catalogue. I should like to know where I could procure one.—G. MARSH.

15604.—**Plants for grave in shade.**—Can anyone inform me what shrub or plant of any kind will grow over a brick grave underneath a Horse Chestnut and Elm trees and bounded on one side by a path, and on the other by a brick wall? With every attention, Hollies, Ivy, and Grass have failed.—REDCAP, *Staines.*

15605.—**Chrysanthemum growing.**—Will anyone kindly explain what is meant by "taking the bud" in Chrysanthemums? Does it apply to those for decoration as well as for exhibition? How do the growers get their plants to bloom so early now? I mean the large November ones that are now seen in October at the Temple show and other places. Perhaps some good Chrysanthemum grower will give me a few hints?—HERBERT.

15606.—**Plants and wireworms.**—I have got a load of fibrous loam, and find in it many wireworms. I grow Roses, Carnations, Phloxes, Pyrethrums, Chrysanthemums, Narcissus, Anemones, Lily of the Valley, Helleborus, &c., and I should be glad to know which of these are most liable to the attacks of the pest, and what I can do besides hand-picking the new soil before spreading it to destroy the worms?—J. G. T. L.

15607.—**Beans and the Gooseberry caterpillar.**—On page 600 "Belvidere" advises Beans as a remedy for the Gooseberry caterpillar; but does not say what kind, nor if they are to banish the grubs or simply draw them from the trees. When should the seeds be sown to have them ready for the opening of the Gooseberry leaves? Perhaps "Belvidere" will inform us?—H. W., *Belfast.*

15608.—**Japanese Chrysanthemums.**—Will Mr. Boyce, or any other reader, kindly tell me which of these two Japanese would do best for blooming in the garden—George Gordon or Albert de Nuris? I want a good dark red for November. Could he also tell me the name of a bright, dark, Japanese yellow, almost orange, the petals broad and crimson at the base, blooming now? I have it in a bunch of flowers bought at a florist's; but the man does not know the name. I think the outer petals may have been striped crimson.—HERBERT.

15609.—**Boiler between greenhouse divisions.**—I have a greenhouse 40 feet long; in the middle it is parted off by two glass ends, leaving a space of about 4 feet for small saddle boiler and stoke-hole. I want to force one house for Grapes, and keep the other cool, but now that we are about fixing the boiler my gardener says that the smoke and sulphur will work through the glass ends, although I have good ventilators front and back in lofty span roof. Will some kind readers tell me if there is much to fear? I want the boiler in this place because then it will not annoy my neighbours.—FOSTER'S SEEDLINGS.

15610.—**Making propagating frame.**—I am anxious to make a small striking frame in one of my greenhouses. I have plenty of continuous heat from pipes under iron gratings, and think I could affix on same a small narrow frame, in which I could strike cuttings better than in open greenhouse or hotbed. Would any correspondent tell me the best means of arranging one in this place? I could only have one 1½ feet wide but 6 feet long. This would be the size of the iron grating, and I should like it to stand 2 feet high from the floor or iron grating.—G. B.

15611.—**The flue for heating small greenhouses.**—I have read with much interest the remarks of your correspondent, "Old Subscriber," on this subject (p. 612). My greenhouse (16 by 10) is heated in the manner described, and the difficulty with me is the short time the fire will burn when left to itself—three, or, at the utmost, four hours being the outside period. I should be glad if "Caloric" could suggest a remedy. What one wants is a fire burning without attention for at least ten or twelve hours. Numerous stoves are advertised to perform this. Could not one of them be used in such a manner as to utilise the flue?—NORFOLK AMATEUR.

15612.—**Heating greenhouse.**—I am having a new lean-to greenhouse erected at end of my house. Size: 27 feet long, 9 feet wide, 10 feet 6 inches high at back, and 6 feet 6 inches front. Aspect: Due west, and very much exposed to west wind; does not get sun until about 12 o'clock. I have been thinking of heating with a No. 1 Loughborough boiler, and two rows of 4-inch pipe along front, and should like this means get about 52 feet of 4-inch pipe. I want to keep the house at not less than from 45 degs. to 50 degs., and shall be obliged if any experienced reader of GARDENING will give me their opinion on above. There will be a door in each end, and also one out of my room into greenhouse, so that I could not very well have any pipes at the end. I don't want more pipe than above, if possible, but if not enough would a double flow and single return be sufficient?—OLD SUBSCRIBER.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15613.—**Straggling Oleander** *(Amateur).*—Cut down and repot your Oleander in early spring.

15614.—**Removing Box plants** *(W. W.).*—You can remove them about February.

15615.—**Dry greenhouse** *(W. W. G.).*—You can put the Moss on the shelves as you propose.

15616.—**Green fly on Pelargoniums and Roses** *(Y. C. G.).*—Fumigate with Tobacco or Tobacco paper.

15617.—**Eucharis amazonica** *(Constant Reader).*—This is a stove plant, and requires a warmer house than the Lilium auratum.

15618.—**Book on Lilies** *(A. C. H.).*—There is no book specially on Lily culture except Elwes's "Monograph," an expensive work, with coloured illustrations of each species.

15619.—**Economical boiler** *(A Constant Reader).*—Lynchwhite's conical boiler we have heard very well spoken of for the purpose you describe.

15620.—**Back volumes of Gardening** *(G. Marsh).*—You can get separate copies of any of the back volumes of GARDENING ILLUSTRATED, with the exception of Vol. I., which is sold only as part of a complete set.

15621.—**Climbers for back wall of greenhouse** *(W. W. G.).*—There is a wide choice, from Camellias to Fuchsias and Heliotropes. Your own taste must decide the question.

15622.—"**Resurrection plants**" *(J. McDermott).*—We are sorry we cannot assist you; but it is impossible to tell you what treatment is required until we know the name of the plant. Your description is insufficient.

15623.—**Euphorbia splendens not flourishing** *(H. C. B.).*—We should say that your plant does not flower freely because the house is not heated sufficiently; it requires a stove temperature (see query 15600).

15624.—**Cactus not bearing** *(R. C.).*—There is an enormous number of Cacti, and "R. C." should state what family his question relates to. Some of them flower very freely in windows and greenhouses; others do not.

15625.—**Magnolia pumila** *(Cocos).*—This is also called Talauma pumila. Of course you cannot expect to find the name of every plant in your dictionary of gardening. The art of gardening itself does not deal with one-tenth of the plants known to man, and perhaps the plant that you refer to has been introduced since your book was written.

15626.—**Fertilising Tomatoes** *(G. Marsh).*—You will probably find it advantageous in early and winter culture, but our experience is that it is not necessary in the open air and in summer.

15627.—**Oranges from pips** *(W. W. G.).*—Yes; you can raise Oranges from pips. Sow them in a box or pot in loamy soil rather thickly, and when large enough put singly in small pots, and treat as an ordinary greenhouse plant.

15628.—"**Love in a mist**" *(W. G.).*—Miller's "Dictionary of English Names of Plants" gives the botanical name of this as Nigella damascena. You would find this book a great aid in discovering the Latin equivalents of the English names and *vice versa.*

15629.—**Ferns growing on pot of Cocos Weddelliana** *(Cocos).*—We should say that slender-growing small Ferns in a pot with Cocos Weddelliana would be pretty, and would do no harm—perhaps do good.

15630.—**Clerodendron trichotomum** *(Young Beginner).*—Certainly a temperature of 55 degs. is too high for this plant, as in the Isle of Wight it should be perfectly hardy—indeed, it is so in the neighbourhood of London. Prune the plant as you suggest.

15631.—**Baines' "Greenhouse and Stove Plants"** *(R. R., Cork).*—The book is advertised every week in GARDENING. It is published by Mr. Murray, Albemarle-street, and can be obtained through any bookseller.

15632.—**Bulbs of Tiger Lily** *(Tiger L.).*—You had better plant them out in a moderately light soil. We cannot tell you whether they will flower next year or not, because the bloom depends upon their age and condition. If they are of good size, sound, and heavy, it is probable that they will do so.

15633.—**Temperature of stove** *(A. G. H.).*—For the plants you mention the temperature should not fall lower than 50 degs. at the present time, and it should rise as the season progresses. In summer, during sun heat, the atmosphere of the house will rise considerably, and this heat must be modified by judicious ventilation.

15634.—**Rolled plate glass for greenhouse** *(H. H.).*—If the glass is good and the position sunny, and if you allow ample provision for ventilation, you may use the glass. You must bear in mind that you will be putting a great weight on the roof, and you should see that your walls are sufficiently strong.

15635.—**Making vine border** *(Amateur).*—On page 487 (Oct. 31st), you will find a note on this subject, and the way has been shown in previous numbers. Do not bury dead dogs, cats, &c., in your border; the belief that carrion is useful for this purpose is not held by good growers.

15636.—**Pruning recently-potted Roses** *(H. V. R. J.).*—A great deal depends, of course, on the shape and size of the plants, of which you give no particulars. Speaking generally, we should cut back the Roses to good eyes, and cut out feeble wood. Do the work just as the shoots are budding.

15637.—**Treatment of Cactus in winter** *(Amateur).*—Cacti should be kept rather dry in winter, and it does not matter if some of them shrivel a little. There are, however, so many plants grown under the name of Cactus that, if you want fuller information, you must tell us the name of the particular family to which your plant belongs.

15638.—**Defective heating apparatus** *(Puzzled Amateur).*—From your sketch we come to the conclusion that the angles at the elbows are too sharp to permit of the water flowing properly. You do not say whether the pipes become hot or not; if the flow and return get hot we cannot see why there should not be sufficient heat to keep the house at the proper temperature, except, perhaps, during excessively cold nights.

15639.—**Best growers of Chrysanthemums** *(J. V. Horngold).*—It would be invidious to give such a list as you suggest. If you wish to procure the plants mentioned you have no difficulty in finding where to get them. Look through a few numbers of GARDENING ILLUSTRATED, and you will find the advertisements of several firms, any one of which will probably give you satisfaction.

15640.—**Cultivation of Swedes and Mangel-wurzels** *(Swedes).*—Sow the seeds of Swedes towards the end of May, or a little later. Only slightly cover the seed. The plants should be about a foot or more apart, and may be thinned out if too thick. These remarks apply also to Mangels, which in the south of England are sown about April. You would gain much information on purely agricultural matters from *Farm and Home.*

15641.—**Heating greenhouse from kitchen boiler** *(Solomon).*—We do not think you will succeed with a plan such as you describe. You had better far get a small independent slow combustion boiler, which will burn almost anything, effectually heat the house, and cost but little. Perhaps, however, some readers who have made use of kitchen boilers for heating greenhouses will give you a few general hints that may be useful. The reply to query 15459 (Dec. 12th) may also help you.

15642.—**Cordon Apple trees** *(J. Noxworthy).*—See replies to queries 15545 and 15548 in GARDENING, Dec 26th. The cordon Apple trees can be obtained from English or French nurseries; some of your Chester nurseries would probably supply them.—*(D. L. Lang).*—See above. You should have no difficulty in obtaining them from fruit nurseries in your own neighbourhood, but be sure to insist that they are on the true French Paradise stock, especially if your soil be cold or clayey—soils that suit the Paradise best.

15643.—**Edelweiss in Great Britain** *(A. Pitowsky).*—Yes; Edelweiss will grow with the greatest freedom on a well exposed rock garden, or in any open border. You can easily get plants in the herbaceous nurseries or you can raise it from seed, which is not very common, but, still, can be got. The difficulty made about its cultivation is all nonsense. We have seen it grown well in many southern districts, and its cultivation would be even more easy in any pure air in the north. Of course, you must not put it under coarse plants that will rob it.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*E. A. Voisin.*—It looks like the Paper-white Narcissus; but the specimen sent in the envelope is so crushed and broken that it is impossible to speak with certainty.——*W. R.*—1, Ophiopogon Japonicum variegatum; 2, Cydonia japonica; 3, Podocarpus japonicus variegatus; 4, Duranta Plumierii.——*G. W.*—1 and 2, next week; 3, Agathæa cœlestis; 4, Cyrtomium falcatum.——*J. A. Green.*—Looks like a Veronica; send in flower.——*G. A. H. Dyer.*—Yes; it is the fruit of the common Passion Flower—Passiflora cœrulea.

TO CORRESPONDENTS.

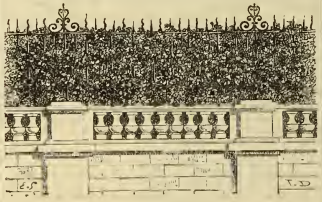
E. Grey.—If you want designs for gardens sent in to you for competition you must advertise.——*Harry Percy Burrell.*—We cannot recommend any particular firm; but all the plants you require can be obtained from any good hardy plant nurseries.——*Mulgrave Wood.*—You will find the propagation of Hart's-tongue Fern fully dealt with in this week's number.——*Montgrado.*—We fear your question, as to how to build a cottage, is not one that comes within the scope of our journal, and you would be much more likely to get the practical information that you desire if you appealed to the readers of some good building paper.

15554.—**Sowing Mistletoe berries.**—I have tried sowing these in various ways, one of which was to cut a slit in the bark in the form of a T; the bark was raised, and the berry with its glutinous substance was pressed in with the fingers. These did not vegetate so freely as the seeds pressed in with the fingers into inequalities of the bark. The birds pick them off as soon as they begin to grow, unless they are protected.—J. D. E.

15255.—**Draining lawn-tennis ground.**—It is the clay subsoil that you mention which, by impeding the descent of surface water, renders draining necessary. Your first care must be to secure a good outfall as near as you can to the scene of operations. Then, as your ground in a cross-wise direction is probably on a level, open a drain from the outfall to the lower end of the ground, and let it enter at the middle 2 feet 9 inches deep, and be continued in a central direction to a distance of 6 feet. From this point, at right angles to the outfall drain, and connected with it, cut another drain across one-half of the lower end of the ground to within 6 feet of the outside. Now, as the ground is supposed to lie on a level in this direction, throw 3 inches of fall into this drain by working up the bottom regularly from 2 feet 9 inches at its junction with the outfall drain to 2 feet 6 inches at the end. Then again from the end of this, at right angles with it, open another drain the same depth to the upper end of the ground. Proceed in a similar way with the other half of the ground, and then carry a drain up the centre, from the outfall drain and in a line with it. As the width of a full-sized tennis ground is 36 feet, the three sub-drains will thus be 12 feet apart; the two outer ones being each 6 feet from the outside. Other sub-drains, if necessary, may be put in outside these by continuing the main in either direction. Lay all the drains with 2-inch pipes, which will be quite large enough, as the drains possess plenty of fall. Should the outfall drain, however, have to be worked on a dead level to obtain the requisite depth, it may be laid with 3-inch pipes; if not, the 2-inch pipes will be sufficient for this also. With regard to filling in the drains, it will be readily understood that if the clay be returned and rammed firmly down—as will be necessary to prevent any after sinking—the work would be rendered useless, as scarcely a drop of water would find its way through the puddle thus formed. Instead of returning the clay, then, supply its place with brick-ends, stones, or, in fact, with any rough, open material that is handiest, and can be made firm. Fill up with the excavated top soil, and run the clay away into a heap, when if mixed with a liberal quantity of quicklime it will form a valuable compost for either cultivated land or turf. This mode of draining is certainly the best for clay lands, and, although it entails a considerable amount of labour, will be found to be the cheapest also in the end.—J. MARTIN, *East Worcestershire.*

IVY SCREENS.

ONE of the many purposes for which some of the different varieties of Ivy may be used is in the formation of screens. Who has not, when walking through the suburbs of a large town, come across one of those ugly black-painted wooden railings which the desire for privacy has impelled the occupier of the garden enclosed to put up? No one has a right to complain of the motive, but as these wooden screens are an eyesore in the neighbourhood it is a pity some other means to attain the desired end is not adopted. As we write, the boundaries of two gardens come before our eyes. One is formed of an iron railing thickly clothed with Ivy, among the dark green leaves of which the softer tints of the foliage of other creepers are sometimes noticeable—this is ever-changing, and never without its charms. The other garden is bounded with a structure of wood, black, bare, and hideous, always the same, and yet it does not better secure the primary object for which it is erected than does the Ivy. A recognition on the part of the owners of gardens adjoining public roads of the fact that something is due to the eyes of the passers-by would effect a vast improvement. On high walls again Ivy may be used as an effective contrast with the stonework. It is not necessary for the plants to be trained from the ground. The roots may be placed in deep boxes of rich light earth, or in a trough formed of stone or cement, and a thick screen is soon made. Such a screen is shown in the illustration, and we commend the idea to



Ivy screen above high wall.

all who have similar positions to embellish. In many cases the level of a garden is higher than that of the ground outside, and when the height of the wall from inside is not great the roots will, of course, be planted in the usual way.

D. E. T.

Plants as weather guides.—Certain plants are very sensitive to changes in the atmosphere, and, by their behaviour, the opening and closing of their leaves and flowers, &c., serve as natural barometers to indicate the coming weather. A continental horticulturist, some time ago, published the signs that he had found reliable with respect to the following plants:—The small Bindweed (Convolvulus arvensis) and the Corn Pimpernel or poor man's weather-glass (Anagallis arvensis) expand their flowers at the approach of wet weather, whilst on the other hand the different varieties of Clover contract their leaves before rain. If fine, bright weather is in prospect, the leaves of the Chickweed (Stellaria media) unfold, and its flowers remain awake and erect until mid-day. When the plant droops and its flowers do not expand, rain may be expected. The half-opening of the flowers is a sign that the wet will not last long. The Burnet Saxifrage (Pimpinella saxifraga) indicates the coming weather in the same manner. As to the small Cape Marigold (Calendula pluvialis), should it open at six or seven a.m., and not close till four p.m., we may reckon on settled weather; if the flower continues sleeping after seven, it betokens rain. In the case of the Corn and common Sow Thistle (Sonchus arvensis and oleraceus), the non-closing of the flower-heads warns us that it will rain next day, whilst the closing of them denotes fine weather. Respecting the weather indications of Bladder-ketmir (Hibiscus trionum), the stemless Ground Thistle (Carduus acaulis), Marsh Marigold (Caltha palustris), Creeping Crowfoot (Ranunculus repens), Wood Sorrel (Oxalis acetosella), and other species of the Oxalis genus, rain may confidently be expected when the flowers of the first do not open, when the calyx of the second close, and when the rest fold their leaves. We may also look for wet weather if the leaves of the Whitlow Grass (Draba verna) droop, and Lady's Bedstraw (Galium verum) become inflated, and give out a strong odour. Finally, the approach of rain is indicated in the case of the yellow Wood Anemone (Anemone ranunculoides) by the closing of the flowers, and in that of the Windflower (Anemone nemorosa) by their drooping.—T. S.

NOTES ON DIFFERENT MODES OF HEATING.

FLUES.—The immortal architect, Pecksniff, remarked to his pupil that if he could shape a cartload of bricks, which happened to be in the back yard, into something which would remind them of St. Peter's at Rome, it would be alike instructive to the pupil and gratifying to the preceptor. The result, though not recorded, was probably a failure; but if, instead of so ambitious a scheme, the pupil had been directed to form the bricks and other things probably to be found in an architect's back yard into a flue which might keep the Pecksniffian Geraniums alive during the winter, there is no reason why the result should not have been gratifying to all parties, and a success. I have taken in GARDENING ILLUSTRATED from its commencement, but very little mention has been made of flues, although Cobbett, one of the fathers of modern English gardening, seems to have known flues only as a means of heating greenhouses; and Thompson tells us how Mr. Cock for a series of years obtained the highest prizes for plants grown in flue-heated buildings. On the other hand, although we constantly read that hot water is the only means of heating to be tolerated, we quite as constantly read that in small conservatories hot water has from some cause or other proved a failure. Probably nine out of ten disappointed ones suffer in silence, and it would be interesting if the owners of boilers, such as we see advertised weekly, would attest in their thousands the result of their experience. I am glad to see flues mentioned by your correspondent, "Caloric," in this week's number, and from what he says I think this system of heating deserves to be more fully discussed than it is. The fact is, anyone can build a flue himself—indeed, there is no difficulty in making a place such as I have made to keep 200 or 300 plants during the winter. I dug out a pit 20 feet long by 9 broad, according to the plan of a "Poor Man's Greenhouse," given in a former number of GARDENING, and I have heated it with a flue which, also, I made myself. I can keep up a constant heat of 50 degs. to 70 degs. at nominal cost, because the furnace burns dust-coal which otherwise would be consigned to the earth.—L.

15519.—UPRIGHT TUBULAR BOILERS.—If properly set, and with the draught—especially below the fire—well under control, these are admirable boilers, very powerful for their size, and for a moderate quantity of piping can hardly be beaten. Tubular boilers of any kind are not generally considered to be so economical as some other forms, but I believe any shortcomings on this score are chiefly due to defective setting or arrangement, the principle being an excellent one, quite equal, if not superior, to that of the coil. In the case of the vertical tubular boiler, it is of great importance to avoid the necessity for a strong draught, which, as there are, as a rule, no flues, occasions a large proportion of the heat from the fire to run to waste up the chimney, and a consequent extravagance in fuel; whereas, given a boiler large enough to do the work with a quiet fire, and the power of regulating the in-draught below the furnace, so as to bring the principle of "slow combustion" into play, and the result cannot fail to be satisfactory. A horizontal tubular is no use on so small a scale, and if the present boiler does its work satisfactorily it would not be wise to make any change.—B. C. R.

Catalogues received.—*Amateur's Guide in Horticulture, and the Pocket Calendar for 1886.* Sutton and Sons, Reading.——*Vegetable and Flower Seeds, &c.* F. and A. Dickson and Sons, Chester.——*Choice Garden and Flower Seeds, Gladioli, &c.* James A. Davidson, Irvine.——*Garden Seeds.* J. Cheal and Son, Crawley, Sussex.——*Seed Potatoes.* C. Fidler, Reading.——*Kitchen and Flower Garden Seeds, and Amateur's Guide.* W. Toogood, 58, Above Bar, Southampton.——*Seed Catalogue.* Harrison and Sons, Market-place, Leicester.——*Flowers, and Vegetables, Bulbs, &c.* Biddles and Co., Loughborough, Leicestershire.

THE KITCHEN GARDEN.

VEGETABLES IN TOWN GARDENS.

THE contents of a town garden are, as a rule, confined to a few trees, some shrubs, the turf, and a greater or lesser number of flower beds and borders. In some cases, however, there may be sufficient space for the cultivation of a few of the hardier and most useful vegetables, but, except in the outer suburbs, where ground is not too valuable to allow of a moderate-sized strip being allotted to each unpretending villa, it is hardly worth attempting anything of this kind beyond a row or two of French or Runner Beans, or a few Vegetable Marrow plants. Fruit is a step beyond flowering, and, as a rule, it is as much as most plants in a genuine town garden can do to reach the latter point with any degree of success, without attempting anything beyond. Vegetables, again, are in most cases anything but satisfactory where the air is confined and smoky, and certainly cannot be grown for anything like the money for which a better article could be bought at the nearest greengrocers. Town-grown Cabbages are at best a long-legged, meagre-hearted race, with almost as much black as green about them; Potatoes are not worth their room, at the prices they are now selling for, and, in short, a few flowers will be found a much more profitable investment in general. Still, there are some things that can be grown almost anywhere, and if there is space and a moderate amount of sunshine and air there is no reason why the attempt should not be made.

A FEW SUMMER CABBAGES will be about the best thing to grow in the way of Greens, of any good hardy, quick-growing sort, and perhaps some Colewort and a few hardy Savoys for winter work. Radishes are a good crop, and Onions may be grown, especially for early pulling for salads, &c.; and a bed of Carrots or Parsnips may produce a few useful roots. Peas, except in quite suburban districts, are not worth growing, but French or Runner Beans will grow and produce a good crop almost anywhere, the former particularly, which we regard as the best town vegetable there is. Lettuces may be grown fairly well, but are very apt to run up if the ground is not open. Rhubarb is a good crop for a town garden; strong, well-established roots in deep, rich soil produce well, and they may be forced satisfactorily with a few large pots or barrels, and some littery manure. A row or two of Parsley is always useful. Vegetable Marrows generally do well in a warm, sunny situation, and Tomatoes will grow and fruit either under glass or against a warm wall. Where anything of this kind is contemplated, it will be advisable to commence collecting manure and leaves with a view to forming a hotbed some time in February. Where salad is acceptable, it is a very good plan to make frequent sowings of Mustard and Cress in shallow boxes, in a fairly warm house; this may be done at any time, and will soon be fit for cutting, when the boxes may be re-sown.

B. C. R.

Exhibition Leeks.—This most excellent vegetable has long been a great favourite in the north of England and Scotland, not only for the pot, but for exhibition. Of late years gardeners and cottagers in the south of England also have taken it in hand, and many of them grow it well; yet, for all that, there are many of my fellow readers of GARDENING who fail in growing a good fat Leek, simply because they sow too late, for instead of sowing in March, as advised in most catalogues, Leeks should be sown not later than the end of January. The seeds should be sown in a well-drained box or pan and placed near the glass in a heated house or pit, or, failing these, a dung frame will answer quite as well. After the young plants show two leaves pinch them out in boxes two inches apart in good soil, and in March harden them off in a cool house or frame, and by the middle of the month plant out one foot apart in a well-manured trench as you would Celery. In hot weather water well thrice a week, and in July the plants will be the better for plenty of manure water; as they advance they will require the soil to be drawn round the stems so as to have them well blanched. Attend to these matters and you will be able to grow Leeks of the finest quality, for I have seen them grown by pitmen in the north of England, weighing three pounds each, in the first week in September. As regards sorts, there are many, most of which I have grown and found good, but I stick to the old Scotch Leek as being the best, alike for the pot and exhibition. All can be grown to a large size if sown early enough, and afterwards well cared for in the way of keeping clear of weeds, and giving good manure and soil to grow in, not forgetting to give them plenty of manure water. —W. C. LEACH, *Clapton Gardens.*

SUMMER AND WINTER LETTUCES.

ENQUIRIES are now being made as to the best sorts of Lettuce. The Paris White Cos is the best summer sort, and when it can be obtained true it is a useful variety, but I am of opinion that it has been superseded by Carter's Giant White Cos, which can be grown to a large size and is yet excellent in flavour; further it does not quickly run to seed. A sowing of this should always be made in February to succeed the autumn-sown crops. Kingsholm is a very excellent sort, quite distinct from Carter's variety, its colour being darker and the edges of the leaves not so smooth. It is a very hardy sort, grows to a large size, and stands well without running to seed. Sugar-loaf Cos well deserves its name, for a perfectly grown specimen of it is not unlike a sugarloaf. It appears to be quite as hardy as any other, and is self-hearting. Victoria White Cos is a vigorous grower, a very large size, is self-hearting, and very crisp and tender. This may be known from all others by the prominent midrib of the leaves. Amongst Cabbage Lettuces for summer use there are several very good ones. All the Year Round is probably as good as any. It is hardy and compact, produces close, white heads, but in hot, dry weather they do not last long in good condition. Commodore Nutt is a great favourite with many, as it requires but little space and hearts quickly. It, however, requires a rich soil to bring out these qualities. American Curled and Fringed is an intermediate form between the Cos and Cabbage varieties. It is certainly very distinct, and all those who have eaten it are highly pleased with it. Tennis Ball is rightly named, for it makes close, firm heads that last for some time in good condition. As an autumn Lettuce this is a desirable sort to grow. For standing through the winter the white-seeded Brown Cos is undoubtedly the most reliable. It is very hardy and excellent in flavour. Bunney's Incomparable Green Cos is not without merit, as where it is needed it makes variety, but is is hardly so hardy as the Brown Cos. It, however, blanches more quickly, which is a consideration. Hardy Hammersmith as a Cabbage variety is perhaps the hardiest. Hicks' hardy White Cos is not much known outside London market gardens, but from the fact that it is largely grown in some of them we may conclude that it is a useful sort. With respect to the capability of Lettuce plants of any sort to stand the winter, a good deal depends upon the size of the plants and how they have been grown. If they stand thickly in the seed-bed they will be drawn and weak, and a hard winter will probably kill them. To be hardy the seed should be sown thinly, so that every plant stands clear of its neighbour; they then form stout sturdy leaves, and if put out in a sheltered border by the end of October they will generally withstand a severe winter unharmed. At planting time plants cut with half-a-dozen leaves about 2½ inches long are better than larger ones. C.

Mushroom growing on a new plan.—Some years ago I saw a system of Mushroom culture which was very successful indeed, and, as I have never seen any description of this method, perhaps you will permit me to give it here. The man who adopted the plan had been seeking a simple way of securing Mushrooms all the year round, with the least possible trouble, and his efforts had resulted in his finding that for which he had sought. The method was as follows: He obtained a good-sized crate, strong, and with a good bottom, such as hardware is sent by rail in. The staves at one end were all cut out, simply leaving the top rim to keep the thing together, for without that the crate could not have supported the bed laid upon it. The crate was turned upside down, and the bed prepared and spawned in the usual way, so far as the outer crust of it was concerned. But there was not nearly so much manure used as in the ordinary hot-bed, for the heat was obtained in another way. When the bed was made, the inside of the crate was hollow; but the open end had been left uncovered, the close end being all built over with the bed. The method of heating was by placing inside the crate the Grass cut from the lawn. This within a few days generated sufficient heat to develop the Mushrooms in the bed. When the heat appeared to be exhausted, the spent Grass was taken out and fresh placed therein. This, it will be at once seen, is a very simple plan, and one that could be worked almost anywhere. Of course, the Grass will not last nearly as long as a well-made Mushroom bed, but there is no limit to the number of times it may be renewed. The gentleman at whose place I first saw this method adopted told me that he had found his beds last three or four times as long as under the old system, and that he secured by means of it a more regular and better supply of Mushrooms. It can be employed either indoors or outside, though it is, perhaps, more suited to the former conditions. —*Country Gentleman.*

Good kitchen vegetables.—I shall be much indebted to any practical gardener who will give me a list of the old sorts of vegetables to be grown for quality and flavour, not for exhibition. My experience of the belauded new kinds, introduced by some of the leading seedsmen at extravagant prices, is the reverse of satisfactory. This is more especially the case with regard to the Cabbage tribe, Peas, and particularly Brussels Sprouts. The last-named vegetable, instead of being close, firm, and round, is now a coarse open sprout, with no flavour, and much too big. I am sorry to have to say, too, that, even by the leading seedsmen, seeds are often sent out untrue to name, and this, at the prices in all cases charged, is too bad. My soil is very dry and gravelly, so much so that, whether from that or any other cause, I find it impossible to get good crops of Peas. Good vegetables for use are what I require, and I shall be much obliged if any readers can assist me to that end.—CHETCO.

1513.—**Turnip tops.**—The ordinary garden Turnips of small size, if left in the ground through the winter, may be cut in the spring when they run up to blossom. The tops should be cut off when 9 inches or a foot high. They are slightly bitter when boiled; but some persons prefer them to sprouting Broccoli.—J. D. E.

ROSES.

PLANTING ROSES.

IF we could trace out the cause of failures of newly planted Roses, it would, in not a few cases, be clearly shown to be unskilful planting. Amateurs and inexperienced workers in the garden fix the roots of Roses so insecurely in the soil that failure, more or less, is inevitable. They appear to be afraid of treading the soil round the roots firm enough to prevent the ingress of air, and then it reaches the roots and dries up the moisture in the soil which surrounds them. The effect of the air acting on the soil in this way is not visible for some time after the planting is completed—in fact, not until the drying winds of March come with sufficient force to dry up the soil; it is then that the roots begin to suffer for the want of moisture, and the branches show a withered appearance, and if they do not actually die the buds will break so weakly that the growth which they make can only produce a few flowers of inferior quality. No one need be told that newly planted Roses, in such a condition, cannot, even if they survive the first ordeal, make satisfactory progress. I, therefore, cannot too strongly impress upon the reader the necessity of making the soil about the roots firm when planting Roses. It is a poor excuse to say that the soil is too wet to allow it to be trodden, without danger of working it into paste, because if it is wet enough to do that it is too wet altogether for planting, and the best course to adopt is to wait until it gets sufficiently dry to be fit to be pretty firmly trodden upon the roots. I find that I gain nothing by planting Roses in the month of January and the first half of February, but rather incur risk of their being injured by severe frost, if it should occur, as newly planted Roses suffer more from severe

cold than established plants; so that waiting for the land to get dry may possibly prove advantageous in more ways than one. In regard to careful planting, it makes no difference what form of tree it is, whether standard or dwarf—the roots of both require the same care. If, from any cause, the planting must be done in wet weather, a little dry soil should be put over the roots, and if the ground is so wet as not to admit of treading round them, that part of the work may be left until the surface gets dry enough to admit of its being made firm immediately over the roots. What is equally as important as securely fixing the roots in the soil is to see that the stems and branches are made secure, so that the wind does not rock them about. Standards should have a stake put to them at once, to which they must be made secure with a strong tie of tar cord. We also like to put a stake to newly-planted dwarf Roses. It need not be more than 9 inches out of the ground, to which the strongest branches may be tied.

When practicable it is a great assistance to newly-planted Roses if a thick layer of good fat farmyard manure can be laid on the surface over the roots, as not only will its richness be washed by the rain down to the roots, but it will shelter them from severe frost, and keep the roots in a more uniform state of moisture. When Roses are planted in beds and the manure would not be considered unsightly, it is a good plan to spread the manure all over the surface. J. C. C.

15559.—**Pruning pot Roses**—"W. A. R." had better prune his Roses at once. If the Rose has been recently potted, I am afraid "W. A. R." will have to wait some time before it will flower; but if it is well established he had better tie out the shoots after pruning, and use a mild liquid manure for watering in preference to clear water. This should be made from horse droppings, and be about the colour of ale when used.—A. HENRY DAVIS, *Carshalton*.

OUTDOOR PLANTS.

CHRYSANTHEMUMS IN THE OPEN AIR.

WITH reference to "J. M.'s" remarks on the above subject (p. 582), without doubt it is quite possible to obtain an abundance of very pretty and useful—even of large and fine—blooms in many places, with a minimum of trouble; and the culture of large-flowering Chrysanthemums planted out-of-doors is capable of great extension. At the same time, I think that the paragraph referred to should not go without a little qualification, or it may prove somewhat misleading, or, at least, cause some amount of disappointment to inexperienced growers. I do not mean to say for a moment that in the genial climate and pure atmosphere of South Wales, if treated as above, late-blooming Chrysanthemums will not prove eminently satisfactory in ordinary seasons, and deserving of being extensively planted; but I will venture to affirm that in at least three seasons out of four, such varieties as those mentioned by "J. M." (Fair Maid of Guernsey, Queen of England, &c.), planted outside in most situations in or near London, or even in any of the Midland or Eastern counties—to say nothing of more northern districts—will not be worth the room they occupy. I have had a good deal to do with Chrysanthemums outside, and until last year, the autumn of which was exceptionally, even abnormally, fine and clear, I really cannot remember a season when this class of Chrysanthemums were worth gathering in the open air in this district (south-east surburb of London). This year the autumn has been much finer than usual, we have had very few fogs (the true yellow "London particular" variety is what we are often favoured with here), which injure the bloom almost more than anything else, yet my plants of James Salter, Mrs. Rundle, and other similar kinds of the earlier blooming section, have hardly been fit to be seen. Near London the flowers, even if they do expand, become so dirty after about the commencement of November, unless protected by glass, as to be practically useless, and I do not remember ever to have seen even a fairly developed incurved bloom outside—that is anywhere near London. At a place more than ten miles from London-bridge, and comparatively in the country, we cut a quantity of very nice clean blooms of Mrs. Rundle, Elaine, M. Charles Hubert, and other good large and Pompon varieties, but this season comparatively few opened, and they were hardly fit to cut. On a warm south border, under a high wall, there is, of course, a much better chance, and in this or other sheltered spot, they may succeed well, even some distance north; but such places are not always available, and my experience is that it is much more profitable to plant good early and semi-early varieties, especially of the Hybrid Pompon and Japanese classes. Among the best of these may be mentioned Mdme. C. Desgrange and its golden form, Isidore Feral, Margot, M. H. Jacotôt, Simon Delaux, nanum, Mrs. Cullingford, St. Michael, Anastasia, La Vierge, and Sœur Melaine. Of course, in such districts as the South Coast, Isle of Wight, Devonshire, Somerset, and most of Wales, &c., the later flowering sorts may, and should, be planted freely. As a rule, plants struck from cuttings some time during the previous year will be found to do better than either spring-struck stuff (excepting Pompons), or very old stools. B. C. R.

THE FRITILLARIES.

IN the genus Fritillaria are included a large number of plants, several of which are valuable inmates of the garden. Some are of stately growth, like the Crown Imperial, others are delicate and pretty, like F. recurva; but the larger portion have dull-tinted, curiously interesting flowers. They may be put to a variety of uses; the Crown Imperial is a fine plant for the mixed border or shrubbery, and, being a vigorous grower, it is well able to take care of itself if naturalised in the wild garden. The early spring growth of this plant makes it a valuable one. The Snake's-head (F. Meleagris) and others, such as F. latifolia, pyrenaica, as well as the choicer kinds, are fitted for the bulb border, and for planting in grassy places. There are only one or two that require special treatment; all the others thrive in any ordinary garden soil. They may all be readily increased by offsets from the old bulbs, which should be lifted every three or four years and planted in fresh soil; the plants will be greatly improved thereby. The lifting should be done in autumn, and the bulbs replanted without delay. F. aurea, one of the prettiest of the genus, quite hardy, about 5 inches in height, bears a stem of four to six thick, fleshy, deep green leaves, and a solitary nodding flower; the latter is pale yellow in colour, spotted, or chequered with brown. F. Burnati, a handsome plant, growing about 9 inches high, has solitary, drooping blossoms, 2 inches long, of a plum colour chequered with yellowish-green markings. A native of European Alps, and quite hardy. It flowers with the Snowdrop, and is as easy to grow.

Fritillaria imperialis (Crown Imperial), is a very showy and stately plant, that grows from 3 feet to 4 feet high, the bright green and stout shoots being crested by large, dense whorls of drooping, bell-like flowers and a crown-like tuft of foliage. There are several varieties, differing chiefly in the colour of the flowers, the principle are, lutea (yellow), rubra (red), double red and double yellow, rubra maxima (very large red flowers), Aurora (bronzy orange), sulphurine (large sulphur-yellow), Orange Crown (orange-red), Stagzwaard (a fasciated stem form, with very large deep red blossoms), and aurea marginata (gold-striped foliage); every leaf being margined with a broad golden yellow band, it blends with the remaining portion of the foliage. This plant thrives best in a rich deep loam, and will be better if the bulbs remain undisturbed for years. It is best, perhaps, in a group on the fringe of the shrubbery or group of American plants. Its strong odour is somewhat against it when gathered; and for artistic effects in the garden it is not so valuable as the common Snake's-head. F. latifolia is a most variable species as regards the colour of the flowers, which are in every case larger than those of our native F. Meleagris, The flowers are borne on stems about 1 foot high, are pendulous, and vary in colour through various shades of purple, black, lilac, and yellow. The principal named varieties are—Black Knight, Captain Marryat, Caroline Chisholm, Cooper, Dandy, Jerome, Maria Goldsmith, Marianne, Melina, Pharaoh, Rembrandt, Shakespeare, Van Speyk, each of which represents a different shade of colour. They grow freely in any soil in an open situation, and are excellent for naturalising.

F. Meleagris (Snake's-head) is an elegant native species, of which there are numerous varieties. It grows from 9 inches to 18 inches high, and bears in early summer a solitary, drooping flower, beautifully tesselated with purple or purplish-maroon on a pale ground. The chief varieties are the white (alba), in which there are scarcely any dark markings; nigra, a deep purplish-black; pallida, light purple; and angustifolia, with long, narrow leaves; major, with larger flowers than the type; præcox, flowers a week or so earlier than the other forms; flavida, flowers yellowish; and the rare double variety. This beautiful plant, in all its forms, may be used with excellent effect by the tasteful gardener. It grows freely in grass not mown early, and is therefore admirable as a wild garden plant; its various forms are amongst the most beautiful inhabitants of the hardy bulb garden, and tufts of the chequered or white-flowered are among the most graceful plants seen in English cottage gardens. F. Moggridgei (Golden Snake's-head).—A beautiful plant from the European Alps, having pendulous blossoms, 2 inches long, of a fine golden yellow, chequered with brownish-crimson on the inner surface of the bell. In may be seen on its native mountains growing among the short stunted Grass, accompanied by alpine plants, at an elevation of from 5,000 feet to 7,000 feet giving the slopes the appearance of a golden sheet of bloom. It flowers in early spring, and is hardy. It is a lovely plant for the choice bulb portions of the rock garden, and, when plentiful, for dotting in groups in Grass where it may escape the mower.

F. pudica is one of the most charming of hardy bulbs, taking a place among yellow flowers similar to that of the Snowdrops among white ones. It is a native of the Rocky Mountains and the Sierra Nevada of California, where it grows in a dry, barren soil, and is one of the principal spring ornaments of the flora. It grows nearly 6 inches high, and has bright golden-yellow flowers, peculiarly graceful in form, and drooping like a Snowflake. It is perfectly hardy, thriving in warm, sunny borders of loamy soil. F. recurva, in colour, is the showiest of the Fritillaries, the red being as bright as that of some Lilies, and intermixed, especially in the inside of the flower, with bright yellow. In England it flowers early in May or in the latter part of April. The bulbs of this pretty plant consist of a slightly flattened tuberous stock, covered by somewhat widely-placed, articulated scales, which at first sight closely resemble those of Lilium philadelphicum. A tuft of linear bright green leaves is produced above the soil, and from this rises a slender, purplish stem, from 6 inches to 2½ feet high, bearing several pendent Lily-like flowers. It is not a robust plant, and it is under careful cultivation only that it has succeeded in this country, growing best in fibry loam, on a warm, sunny border, near a wall. In winter it is advisable to cover the bulbs with some protective material or a hand-light.

Besides these there are many others in cultivation, but the majority are unattractive, though some are useful for naturalising in the wild garden among Grass; for this purpose the most suitable are F. delphinensis, a robust plant with stems 1 foot or more high, bearing brownish-purple flowers, more or less chequered with greenish-yellow; F. pyrenaica, a similar species, but more robust; F. liliacea, lusitanica, pallidiflora, tulipifolia, lanceolata, ruthenica, and tristis, all of which have dull brownish-purple or greenish flowers. R.

Poinsettias in the open air.—I have seen this way of growing Poinsettias practised with the best results, the plants being in every way superior to those kept under glass, where, unless well managed, we generally see them drawn and leggy, and often leafless below; but in the open they are always the reverse of this, as they remain firm in the stem and are dwarfer and stocky, with foliage down to the pots. Some years ago I was shown hundreds of them in 4½-inch pots at Bushey Grove, in Herts, where they were standing on a hard bottom in front of some pits, and none of them, I should think, were more than 12 inches high, but their strength showed what the heads might be expected to be.

Cultivators for market produce them in the same dwarf style, and no doubt their system of management is similar; anyhow, they are always well grown. Planting them out may be all very well to save labour in watering, but the lifting of them in the autumn must cause a check, and it is a question if they are as satisfactory as those established, which, not being disturbed, ought to produce finer bracts.—S. S.

GIANT FENNEL, ISOLATED ON GRASS.

THE Ferulas are among the finest of the umbelliferous plants whose value has been so long unrecognised. Their chief charm consists in furnishing large tufts of the freshest green in early spring. The leaf is apt to lose some of its beauty early in autumn, but this may be retarded by cutting out the flower-bearing shoots the moment they appear; these, however, are far from being ugly, and the bold, striking appearance of the plant when in flower is well shown in our engraving. Where bold spring flowers are naturalised or planted in colonies a group of these fine-leaved hardy plants will be valuable, and they have a fine effect as single specimens isolated on Grass. It is only when well established that the good effect of the Ferulas is seen, and therefore they should be planted well at first; deep free soil should be supplied if the soil be not naturally good and deep. The Ferulas are most readily raised from seed, which should be sown as soon as gathered in a nursery-bed in the open air. F. communis, F. tingitana, F. glauca, F. neapolitana, and a few others are all good, but the first two are sufficient, unless much variety is desired. The flower stems are from 6 feet to 10 feet high, and the flowers inconspicuous.

Giant Fennel (Ferula communis), isolated on Grass.

Salvia gesneræflora.—Flowers during the winter months are now more than ever sought after, and particularly where cut blooms are in demand, and I have often wondered why this old plant is not more grown. It is a plant easily grown almost to any size, and for a conservatory or greenhouse few plants can come up to it. Care should, however, be taken to get hold of the true gesneræflora, for I know that many gardeners grow other kinds for the above, although quite distinct from this one, which, for brilliancy of colour and freedom of flower, is the finest of all the Salvias, new sorts included. To grow this plant well, cuttings should be put in not later than March; plunge them in a mild bottom heat, and, after they are rooted, pot off singly in small pots. In a few weeks they will require potting again—this time into 5-inch or 6-inch pots, and by the end of May they can be planted out in the garden, selecting an open situation, so that the plants can get the benefit of sun and air. It will be safest to put a stout stake to each plant, and should the weather be hot and dry, water thrice a week. These plants will grow 5 feet high and 3 feet through, and, therefore, will require plenty of room to grow. Before frost sets in they should be lifted and potted. Shade them for a few days and winter in a cool house. Attend to these matters and you will be rewarded by plenty of brilliant flowers.—W. C. LEACH, *Clapton.*

Spiræa palmata.—Referring to the paragraph on p. 598, I can quite endorse "J. C. C.'s" eulogium of this elegant plant, and the treatment described is, according to my experience, substantially correct. This plant, however, cannot be forced, as "J. C. C." has discovered, and any endeavour to do so will only end in failure. Last spring I brought in a small batch along with some S. japonica, to come in at Easter, but though well attended to they were all poor stunted objects when in bloom, not more than 8 inches or 9 inches from the pots to the bloom, while the rest, which were allowed to come on naturally in a cool house made fine plants about 2 feet in height, and very strong. It is certain that this variety requires considerably more pot room than S. japonica, which I have always found to force best in the smallest pot into which the roots can be crammed, and also a very liberal supply of water during growth. I do not think much shading is necessary, or advisable, as this plant very easily becomes drawn, and the foliage is by no means delicate in texture, though exceedingly handsome.—B. C. R.

Ranunculuses.—How is it that we see or hear so little of these showy and once popular florists' flowers? The tide of fashion seems to have set in against them; but there are other causes for their disappearance—for instance, a supposed difficulty as to soil, situation, &c. This is shadowy and unreal, as I shall show, but a veritable mistake arises from giving the same general directions for the successful cultivation of the several sections. Recently, looking through a manual in which this matter is dealt with, I found that no distinction is made as to the treatment of the Persian, the Turban, the Scotch, or the French, not to mention the recently introduced Cockade Ranunculus, or the old semi-double section, still retained in several old Irish gardens, called Meladores. The three last, I may at once say, I have found perfectly hardy here, but a severe winter injures the foliage somewhat and checks subsequent growth. To remedy this, while at the same time strengthening and improving the blooms by-and-bye, I mulch with short stable litter at the end of November; this is when I do not lift them, as they may be lifted, dried, and stored in sand if it is desired to remake the bed or to divide them. This I cannot find time for, or think necessary more than every third year. The Persian or Turban will not bear open treatment, but must be thoroughly matured, dried, and wintered indoors. Those I have left outdoors have failed, but I am certain that all will agree with me that there is no flower in the whole garden more deserving of this attention. Now, a word as to soil and situation. Any soil that will retain a fair proportion of moisture without becoming stagnant, and that is tolerably rich, will grow Ranunculuses. A sprinkling of peat often assists in this way. I grow mine in partially raised beds, so that they may be fully exposed. The two first-named sections love the sunshine, though, when intense, it causes those too richly grown to flag. In planting I prefer a bed previously prepared, though this or various manures or composts is unnecessary. I always put some river sand above and below the tubers. It acts as drainage, while retaining moisture, and supplies the necessary silicates to give firmness and stamina to leaves and flower-stalks.—W. J. M., *Clonmel.*

15314.—**Propagating Hart's-tongue Fern.**—The Hart's-tongue (Scolopendrium vulgare) belongs to that class of Ferns comprising nearly all our native kinds, besides most of the North American and some of the Japanese species, which require no artificial heat and no specially-constructed place to raise from seeds or spores, abundantly produced at the back of the fronds. When these are ripe—that is, when the capsules begin to burst open of their own accord, the fronds should be cut off, put in paper, and kept in a dry, but not hot, place for a few days. During that time all the living spores will escape from the capsules and are then ready for sowing; but in so doing be careful to hold the paper close to the soil, as the least wind will blow away the dust-like seed, and only the husks or capsules will reach the soil, when, of course, nothing will grow. A shady but not dark corner out in the garden, or under a stage in the greenhouse, where it is naturally damp, is the best place to put the material for sowing, and there they can remain until the first fronds make their appearance. The best material on which to sow these hardy Ferns is a turfy piece of good fibrous loam, which should be soaked in water for two or three hours, well saturated, and allowed to drain previous to its being used; but, if not procurable, a mixture in equal parts of peat, silver sand, and soft brick, broken small, will answer the same purpose; put it in a shallow pan, or in a pot filled half-way up with crocks, and water well, let it drain, and sow on it as recommended above, but the seeds must be sown before the surface of the material is dry. There must be no covering of soil put over the seed, which should be protected simply by a bell-glass in the case of turfy loam, or by a flat sheet of glass for the mixed soil. These coverings should remain on without being removed until the seedlings make their appearance, which, under good condition, will be from six to eight weeks, when they must be gradually tilted on one side to admit a little air to the new growth. This latter, from its peculiar appearance, is often scraped off and thrown away by the uninitiated, who take it for the common Liver-wort, to which it bears a great resemblance. It remains in that state for two or three months, when the first young fronds are produced. They must then be pricked out in small tufts to allow for their development, as they generally come up very thick. After this operation is performed the young seedlings should be subjected to treatment similar to that given the seed-pans, kept close for a few days, and then gradually have air given them by the tilting of the glass which, after awhile should be removed entirely; and when large enough the young seedlings may be either potted singly or planted in the border in a north or else shady aspect. The material on which the seeds are sown must be kept constantly moist, and the most satisfactory way to do it is by immersion; that is, by standing the lowest part in water, and allowing it to suck up the moisture, but it should not on any account remain altogether in water. If the above instructions are followed, young seedlings of hardy Ferns may be raised in about six months. The seeds may be sown at any time when ripe, but it is best to keep them cool and dry, and sow them in February or March.—S. G.

15512.—**Carnations, Pinks, and Picotees.**—The distinction between these is not a very marked one to a casual observer. The Pink is a variety of the Dianthus plumarius, the Carnation and Picotee varieties of the D. caryophyllus. Although the Carnation and Picotee belong to the same variety, they can be easily distinguished if well observed. The colouring of the Carnation is arranged in unequal stripes from the centre outwards, and the Picotee either has its colouring (which is dark and uniform) arranged on the outer edge of the petals and proceeding inwards, or the petals are dotted.—T. W. R.

—— Dianthus Caryophyllus is the reputed parent of the Carnation and Picotee—a plant found growing on old walls in England—but it is doubtful whether it is really a British plant. From this parentage the self, flaked, and bizarred Carnations have sprung, also the Picotees. D. plumarius is quite a different plant—it has smaller leaves, and flowers a month earlier. From this plant it is supposed the garden Pinks have originated. D. deltoides has also been suggested as a parent of the Pinks. All the garden Pinks are small-growing plants, and flower quite a month before Carnations in the open borders.—J. D. E.

TREES AND SHRUBS.

Tacsonia Van Volxemi in rooms.—I have derived much pleasure from the use of this Tacsonia in my sitting-room. I have kept it trained round a window with an east aspect, so that the short sunshine may best reach it. It was moved from a cold greenhouse upon the approach of frost in October, its training wires and pot being brought bodily in, and placed where it is now; whether in flower or not, the plant is very effective and pleasing. In April (as I do not heat the greenhouse) it is replaced, the pot first being gently tapped off to enable us to examine the roots and drainage, and, if necessary, to give more root room, as being a vigorous climber it needs a good supply of food. All such matters being settled, its wire is hooked on again, and so it grows for the season. The soil which I use is good ordinary potting soil with sand and rotten manure, and once or twice during the growing season it has a tablespoonful of artificial manure sprinkled over the top and scratched in. It begins to flower in August, and continues until December, though the buds will not open unless there is some sun to coax them out. Watering has always to be attended to, or the leaves flag and the plant suffers. It is advisable to examine the wood once or twice in winter for scale or mealy bug, as prevention is better than cure, and at the same time, if the weather is mild, a few hours out-of-doors laid upon the Grass, after a good syringing or rain, will clean and brighten it up wonderfully.—W. J. C.

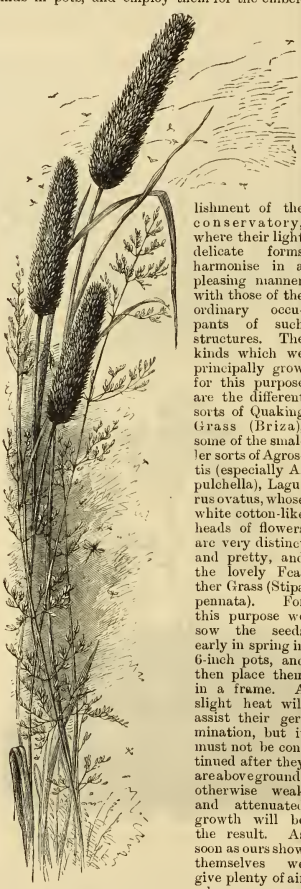
Scarlet Elder not fruiting.—I think your correspondents "Rothven" and "J. C. C." must look for some other reason than the climate of their situations for this handsome Elder not fruiting with them, for here, in this proverbially bleak northern district (within five miles of Newcastle-upon-Tyne), it fruits with me in the most luxuriant manner, and is the admiration of all visitors. The bushes in the season are covered most profusely with what look like miniature bunches of Grapes, of rich scarlet colour, and we use it for church decoration at our harvest festivals. It grows so rapidly and strong that a hedge which I planted with stout cuttings about 18 inches long, three years ago, is now 8 feet high and quite 5 feet through, and bears abundance of berries, notwithstanding that it is in a most exposed situation, on a high table land, swept by the long westerly gales, with nothing higher than a Thorn hedge for 14 miles in front to shelter it. I think it by far the most valuable of all the Elders. With me it grows four times as fast as the common and the variegated ones, and twice as fast as the golden variety. For making a hedge rapidly it is invaluable. I may state that my land is strong clay.—J. DAVISON. *** *Perhaps Mr. Davison will kindly send us a specimen of the plant when it is next in berry.*—ED.

15476.—**Magnolia grandiflora as a bush.**—I have awaited with great interest the answers to the query concerning the Magnolia grandiflora in the columns of GARDENING. I have a Magnolia in my garden which I have always thought to be Magnolia grandiflora. It was brought in a flower-pot from the United States about twenty-five years ago, and is now a well-grown tree, from 4 yards to 5 yards in height. It is laden every year for about two months with beautiful creamy-white flowers, one of which is sufficient to fill an ordinary-sized room with the most delicious perfume. The leaves are a delicate green on the upper, and a silvery-white on the under, side. It does not grow near any wall, but by itself. The locality is Montgomeryshire, on the Welsh borders of the Shropshire Plain, near to the Severn. The tree is extremely well sheltered, being protected from the north and east by a thickly-wooded hill. The soil is a stiff clay; thirty-five years ago the garden was a rough Gorse-bank. Close to the Magnolia is the largest and most perfect Araucaria that I have ever seen; so that it would seem that the soil and situation are well adapted to plants of these kinds.—VICAR, *Penrhos, Montgomeryshire.*

15516.—**Straggling Hollies.**—These, having grown rather straggly and bare near the base of the plants, should be well cut in just before they start to grow in the spring. In no other way can they be made to form a bushy habit or to become furnished at the base.—J. D. E.

ORNAMENTAL GRASSES.

MANY Grasses, even common ones, are worthy of being grown for their ornamental qualities, especially for table decoration. We grow some kinds in pots, and employ them for the embellishment of the conservatory, where their light delicate forms harmonise in a pleasing manner with those of the ordinary occupants of such structures. The kinds which we principally grow for this purpose are the different sorts of Quaking Grass (Briza), some of the smaller sorts of Agrostis (especially A. pulchella), Lagurus ovatus, whose white cotton-like heads of flowers are very distinct and pretty, and the lovely Feather Grass (Stipa pennata). For this purpose we sow the seeds early in spring in 6-inch pots, and then place them in a frame. A slight heat will assist their germination, but it must not be continued after they are above ground, otherwise weak and attenuated growth will be the result. As soon as ours show themselves we give plenty of air whenever possible, and as the pots become full of roots we give them a little manure water occasionally. In other respects they get but ordinary care and attention, the principal point to be considered being to see that they do not get too dry at the roots, for if that happens the foliage soon wears a sickly hue and the beauty of the Grass becomes lost. The Brizas are especially susceptible of drought. In sowing the seed care must be taken not to sow too thickly. The Quaking Grass and Lagurus dislike being transplanted, though the Agrostis and Stipa will succeed very well if pricked off in little clumps when about an inch high. The bearded Hordeum jubatum is also very pretty, but it does not last long; its flower-heads soon drop to pieces. We sow a few rows of a great many Grasses in the open ground, and find them extremely useful in a cut state. P.



The Cat's-tail and Air Grasses.

15520.—**Defective boiler.**—The evil lies in the feed-pipe from the cistern—either it is stopped up, or "B." has neglected to keep the cistern full. One thing is certain, the boiler is short of water, and the pipes are not full as they should be.—WM. W. TRAVIS.

15559.—**Pruning pot Roses.**—Do not cut Tea Roses in very closely; and if wanted to flower early prune them at once. The earliest flowering Roses should be pruned in November. The later they are intended to flower, the later should the pruning be.—J. D. E.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXXIII.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

APPLE PUDDINGS, VARIOUS.

THERE is scarcely any limit to the variations of cheap and wholesome puddings that may be prepared with the introduction of Apples through the hands of a skilful cook, and so present economical and simple preparations.

APPLE AND BATTER PUDDING.—Take four large Apples, half a pound of flour, one pint of milk, two eggs, one ounce of butter, two tablespoonfuls of sugar, eight cloves, and a pinch of salt. Butter a deep pie dish; pare and core the Apples without breaking them; fill the cavity of each with sugar and two cloves, and place them in the pie dish; mix the flour and salt in a basin; add half the milk, and beat until there are no lumps; add the eggs one by one, and beat five minutes; next stir in the remainder of the milk, and pour the batter over the Apples; break the remaining portion of butter over the top in small pieces, and bake in a brisk oven from half to three-quarters of an hour. Sift some sugar over the top, and serve hot.

APPLE AND BREAD PUDDING.—Take six large Apples, three slices of bread and butter, one egg, one pint of milk, sugar to taste, and a little grated nutmeg. Pare, core, and slice the Apples very thinly, put them into a pie dish with the sugar; cover with the bread and butter, keeping the buttered side to the top. Beat the egg until frothy and pour over the bread, grate a little nutmeg on, and bake in a moderate oven for about half an hour, or until the Apples are soft. Sift some white sugar over, and serve.

AN APPLE SHAPE.—Take two pounds of Apples, four ounces of sugar, one ounce of butter, one gill of water. Wipe and slice the Apples thinly, cook them with the ingredients above mentioned until soft enough to be passed through a hair sieve. Dissolve half an ounce of gelatine in one gill of water and add to the Apples, with one or two drops of cochineal to give the mixture a pale pink tint. Pour this into a previously wetted mould and stand aside to become quite cold. Then dip the mould into tepid water, reverse it upon a crystal dish, give it a shake, take away the mould, and leave the Apple shape standing; it may be served plain, or with whipped cream around it; or a jug of milk and sifted sugar may be served with the shape.

A SWISS APPLE PUDDING.—Take two large cupfulls of stewed Apples, four tablespoonfuls of bread crumbs, two ounces of butter, nutmeg or cloves to taste. Butter a pie dish and line it thickly with bread crumbs, put a layer of Apples, sugar, and next bread crumbs, and so on, until all are used, taking care to have bread crumbs last; break the butter over the top and place the dish in the oven or before the fire to become brown. Serve hot with butter and sugar, or sweet sauce.

APPLE AND COCOA-NUT PUDDING.—Take two ounces of beef suet, two ounces of fine bread crumbs, three ounces of desiccated Cocoa-nut, four large Apples, two ounces of sugar, one egg, one gill of milk, and a little grated ginger. Mince the suet finely, and put it with the bread crumbs and Cocoa-nut into a basin, pour the milk hot over them and let stand for half-an-hour, while you pare, core, and slice the Apples, and stew them with the sugar until tender. Put all the ingredients together with the egg, and beat until they are thoroughly mixed. Butter a mould and pour in the mixture, tie a piece of buttered paper over the top, steam for one hour and a half. Turn on to a hot dish and serve with sweet sauce.

Sweet sauce.—Take one ounce of butter, half an ounce of cornflour, half-a-pint of milk, two tablespoonfuls of sugar, a small pinch of grated nutmeg, ginger, or cinnamon, and two tablespoonfuls of cream. First, melt the butter and mix thoroughly with it the cornflour, sugar, and spice. When there are no lumps, pour on the milk gradually, and stir until boiling, then add the cream, and serve around the pudding, or in a sauce boat.

APPLE AND RICE MERINGUE.—Take a quarter of a pound of Rice, wash it well and boil it in water for five minutes; pour away the water,

and add one pint of milk, one ounce of butter, one tablespoonful of sugar, and a little grated Lemon rind; stir this occasionally until the rice is quite soft, the milk all absorbed, and the mixture thick enough to form a wall round a dish. When this is arranged, have six Apples pared, cored, sliced, and cooked to a pulp, with sugar and ginger to taste; add one gill of milk and the yolks of four eggs; beat them briskly over the fire until the Apple mixture becomes thick, but do not allow it to boil. Place this in the centre of the rice, and whip the four whites of eggs to a very stiff froth; stir lightly in one ounce of finely powdered sugar; pile this neatly on the top of the Apples, and bake in the oven a pale brown colour. Sift some white sugar over, and serve hot.

STEWED APPLES WITH JELLY AND CREAM.—Pare and core six large Apples without dividing them, place them in a stew-pan, with one pint of cold water, six ounces of loaf sugar, the rind and juice of one Lemon, and a few drops of cochineal. Let the Apples stew gently until tender, and then take them out to get cool; add half an ounce of gelatine to the liquid, and stir until boiling. Place the Apples in a crystal dish, strain some of the syrup around them, and put the rest aside to become cold. Whip half-a-pint of cream to a froth, sweeten to taste. Pile this upon the top of the Apples, and decorate with the reserved jelly, chopped, after it is cold.

APPLE AND CHOCOLATE PUDDING.—Stew six Apples, with sugar to sweeten them, and one ounce of butter, until they are quite soft, beat them to a pulp, and place them at the bottom of a buttered pie-dish. Boil two ounces of French chocolate in half-a-pint of new milk, and when quite soft work the chocolate into the milk free from lumps, and boil it for five minutes. Beat two eggs to a very stiff froth, and strain them into the chocolate, mix thoroughly, and pour over the Apples. Place in a moderately hot oven for about ten minutes, sprinkle some sugar over, and serve either hot or cold.

Lemon mince pies.—Squeeze a large Lemon, boil the outside till tender enough to beat to a mash, add to it and the juice three large Apples chopped, four ounces of suet, half a pound of Currants, and four ounces of sugar. Make a short crust, and rather more than half fill the tins (previously buttered and lined with the paste) with the mincemeat. Lay on a covering of paste and trim round the edge. When the pies are half cooked they should be brushed over with the white of egg (previously beaten to a stiff froth), then sprinkled with powdered sugar, and returned to the oven to finish baking, by which time the icing should be crisp and dry.—FARMER'S WIFE.

Sandwiches.—"C. G.'s" recipe for sandwiches (p. 610) is very good, but I can suggest an improvement — that is, to mince the meat before placing it between the slices of bread. This entirely prevents any difficulty which there often is in getting one's teeth through the meat. Very nice sandwiches may be made with mince made in the usual way for the table (but not too moist) allowed to get cold. I think that if the bread used is only one day old (unless home-made) it will be found to be quite stale enough, and more palatable to most persons than bread two or three days old. However, tastes differ, and each should suit himself in this matter.—G. S. S.

Savoury sandwiches.—Take the remains of any cold meat there may be in the house—beef, mutton, pork, or veal. Remove every morsel of bone, skin, or gristle, and mince the meat as finely as possible; indeed it is best when put through a sausage machine. Put the mince into a basin and add suitable seasonings—for instance, if beef is being used, add salt, pepper, a small quantity of mixed mustard and some finely shred Celery. If mutton sandwiches are being made, add salt, pepper, and a spoonful or two of some favourite sauce, to give it a nice, spicy flavour. If pork is the chief ingredient, then add, beside salt and pepper, a well boiled Onion, minced very small, and a sprinkling of dried sage; and if veal is used, make the following mixture:—One tablespoonful of fine bread crumbs, one teaspoonful of chopped Parsley, one hard-boiled egg, chopped very fine, and a little salt and pepper. Add this mixture to the minced veal, and moisten the whole with a little milk. These are all suitable seasonings, but of course they can be varied to any extent, to please different tastes. Cut the bread, and butter it in the usual way, spread the mixture evenly on the bread, cover each slice with another, and cut the sandwiches into neat squares.—C. G.

15644.—**Tough pastry.**—Will anyone kindly tell a young cook why her pastry is tough when baked?—M. M. B.

POULTRY.

SEASONABLE NOTES.—II.

REGULAR account keeping is also best begun on the first of January. The owner of the smallest flock imaginable, if he buys poultry with the intention of being repaid for his outlay, should, as a matter of business, keep an accurate record of receipts and payments. I do not go so far as to say that a value should be put upon the scraps from the table, bits of meat, potatoes, &c. These, if it were not for the poultry, would be thrown on the ash-heap, or given to a neighbour for his pigs, so that, as a food, they really cost the poultry fancier nothing. But everything for which money is paid, be it corn, stock birds, or materials for a fowlhouse, should be duly entered in the cash account, and in the same way, all kinds of produce from the poultry-yard whether used in the house, or given away, so long as it may be converted into money, must be credited to the stock. We often hear men engaged in business say their concern is a losing one. This may be really the case, but no dependence can be placed on the assertion, for the reason that no accounts are kept. Cash is received and paid away, but it cannot be said with certainty whether the whole of the expenditure is made in connection with the business, or whether much of it is not merely squandered away. So with the poultry keeper. Hundreds of those who keep a large stock of poultry maintain that there is no profit attached to the business. These men only see one side of the question. To them the cost of food is everything. They never think of the eggs used in the house for breakfast and cooking purposes, nor do they take into consideration the fact that when a couple of chickens provide the family dinner, so much butcher's meat is saved. The balance-sheets one often sees published, however truthful they may be in themselves, should never be looked upon as examples of what all poultry keepers might obtain. Fresh eggs, even at Christmas, command much higher prices in some districts than in others, and the figures realised by chickens at fashionable resorts or places frequented by pleasure seekers, it would be absurd to expect in an agricultural neighbourhood. But even in the last mentioned case I am sure that poultry, if properly looked after, will not only pay for their keep, but leave a comfortable margin for profit. The most sceptical individual can be convinced of this, if he will only take the trouble to manage his poultry yard in the way a business of any kind should be. Let him, in the first place, take care that his stock be of the right sort and age to be capable of yielding a profit. It is useless to select a breed of fowl which is not adapted to the surroundings. In a damp or bleak neighbourhood, for instance, Dorkings will not thrive, and the longer they are kept in such situations, the greater will the loss be. Then, having chosen the most suitable variety to keep under the circumstances, the concern should be managed on true business principles. First, the pullets must be hatched by a fixed date every year, and at a certain age a vigorous weeding out should take place. Only in the case of very valuable specimens should hens be kept beyond that age, and then only for breeding purposes. The question of pets must not be considered at all. If the poultry fancier makes pets of his stock, and in consequence keeps them longer than he should, that puts a totally different face on matters. His business then degenerates into a mere hobby. For hobbies men have always had to pay dearly, and always will. Lastly, let a proper statement of outgoings and incomings be kept. Everything brought on the place, whether food, stock, eggs for sittings, or materials for coops, &c., has generally to be paid for in some way or other. Even supposing a stock bird to be given by a friend, his value should be stated on the payment side, just as it would appear amongst the receipts if he were given away. Chickens used for the table should be priced at their proper value. A register of the eggs brought in daily should be kept, and at the end of each month the number used for household purposes may be easily ascertained, and valued at the average market price. Then, to get at the profit or loss for the year, a valuation of the stock at the beginning and end of the season will be required. The former, when added to the payments, will show what the actual outlay would have been had the stock been purchased on the first day of the year, whilst the valuation taken at the end, added, to the receipts, will give the amount which the investment has realised. It is only by acting in this way that a reliable account of the year's transactions can be obtained, and, however formidable the scheme may appear to a beginner, I can assure him it is simple enough for the veriest novice at bookkeeping to manage. For several reasons, New Year's Day is the best for starting such an account as I have described, and it is in the hope that many may adopt the system that has led me to write this.

DOULTING.

Turkeys as chicken raisers.—Turkeys would be most useful to keepers of non-sitting varieties of fowls, who do not go in for artificial methods of hatching and rearing. A couple of turkeys would be able to hatch and rear a hundred chickens in one season, one doing the hatching, and the other the rearing, except the last batch, which the hatcher would herself undertake. This is a proportion that may be calculated upon. If an incubator were employed for the hatching, but for any reason it was thought inadvisable to rear the chicks artificially, turkeys would be the easiest method of providing natural mothers. Under these circumstances it would be necessary to have one turkey for every sixty chickens. This is calculating that the bird would brood each batch of thirty or thirty-five for six or seven weeks. On the other hand, if the breeder of non-sitting fowls preferred to have the chicks hatched naturally, but to have them brooded artificially, he could employ the turkey to hatch, and transfer the chicks to the brooder when twenty-four hours old. For some years this was the plan I adopted, as incubators had not then reached their present state of perfection. When the turkeys are used either as hatchers or as brooders they should be rather sparingly fed.—C. G.

How to hatch pullets.—Pick out round eggs of a uniform size, rejecting very large, small, or ill-formed ones. Eggs laid early in the season by pullets generally average seven cockerels to four pullets, but in eggs laid by the same birds later in the season, pullets predominate. It is believed that the smaller the number of hens that run with the cock, the greater the proportion of cockerels that may be expected from the eggs. It has also been stated that the position of the air-vesicle in eggs determines the sex; those eggs having it in the centre of the large end producing cockerels, while those showing it at one side of the centre produce pullets; but this theory should not be relied on. I should advise those who wish to hatch pullets (1) Not to use the eggs from young birds for hatching, but from more matured ones; (2) Not to have less than eight or nine hens with each cock; (3) Not to begin hatching before March or April.—AJAX.

QUERIES.

15645.—**Feeding poultry.**—Will someone kindly tell me how much food, and of what kind, I ought to give my fowls, as they do not lay as they should? They have a Grass run of rather over 2½ acres. I have about three dozen hens and pullets, three cocks, four cockerels, and about three dozen chickens from three to four months old, and also six ducks.—ENQUIRER. *** *On p. 580, and in previous numbers, you will find information as to the feeding of poultry.*—ED.

15646.—**Drake.**—I have a drake who for the last three months has had something the matter with his feathers; they always appear wet and dirty, and he seems to dislike going in the water. I have tried giving him warm food and Barley-meal; but he gets no better. Can any reader inform me what to do? The ducks appear to be in good health. I was soon expecting them to lay; but I suppose that now they will not.—W. PAYNE.

REPLIES.

15551.—**Disease in poultry.**—It is possible that the birds are suffering from ulcerated throat, which is very similar to severe cases of roup. The throat should be washed three times a day with M'Dougall's fluid carbolate, diluted

with three times its bulk of water. Some powdered sulphur may also be added to the soft food. Of course the birds must be separated from the others, and placed in a warm pen until thoroughly restored to health.—Doulting.

15553.—**Blue Andalusians.**—That the Andalusians are very useful fowls, none will deny; in comparing them, however, with the Brahmas as egg-producers, it must be remembered that, like the Spanish varieties generally, they are not, as a rule, good winter layers, and are non-sitters. The Brahmas, on the other hand, may be expected to provide plenty of fresh eggs in the coldest weather, and will also be ready to bring out a hatch of chickens when required to do so. The Andalusian is considered the hardiest of all the Spanish breeds, and is certainly growing in popular favour. They can fly much better than the Brahmas, and will require a higher fence in consequence. With this exception, the same yard, if sheltered, will answer for either Brahmas or Andalusians. "H. H. B." must, nevertheless, remember that it is bad policy to resort to overcrowding.—Doulting.

15647.—**Disease in Brahmas** *(T. C., Kent).*—I know of no poultry disease called "The Blacks," and expect the term is only common in the querist's neighbourhood. "T. C.'s" description of the symptoms accompanying the disease is too brief to be of much use. All sick birds mope more or less, and, as a rule, they have but little appetite. I may say there is a disease called "Black Rot," which principally attacks Spanish fowls. It commences with a blackening of the comb, followed by swelling in the legs and feet, and a gradual wasting away. Treatment is useless unless the fowl be taken in hand at once. A dose of calomel or Epsom salts is recommended at first, and this should be followed by Parish's Chemical Food, or some other simple tonic, the bird being supplied with warm and nourishing food. Roup is a very contagious disease, and "T. C.'s" birds might have suffered from this. It appears strange, however, that the Houdans and Leghorns escaped, whilst the Brahmas suffered so severely.—Doulting.

BIRDS.

GARDEN BIRDS.—VI.

I must not conclude without mentioning the very great services rendered to the gardener by another winged visitant, which, however, is not a bird. I mean the Bat (Vespertilio pipistrellus and other species), whose useful work, done silently and unobtrusively in the night-time, is seldom recognised as it deserves to be. It should be borne in mind that all the caterpillars which infest fruit-trees are the larvæ of various species of moths. In the daytime these moths hide themselves in crevices of walls and in other nooks and crannies, where they, for the most part, escape the notice of the diurnal insect-eaters; but, when they issue forth on the wing at dusk, the Bat makes his appearance at the same time, and, feeding exclusively on these insects, thins their numbers very considerably. I have often, of a morning, seen two of our garden walks, which run alongside tall Hawthorn hedges, very plentifully sprinkled with the shorn-off wings of various kinds of moths which had been devoured by the Bats in their flights during the preceding night. The gardener should, therefore, look upon the Bat as a benefactor, and protect him accordingly.

From the foregoing notes it will be seen that of the thirty-three distinct species of birds which I have described as either frequenting our garden more or less constantly, or coming about it and having free access to it, only four (the House-Sparrow, Bullfinch, Blackbird, and Thrush), actually do any damage worth speaking of; that seventeen species (the Starling, Robin Redbreast, Wren, Hedge-Sparrow, Willow-wren, Creeper, Ox-eye, Blue Tit, Cole Tit, Golden-crested Wren, Goldfinch, Pied Wagtail, Yellow Wagtail, Twite, Swallow, Swift, and House Martin), are not only harmless, but also decidedly useful birds; and that the twelve remaining species (the Chaffinch, Green Linnet, Gray Linnet, Yellow-hammer, Titlark, Sedge Warbler, Long-tailed Tit, Magpie, Rook, Fieldfare, Red-wing, and Missel Thrush), if not useful birds in the garden at least never do any harm there. In dealing with the four species which do all the serious damage that is done by birds in a garden, I would only recommend the gun to be used in the case of House-Sparrows when they have become too numerous for the supply of food which is afforded them by the crumbs and scraps that are daily consigned to the rubbish-heap, and which it is the proper office of these birds to remove. The Bullfinch, Blackbird, and Thrush should be rendered harmless by netting the fruit-trees and bushes, as these birds, although at certain seasons they will, if permitted, do a deal of damage in the garden, are, nevertheless, serviceable in the fields in various ways.

It appears to me that the most sensible view to take of birds in general is, that the occasional harm which they do in the garden, or on the farm, is hardly worth mentioning in comparison with the amount of service rendered by them at all other times. The Bullfinch, for instance, is a plague in the garden only in the time of buds; during all the rest of the year he is usefully employed in devouring vast quantities of the seeds of weeds. The Rook, when his natural food is scarce, will occasionally help himself to Potatoes or Corn, in doing which he is often shot by the farmer, who either forgets or ignores the fact that his crop of Potatoes and Corn would not, perhaps, be half so good if the Rooks had not cleared his ground of wireworms and other grubs. When the farmers in Cambridgeshire combined some years ago to banish the rooks from the county, the result was such a destruction of the crops by wireworms, &c., that the owners were nearly ruined, and were only too glad to take steps to restore the rookeries they had so foolishly destroyed. The Wood-pigeon (Columba palumbus) is usually regarded by the farmer as even a greater enemy than the Rook, but the character of this bird as a friend to the farmer has been amply vindicated by Mr. St. John, who informs us in his "Wild Sports of the Highlands" (page 119), that an agricultural friend called his attention, on March 6, to an immense flock of these birds busily at work on a field of young Clover, which had been under Barley the last season. "On this," he says, "in furtherance of my favourite axiom that *every wild animal is of some service to us*, I determined to shoot some of the Wood-Pigeons, that I might see what they were actually feeding on; for I did not at all fall into my friend's idea that they were grazing on his Clover." Accordingly, he shot eight of them as they were flying over his head. On being opened, "every Pigeon's crop was as full as it could possibly be of the seeds of two of the worst Weeds in the country, the Wild Mustard and the Ragweed, which they had found remaining on the surface of the ground—these plants ripening and dropping their seeds before the Corn is cut. Now, no amount of human labour and search could have collected, on the same ground, at that time of the year, as much of these seeds as was consumed by each of these five or six hundred Wood-Pigeons daily, for two or three weeks together."

Similarly, in the case of all our garden birds, I am convinced that even those that are considered the most mischievous do, on the whole, far more good than harm. This seems to be better understood on the continent, where in many places the birds are systematically fed in winter. Ten years ago, at Halle, in Germany, a society, formed for this purpose, had twenty-two stations in the neighbourhood of that town, where, during severe weather, many hundreds of birds received three meals a day, the expense of which they "repaid a hundredfold by the destruction of noxious insects." Commending this practice to the attention of the readers of Gardening, I would also earnestly advise them at other seasons to net their seed-beds and fruit trees, and to let the birds alone.

William Miller.

15648.—**Birds for open air aviary.**—Will some reader of Gardening kindly tell me about any pretty birds which would live in an open air aviary? Love birds, wax bills, canaries, &c., seem quite acclimatised, and it is curious to see them outside on a cold December day picking about in the snow and singing merrily. I imagine there are many nice birds in North America and other temperate places which would be suitable. A really good descriptive list of the birds which would exist in our climate, with their food and shelter guaranteed to them, would be of interest no doubt to many besides myself. Of the larger game birds pheasants are, perhaps, the most showy; but there must be many others large and small worth keeping.—V. V.

THE PRAISE OF GARDENS.*

The author of this pleasant compilation starts upon the assumption that "it is a natural consequence that those who cannot taste the actual fruition of a garden should take the greater delight in reading about one." We are not inclined to agree with this statement, for, believing in the truth of the proverb, that "appetite comes with eating," we think the persons most likely to appreciate this work, are those who have themselves tasted the actual pleasure of gardening, and whose own practical experience enables them to more intelligently sympathise with, or dissent from, the views expressed in its pages. "The Praise of Gardens" is a compilation of extracts from the works of writers of many nations and times, from an Egyptian MS. of the nineteenth dynasty (B. C. 1300), through Greek, Latin, Italian, French, German and Chinese, down to the authors of our own day and country. As a means of putting us in possession of the written thoughts of great men who were and are lovers of the beautiful in nature, and as showing the fluctuations in the views held by the admirers of the art which "doth change nature," this book is most valuable, and we doubt not that it will afford many a half-hour's pleasant reading to our gardening friends.

* "The Praise of Gardens." A prose Cento, collected and in part Englished by Albert F. Sieveking, with proem by E. V. B. London: Elliott Stock, 62, Paternoster-row.

Smithfield market, Evesham.—List of prices realised Dec. 31, 1885:—Brussels Sprouts, 3s. 6d. to 3s. per pot; Carrots, 1s. 6d. to 1s. 10d. per cwt.; Celery, 1s per doz.; Gillyflowers, 6d. per doz.; Onions, 3s. to 3s. 9d. per cwt.; Parsnips, 3s. to 3s. 6d. per cwt.; Potatoes, 1s. 2d. to 1s. 6d. per pot; Savoy, 2d. to 6d. per doz.; Turnips, 10d. to 1s. per pot; Apples, 3s. to 5s per pot; Pears, 3s. per pot.

15563.—**Value of timber.**—This depends a great deal on the quality, proximity to a railway, and many other circumstances. I should advise "Agrestis" by all means to sell his Oak tree as it lies. According to his measurements it should contain about 24 cubic feet if he has excluded the thickness of the bark, but it is difficult to say without proper measurement. It might be worth 2s. a cubic foot as it is—perhaps more, possibly less. If cut up where it lies, the cost will probably be 25s. at least, and the additional price which might be realised would hardly recoup "Agrestis" for the trouble that he would be put to.—W. M. B.

15477.—**Defective heating apparatus.**—It is undoubtedly the confined air in the pipes which prevents the water from circulating, and if there is no air pipe to allow of its escape you will have to get one fitted. This should be at the end of the flow, just at the bend, and need not be more than 18 inches long. The fact of the water surging up and down in the supply cistern is a sure sign that the air cannot escape from the pipes. Are you sure that the flow-pipe does not dip, as if it does, however slightly, the water will have great difficulty in forcing its way along it? See that this is at least level—it ought to rise a little—that the return pipe falls, and fix an air pipe as above indicated, and you will find that circulation will go on all right.—Byfleet.

A wide circulation.—Some idea of the extent of the constituency to which Gardening Illustrated appeals may be obtained from the following list of some of the places from which letters of enquiry, were received by us during the issue of one number lately:—London (various districts), Croydon, Tunbridge Wells, Uckfield, Sale, Malvern, Paignton, Manchester, Wolverhampton, Shrewsbury, Gosport, Totnes, Cheltenham, Woodbridge, Bristol, Liverpool, Birkenhead, Bridgewater, Poole, Sidcup, Guildford, Buxton, Leicester, Winchester, Leatherhead, Nottingham, Denbigh, Begelly, Hastings, Salisbury, Durham, Lymm (Cheshire), Oldham, Lewes, Buckhurst, Birmingham, Hawkhurst, Dartmouth, High Wycombe, Huddersfield, Longton (Staffs.), Douglas (Isle of Man), Guernsey Aughnacloy, Belfast, Carlow, Kingston, Dumfries, Dublin, Wicklow, and Odessa (South Russia). Taking these letters as a guide in the calculation we shall be hardly overstepping the mark if we say that there are scarcely any towns, and few rural districts, in the United Kingdom, where readers of Gardening may not be found.

GARDENING ILLUSTRATED.

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OUR ILLUSTRATION COMPETITION.

WE regret that, whether owing to the season or to other causes, our competition was of a very poor character when compared with the two previous ones. A great many photographs were sent, but they dealt, for the most part, with subjects that were not pretty, or were of slight interest, or the photos themselves were poor. The art of the amateur photographer is yet in its infancy, and we trust to record a marked improvement during the current year. It is a beautiful art, but it requires some knowledge on the part of its followers, and the best mechanism. It is a splendid aid in gardening and in many other things, and we trust the knowledge of it will go on spreading. We hope our next competition will be more fertile in good things, and there can be little doubt that the present season is against good work, even when the best subject and the good photographer are close together.

PRIZES ARE AWARDED TO—

Mr. Arthur P. Jackson, of 7, Cannon-street, E.C., for some good photographs, among them one of a view in the Oxford Botanic Gardens; and to

Mrs. Hamilton, 4, Grosvenor-hill, Wimbledon, for the prettiest photograph, from a garden point of view, sent to us. It shows a house well covered with climbers, and a porch flanked with plants. These are, perhaps, too numerous and complex for the best effect, but still, on the whole, they form a garden picture.

We give some particulars as to the best of the other photographs.

Mr. John Allen, Yew Tree Cottage, Buxted, near Uckfield, Surrey, sends a view of the cottage pictured in the photo sent by him for a previous competition. It shows a very pretty cottage and garden, but the details are not clear and cannot be reproduced.

Professor Allman, Ardmore, Parkstone. A very interesting bog garden. The reduction in photo is so great, however, that the details are not clear enough for engraving.

Mr. B. Boucher, Caroline Cottage, St. Ann's-road, Stamford-hill, N. A graceful town garden, but in the photo no fewer than eight human figures are shown.

Mr. James Cole Copeman, Loddon, Norfolk. Rock garden in town; there are too many stumps and rocks for our taste, but, withal, well covered and with a picturesque background.

Mrs. Digby, Moat Lodge, Moybough, co. Galway. A pretty rock and flower garden, in which, however, there are, according to our taste, too many small stones and roots of trees—the usual faults in rock gardens. It is otherwise very interesting, and has a rich background of varied trees.

Mr. George Fry, Custodian of the Lee Cemetery, Lewisham, S.E., sends us views of a cemetery which is evidently very well arranged and a fine place; but there is nothing shown in the way of gardening that would be suggestive or interesting to our readers, and the bedding-out is of a very formal and mechanical character that is not attractive to us.

Mr. G. Ross Galloway, of Monaliadh, Inverness. Photographs of pretty things, but all too small and ineffective.

Mr. S. Walkley Gillett, West View, Bowdon, Cheshire. A pretty fence of Roses, but taken too indistinctly to be useful. Also photo of a fine Araucaria.

Captain C. M. Harrison, Ketton Grange, Stamford, sends photos of some fine trees—a Wellingtonia, 75 feet high, in Beaufort Park, near Battle, and of one of the finest groups of Monkey puzzles (Araucaria imbricata) that we have ever seen. The photos, however, owing, as the sender hints, to the weather, are not clear enough for engraving.

Sir Charles Isham sends from his interesting garden in Nottinghamshire a very pretty photograph of a pigmy Cedar. He says: "I send you a photo of a pigmy Cedar of Lebanon, 3 feet high, on my rockery. It may be some forty years old, but looks a hundred. There is pigmy Ivy on the tree, as also on the rocks, and small caves by the roots, with Thyme, which is visible in photo. I say without hesitation that my rockery is totally unlike any other that was ever constructed; it has improved almost daily for near forty years and goes on doing so whilst I attend to its requirements."

Mr. W. E. Matthiessen, 40, Devonshire-road, Forest Hill, S.E., sends views of "imitation ruins" very well covered with plants, and, for this kind of work, very fair; but we do not like to encourage imitation ruins either in the garden or out of it.

Mr. Robert Murray, 7, Hope-terrace, Edinburgh. Some beautiful photographs of old gardens and trees in Scotland. An old garden wall attached to the ruined castle of Edzell, in Forfarshire, is very interesting.

Mr. Archibald Walker, Bank of Scotland, Auchtermuchty, Fifeshire. A splendid group of Lilium auratum, but so over staked that it would be impossible to make a pretty cut of it.

Miss Ward, New Court, Marlow, Bucks. A very graceful fernery, but the photo is scarcely clear enough for engraving.

15554.—**Sowing Mistletoe berries.**—Mistletoe berries should be inserted in the spring of the year. Dry them well, and then make an incision in the bark of the tree, and put in the berries, and tie the bark carefully with a piece of mat or yarn. It is best to insert the berries in the under-side of the tree, as the birds are fond of them, but cannot rest on the underside of the tree.—C. F. DAVIS, *The Grange, Leatherhead.*

—— I do not agree with the answer given to question 15576 (Jan. 2). I have found that drying the berries delays their germination, and inserting them in a slit of the bark is unnecessary, and even injurious. The plan I have adopted, with success, is the simplest possible. Take the berries, quite fresh, and, pressing with the finger on the plain bark, burst the berry. The husk separates, and leaves the seed enveloped in a viscous mass, which glues it to the tree most effectually. It will germinate in the spring, sending out two green sprouts, which will bend over until they reach the bark, to which they will attach themselves, after the manner of the Ampelopsis Veitchii.—W. F., *Durham.*

FAVOURITE FLOWERS AND HOW TO GROW THEM.—IV.

THE CARNATION.

ITS HISTORY.—It would serve no useful purpose to trace the history of the Carnation back through the dark ages to the time of Cæsar Augustus. It is recorded that the Romans seldom sat down to their meals without wearing chaplets of flowers, and that Carnations were held in high estimation for that purpose. No doubt they were cultivated double varieties—single ones would be useless. It is stated by Chaucer that the Clove Gillyflower was cultivated in England as early as the time of Edward III., it being used to give a flavour to ale and wine, whence its name, "Sops in wine." The Carnation was certainly a favourite flower during the reign of Queen Elizabeth, and has many different names. Chaucer in one place writes the name Girofler, and Spencer calls them Coronations. The oldest and best histories of the Carnation are those given in John Gerard's "History of Plants," published in 1597; John Parkinson's "Garden of Pleasant Flowers," second edition, published after the author's death, "much corrected and enlarged," 1656; and John Rea's "Flora," published nine years later, 1665. First, as to Gerard, it is evident that even at this early date, three hundred years ago, there were hardy border Carnations, and others, more tender, requiring to be grown in pots. At page 473 we read: "These Gilloflowers, especially the Carnations, are kept in pots from the extremity of our cold winters. The Clove Gilloflower endureth better the cold, and therefore is planted in gardens." Gerard further states that there were many varieties, but he does not condescend to particularise them—"Considering how infinite they are, and how every year every climate and country bringeth forth new sorts such as have not been heretofore written of." He also states that the first yellow Gilloflower was given to him by "a worshipful merchant of London, Master Nicholas Lete," who procured it from Poland. Parkinson divides the Carnations from the Gilloflowers, but the reason is not very apparent; the first he designates Carophyllus maximus, and the latter C. major. There are nineteen Carnations and twenty-nine Gilloflowers minutely described in his quaint manner; by that time Master Lete's yellow variety had produced a numerous progeny. There were all colours, including blue. The following is a specimen of Parkinson's description:—"The white Carnation or Delicate is a goodly, delightful, fair flower in his pride and perfection—that is, when it is both marbled and flaked, or striped and speckled with white upon an incarnate crimson colour, being a very comely flower, but abideth not constant, changing oftentimes to have no flakes or strakes of white, but marbled or speckled wholly." Mr. John Rea remarks that in his time many flowers were lost, probably during the Civil Wars in the latter part of the reign of Charles I. and of the Commonwealth. The Dutch then commenced to grow them, and from that country, during the reign of Charles II., many varieties were introduced. Rea says:—"Of these Dutch flowers I have known more than a hundred distinct varieties by names, all of them fair,

large, and double flowers." Subsequently, the same author enumerates 360 good sorts.

Coming down to the time of Philip Miller, F.R.S., of the Botanic Garden, Chelsea, we find that in 1741 he writes of the Caryophyllus hortensis (the Clove-Gilliflower or Carnation), and states that—"The florists divide them into four classes. The first they call flakes; these are of two colours only, and their stripes are large, going quite through the leaves. The second are called bizarres; these have flowers striped, or variegated, with three or four different colours. The third are called piquettes; these flowers have always a white ground, and are spotted, or pounced as they call it, with scarlet, red, purple, or other colours. The fourth are called painted ladies; these have their petals of a red or purple colour on the upper side, and are white underneath." Mr. Miller does not care to enumerate varieties, but states that they are very numerous. Excellent cultural directions are given by Miller. We now trace the history of our plant down to the time of Mr. W. Curtis, of the Botanic Garden, Lambeth Marsh. In the *Botanical Magazine*, published in 1787, at plate 39, there is an excellent coloured picture of a scarlet bizarre Carnation—Franklin's Tartar, a seedling raised by Mr. Franklin, of Lambeth Marsh, an ingenious cultivator of these flowers. The early plates in the *Botanical Magazine* are not exaggerated, hence the plate of this variety is of great value, as showing the advance made at that time. The variety Tartar would hold its own amongst the best scarlet bizarres of the present day, and is superior to most of the new ones. Curtis was a good and learned botanist, and he writes that "the Dianthus Caryophyllus is generally considered as the parent of the Carnation, and may be found, if not in its wild state at least single, on the walls of Rochester Castle, where it has been long known to flourish, and where it produces two varieties in point of colour, pale and deep red." Further he says, "excessive moisture is found to be one of the greatest enemies this plant has to encounter; and on this account it is found to succeed better when planted in a pot than in the open border."

I make no comment on the above, except this, that following the history of the culture of the Carnation from Gerard to the present time it is found that some varieties were best adapted for pot-culture, and others would succeed equally well planted out. Those who like to grow Carnations in pots may surely be allowed to do so, if it pleases them. Others, despising such restrictions, can grow their plants in the open border. There has always been room for both, and the garden is the world, which is as wide as it ever was. In the history of the Carnation, one cannot omit any reference to one of the best of comparatively modern cultivators, Mr. James Hogg, of Paddington. His practical treatise on the culture of the Carnation was published in 1839—sixth edition. A good deal of Hogg's matter is not of much value at the present day. He is rather too discursive on the numerous varieties cultivated at that time. His remarks on dressing are of no practical value; and the minute cultural details have been superseded by the more intelligent cultivators of the present day, and I question whether any advance had been made upon the choice varieties cultivated fifty years previously. The yellow Picotee must be excepted from this; for I believe that there were, in Hogg's time, numerous very richly coloured, and very beautiful varieties in this section, far superior to the pale, washy kinds at present in cultivation. Hogg writes "That the late Queen Charlotte and the Princesses a few years ago had a very superb collection of yellow Picotees at Frogmore," and that "The Empress Josephine, distinguished among other things for her great taste and fondness of flowers, had, amongst other things, an admirable collection of yellow Picotees at Malmaison." Hogg himself grew a choice collection at Paddington in 1832; and enumerates thirty-five varieties by name, with the remark that, "Any person desirous of viewing some of these new and curious varieties, may have their desire gratified by visiting my small garden in July next (God granting), for the tenure of life is very uncertain in the most robust and healthful." 390 varieties of Carnations, bizarres and flakes only, are enumerated, and 113 white ground Picotees, no less than 98 varieties of the Carnations being scarlet bizarres. It may not be amiss to conclude this short history of the Carnation with a few remarks by the celebrated politician and clever writer, William Cobbett:—"Some persons may think that flowers are things of no use, that they are nonsensical things. For my part, as a thing to keep and not to sell, as a thing the possession of which is to give me pleasure, I hesitate not a moment to prefer the plant of a fine Carnation to a gold watch, set with diamonds."

The above very short historical remarks will be interesting to those who seem to think that the Carnation is quite a modern flower, and has only been grown extensively during the last decade. During the last few years large numbers of amateurs have become acquainted with the beauties of the Carnation and Picotee. Perhaps they do not read much of contemporary garden literature, and have no knowledge of what has been done in the way of improving and cultivating the Carnation during the last century, or even the last twenty years. Such persons may be fortunate enough to rear a bed of seedling Carnations, and when they are struck with the endless variety, the great beauty and sweet perfume of the flowers, one can excuse the exuberance of the amateur's delight, if he fancies that no such bed of Carnations was ever seen in England. In writing on the culture of the Carnation and Picotee, it is necessary to begin with its propagation. This is performed first by seeds.

SEED SAVING AND SOWING are preliminary to the production of improved varieties. Seeds of choice Carnations and Picotees may be purchased, but the cultivator who wishes to obtain certain results must prepare for those results in a way that their consummation may be possible. The fancier has certain points in his flowers which he is anxious to develop, and in the definition of these points considerable misunderstanding exists. It may be as well at the outset to point out in what way the Carnation and Picotee has been divided into

GROUPS OR SECTIONS.—First, of the Carnation. We begin with the scarlet bizarre, and this section includes all flowers that have two colours on a white ground. Very few bizarres have the ground quite white; but the object of the seedling raiser is to produce the white as pure as possible; consequently, impure flowers would not be used either as seed or pollen bearers. The colours are scarlet and maroon, or purplish maroon. Second, the scarlet bizarre. This includes all flowers with crimson and purple flakes, like the others irregularly disposed on a white ground. The flakes should be broad, and with few or no spots. Third, pink and purple bizarres. Here we have pink instead of crimson with the purple, but I must say that some of the more recent introductions have been to a certain extent mixed in these two classes, and many of the flowers named crimson bizarres are crimson in name only, being generally deeper shades of pink. Fourth, purple flakes. This is a well-marked group, and cannot easily be mistaken. The flowers in this class have heavy purple flakes. In each the ground colour should be white, and the purer this is the better. Picotees are also divided into six sections, in the following order (and it must be premised that the white should be pure, without "spot or bar," and the colour in the form of a regular margin, broad or narrow, round each petal—in technical language "heavy or light," as the case may be). First, heavy red edge; second, light red; third, heavy purple edge; fourth, light purple; fifth, heavy rose edge; sixth, light rose; seventh, yellow ground Picotees—but in this class the edges are not defined. Indeed, there are only different shades of red at present. There is also a numerous family of self-coloured Carnations, and a group of such as produce flowers during winter. Now we will suppose that the cultivator has any or all of these groups before him, he may use his own judgment as to the varieties from which he will save his seeds. If the object is

TO OBTAIN AN IMPROVED FORM of the Scarlet bizarre, the finest variety in this class should be selected; that is, undoubtedly, Admiral Curzon. I would use this variety, both as a seed and pollen parent. Mars is a distinct variety that might be crossed with it; Robert Lord is a very superior S. B., but I would not use this as pollen for Admiral Curzon; and would rather cross it with True Briton. Sir J. Paxton, if a good stock of it can be obtained, would do to cross with another excellent sort named Arthur Medhurst. I do not care to grow more than six varieties of the Scarlet bizarre class. Crimson bizarres next claim attention. Amongst these a variety named Master Fred has attained considerable celebrity. John Simonite would make a good cross for it. In pink and purple bizarres William Skirving and Mrs. Barlow are the best; they might be crossed with Jenny Lind. The above are merely given as examples of what may be done in the way of hybridising to obtain better flowers than we already have in the various classes. It must not be supposed that all the produce will be of the same type as the parents. From the produce of the best scarlet bizarres not one in six will be a scarlet bizarre; many will be beautiful double purple, maroon, scarlet, and crimson selfs; some will be single; many will be what are termed fancies—that is, flowers with various degrees of spotting and striping, all interesting and pretty. I had one particular bed of Carnations last year, the produce of the best hybridised flowers. It contained 370 plants; I found 37 of them were single—these, of course, were thrown away—321 were double flowers, many of them good flakes and bizarres; but, on comparing them with the best-named varieties, they were below par, and, consequently, not worth trying again. Many were selfs, some of them pure white; 12 only were thought worth growing again—not four per cent. of the whole number. The same remarks apply to the Picotees. The best varieties in each colour should be crossed with each other, the heavy and light edges being kept apart. If they are hybridised the result is a medium edge, which is not so much esteemed—especially on the exhibition table. In very dry and warm seasons the seeds may ripen out-of-doors, but it is not to be depended upon; the damp causes the seed-pods to rot before the seeds are ripe. All that is necessary is to keep them dry with the shelter of glass lights.

I SOW THE SEEDS early in April, and they are kept in the pods until it is time to sow them, and they vegetate best if sown in pans and placed over a gentle hotbed. The young plants appear in ten days or a fortnight, and in three weeks they may be pricked out, 2 inches apart, in larger pans or boxes, to be planted out, 15 inches apart, where they are to flower, about the last week in May or early in June. These seedling plants will mostly all flower next year. Some of them will produce a hundred flowers of great beauty and charming sweetness. The selection of varieties to grow again must ever be a matter of taste, and, certainly, seedling-raisers are more likely to select too many than otherwise; for be it remembered that each plant will most likely produce from a dozen to a score, and twenty selected seedlings may mean cultivating three hundred plants next year, besides another lot of seedlings to prove again.

NAMED VARIETIES ARE PROPAGATED SIMPLY BY LAYERS, sometimes by cuttings. The operation of layering is performed about the end of July or early in August. The lower leaves are removed from the growth with the fingers. A sharp knife is then used to cut half through the stem, under a joint, the knife is then turned to cut upwards through the joint itself; it is at once pegged firmly into the soil around the plant, and some fine sandy soil placed over it. When the layers are all secured, the plants are placed in a sunny position out-of-doors, for, even if they have been grown under glass to perfect the flowers, the plants themselves succeed best out-of-doors. The first or second week in October is a good time to separate the plants from the parent stem. Some of them are to be potted to be grown in pots next season, others will be planted out in the open garden, and the residue used as presents to friends. There is some difference of opinion as to the best time to plant out the choice varieties of Carnations and Picotees. The late Mr. Charles Turner told me that spring was the best time, but the Carnation fanciers near Newcastle-on-Tyne, who grow them remarkably well, plant out their whole stock in October, or even so late as November. The plants in pots are kept in frames during winter, and are repotted into the pots in which they will flower about the end of February or early in March.

THE POTTING SOIL is very simple, and in most places easily procured—good yellow loam four

parts, leaf-mould one part, and one part decayed stable manure. At one time the pots in which the plants were placed to produce their flowers were out of all proportion large for the size of the plants. Ten-inch and 11-inch pots were used when 8-inch and 9-inch would have been much better. I believe that I was the first who successfully used the smaller sized pots, and they are now in general use instead of the larger ones. We pot one plant in a 7-inch pot, two small ones in an 8-inch, and two of the largest size in 9-inch pots. After potting them (do not be too free with water) I place them back again into the frames, and there they require very little water until the first of May, when longer days and drier hotter weather produce a more active state of the roots. It may be as well to remark about the production of plants from cuttings, that they should be put in early, and be covered with close bell-glasses until roots are formed. And if the object is to increase the stock of the best bizarres or flakes, the cuttings must not be taken off until the flowers open, or else the plants from which they are taken must all be marked with a corresponding mark on the label. This is done in case the particular plant may have sported to a self, or in some other way changed from its original state. This is a common occurrence with bizarres. The following list comprises the best varieties at present in cultivation :—

CARNATIONS.—*Scarlet bizarres.*—Admiral Curzon (Easom), Arthur Medhurst (Dodwell), Fred (Dodwell), Mars (Hextall), Rayner Johnson (Dodwell), Robert Lord (Dodwell). *Crimson bizarres.*—Crimson Banner (Simonite), Harrison Weir (Dodwell), John Simonite (Simonite), Master Fred (Hewitt), Rifleman (Wood), Shirley Hibberd (Dodwell). *Pink and purple bizarres.*—Mrs. Barlow (Dodwell), Sarah Payne (Ward), Squire Llewellyn (Dodwell), T. S. Ware (Dodwell), William Skirving (Gorton), Unexpected (Turner). *Purple flakes.*—Dr. Foster (Foster), Florence Nightingale (Sealey), James Douglas (Simonite), Mayor of Nottingham (Taylor), Premier (Milwood), Squire Whitbourn (Dodwell). *Scarlet flakes.*—Annihilator (Jackson), Figaro (Abercrombie), Henry Cannell (Dodwell), John Bailey (Dodwell), Matador (Abercrombie), Sportsman (Hedderley). *Rose flakes.*—James Merryweather (Wood), Jessica (Turner), John Keet (Whitehead), Rob Roy (Gorton), Sybil (Holmes), Tim Bobbin (Gorton). *Selfs.*—The best six are : Bride (Hodges), white ; Coroner (Barron), scarlet ; Florence (Wallington), buff ; Lady Cathcart (Lane), yellow ; Mary Morris (Smyth) and "The Governor" (Cross), blush.

PICOTEES.—*Heavy red-edged.*—Brunette (Kirtland), Dr. Epps (raiser not known), J. B. Bryant (Ingram), John Smith (Bower), Mrs. Dodwell (Turner), Princess of Wales (Fellowes). *Light red-edged.*—Clara (Bower), Emily (Addis), Mrs. Bower (Bower), Mrs. Gorton (Simonite), Thomas William (Flowdy), Violet Douglas (Simonite). *Heavy purple-edged.*—Mrs. Albert Chancellor (Turner), Muriel (Hewitt), Mrs. Summers (Simonite), Picco (Jackson), Rev. J. B. M. Camm (Fellowes), Zerlina (Lord). *Light purple-edged.*—Baroness B. Coutts (Payne), Clara Penson (Willmer), Her Majesty (Addis), Jessie (Turner), Mary (Simonite), Nymph (Lord). *Heavy rose-edged.*—Constance Heron (Fellowes), Edith Dombrain (Turner), Fanny Helen (Niven), Lady Boston (Fellowes), Mrs. Payne (Fellowes), Royal Visit (Abercrombie). *Light rose-edged.*—Empress Eugenie (Kirtland), Ethel (Fellowes), Evelyn (Fellowes), Lady Carrington (Abercrombie), Liddington's Favourite (Liddington), Mrs. Rudd (Rudd). *Yellow Picotees.*—The following were raised by Mr. Turner, of the Royal Nurseries, Slough : Alice, Flavius, Eleanor, Princess Beatrice, Ne Plus Ultra, and Mrs. Colman. The variety Prince of Orange, from which the above six varieties are seedlings, is also fine. It was raised by Mr. Perkins, of Coventry. JAMES DOUGLAS.

15598.—**Everlasting flowers.**—I think "Constant Reader" would find Xeranthemums very satisfactory. They resemble Rhodanthes rather than Helichrysums, and are of three colours, reddish purple, straw, and pure white. The purple contrasts well with the browns and yellows of Helichrysums. Catananche cœrulea is said to preserve its colour when dried, but I have not yet tried it, so cannot write from experience. The colour would be valuable, and the flower is very pretty.—R. C. S.

OUTDOOR PLANTS.

THE INULAS OR FLEA-BANES.

Of the fifty-six species of Inula described in scientific works probably not more than thirty are at present in cultivation in this country, and those are chiefly confined to botanic gardens, notwithstanding the fact that many of them are useful garden plants. Some of the low-growing species are extremely useful for the rockery, such as I. montana (the Mountain Inula), a fine dwarf plant with woolly lanceolate leaves and dense heads of orange-coloured flowers, resembling in habit and general appearance some of the creeping Hieraciums. It is a handsome and desirable plant for the decoration of old walls and similar places, where it can be a little sheltered from rain and drip. Another very useful species for this purpose is I. rhizocephaloides, found plentifully in the Himalayas. It is one of the prettiest alpine composites we have. It seldom attains more than from 1 inch to 2 inches in height, forming a dense rosette of short, hairy, oval leaves, in the centre of which the bright purple involucres, in the form of a ball, are extremely interesting. It is easily cultivated, requiring, however, a rather snug nook,

Inula glandulosa (showing habit of growth).

where it will not be allowed to become too dry. It is best propagated from seed. Then there is the woolly Inula (I. candida), a pretty plant with small oval leaves, covered with a thick, silky down, and much in the way of the white-leaved I. limonifolia. Both of these are very effective when grown in masses, which should always be low down near the front of a rockery, or as an edging for a mixed border. The glandular-leaved Inula (I. glandulosa), of which a good representation is here given, is a beautiful hardy perennial. It is a rather robust-growing species with large bright orange-yellow flowers, varying from 3 inches to 5 inches in diameter, the narrow and very straggly ray florets contrasting nicely with the rather prominent disk. The leaves, although quite entire, seem notched, owing to large black glands which form on their margins. They are lanceolate and clasp the stem. The plant is very variable, both as regards robustness and size of flowers, and this may in a measure account for the confusion existing between it and I. Oculus-Christi.

The soil most suitable for the full development of I. glandulosa is a strong clayey retentive loam ; it does not thrive well in the light shallow soils in the neighbourhood of London, except in shady positions. I. Hookeri is a free-flowering perennial, with pointed lanceolate leaves, of a delicate texture, bright green, and very finely toothed. The flowers, which are sweet-scented, are not so large as those of I. glandulosa, and are produced singly, the ray florets being, however, much more numerous, rarely numbering less than thirty. It is found in abundance in rocky places in Sikkim, where it replaces the nearly allied I. grandiflora, a dwarfer species, with much shorter shining leaves. Both are very desirable plants either for rockery or flower border work. The Elecampane (I. Helenium) is an imposing, robust-growing species, having large, broad leaves a foot or more in length. It grows from 4 feet to 5 feet in height, and its thick, shaggy branches are crowned with large yellow flowers. For isolating in woods this plant is very useful, and, with the exception of Telekia cordifolia, it would be hard to find a rival to it. It is, I believe, pretty extensively used for planting in shrubberies ; but, unless they are thin and open, it is seldom seen to advantage. It is found wild or naturalised in some parts of England. It flowers in June and July, and even into August, when the season has been favourable. For naturalising in woods the following will be found useful—viz., I. salicina, I. Oculus-Christi, I. squarrosa, I. britannica, and many more, the true beauty of which can only be realised in this way. With the exception of I. rhizocephaloides, they are all propagated by division with the greatest ease, or by seed, which is best sown as soon as it is ripe. D. K.

Hardy Cyclamens.—I cannot understand how it is that these easily-managed bulbous plants do not meet with much favour. Our bulbs of the autumn flowerers begin to bloom in August, and continue to do so for fully three months, and after the flowers are over they are succeeded by a charming carpet of handsome marbled foliage that in itself is worth the little trouble which their growth entails. Even in the early days of February that beautiful spring-flowering variety C. Coum bristles with its bright crimson-purple flowers rising from a bed of ample foliage, and this too at the foot of a warm wall in the open. These Cyclamens are best planted in a narrow border where they will not be overgrown by other things. Any kind of soil seems to suit them, and when well established no sort of weather seems to hurt them. About once in five years they should be taken up as soon as they go out of flower, the old soil removed, and fresh substituted. The best varieties for autumn flowering are græcum, macrophyllum, hederæfolium album, and h. rubrum ; for spring flowering the best are Coum album and C. carneum. These are easily raised from seed, which should be sown as soon as ripe. It is best to raise the plants in a cold frame, and then they may be expected to flower the third year.—SOMERSET.

Belladonna Lilies.—It is clear that the Belladonna Lilies like warmth, for I have tried them in various aspects, but in none do they succeed so well as against the wall of our stove, which is heated during nine months of the year. The hot-water pipes which heat the stove run along inside the wall, and in that way the wall for a great part of the year is warmed ; the soil, too, outside in which the Lilies are growing, no doubt, abstracts a good deal of heat from the wall. Be that as it may, the behaviour of the Lilies on that spot is all we could desire, and they give us no trouble. As they come into flower in September we pot them up for the conservatory. Sometimes they are put back again after they have done flowering if there are any vacant places, but not otherwise. This annual removal of some of the largest bulbs gives room for the younger ones to grow, and therefore we have a constant supply of young bulbs. We have them growing close to the foot of a south wall in another part of the garden, where they do very well, so that no one need despair as to getting them to flower if they can give them the same treatment.—J. C.

The winter flowering Jasmine.—If anyone wishes to have this Jasmine (Jasminum nudiflorum) in perfection for floral decoration, cut the sprays about a foot long before the flower-buds come out. Put them into a deep vase with plenty of water, and every bud will come out much larger and finer than those out, of-doors. When the flower-buds are half out-a piece of the stem may be cut off to give them a fresh start. Thus treated they last a fortnight. This Jasmine looks well mixed with

sprays of Cryptomeria elegans, the most useful and lasting of winter greens, and red Mahonia leaves.—M. E. C.

Ornamental Brambles.—Rubus chamæmorus and R. arcticus are both well known as flowering plants, and desirable for rockwork. R. saxatilis, though not claiming a place as a flowering plant, deserves one as a fine-foliaged trailer. All through the dull season its leaves, which are deep red, are extremely ornamental, and for draping old roots surpass even the Virginian Creeper, if not in intensity of colouring, at least in duration. In dull shady places, in which the plant is generally seen, it rarely develops its bright colours, which only reach their best when fully exposed to the sun and kept well supplied with water during hot summers. It revels in a peaty soil, and although useful for draping rooteries or large boulders, it is most at home where it can find soil for the roots emitted at every joint to strike into. Its stems are small and wiry, and covered with close-set short prickles. Cuttings of it taken off in spring are easily struck under hand-lights, or they may be taken off in autumn and struck in the open ground.—K.

Balm of Gilead.—Among sweet-scented plants which one likes to have in a garden, the Balm of Gilead, or Canary Balm, as it is also called (Cedronella triphylla) is one of the most desirable; its foliage is handsome, and when gently rubbed has a rich and pleasant odour. It is a shrubby plant, which in mild localities reaches a height of 3 feet or 4 feet. The flowers are not showy, being small, pale purple, and crowded into dense heads, but the leaves are of a rich deep green, and much wrinkled. It thrives in any light garden soil, and likes a warm spot best, as it is apt to be injured during severe winters. The Balm of Gilead is a very old garden plant, having been introduced so long ago as 1697. It was first brought to Europe from the Canary Islands under the name of Permenta de Tana. It is also known as Dracocephalum canariense.

Herbaceous Pyrethrums as annuals.—If seed of these be sown in January, and the plants cared for, grown on into size, and planted out as early as possible in good soil, many, if not all, will flower in August and September. There is this great advantage, that, presuming it is intended to make a permanent plantation, the grower is enabled to select all the best flowers and reject the inferior ones. But the seed must be sown early; that is an indispensable condition, and when the seedlings are raised they must not be neglected. Consequently, the plants, as soon as they can be handled, should be potted off into pots of good, light, free soil, and in every way encouraged to grow into size. But how often it is that pots of seedlings are sadly neglected, and suffered to become long, lanky, and weakly; and when planting comes, and plants of this character are placed in the open ground, they take so much time to recover themselves that the season is well-nigh over before they are in form to flower. Many seedling plants are, unfortunately, much neglected when in a young state, and not a few are destroyed in consequence.—D.

REPLIES.

15565.—**Plants for cottage gardens.**—Some of the hardy annuals are very showy, and as they are easily raised in the open ground they are suitable for cottage gardens. Clarkia pulchella, Godetia, Saponaria calabrica, Crown Daisies, Coreopsis, of sorts, Collinsia, Eschscholtzia, Golden Bartonia, and Mignonette are some of the most satisfactory. These may be supplemented by such easily-grown perennials as Sweet Williams—the Auricula-eyed strain is but little known to cottagers; Campanula pyramidalis, Antirrhinums, Columbines, and Marigolds, the common yellow being as a rule the only variety seen in cottage gardens. A selection from the above-named will do well to begin with, and if it is seen that they have been well attended to, something choicer may be supplied the following year. A pinch of seed of a first-rate strain of fancy Pansy would prove a source of real pleasure to those who only know the ordinary type of this flower; and Polyanthuses and Carnations would undoubtedly be appreciated. An important point is not to attempt too much at first. Commence with things showy, but of the easiest culture, following up with others which demand some experience in gardening for their successful growth.—J. C., *Byfleet.*

—— The following annuals and perennials might be successfully grown. That they will add beauty to the gardens cannot be doubted. I have given a list of twenty-one plants; if, however, a selection from these were made I would select the first twelve: Candytuft, Clarkia, Pansy, Golden Feather, Larkspur, Verbena, Mignonette, Marvel of Peru, Chrysanthemum, Wallflower, Sweet William, Lupinus, Nemesia, Delphiniums, Antirrhinums, Columbine, Phlox Drummondii, Zinnia, Salpiglossis, Nicotiana affinis, Carnation.—T. W. R.

—— What I grow to get plenty of bloom and to cut from April to the end of summer are: Hollyhock, Foxglove, Sweet Sultan, Sweet William, Wallflower, Gaillardia (to bloom next year, forming nice green bushes for the present year), Stock (Emperor), Scabiosa, Godetia, Chrysanthemum coronarium, Eschscholtzia, Nasturtium; all the above to be grown in single plants. Sweet Peas, Linum grandiflorum, in patches. The cost at the best London houses is: Stocks, 1s.; Hollyhocks, 6d.; all others, 3d. per packet; total, 4s. 6d. the fourteen packets. These can be divided into six lots, each of which will be enough for one cottage, the cost thus being 9d. per cottage. This will allow Mr. Evans to add a climbing Rose tree as advertised at 6s. or 9s. a dozen, and would produce a magnificent show. The cottagers might be advised to hunt for Primroses, Ferns, and Periwinkles. All the above are hardy, and will grow in any soil with a little attention.—H. D.

FRUIT.

PRUNING PYRAMID APPLE TREES.

AT page 600 "L. C. K." has done both "W. W." and myself the favour of alluding to us. Leaving "W. W." to fight his own battle, and defend his "garden-toy," and turning to my portion of "L. C. K.'s" remarks, I would say, if I may presume to judge, the remarks seem to be those of a gentleman who looks at pomological facts with two sharp, intelligent, business-like eyes; and when he has seen them is evidently able to present them both intelligently and intelligibly to his readers. Still, I venture to think that, although he looks at the facts most accurately, he most unfortunately loses sight of those great and fundamental principles upon which those facts are founded and from which they spring. Suppose, for instance, that our good friend "L. C. K." had only taken the very little trouble to learn, as one of her laws, what Nature so plainly, so intelligently teaches—viz., that in the pomological world, no less than in some other provinces of her wide domain, senility is fertility; or, in other words, old age is fruitfulness, and that youth is growth. His six propped Apple trees would never have come into argumentative conflict with my pruning-knife, nor my pruning-knife with them; for with that law and its congeners recognised and carried out to their logical and inevitable issues, "L. C. K." and "J. Doman" would have been at one! For, really and truly, "L. C. K.'s" non-recognition of this is the only one matter of difference between us. The wants of age are unquestionably nutrient, and sometimes even stimulant, while mere rampant youth may require its restraints. And so, while I should never think of pruning an old tree—meaning by the term "pruning" the reduction of redundant or surplus wood—since, by the law referred to above, it makes so little, and sometimes, very many years before it dies, no wood at all, a really young one, if for garden culture and not grafted upon some restrictive stock, absolutely demands, both for its "form and fruitfulness," reduction both of root and branch, if we desire either to antedate its fruitfulness, or somewhat more equally, year by year, enjoy its produce, or, in other words, make it give us annually some of that fruit under which, if left to itself and unpruned, its old age would bend. Now, since all that "L. C. K." contends for is this—that the total produce of any given tree that has not been pruned is equal to that which has, making that total up of all the fruit it has produced during its lifetime, and so, by not pruning it, saving the cost and labour of doing so—although he has not discounted this saved cost in labour by the incurred extra cost of its additional room (a very important item with urban and suburban cultivators, like, most probably, our friend "W. W.")—I say, taking "L. C. K.'s" own position (a neither provable nor disprovable position) I would just ask, which of the two would be the wiser man—the man who, having put out his capital to simple interest, year by year made his five minutes' or ten minutes' call in order to obtain his required interest; or the man who, having made the same investment, declined to make his annual call for that interest in full, leaving the borrower to send him only some portion of it, calculating most self-denyingly that some future generation or posterity might gain what he has lost? Now, I say this is a most fair illustration of "L. C. K.'s" position, for purchasing and planting the tree is both virtually and actually an investment of capital, the five minutes' or ten minutes' call for the interest the time spent in pruning the tree, while the fruit the tree gives yearly is the interest. I think that most of us would say that the former of the two was the wiser man. Nor do I quite see why my small attainments at Nature's school should at all excite "L. C. K.'s" surprise, for I must have been a very dull pupil indeed there not to have learned some at least of her lessons and her laws, and among those laws that perfectly legible, though equally important one as above, viz., that in the world pomological senility is fertility; or where is the wondrous wisdom displayed in my, I believe, correct theory of pruning, submitted to our mutual friend "W. W.," viz., that of allowing only that portion of the sap which is superfluous to the wants of existing fruit buds to flow from them, and so more or less starve them, in order to produce fresh fruit buds or fresh growth? For having gone to my good grandmamma's school, and learned that I must not "Rob Peter to pay Paul," I went to Nature's school, and, practising the lesson, I only found that my two kind school-mistresses agreed, that they both taught the same identical lesson, endorsed the same law, and that they both accorded with that higher moral one which forbade me to do "robbery for burnt offering." I really claim no discovery in what I have said; I have only professed my belief that moral and natural matters, if they run rightly, run on the same line; I have only transplanted an aphoristic truth out of the social or domestic into the horticultural nursery. In that adverbal "really"—really young—is involved a law, a law of Nature, of which our "practical" professional nursery friends seem practically most profoundly and most lamentably ignorant; and yet a law the practical recognition of which would, most unquestionably, not only revolutionise every fruit-tree nursery in Europe—and, as far as I know, those in America, too—but also be a most ineffable boon to every man who plants a fruit tree! When our Editor's indulgence, his readers' patience, and my own opportunity shall all concur, I shall be only too happy to attempt, at least, to substantiate for this law these pretentious claims—for pretentious, most pretentious, I acknowledge them to be. In laying down my pen, I would respectfully just remind "L. C. K." that neither that honest photograph of the orchard tree which he has taken nor his claims, however true, on its behalf are, even in the slightest degree, responsive to either "W. W.'s" enquiry or my reply to it. For "W. W." did not ask which was the more profitable, the orchard tree or the pyramid, and not even if the pyramid was profitable at all, but the principle of pruning pyramid Apple trees. I would respectfully say that I should feel that I was hardly complimentary either to any querist or to myself if, questioned about a cow, I responded something about a Cucumber!

Bracondale, Norwich. J. DOMAN.

Canker in fruit trees.—"Mr. Hiam," in his article on canker being due to insects, does not mention that canker is seldom or never seen on trees where the bark is uninjured. The beginning of canker appears to be bruising the bark, then it gums, and soon after canker appears. Persons when buying fruit trees should be very careful to see that the bark is uninjured before selecting them, and when bought should be doubly careful in seeing that

no injury is done to them in planting, or tying them too tightly to stakes. If we notice an old eankered tree we can always see that the bark has been injured. Whether insects come after I do not know, but in the first instance I feel sure it is caused by injury to the bark.—C. F. DAVIS, *Leatherhead.*

The Service tree lately mentioned by "R." (page 592), which he calls Pyrus Sorbus, I find described by Mr. Coleman in his useful little book, "Our Woodlands, Heaths, and Hedges," as the Pyrus torminalis. Mr. Coleman says it grows in Caen Wood, in Epping Forest, and about Caterham. It is a handsome tree, sometimes growing to the height of 54 feet, with a trunk 3½ feet thick. He says: "The fruit is of a greenish brown when ripe, and of an acid, rough flavour, which, however, becomes very agreeable when the fruit is in a state of incipient decay and mellowed by frost." Loudon

Inula glandulosa (natural size), flowers deep yellow. (See page 649)

("Encyclopædia of Plants") gives a description of the Pyrus domestica, or True Service, and also of the Pyrus Sorbus hybrida, but I cannot make out which of the two is the tree in question. The Service tree is common in Sussex; the fruit, or rather berries, are somewhat difficult to get at, as they grow at the ends of the branches. They are called "Serves" by the natives of that county. In the late autumn they may often be seen, bound round a stick, after the fashion of a rope of Onions, hanging on the sunny part of a cottage to ripen. I have now some berries which were sent to me by a friend living near Barnstaple. There, I am told, they are brought to market by the country people, who call them French Pears, and have also some provincial name for them.—ARISTOPHANES. *** *The true Service is Pyrus domestica; it is considered a native, but this is doubtful. The wild Service, P. torminalis, is more common. It is the fruit of P. domestica that is edible, and when half-decayed it is something like a Medlar.*—ED.

REPLIES.

15562.—**In-arching vines.**—The best way to do this is to obtain a plant of the variety Lady Downes. Start it into growth at the same time as the vine on which it has to be in-arched. When both—that is, the stock and the vine which is to be in-arched—have grown to 4 feet the wood will be moderately firm. A slice should be cut from each, about 4 inches long, cutting quite to the centre; place the cut portions together, and tie firmly with soft matting. The operation ought to be done when the wood is in a green state; and the ties must be loosened in two or three weeks, else they cut into the wood, which swells rapidly. The union will be complete in about six weeks, but the ties ought to remain until the end of the season.—J. D. E.

—— The information which you give clearly shows that the fault lies not so much in the sorts of Grapes that you grow, as in the house or the management, for if you cannot ripen Hambro's you certainly will not be able to succeed with Lady Downe's. Any information we may give you about in-arching will be of no service to you, as your proper course to follow is to let the vines alone at least for another year. Do your best to keep the house warmer through the months of July, August, and September, and if the Hambro's are not then ripe, you may safely conclude that something is wrong. By that time, you will also be able to tell whether it will be advisable to root out the Muscats or not. You will certainly not gain anything by substituting Lady Downe's for Muscats.—J. C. C.

—— If the Hambro's will not succeed in your house, you have no hope of obtaining good results with Lady Downes, and the advice given to substitute this latter for the Black Hambro's is quite wrong. The former is one of the easiest black Grapes to grow, the latter is one of the most difficult and requires special convenience and a complete knowledge of its peculiarities. Moreover, Lady Downes is a late ripening kind, much later than the Hambro', which, you say, does not come to maturity. If your house has any exposure but a north one, you can assuredly grow the Hambro' well in it. The best plan would be to do away with the Muscats, which require a long season of growth, and then, with a little fire heat in autumn, in cold seasons, the Hambro's would be sure to ripen. The Muscats may be inarched with Hambro's if so desired. The proper time for the work is in spring, just when the vines are well started into growth, as then there will be no danger of ill effects from "bleeding." The vines to be operated on must not be cut down, the operation consisting in paring away the bark and a portion of the wood from the stock and from the scion, and tying them firmly together so that the bark meets on one side at least. In the course of the summer they will become firmly united, the ties can be taken off, and the following year the old vine can be cut down.—J. C. B.

15564.—**Pears as cordons.**—A north-west wall is not a good aspect for Pears, and it is probable that some of the late sorts you name would not ripen their fruit in a satisfactory manner. The first four sorts which your list contains would be the most likely to succeed. The remaining kinds should be planted on the south wall. As you have 170 feet run of wall in the two aspects there is no reason why you should not grow all the sorts named in your list. In no case should you omit planting Beurré Superfin, Doyenné du Comice, and Josephine de Malines, as they are the very best in your list.—J. C. C.

The French Paradise Stock.—So many of our readers have expressed a desire to obtain the true Paradise Stock that we would advise those nurserymen who have it to make the fact known.

ROSES.

15559.—**Pruning pot Roses.**—Your plant, being only 14 inches high, does not want any pruning, as, when grown in pots, W. A. Richardson is not a strong-growing Rose. Our specimens of this Rose are in pots 12 inches in diameter, and this is the first year it has had any pruning, although we have had them in pots for the past five years. When tied out they are now 3 feet high, and as much through. Give your plant an annual shift into a larger pot until it gets into one 14 inches over, if you want to make a good specimen of it.—J. C. C.

—— If pruned at all it should be in the spring, but as W. A. Richardson is a Noisette it should be pruned as little as possible.—C. F. DAVIS, *The Grange, Leatherhead.*

15603.—**Diamond-shaped hoe.**—I have also tried to obtain this, but unsuccessfully, and do not think it is procurable in the ordinary way. The best plan would be to get an ironmonger or blacksmith to make one.—K. *Southend.*

15609.—**Boiler between greenhouse divisions.**—If the space between the division is well ventilated, and the glazing fairly air-tight, I should not hesitate to place the boiler there, if desired; but any fumes or smoke must be kept out of the greenhouse or evil will result.—K., *Southend.*

15558.—**A plague of caterpillars.**—There are doubtless different species of caterpillars which attack the crops in the garden. Pear trees, for instance, are infested by the slug-worm, a small, dark brown, slimy caterpillar, which has to be destroyed by throwing quick-lime on the leaves. This kills them wherever it touches. The Pear tree blister-moth deposits its eggs on the leaves in May and June, and the larvæ, which are speedily hatched, eat the soft part of the leaves, leaving the skin, and blisters are formed. Syringing the trees in May with a solution of soft soap keeps them off. All decayed leaves should be swept up as soon as they fall in the autumn, to destroy the chrysalides which are usually found on the leaves. Kidney Beans are not often attacked by caterpillars; red spider is the most troublesome pest. Probably the common butterfly caterpillar has attacked the leaves. The only way is to destroy the butterflies, and pick off the caterpillars by hand. The same may be said about Horse-radish and Rhubarb. These are the hardiest of all the occupants of the kitchen garden, and during the experience of a quarter of a century I never saw them materially injured by caterpillars.—J. D. E.

THE KITCHEN GARDEN.

EXHIBITION VEGETABLES.—PEAS

THE most important point to attend to in connection with growing Peas for exhibition is to select the most handsome varieties, for it must be remembered that appearance is everything, flavour being only of secondary consideration, as the longest and best-filled pods, even when the table quality is known to be inferior, will invariably take the highest honours, although there may be less handsome but better quality exhibits in competition against them. It is no part of my business, perhaps, to stop to question the correctness of such views on the part of those who award the prizes; but I may say that I do not agree with them, on the principle that table quality should count for more than appearance. But intending exhibitors cannot afford to ignore popular opinion as to what constitutes the best dish of Peas; so I advise them to choose the sorts that produce the most handsome, well-filled pods, and I think they will find it difficult to select any to surpass Telephone in these respects. This sort will grow 6 feet high in a strong soil, but 5 feet may be said to be its average height. Laxton's Supreme is a very excellent Pea, growing about 4 feet high; a still dwarfer-growing sort is Laxton's Fillbasket, which produces very long curved pods, that are densely packed with bright green Peas; height, 3 feet. Scarcely less important is it to know when to sow the seed. This can ouly be done with any degree of certainty by careful calculation of the time each sort requires to come to maturity, and in making this reckoning the season of the year must be allowed for, as, for instance, any sort of Pea sown on the 1st day of March will be from ten to fourteen days longer in coming into bearing than the same sort sown on the 1st of May. Then, again, the seasons vary sometimes sufficiently to throw out the most careful calculations, and to provide against this I advise all to make a second sowing a week after the first. In regard to the time that the crop must be allowed to mature, in the first place it will be necessary to know the date on which they will be wanted, and to base the calculations accordingly. Assuming that the greatest numberof shows are held in July and August the first calculation may be made from the 1st day of April, aud if the sorts which I have named are sown on that date they will be, in a general way, fourteen weeks before they are fit for exhibition; if they are not wanted until the middle of August twelve weeks will usually suffice to furnish well-filled pods; but it must be understood that soil and situation, as well as the character of the season, have something to do with the progress of the crops, which may somewhat interfere with the above calculations; yet it is the only satisfactory way of getting an approximate idea of the probable time it will take to secure a crop on a given date.

THE SOIL must be of the most substantial character, or the result will be anything but satisfactory. In the case of those who have an inferior staple to deal with, the only cheering prospect for them is that in the case of Peas it does not entail so much labour and expense to prepare the ground for a row or two of Peas as for some other crops which cover more root space. As Peas only require sowing in single lines a sufficient quantity of fresh soil can generally be had to increase the depth, if it should be wanted. In all but the strongest and deepest soils it is best to sow in shallow trenches; the trench should be marked out 15 inches wide, and then about 9 inches of the soil should be thrown out—a part on each side. If the next 6 inches of soil at the bottom of the trench is not of a pretty good character it should be wheeled away. If it should be pretty equal to the top spit it may remain, but a layer of rotten manure should be spread over it, and then the bottom of the trench may be forked up to mix the manure with the soil. A part of the top soil may then be put back, and another layer of manure spread over it and forked in lightly in the same way as the first layer was treated. As much of the remaining top soil should now be put back and laid along the sides as will leave a depression about 3 inches below the surface; the trench will then be ready to receive the seed. Well-rotted pig or cow manure is better for Peas than that from the stable, but when used judiciously there is no manure equal to that from a fowl-house for Peas. The most successful exhibitor of my acquaintance uses no other; he prepares his trenches in the way I have described, except that only one layer of the manure is used. The bottom of the trench is dug up deep, and on this the manure is spread—one peck of manure to every four yards' length of trench. It is then lightly forked in, and the top soil put back in the manner before described; he gets the most luxuriant growth on his Peas, and in the driest of summers mildew is rarely seen.

SOWING THE SEED.—Most people sow about three times the quantity of Peas that are required to furnish a crop. This is a general state of things. and when sowing for exhibition one-fourth of the quantity usually sown would suffice to furnish a good crop. The effect of thick sowing is that the ground gets so full of roots that all the sustenance it contains is very quickly drawn out of it, and then follows a total collapse of the crop. If anyone doubts this let him sow two rows of the same sort, one thick and the other thin, and watch the result. I am sure that he will be convinced that thin sowing is in every way advantageous. All the sorts of Peas I have named should be planted 2 inches apart. If mice are likely to be troublesome, plant the seeds an inch apart; and if they all grow, thin them out to the proper distance as soon as they get large enough to handle. The necessary supports must be given them as soon as they require it, and there is nothing better than the ordinary Pea sticks, but instead of the sticks meeting at the top, they should stand in the form of a letter V, and then the growth will have room to grow up between them, and the tendrils will have a better chance of getting hold of the sticks. As soon as the sticks are in their place a

MULCH OF HALF-ROTTEN MANURE should be laid along close to them. If manure is not to be had Cocoa-nut fibre or short Grass from the lawn will be better than nothing, as a mulch tends to confine the moisture and keep the roots cool. In regard to watering, it is very desirable that the roots should have all the moisture they require, but unless the cultivator is able to continue watering it is better not to begin; and little driblets that will only moisten the soil for an inch or two in depth will be worse than none at all. If sufficient water is given to soak the soil to a depth of 7 inches or 8 inches it will do some good, and liquid manure or sewage water should be used in preference. In very dry weather it will be necessary to water them twice a week. When practicable the Peas ought not to be picked until the morning of the show; and in making the selectiou of pods choose those of one uniform age and size. Place them neatly on the dish or plate, and make no attempt to catch the eye of the judges by placing a few of the best pods on the top. Experienced censors do not like such traps, and will be sure to resent them if there is a chance of doing so. J. C. C.

FORCING SEAKALE

A CONSTANT supply of forced Seakale may, if a sufficiently large number of plants be grown, be obtained from early in December until late in the spring. The crop may be grown from seed sown in the spring, or roots may be selected from plants lifted in the autumn to prepare for forcing, which may be easily accomplished in any warm structure kept dark for blanching purposes. Seeds of Seakale may be sown in March or early in April in drills 9 inches apart, or broadcast upon beds 4 feet wide, covering them with fine soil. When large enough the young plants should be thinned out to several inches apart to afford ample room for growth. The following spring they will be large enough to transplant into a piece of ground deeply trenched, and dressed with rotten farmyard manure. Some time in March lift the plants carefully with a fork and plant them in rows 12 inches asunder and 9 inches from plant to plant—that is, when grown for lifting in autumn for forcing. But if to be planted to make stools for forcing in the open air—which may be done by covering them with hot manure and leaves—plant the rows 3 feet apart and 2½ feet clump from clump; this will give plenty of room to cover the plants with heating material. Three or four plants may be planted in each clump, allowing 3 inches or 4 inches between each plant. Take care that the plants are 3 inches clear of the rims of the Seakale pots when placed over them when ready for forcing. Where the plants are grown from roots or thongs, when lifted in autumn for forcing, the strongest should be selected, but, where the stock of roots is scarce, thongs may be used about the thickness of a quill pen, when they will be strong enough to force the following spring. Cut the roots 9 inches in length, leaving the top or thick end level, and the thin end slanting about half an inch, when it will emit a number of fibres. Tie the roots thus prepared in bundles, and lay them in some fine sandy soil, covering them 2 inches in thickness. Ground intended for Seakale should be deeply trenched during autumn, and enriched by several inches in thickness of rotten manure. If ridged as the trenching proceeds, the ridges must be levelled down in spring before planting.

THE EARLY PART OF APRIL is a good time to plant the roots or thongs; they will then have formed crowns, aud be pushing out young fibres. Rake the ground level after levelling down the ridges, tread it firmly, and plant the sets in rows 12 inches asunder and 9 inches plant from plant. The ground will require to be frequently hoed between the plants during summer to remove weeds and to keep the surface open. Liquid manure will be found of great benefit to the plants during summer, and, if at hand, a dressing of artificial manure may be given, for by feeding well during the growing season fine strong roots will be obtained. As soon as frost kills the leaves in autumn the plants intended to be lifted for forcing should be taken up and laid in some light soil. Open a trench at one end of the plantation and lift the plants, with as many roots attached to them as possible. After taking off the thongs for next year's crop, lay the roots in some light dry soil, covering their crowns over with some dry litter to keep frost from them. Thus a few roots may be had during winter for forcing when required. From 55 degs. to 60 degs. will be heat enough, and the roots may be planted in large flower-pots or boxes. If in pots, invert another the same size over the one in which the roots are planted. Thus circumstanced and placed in the temperature just named, fine, crisp, well-blanched Kale will be produced. If required soon after being put in warmth, place a few barrowloads of hot manure in the house, and on that set the pots. The warmth induces quick growth and superior heads. If in boxes, they should be deep enough for the roots to stand upright, and there should be depth for the Kale to grow to its full length before it reaches the lid of the box. If more convenient, the roots may be planted in light soil in the Mushroom house, covering them over with some light material to keep the crowns in darkness. Fine crops may also be grown upon

ORDINARY HOTBEDS covered with frames and wooden sashes; if glass sashes are used, they must be covered with straw and double mats to exclude light and keep the temperature of the frames equable—about 60 degs. The roots may be planted iu light soil or in pots placed upon the heated material, which should be covered with sifted ashes or some light material to keep down the rank steam. Where Kale is required in large quantities a Cucumber or Melon house with bottom heat at command will be found to be one of the best structures in which to produce it. Put a few inches of soil over the slates or boards forming the bottom over the pipes or hot water tank; in this set the roots upright several inches apart, running some soil in between them, and water well; as soon as the crowns show signs of growth, give another soaking, and cover the crowns to the depth of 9 inches or a foot with dry, sifted leaf-mould or Cocoa-nut fibre; thus treated, in a very short time the tips of the leaves will appear above the covering, when the Kale will be fit for use. When forced in the open air Seakale pots or boxes having wooden covers must be placed over the clumps of plauts, and the pots or boxes must be covered with fermenting material, consisting of hot stable manure and leaves well mixed together. Care must be taken that the manure does not overheat, or the crowns will get scorched and the crop will be lost for the season. When planted in rows, if a covering of ashes or light, loose soil is placed over the crowns from 9 inches to a foot in depth just before the crowns start into growth in spring, the heads of Kale will grow up through

the covering, and when uncovered the result is often a very superior crop, which being late is very acceptable, especially if, after a severe winter, other crops are scarce. W. C. H.

TRENCHING AND DIGGING.

TRENCHING is a most important operation, and ought to be done well and wisely. A man with a strong arm can cast out a trench well, but it requires both judgment and experience to decide how much, or if any, of the subsoil should be placed upon the top. Subsoils vary so much that no certain rule or correct guide can be laid down upon this point. But there is one operation that is applicable to every variety of subsoils (which, neglected, no trenching can be said to be efficiently carried out)—that is, loosening and breaking up the bottom of the trench by spade or mattock, as the case may be. The more thoroughly that is done, the greater will be the ultimate benefit resulting therefrom. Another very important point to be considered is the proper season in which to trench. No doubt autumn is the best time for such work, and the earlier in the autumn it is done the better, before the surface-soil parts with its heat. The next consideration of importance is the

APPLICATION OF MANURE during the operation of trenching. Many people never trench in manure, whilst on the other hand some think it best. If manure be deeply buried in the trench, it is well to use it in a green state, thus giving the ground the full benefit. If trenching be done in the autumn the manure will by the following summer be decomposed; and, should the weather be dry, deep-rooting plants will soon go in search of it and be greatly benefited thereby. There are, however, people who prefer putting the manure near the surface, with a view to benefit the soil underneath by the washings of the manure by rains. This question must be settled individually, according to opinion or circumstances. The proper depth to trench must depend upon the natural depth and character of the soil, and also the depth that has been gone to in previous trenchings. If the subsoil be bad, no portion of it should be brought to the surface, but a few inches of it may with advantage be stirred and left there for a time, and the essence of the manure washed down by rains becomes mixed with and gradually improves it by the time the land again requires trenching. In two or three years those few inches of bottom soil can be brought to the top, and a little more of the bottom loosened up and left as before. Where the subsoil is ordinary clay, a couple of inches at this and every subsequent time the land is trenched may with advantage be brought to the top; but, where this is done, the work should be carried out in the autumn or early winter, so as to allow of the clay getting mellow, and in a fit state to be forked in previous to the time of cropping.

IN DIGGING OR TRENCHING IN AUTUMN AND WINTER, the ground can be scarcely thrown up too roughly. As large a surface as possible should be exposed to the action of the atmosphere; no time should be wasted in attempting to chop and cut it to pieces, as the weather will do that better than any workman can, however careful he may be. The great point is to work the soil up deeply and roughly, and then in frosty weather, if possible, to take a pick and loosen up the frozen crust and let in the air still deeper. On no account should snow be turned into the ground, nor frozen soil be deeply buried; as, when thus turned down, it is a long time before it thaws, and consequently remains wet and sodden.

AS SPRING COMES ROUND we can no longer count upon frost as an ameliorator of the soil; therefore, in all digging which it may be necessary then to do, the soil must be thoroughly broken up with the spade, especially where land is constantly under crops. In some soils, too, dug deeply after February, there is often a difficulty in securing the necessary firmness. If too much air be let into soils that are naturally porous, plants may suffer from drought, even though the season may not be dry. In short, though digging is a simple operation, yet very much depends upon its being done at a right time as well as in a right manner, and the right time depends in a great measure upon the character of the soil and subsoil, and upon the nature of the succeeding crop. In digging, a deep and wide opening is necessary, so that the newly-turned earth and dung thrown well up against the opposite ridge may mix together in rolling down the face of the trench. In heavy soils a steel fork will be found an excellent cultivator. Indeed, it has entirely superseded the spade for spring "pointing;" it pulverises and disintegrates heavy moist soils in a more efficient manner than can be effected by any other garden tool; and as agriculturists have made such rapid strides in machinery for cultivating the soil, there is no reason that horticulturists should not invent something to ease manual labour and work the ground more perfectly. C. W. S.

OUR READERS' ILLUSTRATIONS: A Cottage Garden (from photograph sent by Mr. A. Watkins).

15557.—**Duke of Albany Pea.**—This is a fairly useful Pea for exhibition; but Telephone is a better one, as it is much more handsome and altogether a more reliable sort for your purpose.—J. C. C.

—— This Pea would suit admirably for the purpose, as would also President Garfield.—T. W. R.

OUR READERS' ILLUSTRATIONS.

A COTTAGE GARDEN.

IN strong contrast with some of the preceding "Readers' Illustrations," comes this pretty picture of a cottage garden, one of an old-fashioned kind, and such as may be found in some parts of the country. Such a place as this, though the variety of flowers is not great, is far more pleasing than many more pretentious gardens, and there is a charm in the irregular crowded border which may be sought in vain in the prim parterre. These cottage gardens, with their wealth of bloom and foliage, form one of the chief attractions of a country walk, and no good gardener is above taking the useful hints which may be conveyed to him from even such an unpretending plot of ground as this. Mr. Alfred Watkins, of Wilcroft, near Hereford, who sent us the photo (taken by himself) from which the engraving was made, forwards the following note concerning it: "The cottage garden of my picture is not one of the neat and trim kind; it adjoins a narrow lane, and can only be looked at over the pales of the garden gate. The narrow, pebbled path is quite hedged in with old-fashioned flowers; which elbow each other for very existence and encroach on the walking way. It is evidently a case of the 'survival of the fittest,' for an old man and his wife live here and no new-fangled flowers are to be seen. The Horse Chesnut tree in bloom over the chimney fixes the time of year, a Woodbine of ancient growth gives shade at the door, and, unless often cropped, creeps up to tap at the window in the thatch. Down below, a Guelder Rose bush, and Rose tree, Peony, Iris, and Pink, with many others, find room to bloom and flourish."

Anthracite coal.—If "W. C. C." (p. 637), will make a trial of this coal and use his own judgment in the matter, instead of trusting to adverse hearsay, I believe he will not only not regret it, but be agreeably surprised at the result. Its delightful smokelessness and general cleanliness in burning make it just the fuel for an amateur who does not want to be troubled with frequent flue-sweeping, ash-removing, &c., and at the same time desires a minimum of smoke and smuts about the garden. It is true that it developes a powerful heat under a strong draught, but this is never required in horticultural heating, and can always be reduced by the dampers. As to its damaging the boilers, I used it for three winters in a Loughborough boiler, and also in an upright tubular, with great satisfaction to myself and without any signs of deterioration in the metal.—J. K., *Southend*.

15519.—**Upright tubular boilers.**—These are the most powerful boilers made, and where there is a large amount of piping to be heated they are economical. For warming small houses I should not recommend them, as, owing to the small space between the furnace bars and the top of the boiler, a great amount of heat passes away before it can act properly on the tubes. To heat from 100 feet to 500 feet of piping I do not think any kind of boiler is so good as a saddle, and any rubbish can be burnt in it, which is not the case with upright tubular boilers, which require coke. There are several kinds of saddle boilers, but the ordinary form will do very well for a small house.—J. C. B.

15556.—**Turnip for exhibition.**—The Petrowksi Early will be found excellent for exhibition.—T. W. R.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15649.—**Culture of Nephrolepis exaltata.**—Can anyone give me a few directions about the culture of the Fern Nephrolepis exaltata?—C. H. B., *Birmingham.*

15650.—**Bouvardias after flowering.**—I should be much obliged for hints as to treatment of Bouvardias after flowering.—PUZZLED.

15651.—**Heaths after flowering.**—A few hints on the treatment of indoor Heaths after flowering will oblige —ERICA, *Carlow.*

15652.—**Fruit trees for Nebraska.**—Would anyone kindly give a list of fruit trees that would bear the climate of Nebraska, or say if there be any book to be got giving all particulars about farming in that country?—J. C.

15653.—**Failure of Chrysanthemums in Scotland.**—Will any of the Scotch readers give their opinion as to what was the cause of the Chrysanthemums being a failure in different parts of Scotland this season, and especially the district around Glasgow?—M. F.

15654.—**Apples on the French Paradise.**—Will any fruit growers kindly tell me what Apples would do best on the Paradise in this district? Soil, a light loam, with gravelly bottom; sixteen miles south-west of Glasgow. —R. C. L.

15655.—**Grafting on Crab stocks.**—There is in the neighbourhood where I am living a quantity of fine young Crab trees that I could procure. Would any of the readers of GARDENING advise me as to the best method of grafting them, and also the best treatment they would require to become fruitful Apple trees?—AMATEUR, *Llandrindod.*

15656.—**Hoya carnosa not flowering.**—I have a Hoya carnosa planted out in rich compost in greenhouse (temperature from 45 degs. to 55 degs. in winter). The plant looks very healthy, and makes good growth, but never blooms. It covers a trellis about 4 feet square. Does it require more heat, or what can I do to make it bloom?—W. J. *** *An article on page 607, Dec. 26th, will help "W. J.," whose question will, no doubt, also be dealt with by readers.*—ED.

15657.—**What are the best labels?**—For some years past I have been in the habit of transcribing the names of my Roses by means of zinc labels attached to the trees with copper wire. To-day I have examined at least one hundred so labelled, and find that in nearly every instance the branch to which the label is affixed is either dead or dying. I presume the oxidisation of the wire causes this. I have found that painted wooden labels, if placed in the ground, decay in a few years. What permanent label can I affix to the trees, and how?—J. MILTON-GARBOLTON.

15658.—**Potatoes for heavy soil.**—Will any readers be kind enough to advise me what are the best varieties of Potatoes to grow in my garden? It is a good strong loam, rather stiff, and shallow in places, on a bed of yellow clay. I had intended trying the White Elephant and Schoolmaster this year, as I find the Magnums are only indifferent; but am deterred by the remarks of "L. C. K., Newport, I.W.," in your issue of Dec. 5th. Perhaps he will be good enough to advise me as to what will be the best sorts for the table?—ERA, *Gloucester.*

15659.—**Chrysanthemums not flowering.**—Will any reader kindly tell me why my Chrysanthemums have not flowered? Last February I bought some rooted cuttings of the best varieties; they remained out-of-doors all summer, were placed in their flowering pots in July, watered regularly with liquid manure, and in September were taken into a cool greenhouse. The plants look very healthy, but none have flowered; two showed buds, but they withered and came to nothing. I am anxious to know what to do with them. They seem to be making a great deal of wood. Should I cut them down, or wait to see if they will flower later on?—L. M. B., *Perth.*

15660.—**Quince tree.**—Will you kindly tell me how and when to prune my Quince tree, and how it is that the fruit falls off soon after the bloom is done? When I first came here it was merely a bush; but I cut away below, and it is now about 9 feet high. On the west is a wall about 18 inches from the base; the wall is about 8 feet high. On the other side of wall are large shrubs, Elders, Ivy, &c. On the north is a drain about 18 inches from tree, and to the south, about a foot away, commences a small cement pond; on the east, 14 inches away, is an ordinary footpath. The first year I cut the lower branches away it had three Quinces, which remained until they were nearly as large as pickling Walnuts, and then dropped off. It always blooms well.—THOMAS H. BUSH.

*** *Quinces, as a rule, do not need much pruning; they merely require the branches to be kept open. The falling off of the fruit before it comes to maturity is probably due to some defect at the root.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15661.—**Exposed bulbs of Lilium candidum** (*J. B.*).—Cover them with good soil such as the bulbs are growing in.

15662.—**Fancy Pansies** (*Golden Oriel*).—You will find a list from which you can make a selection on pages 581-2 in the number that you refer to.

15663.—**Book for market gardener** (*Enquirer*).—Shaw's "Market Garden" (Crosby Lockwood and Co.).

15664.—**Book on vine culture** (*J. A. H.*).—Simpson's book on "The Vine" will probably meet your wants. It is published by Routledge and Sons.

15665.—**Book on grafting** (*Saxon*).—Balfet's "Art of Grafting" (Lockwood and Co.) is the best book that you can obtain on the subject.

15666.—**Dying Marechal Niel Rose** (*H. E. P.*).—We think your Marechal Niel Rose is dying, and it is not uncommon for this Rose to die off without any apparent cause.

15667.—**Sowing Holly berries** (*J. Weaver*).—You can either sow them now or put them in a heap for a year, as they will not begin to germinate until twelve months after they are covered. Sow them evenly in lines.

15668.—**Planting Marechal Niel Rose** (*B. E. R., Monmouthshire*).—Plant the Rose outside on the south border in good rich soil; during winter protect the border with litter, and particularly protect the portion of the stem that is outside.

15669.—**Bignonia radicans** (*W. J.*).—We have experienced no difficulty in growing this climber in the neighbourhood of London, planting it against and training it to a warm wall. A southern or western aspect suits it well.

15670.—**Mushroom growing** (*Fungi*).—Mushrooms are uncertain things, and sometimes fail to grow under the best conditions. You should not despair of the bed, though it seems as if there would be no crop; and it would be well to spawn another as soon as possible.

15671.—**Gloire de Dijon Rose starting into growth** (*W. O.*).—Your Rose has not started too early. As long as it does not receive any check, and you do not keep it too warm, and see that the house is properly ventilated, you need fear nothing.

15672.—**Vines in the open air.**—If against or near a wall by all means train the vines to it. If not, they will, of course, derive more heat if you bring them nearer the ground; but in that case we doubt that you will be successful unless you have some kind of glass structure above them.

15673.—**Treatment of Lilies** (*J. M.*).—No; do not keep them quite dry; let them be moist, but not waterlogged. Remember that, although no growth shows above ground, Lilium bulbs, like many others, are forming roots and preparing for the nourishment of the up-growing stems.

15674.—**The French Paradise stock** (*R. C. L.*). —We advise you to apply to some of the Glasgow nurseries, and insist on getting the true stock. If your soil is very dry, however, we don't think the Paradise well suited for it. You will see that we have printed your question.—(*F. W. C., Luton.*)—Apply to some good fruit nursery in your neighbourhood.

15675.—**Artificial manures for potting purposes** (*E. M. Poppleton*).—Yes; the artificial manures that you mention, and all concentrated manures, are better adapted for the purpose of potting than is farmyard manure. The amount would vary in different cases; but for a measure holding 2 gallons as much as you could hold in the two hands would be enough.

15676.—**Destroying life in tree stumps** (*H. B.*). —We have had no experience of the use of carbolic acid for the purpose of destroying life in tree stumps; but you can bore auger holes, put in petroleum and saltpetre, cover the stem, and leave it for a time, so that the wood may be quite soaked with them; then you can set fire to the stump, and it will smoulder away.

15677.—**Sowing seeds of Begonias** (*Hater of Towns*).—A very favourable time for sowing Begonias, like many other warmhouse plants, would be the coming months, February or March; but, as you want them for window decoration, we should be inclined to say—"Choose healthy little plants, because the bringing up of seedlings require more attention and better appliances than are necessary for growing plants in windows."

15678.—**Keeping frost out of small greenhouse** (*G. F. B.*).—You do not appear to have read "J. B. S.'s" note (p. 619) carefully. The advantage is claimed, not for the stove, but for the system of overhead protection. There are many small stoves such as he refers to which you could obtain from any hardware merchant. Paraffin may be used, but cleanliness is absolutely necessary.

15679.—**Pruning Gooseberry and Currant trees** (*R. J. W.*).—If they are large and too thick you should prune them; do the work at any time before the buds begin to break. The aim should be to keep the bushes open, to encourage the young fruit-bearing branches, and to do away gradually with the older ones. Both Gooseberry and Currant bushes require to be kept open, so as to allow light and air among the branches.

15680.—**Rhododendrons on chalky soil** (*C. A. H., Norfolk*).—We doubt whether you will succeed in growing Rhododendrons in any soil that contains a particle of chalk. You can grow them in loamy soil; but where chalk is in the formation we do not think you are likely to get a natural soil in which it does not form a part. Of course, you can specially prepare a Rhododendron bed by concreting the bottom to keep away the chalk and bringing in peaty soil; but that would be an expensive operation.

15681.—**Inside and outside borders for Grapes** (*E. Jones*).—We have seen excellent Grapes produced from vines that were planted entirely inside the house; but the best results and the surest are obtained where the borders run outside and inside through arches in the front wall. This is the plan now generally adopted, and it is found to answer best; but should circumstances not permit you to make an outside border, you may fairly reckon on success if you have a properly-made inside border of sufficient size.

15682.—**Saving old Elm trees** (*Abinger*).—The state and prospects of the tree can be judged only by one who sees it. After Elms have reached a certain age their existence is very precarious, and they may come down at any moment. The Moss is caused by the unhealthy condition of the tree, and you should kill it by dressing the trunk with a mixture of quicklime and sulphur, and renovate the top soil as much as possible by dressing with good soil mixed with manure. Probably it would be beneficial to lop the tree, and it would certainly be safer, for if the trunk is in a bad condition, as we suppose it is, it may come down at any moment during a high wind if it has a heavy top.

15683.—**Polyanthus Narcissi** (*Harrovian*).—Your Polyanthus Narcissi should have been put in long ago; but you had better plant the bulbs now, as you have neglected to do so hitherto. Grand Soleil d'Or has the perianth rich yellow, cup deep orange; Staten General, perianth white, cup yellow. The proper time for planting is the end of October or beginning of November. Polyanthus Narcissi do best in our extreme southern counties, and elsewhere should have warm, sandy loam and sheltered spots under south walls, or among shrubs in sunny places. There is a note on, and an illustration of, a bunch of Polyanthus Narcissus in the number for August 15th.

15684.—**Gardening and variation in climate** (*R. J. W.*).—Of course garden operations are in colder districts slightly behind, in point of time, those of mild localities; but certainly the difference between the south of England and the north-western part of Yorkshire is not nearly so great as you have been informed—only between the northern parts of Scotland and our southern districts would there be such a difference as three weeks. No fixed rule can be given, and each gardener must exercise some amount of judgment as to time of sowing, &c., making it earlier or later according as the climate of his district is genial or cold. The articles in GARDENING are written for the country generally; but they must be read intelligently, and the instructions that they contain followed only after due consideration has been given to the circumstances of each particular locality.

TO CORRESPONDENTS.

Wellington.—Your question is an almost exact copy of one that appeared on Dec. 26th, and has already been dealt with. See No. 15512.——*J. Thomas.*—We cannot give you the address.——*R. O. C. K.*—Try Scott, Merriott Nurseries, Crewkerne.——*E. Ellis.*—We do not know the variety; your best plan would be to ask your seedsman to get it for you.——*J. Davidson.*—We will publish an article on the subject soon.——*S. R.*—Your note was written on both sides of the paper, and, therefore, could not be used.——*A Subscriber.*—Thanks for hint.——*Mrs. Burdon.*—We hope to publish a note on the subject shortly.——*J. J.*—1, Next week; 2, We have heard the boiler you mention spoken very highly of.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*W. B.*—Maxillaria venusta.——*Ferndale.*—1, Nephrolepis Duffi; 2, Goniophlebium subauriculatum; 3, Phyllotænium Lindenii; 4, Looks like a variegated Agapanthus; send us a plant.——*J. M.*—It looks like a Veronica; but we cannot possibly name with certainty from the leaf that you send.——*G. A. B.*—The two-dead Tritomas are not recognisable; you must send better specimens.——*W. N. Cheesman.*—1, Platyloma rotundifolia; 2, Pellæa hastata.——*H. T. J.*—We cannot name the leaves; send good specimens when in flower. ——*Mrs. Astell.*—Can you send us flowers and leaves of both for the purpose of comparing them?——*J. Milton-Tarbotton.*—We have no doubt from your description that a bulb of Ornithogalum nutans (Drooping Star of Bethlehem) got in among your Chionodoxa Luciliæ. It is perfectly hardy, and you will lose it if you coddle it too much. This Ornithogalum is by no means a rarity; but if you wish to be certain as to the identity of your plant send us a flower when it blooms.——*G. W.*—1, Onychium japonicum; 2, Polypodium Billiarderi.——*Uxbridge.*—Evidently Lastrea Filix-mas grandiceps, which may be procured from any of the leading London nurserymen.——*Ignoramus.*—When you send several specimens to be named please attach numbers to each of them. The four which you send us are:—Ferns: Adiantum formosum, Polystichum angulare proliferum, Cystopteris fragilis; the grassy plant is Cyperus alternifolius.——*D. Donnybrooke.*—1, Solanum capsicastrum; 2, Pteris serrulata; others too small to name.

F. S. L.—Royal Somerset.——*S. C. O.*—Hacon's Incomparable.

UNANSWERED QUERIES.

15422.—**Hemp v. caterpillars.**—I have read on page 560 a suggestion on this subject. Will any reader kindly let me know at what time I should sow the Hemp seed that it may be advanced enough to disgust the butterfly, for the protection of the Cabbage crop?—R. K. *Dublin.*

15467.—**Chrysanthemums.**—Mr. Weaver, in speaking of "specimen Chrysanthemums" trained round sticks to hide the long bare stems does not say if they should be stopped after commencing to train or allowed to grow to a single stem. Will he kindly tell me?—L. C. S.

THE MOUSE-EAR CHICKWEEDS.

THE Cerastiums, or Mouse-ear Chickweeds, comprise a large number of plants, proportionately few of which, however, are useful for the garden. One of the best known is C. tomentosum (Snow in summer), of which an engraving is here given. It is now used in almost every garden for forming compact silvery edgings to flower beds and borders. Its hardiness, power

Snow in summer (Cerastium tomentosum).

of bearing clipping and mutilation, and the great facility of propagation, make it worthy of all the attention that it receives. It is also very useful as a border plant, and for rootwork, and rough rockwork; but it is too common to be permitted a place on small or choice rockwork that might be devoted to some of the many rarely-seen and beautiful alpine plants. The flowers are produced freely in early summer. C. alpinum is an interesting British plant, seldom more than a couple of inches high, with leaves clothed with a dewy-looking silky down, which gives it a singularly shaggy appearance. It is a pretty and distinct-looking object on those parts of rockwork that come near the eye. C. Biebersteini is a very silvery species closely allied to the common kind, and is suitable for borders or rough rockwork. C. grandiflorum, the only other kind worth mentioning, is a fine plant for the front margin of a mixed border or for the rougher parts of rockwork. R.

GARDEN STOCKS.

THE varieties of Stocks as presented to us in any important seed list are so numerous, that only a very intimate knowledge of each one would enable a grower to give a clear opinion of their merits, but, happily, though the family be large, its members show no very great diversity of habit; indeed, with some the divergencies consist in colour of flowers only, in others of colour and leaf, and in other respects there is much duplication, with only infinitesimal variations. The large-flowered dwarf Ten-week Stock is represented by twenty-four varieties in colours; the Giant Perfection and the large-flowered Wall-leaved Ten-week each have eight varieties; another Wall-leaved form has twelve varieties, and so on endlessly, though it will be found, if all be grown side by side, that the divergencies are singularly trifling. The German seedsmen have a plan of defining that is doubtless useful in trade, and profitable. We in this country cling with exceeding love to our famous old

BROMPTON STOCK, the grandest of all the family. This kind, when seen in perfection, is a giant amongst the pigmies of the summer strains, and forms one of the noblest floral ornaments to be found in gardens. For the past few years mild winters have dealt tenderly with this grand old Stock, and it has somewhat recovered from the hard blows received when really hard winters prevailed. It is safest, however, to entrust this Stock to some sheltered spot where it may, should severe weather set in, receive some needful protection. Market growers find it thrive well if planted beneath overhanging trees, where the force of the frost and of keen winds is broken. May is the best month to sow seed, and the young plants should be ready to put out in July, so that they may have ample time to get strong before winter checks growth. Really good garden soil suits better than one heavily manured, because it is desirable to produce solid, hard stems, for these not only withstand frost better, but also produce the finest spikes of bloom. These may often be seen ranging from 12 inches to 14 inches in length, the individual blooms being large and double, and rich in colour. As a rule, Brompton Stocks produce from 40 to 50 per cent. of doubles, and saving seed requires considerable care and observation, because the selected pods should be from those single flowers which show an abnormal number of petals. The other best known form of Brompton Stock is the giant white, easily distinguished from the scarlet kind by the narrowness of its leaves. Even in a single form this is a grand Stock, but spikes of double flowers are superb, and present striking companions to double scarlet Bromptons. The German growers profess to offer a dozen varieties of the Brompton, but it is very doubtful whether they have the true English form at all.

A VERY USEFUL and hardy branch of the Stock family is found in the white, scarlet, and purple Queens, which rank amongst our oldest and, perhaps, most widely grown of biennial varieties. These may be seen growing in market gardens in huge breadths, and, curiously enough, some growers favour one colour, some another, and all care as much for the singles as for the doubles, because the former bunch equally well. Any good strain of these Queens will give from 70 to 80 per cent. of doubles naturally, and in this respect, without any merits of culture and little of selection, they rival the German pot-grown strains. The Queens are all very dwarf, bushy, and, when blooming, branching. They furnish good cutting material, and bloom well in May. Sometimes old plants may be preserved for two or three years, but nothing is gained by keeping the plants so long. Seeds should be sown in the month of May in the open ground, and the plants be got out during the summer. There are some very fine double kinds found under the designation of Cape Winter Stocks. These seem to be intermediate between the Brompton and the Queen, but have a bushy, branching habit of growth. In young plants before blooming the leafage is broad like that of the scarlet Brompton, and the plants are about as tender. These again furnish capital bloom for cutting, and, in common with other kinds, are richly perfumed. The white Cape is a grand Stock, and merits cultivation in all gardens. East Lothian Stocks seem as though they were the produce of a cross between the well-known race of Intermediates and the Queens. Sown in the autumn and grown in pots for house decoration, they are none too robust, though producing flowers of the most beautiful kind and very double; but, sown in the spring and planted out in good ground for autumn, they grow very strong, and resemble some biennial varieties. East Lothian Stocks are so well known as to need little further reference, for gardeners have not been slow to utilise such beautiful members of a beautiful family of flowers. Intermediate Stocks are grown very largely in private gardens, but probably nowhere in such enormous quantities as around London, where the strain is of the very best. The white and scarlet forms are in most favour, and myriads of plants are utilised for furnishing purposes. It is the popular

TEN-WEEK AND PYRAMIDAL FORMS which prove so valuable to us for garden decoration in the summer months. Variety in these seems to be endless, and their usefulness and beauty are remarkable. For bedding and massing the pyramidal kinds seem to be best, while the branching Ten-week gives capital material for cutting. It is an admirable feature of the giant Ten-week that if carefully cut it will break again below, and later on produce other blooms. Summer Stocks may well be sown at all times under glass, because the spring season is often treacherous and seed may suffer. To ensure a long season, it is well to sow both in April and May, and thus promote a long succession of bloom. Beginning with Intermediates turned out of pots in April, it is easy to have Stocks in the garden for six months or even longer, for the Queens and Giant Bromptons continue the supply through May and June, then come the pyramidal and Ten-week forms, and the spring-sown Lothians will continue to blossom right up to November or later—indeed, sometimes till Christmas. We can hardly wish for a longer season than that. D.

Agapanthus umbellatus, although not sufficiently hardy to withstand a severe winter in the open without some protection, is such a grand subject for the mixed border, that it is well worthy of the little extra attention necessary to keep frost from it. I have never known the severest winter to kill it outright, but 12 degs. or 14 degs. of frost are sufficient to injure the leaves, and the plants will not flower the following summer; all the protection, however, that is wanted is to keep the leaves from harm. I have kept them through a rather hard winter by lifting the plants in the autumn, and planting them close to the foot of a south wall, and in severe weather putting an old glass light over them, and on the glass a thick layer of litter. In the spring they were put back in their old place in the border. Plants so treated will flower in the most satisfactory manner. Having plenty of room in a cool Peach house, I lift the plants in autumn and drop them into large pots and stand them on the floor of the house until all danger from hard frost is over. When it is desirable to increase the number of plants one of the oldest stools should be divided in spring, and the pieces obtained should be planted out in a rich piece of ground in the open; whether in pots or planted out, the large heads of blue flowers of this plant, standing well up as they do on erect stout stems 3 feet or more in height, never fail to arrest attention.—TAUNTON.

The Sweet Woodruff.—This little wood plant (Asperula odorata), abundant in some parts of Britain, is worthy of some attention in the garden and shrubbery, especially in localities where it does not occur wild. Many would like to cut and preserve its stems and leaves for the sake of the fragrant hay-like odour which they give off when dried; and in May the pure white small flowers, profusely dotted over the tufts of whorled leaves, look very pretty. It may be seen covering the ground with its carpet of green, frosted over with white, in some of the College Gardens at Oxford, and it is one of the many plants that may be allowed to cover the earth in a shrubbery where the barbarous practice of annually digging and rooting up the borders is not resorted to. It is sometimes used as an

The Sweet Woodruff (Asperula odorata).

edging to the beds in cottage gardens, the odour filling the air. It is, however, as a wood or shrubbery plant—as a companion to the Wood Hyacinth and the Wood Anemone—that it will be most at home.—M.

Catalogues received.—*Garden Seeds, &c.* Peter Lawson and Son, Limited, 1, George IV. Bridge, Edinburgh.——*Vegetable, Flower, and Agricultural Seeds.* Wm. Paul and Son, Waltham-cross.——*Spring Catalogue.* Benjamin Soddy, 243, Walworth-road, S.E.——*Amateurs' Gardening Guide and Spring Catalogue.* Stuart and Mein, Kelso, Scotland.——*Flower, Vegetable, and Farm Seeds, &c.* Wm. Cutbush and Son, Highgate, London.——*Bulbs and Plants for all Seasons.* Barr and Son, 12, King-street, Covent-garden.——*Seed Catalogue.* W. B. Smale, 30 and 31, Fleet-street, Torquay.

THE COMING WEEK'S WORK.

GLASSHOUSES.

POINSETTIAS.—Where these plants are managed so as to give a succession of bloom, their showy heads of red bracts may be had in good condition for three or four months; but to secure this it is necessary that in addition to a warm stove there should be a house or pit that is kept at a temperature intermediate between that of the stove and an ordinary greenhouse, say at about 55 degs. in the night. For if during the time that the later portion of the stock is being kept back the plants are subjected to much less warmth than this, it is more than likely that they will be so far injured that they will be of little use. When retarded in this way the floral bracts do not attain nearly so large a size as when the plants are encouraged to come on in a higher temperature in the latter months of the year; but, in many cases, the smaller heads will be found more useful than those that attain a large size, especially when the highly coloured leaves are to be used in bouquets, for which purpose they are adapted when the heads are divided into four or five pieces. In this way, when intermixed with light-coloured flowers, they are very effective, and also last well. Plants of these Poinsettias that have done flowering should have water withheld from the roots, letting the soil get quite dry, after which they will bear a lower temperature; but, after blooming, they should not be removed to cool quarters whilst the soil is wet, as in that case the roots are almost sure to perish; in this way Poinsettias are often killed.

EUPHORBIA JACQUINIÆFLORA.—This beautiful winter bloomer is nearly allied to the last named plant, and, like it, enjoys a brisk heat both in the growing season and also during the time its flowers are developing. In the absence of this, the full amount of bloom which it is capable of producing is not forthcoming, for when the plants are strong, and subjected to as much warmth as they require, after the first sprays borne at the extremities of the roots are over they will break out fresh growth lower down the stems, which will flower when 6 inches or 8 inches long. In this way, where the stock is strong and well managed, a succession of flowers may be had for three months. There are few more beautiful and useful winter-blooming plants than this, and none that amateurs possessing a stove would find more deserving of cultivation. Yet it is much more rarely met with than many things that are not nearly so well deserving of a place. Among high coloured flowers it has few equals for cutting; its elegant sprays of blossom contrast favourably with flowers of massive form, such as Camellias, Gardenias, and others of like character. The chief cause of failure with this Euphorbia is the mistake of treating it in the way that many heat-requiring plants succeed under. It is a spare rooter, and cannot bear much pot room unless in skilful hands; and under any circumstances much root space is unnecessary. After blooming it should have no more water, until it has made some growth, than will prevent the soil getting quite dry.

EUPHORBIA SPLENDENS.—This old-fashioned plant differs much in appearance from the preceding, both in its habit of growth and in the character of the flowers, which are produced in pairs on stalks about 3 inches long, and are most effective for button-holes, or arranged in small vases. They are very enduring, often lasting in water for eight or ten days, and the plant, when fairly managed, keeps on blooming all the year round. Ordinary stove heat answers for it, and if there happens to be an end wall that plenty of light can reach not only does this Euphorbia afford a suitable covering, but such a position meets the requirements of the plant. It strikes freely from cuttings made of the points of the shoots taken off about four or five inches long; if put in now singly in small pots filled with a mixture of sand and loam, kept warm, with the soil moderately but not too moist, they will strike in a few weeks, and have a long season wherein to make growth. The cuttings, being succulent, do not require to be confined under propagating glasses.

PLUMBAGO ROSEA.—Plants of this useful winter bloomer that are to be grown on another year should, as soon as they have done flowering, have the soil allowed to become partially dry, and then be kept in a state of comparative rest for a few weeks previous to their being again started into growth. Where young stock has to be raised from cuttings a plant or two to furnish these should have the shoots cut well back, and be at once stood at the warmest end of the stove to get them to break.

RUSSELIA JUNCEA.—This is one of the most elegant plants that can be grown in the stove for suspending in baskets. It is easily managed, not being liable to get out of condition, on which account it is a suitable subject for amateurs to try their hands on. It requires annually cutting back after it has done flowering, otherwise it gets into a long and straggling condition. Where the shoots have not already been so shortened they had better be attended to at once, or growth will be made to no purpose, consequent on its having to be removed afterwards. After being cut in encourage the plants to grow, subjecting them to a moderately warm temperature, keeping them hung up where they will be under the influence of enough light, on which much of their ability to flower well depends. It thrives in a moderately warm house.

ALLAMANDAS.—Where the intention is to make the most of these plants by having them in flower over as long a period as possible, a plant or two that were put to rest in the autumn may now be cut in and started afresh. Where the plants are small—say in 10-inch or 12-inch pots—it will not be necessary to do more than remove the loose soil, which will not entail the destruction of so many roots, as if shaken out of the material almost wholly in the way often adopted with large specimens in big pots. Allamandas are strong growers, and require a good deal of root-room. Plants such as spoken of should have pots 16 inches or 18 inches in diameter if they are expected to attain the size which they are capable of. Good loam, to which a liberal quantity of rotten manure, with some sand, has been added, will answer for them. The soil should be rammed in the pots as hard as it well can be. Few plants require it to be made so solid as these. When in full growth, copious supplies of water are necessary; consequently to meet this in potting a little more room should be allowed between the surface of the balls and the top of the pots than is requisite for plants that need less water. In the case of old examples that already occupy large pots, there are two ways of proceeding—either to shake away much of the old soil and pot afresh, or dispense with renewing it, and depend wholly upon manure-water, or the use of surface dressings of concentrated manure washed into the soil with water. Where enough sustenance is given in this manner, the plants can be kept on growing and flowering well for several years in the old soil. When Allamandas are to be cut back, and much of the old soil removed, I have always found it best to depart from the course followed with most things when to be similarly operated on—that is, in place of cutting them in and allowing sufficient time for them to again break into growth before repotting, to shorten in the shoots and repot at the same time. By following this course, the check inseparable from disturbing the roots after shoot-growth has been made is avoided; but it is only in the case of strong-growing subjects that such a course can with safety be followed. With plants that are to be grown on in the soil that the roots have occupied during the preceding season all that is necessary is to reduce the shoots as far as appears necessary to keep them within the space available in which to grow them, either when trained on the roof, or on trellises.

THOMAS BAINES.

OUTDOOR GARDEN.

TREES AND SHRUBS.—It is now nearly time that the planting of all kinds of deciduous trees and shrubs, the buds of which are fast swelling, should be brought to a close. After planting, all should receive a good mulching of half-rotten litter; and if the appearance of this be objectionable, scatter a little fine soil over it. Trees should never be planted in a hollow, but on the summit or side of hills. In such positions they always look more natural, and show off to better advantage, and help to bring out any slight undulations in the ground in the most favourable manner. If the weather is mild, Aucubas, Rhododendrons, Box, and plants of this kind, that always lift with good balls of earth, may be moved with comparative safety. April is a good month for transplanting evergreens, and any choice specimens should be left until that time. The ground between rows of Conifers not intended to be removed this spring should be dug over, but not so as to injure the roots. A rough weeding is necessary before digging, otherwise the overturning of the soil transplants the weeds. Insert cuttings of deciduous trees and shrubs in sheltered places, such as in narrow borders, at the base of walls or hedges, in rows 6 inches apart, and 1 inch or thereabouts between the cuttings, which should consist of last year's wood cut into pieces from 6 inches to 9 inches long. Limes, Poplars, Elders, Weigelas, Spiræas (such as prunifolia), Ribes, Deutzias, Cornuses, Buddleas, deciduous Magnolias, Viburnums, Jasminum nudiflorum, Willows, and many other plants may be increased from cuttings inserted in this way at any time between January and March.

FRUIT.

PRUNING HARDY FRUIT.—When attending to the pruning of orchard trees see that every branch is made clear of its neighbour, and that they are so thinned that, when windy, they do not chafe together. Long and ugly spurs should be shortened back by cutting a few off each year, and in this manner gradually getting rid of all. Lichen and Moss must be cleared off, and, if necessary for its thorough destruction, the stems and branches painted with a mixture of quicklime and soot. A good dressing of either fresh soil or manure should afterwards be given; and if digging amongst the trees be impracticable, leave it as a mulching over the roots. Raspberries should, at the earliest opportunity, be thinned out; all the old fruiting canes of last year should be cut away, and the new canes regulated, after which give the ground a good coat of rotten manure. Gooseberry and Currant bushes may be pruned, and the branches of each well thinned out. All kinds are best pruned on the spur principle, with the exception of Black Currants, and these bear the finest fruit on the wood of the previous year. Planting all kinds of hardy fruit, when the ground is in suitable condition, should be pushed forward, as it is desirable that such work should be completed early.

ALL GRAPES now on the vines should be cut and stored in a dry room, for if this is not done soon a recurrence of mild weather will at once put the sap in motion, and two evils will be the result, viz., the vines will bleed by being pruned so late, and the Grapes will burst as soon as they are put into the bottles of water. When the pruning is done, thoroughly cleanse the houses and vines by rubbing off any loose bark and painting them with the usual composition, both as a preventive of and remedy for insect pests. The borders should then be renovated by clearing off all surface soil, working it out from the roots with hand-forks, and replacing it with the best loam that is to be had, with which should be mixed a liberal allowance of half-inch bones and wood ashes or charcoal, the whole being pressed firmly about the roots. For the present guard against exciting the vines into activity by keeping the house as cool as possible, a month's real rest being more beneficial than two months uncertain rest.

KITCHEN GARDEN.

POTATOES may be planted on hotbeds covered with frames; Fenn's Early Market (round) and old Ashleaf Kidney are good sorts for the purpose. If a frame for the purpose has been prepared for Early Horn Carrots they may soon be sown, but in cold positions Carrot seeds lie a long time in the ground, and under such circumstances it will, for very early crops, be better to cut a wide trench, and fill it with warm manure; cover it with 5 inches or 6 inches of light soil, and protect it with glass or outer covering. Where an autumn supply of Brussels Sprouts is required, a box or two should now be sown under glass. As soon as the weather becomes open, plant out from the seed bed autumn-sown Cabbages. Stir the soil with a fork between the rows of early Cabbages, selecting a drying day for the operation, and afterwards earth them up. Make a small sowing of Celery, in pans or boxes in heat, for flavouring purposes.

The weather, lately, has been unfavourable to garden work. When it is suitable, and the ground is in good working condition, a portion of the autumn-sown Onions should be transplanted. Select for them a piece of land that was manured and deeply dug in the autumn or early winter; wheel on a good dressing of charcoal dust or charred refuse, spreadit evenly over the surface, and rake or fork it in. Soot also may at all times be beneficially applied. Make the ground tolerably firm, and put in the plants, not too deeply, 1 foot row from row, and 4 inches apart in the rows. Make a sowing of Veitch's Autumn Cauliflower in pans in heat. As soon as the surface of the soil is dry enough, go over such crops as Spinach, Onions, Lettuce, &c., with the Dutch hoe. The sooner all vacant plots of land are trenched or dug the better. Sow early Peas in warm sheltered positions; Ringleader and William the First are suitable; or, for small gardens, Tom Thumb or Beck's Gem may be substituted. M.

THE ALEXANDRIAN LAUREL.

THE Alexandrian Laurel (Ruscus racemosus) is one of the most desirable of garden plants from the extreme grace and beauty of its foliage and whole manner of its growth. The branch-like stems are renewed annually, coming to maturity

Spray of the Alexandrian Laurel (Ruscus racemosus).

about September, and enduring in their perfect state throughout the winter until March; then they slightly lose their deep colouring. When the new growth is matured it is best to cut out the old, or the plant looks too much crowded, especially in the case of well-established clumps. It does not like to be often divided. It shows to best advantage in distinct groups by itself in some quiet place half-shaded, such as a shrubbery recess or thin wood, or if grouped with flowers, perhaps the best are Christmas Roses and the common blue Hepatica, those blooming at a time when the foliage of the Alexandrian Laurel is in full beauty. For cutting purposes it is invaluable, whole sprays, cut from 3 feet to 4 feet long, grouped gracefully with the largest flowers, such as Lilies and Gladioli, while the side sprays are of the greatest use in small arrangements. It has great powers of endurance in a cut state, lasting, even in London, in good order for something like a month. Few plants have so graceful a manner of growth. It should have a place in every garden, however small. J.

INDOOR PLANTS.

GREENHOUSE AND STOVE PLANTS.

THE plants I mention first are for moderately warm greenhouses, not stoves. Foremost among those of easy culture is the Heliotrope, which can be had in flower every month if a regular succession of cuttings are taken, and they strike so readily in sand and warmth that there should be little difficulty in having a succession. Those, however, which are struck in June and July will flower during the winter months. All the varieties are sweet and pretty, and most acceptable at any time of the year, but particularly in winter. Mignonette is another favourite indoor plant. The seeds should be sown in pots out-of-doors in June and August, and taken in before frost arrives. There seems sometimes, however, a little difficulty in raising Mignonette under glass; it should be kept neither too damp nor too dry, and should be placed where it can get all the sun possible. The Mignonette tree is rather an interesting plant for one who has plenty of patience; it is formed by training a vigorous plant of Mignonette for 3 years. Sow the seed in April, draw out to a single plant, and in autumn remove all the lower shoots; keep it in a growing state and warm, and remove all the flowers. Treat in the same manner the next year, and by the third year it will have bark on its trunk and will blossom for many years in autumn and summer. Mandevillea suaveolens is a pretty climber, with clusters of snow-white flowers of delicious scent, blooming in summer and autumn; it likes peat and sand.

Orange trees are, in a large conservatory, nice things to have; their pretty, fragrant blossoms are familiar to everyone. They should be grown in peat, loam, and sand, and require a good deal of syringing to keep the leaves in nice condition. Pelargoniums are most attractive flowers in the conservatory, and combine the most lovely flowers with gorgeous brilliancy of colouring. They should be grown in soil composed of loam, half-rotted manure, and sand. Abutilons are charming things in a conservatory, and are easily treated in a compost of sand and peat. Neriums (Oleanders) should find a place in every greenhouse. These flourish best if liberally fed, and exposed to all the sun possible. Epiphyllums are making a nice show just now, as are Roman Hyacinths, and other bulbs which have been potted; and it is wonderful what a little amount of heat will start these into growth and flower, if only it is applied evenly, and not a fierce heat one day and none at all another. These are all greenhouse plants. I now give a list of

STOVE PLANTS.—Surely the Poinsettia ought to head these; at this time of year it is especially useful, and many are the churches in which it has played a conspicuous part in the decorations. It requires a constant temperature of 60 degrees of heat, and a moist atmosphere. With careful attention to these two points there will be no difficulty in getting fine large heads of flower. In the summer it can be planted out and taken up again in September and placed in the stove. Then there is the Allamanda Hendersonii, with its large yellow flowers; this is a climber and a rapid grower—the only drawback is that its flowers when gathered have no stalk and require to be mounted on wire, but those who have stoves ought not to omit the Allamanda. Another curious climber, is Bougainvillea glabra; this, I am told, does equally well in a hot or cold house, and it is certainly an accommodating plant if such is the case; with me it only does in a hothouse. Its flowers, which are really lilac leaves in the shape of a hazel nut, are very interesting, and if branches of it are put in wet sand they will last a long time when cut.

Crotons, Caladiums, and Dracænas are all pretty stove foliage plants, and the more heat they have the more do their beautiful colours appear. The Eucharis is one of the most favourite plants, and, alas! one of the most difficult to flower. It wants a very moist heat, and a great deal, just when it is going to flower. It cannot stand the least sun, it is often a shy bloomer, but a lovely thing when in flower. Gardenias are quite the other way—only give them plenty of heat and water, and they will flower most freely. They are very subject to mealy bug, and should be carefully cleansed from it. I must not close this long list without mentioning the Gloxinia and Stephanotis, which are favourites with everyone—the latter on account of its delicious perfume, and the former on account of its extreme beauty and elegance of form. C. F. DAVIS.

The Grange, Leatherhead.

SEEDS OF AUSTRALIAN PLANTS.

A GENTLEMAN who has been travelling in Australia and New Zealand has brought me a packet of seed of different plants, but with no directions for my guidance; and as they are all strange to me, I am at a loss to know how to deal with them. I should be glad of any hints that may be given me.—ANXIOUS.

*** All the seeds mentioned may be sown at once in a mixture of sand and peat-soil, half and half. A temperature of 55 degs. to 60 degs. will be suitable for them, or, say a shelf in an early vinery or an intermediate house. The seeds should be treated as you would treat seeds of Cyclamen or Primulas. The following notes refer to the plants:—

CHLOROXYLON SWIETENIA is the Satin-wood tree of India, and is an introduced plant in Australia. It forms a tree 50 feet or 60 feet high, but may be cultivated in a pot as a shrub. It is like the Sophora or Honey-locusts in habit and foliage. The flowers are of no account, the value of the tree being in the beauty and hardness of its wood. Stove.

HAKEA VICTORIÆ is a variety of H. cucullata, and is one of the most striking of the Australian Protoads. It forms a tall shrub with stout branches, thickly clothed with broad heart-shaped, stalkless foliage, which when young is of a beautiful purple-red colour. The flowers are in bunches in the axils of the leaves on the ends of the branches. They are not particularly beautiful. Greenhouse.

KENNEDYA COCCINEA, K. NIGRICANS.—Both handsome flowering greenhouse climbers, with long-stalked heads of pea-like flowers, coloured purple and red.

CROWEA SALIGNA. — Sometimes known in gardens as Crowea latifolia. It has Willow-like, rather fleshy leaves, and deep rose flowers in the axils of the leaves all along the branches. It forms a pretty pot shrub if grown in a sunny position in the greenhouse and potted in a peaty soil.

BORONIA MEGASTIGMA. — The deliciously-scented greenhouse plant so popular now in gardens. The flowers are half an inch across, saucer-shaped, brown outside, yellow inside, and are produced in the axils of the linear foliage. B. crassipes we do not know. All the Boronias thrive under the treatment recommended for the Crowea.

AGONIS FLEXUOSA.—A shrub with crowded branches, ovate leaves, and axillary heads of white, silky flowers, very pretty, and worth growing in the greenhouse.

CALOTHAMNUS.—Some of the most beautiful plants of the Myrtle family belong to this genus. They are shrubs with rigid branches, lance-shaped or linear leaves, and bottle brush-like inflorescences, the flowers being arranged in bundles close together, a little below the top of the branches. The beauty of the flowers is in the stamens, which are long and bright red in colour. The name, from *kalos*, beautiful, and *thamnus*, a rod, alludes to the splendour of the branches when clothed with the bright coloured flowers. Three species are in English gardens—viz., C. quadrifolius, C. sanguineus, and C. villosus, all greenhouse plants, flowering in autumn. EUCALYPTUS FICIFOLIA may have the same treatment as E. globulus. It is not ornamental.

LOGANIA LONGIFOLIA is a shrub with opposite oval-shaped leaves and axillary flowers; these latter are small, white, and not ornamental. May be cultivated in the greenhouse.

THYRSANOTUS.—A small genus of elegant little Australian Liliads; they have grassy

leaves and erect racemes of purple blossoms, the petals in which are surrounded with a deep fringe of hairs. Greenhouse perennials, flowering in August. All the above plants may be grown in sandy loam and leaf-mould, except where otherwise stated. We should be glad to get a few seeds of each of the following: Thyrsanotus, Calothamnus, Boronia crassipes, and Hakea Victoriæ. B. W.

AGAPANTHUS.

THE only assignable reason why these elegant-habited greenhouse plants are not now so generally cultivated is that they are old-fashioned. They are amongst the easiest of plants to manage, bearing without injury usage that would kill most of the species subjected to pot culture. Their gracefully-curved leaves, which in a well managed specimen droop so as to all but hide the pot, render them at all times pleasing to look upon, and when, in addition, they are furnished with their straight erect flower-stems, surmounted by dense umbels of blue or white flowers, there are few more telling plants. In addition to this they last a considerable time in bloom. The flowers, moreover, are amongst the most useful for cutting, either combined with others for ordinary decorative purposes, or for bouquets; and for the latter use the blue kinds afford a colour that is not over-plentiful in flowers that are of suitable form and of a durable nature. Agapanthus may be raised from seed, but, except in the case of a new, or scarce kind, the usual course is to increase them by

DIVISION OF THE CROWNS.—This can best be done by taking a large plant in the spring just as growth is about to commence and washing all the soil from among the roots, so as to get them disentangled as far as possible without unnecessary breakage; then divide the crowns singly, or in masses of several together, according to the number and size of the plants required. Where there is no object in adding greatly to their number, large specimens may be simply divided into two or four, as may be required, with these, as with the single crowns, giving pots according to the size of the divided pieces, potting firm and encouraging growth by keeping them a little close in a pit or greenhouse. All that is required afterwards is to give pot-room as wanted; but it must be kept in mind that these plants will bear confining at the roots to an extent that few will without suffering. When the specimens are as large as required, and are in from 12-inch to 16-inch pots, they may go for two or three years without repotting.

They may be wintered anywhere out of the reach of frost, say under a greenhouse stage, or similar place where there is only a limited amount of light. Give little water through the season of rest. The following are distinct and desirable kinds: A. præcox has blue flowers, distinctly suffused with purple—a much scarcer plant than the old species; A. umbellatus, the best known sort, bearing large umbels of dark blue flowers; A. umbellatus candidus, a pure white sort—a decided improvement on the old white form; A. umbellatus flore-pleno, a double form of A. umbellatus, with deep blue flowers—a fine kind; A. umbellatus variegatus, a variegated form, with prettily marked leaves. The species come from the Cape of Good Hope, A. umbellatus being amongst the oldest introductions we possess. Agapanthus are little troubled with insects. Aphides sometimes infest the young leaves, or, more commonly, the advancing flowers; when these are troublesome, fumigate with some or other of the preparations of Tobacco. T. B.

Acacias.—Some years ago, when hard-wooded plants were more in favour than at present, Australian Acacias were represented in British gardens much more numerously than we find them nowadays. A goodly number of the Acacias then in cultivation were, however, only suitable for large conservatories, in which, when planted out, they could have sufficient space for proper development. Thus treated, almost every one of the hundreds of Acacias represented in Australia well deserved the room devoted to it; but for pot cultivation, with the exception of the climbing or slender growing species, such as A. Riceana, which may be treated as a rafter plant, the number of really useful garden Acacias of which we know anything does not exceed half-a-dozen. These are A. armata, one of the oldest and best of all Acacias, with a constitution like that of a Bramble, and a most accommodating habit; A. Drummondi, a graceful and handsome plant, but not always happy under cultivation; A. obliqua, a kind with orbicular leaves and globose heads of deep yellow flowers; A. lineata, a narrow-leaved shrubby kind with globular flower-heads; A. pubescens, and A. dealbata. The first four specimens are dwarf, compact growers, and when properly managed form pretty little specimens and flower well planted in 4-inch pots. About London these four Acacias are commonly grown by market growers and managed in the same way as winter Heaths are treated. A. pubescens and A. dealbata are fine-foliaged plants, and as such are often used for table and indoor decoration and for sub-tropical out-of-door arrangements in summer. They grow freely from seeds, and in a few months form shapely little plants with erect stems and handsome Fern-like leaves. A. verticillata, which has pale yellow flowers, produced in February and March, belongs to the same set as A. Riceana, A. pulchella, A. longifolia, &c., which do not flower well in a small state, but which when grown on into large bushes are exceedingly handsome. This may be effected in pots, but in large conservatories, better results are obtained, and labour is saved by planting them out in beds or borders.—B.

The Creeping Myrtle.—This graceful climber (Myrsiphyllum asparagoides), the branches of which are now much used for decorative purposes, bears numerous axillary racemes of Heath-like flowers, green and white. Grace and elegance more than size or colour constitute the charm of these flowers, or rather of the whole plant when covered with them. As a free-growing climber this plant is deserving of a little space in every conservatory, apart from its serviceable character for greenery to associate with cut flowers. The leaves are not unlike those of Ruscus androgynus, but thinner in texture, much darker green, and wavy at the margin. It is a native of South Africa, and, properly speaking, an Asparagus. —B.

Neja gracilis and falcata.—Plants that flower nearly the whole year round without intermission might almost be counted on the fingers, but, nevertheless, in this category must be placed the two plants here mentioned. After flowering in the open border all through the summer and autumn months we lifted and potted them carefully, and they have ever since been flowering freely in a cool frame. They are natives of Mexico, and, therefore, not fitted to stand outside during severe winters, except perhaps, in dry, well-sheltered situations, or perhaps under a slight covering, which would serve the purpose of warding off damp and yet admit a free circulation of air, for, although of a shrubby character, they succumb more readily to damp than to cold. As cool greenhouse plants they would prove most useful, for although their flowers are not bright in colour, they are produced in such quantities at all times that they could not fail to be welcome. N. gracilis grows about a foot in height and is neat and graceful in habit, the slender stems rising from the crown being thickly beset with long, round, upright, wiry leaves, densely covered with hairs. The flowers are ¾ inch broad, yellow, and produced in abundance. N. falcata is rather taller and stronger than gracilis, much more woody, and quite devoid of hairs; the flowers are also larger, measuring an inch in diameter. They are of the same colour as those of gracilis. Both plants are easily increased by means of cuttings.—K.

Torenia Fournieri.—This is an annual which I can especially recommend for pot culture in a warm greenhouse. Its blooms are not evanescent, as some are, but lasting, and conspicuous even among the most choice of indoor plants. Its habit is very dwarf, bushy, and compact; and the main shoots, which grow erect, branch out freely, and bear great quantities of lovely blue and white blossoms all the summer through. To have them early, seed should be sown in February in light rich soil, and then placed in heat where, if kept moist, they soon germinate, and the plants become strong and large enough for pricking out or potting off. If treated in the latter way, they should be placed singly in small pots, and shifted on into others later on; 6-inch pots are quite large enough, as, when well fed, little root-room is required. Being somewhat tender, it requires the heat of an intermediate house or cool stove till the end of May or June, after which it will succeed well in the temperature of a conservatory. The soil that suits it best is a mixture of leaf-mould and loam with a little old Mushroom or other light decomposed manure to afford the requisite stimulus. Potted in a mixture of this kind, the plants grow rapidly, and produce a profusion of flowers.—S.

The variegated India-rubber plant.—There are two forms of Ficus elastica variegata, one of which is much superior to the other in point of variegation. The better one is distinguished by its broad, irregular band of creamy white running all round the outside of the leaf, a second band of greyish green being between the white and the dark green inner portion. The midrib of this form is also creamy white. When grown in a warm, moist house and afforded a position near the glass the variegation comes out well, some of the leaves, especially those made in summer, being as much white as green. As an ornamental foliage plant this variegated form of the old Ficus elastica is a good addition, and is deserving of a place wherever foliage plants are in favour. The second and inferior variety is very little better than the ordinary green form, from which it differs only in having a band of greyish green surrounding the darker green of the leaf. Both forms originated as sports from the old green India-rubber plant.—B.

Nerine Fothergilli.—This usually flowers in August, and in order to make effective specimens eight or ten bulbs should be put in a 6-inch pot, and the bulbs should be as near as possible of one size, the largest potted for flowering, the younger ones being put in other pots until they get to a flowering size. As regards soil, I find that they do as well in a mixture of loam and peat as in anything else, but the chief point to attend to is to give them the treatment which they require after they have done flowering—that is, keep the leaves growing all the winter. This they cannot do in a cold greenhouse temperature; the proper way to deal with them is to repot them as soon as they go out of flower; they then begin to form new leaves. It is then that they require a slightly increased temperature. This should extend all through the winter until the leaves begin to turn yellow, which will be about the end of April. A position then in any cool plant house will suit them, and when the leaves are quite dead water may be withheld altogether. After resting for about three months they will begin to show signs of starting into growth again, and all bulbs that are strong enough will flower. Water at the roots will now be necessary, and the details here given must be repeated. I find the Guernsey Lily to do well under the same kind of treatment as that here recommended for N. Fothergilli.—J. C.

15509.—Propagating fine-leaved Begonias.—Leaf propagation is the method commonly resorted to in the case of this class of Begonias. Well grown thoroughly matured leaves are taken in July, and are laid underside downwards, on well drained pans of light soil, surfaced with silver sand. This should be kept moist, and the pans stood in a close frame or in a warm house, and in due time small plants will spring from the principal veins of the leaves. It facilitates their formation if the veins are cut about half way through with a sharp knife. When the young plants become furnished with a pair of leaves, they should be put singly into small pots in fine peaty soil.—J. C. B.

15597.—**Gas tar on pipes in greenhouse.**—Wash the pipes twice or three times with unslaked lime, and you will find no more injury done to your plants.—W. R.

15521.—**Damp walls in greenhouse.**—I would refer "Ba-Ba" to a note on p. 380 (Sept. 5th, 1885), in which a remedy is given for damp walls in greenhouse.

15423.—**Ice flowers on windows.**—I do not know where the enamel powder required for fixing the Ice flowers on glass can be obtained; but "K. C." can buy at a stationer's paper from which this enamel can be scraped. —M.

15565.—**Plants for cottage gardens.**—I should be most happy to forward some nice home-grown seeds, such as I give to our cottagers, to Spark Evans, No. 15565, if he will only send address and stamps for postage.—MRS. S. S. ELLINGTON, *The Oaks, Keepham, near Norwich.*

CATTLEYA TRIANLÆ.

THIS is one of the most beautiful of all our winter-flowering Cattleyas, and when well grown makes a fine plant, either for home decoration or for exhibition purposes. It varies considerably both in the size and colour of its broad-petaled flowers. One variety has sepals and petals of the most pearly whiteness, the lip being white, with a faint lemon-yellow blotch in the throat; another form has deep rosy flowers, the lip being blotched with dark velvety crimson, and between these extremes we find a whole series of varieties, distinguishable only by slight differences in the length or breadth of the floral segments, or by their slightly varying shades of soft colouring. This species grows well in an ordinary plant stove or intermediate house, and does best in a fresh, open, well-drained compost, consisting of fibrous peat, Sphagnum, and coarse, well-washed river sand or grit. If the Moss is encouraged to grow over the surface of the compost all the better, and an abundant supply of moisture is necessary during the summer and autumn months. This variety of Cattleya generally flowers freely in January and February, and the flowers last in perfection a fortnight or three weeks if kept free from cold, damp, and drip. If grown in quantity a succession of delicately tinted flowers may be kept up for two or three months at a time. The illustration gives a very good idea of the general appearance of this plant. F. B.

Cattleya Trianiæ.

Spiræas.—The paragraph by "J. C. C." (on p. 633) relates to Spiræa Thunbergi, and not to S. palmata.

15555.—**Carrot for exhibition** (*T. C.*).—The best Carrot for exhibiting at the end of July is Nantes. This has a longer and more handsome root than any of the Early Horn section, and is good in flavour also.—J. C. C.

—— I should advise either Sutton's scarlet Short Horn or the New Intermediate.—T. W. R.

Smithfield market, Evesham.—List of prices realised Jan. 7, 1886:—Brussels Sprouts, 3s. to 3s. 6d. per pot; Carrots, 1s. 3d. to 1s. 9d. per cwt.; Gillyflowers, 4d. to 8d. per doz.; Parsnips, 3s. to 3s. 6d. per cwt.; Potatoes, 1s. 2d. to 1s. 9d. per pot; Savoy, 2d. to 8d. per doz.; Turnips, 1s. 3d. to 1s. 6d. per pot; Apples, 2s. 6d. to 7s. per pot; Pears, 4s. to 5s. per pot.

HOW SHALL I BUILD MY GREEN-HOUSE?

I HAVE a nice open space of ground, about 30 feet by 15 feet, available for a greenhouse, running north to south, facing full east, well sheltered north and west. I cannot afford to pay the price even of the cheap portable horticultural buildings, and shall be grateful if, by your advice or that of some really practical reader of GARDENING, I can be put into the way of erecting a suitable place at the minimum cost. I should like the size to be 30 feet long by 15 feet, span roof, north to south, no brickwork, 21 oz. glass, no staging, and simply laid out in borders and centre beds in the following proportion—viz.: Two centre beds, each 3 feet wide, with a path 1 foot wide between, and two paths 1 foot 6 inches wide, on each side, separating beds from side borders 2 feet 6 inches wide. At the north and south ends would be borders, 2 feet 6 inches wide, the former being intersected by the entrance-way. I propose to do without heat of any kind beyond that given by a propagating-frame, 3 feet 6 inches by 2 feet, which is heated with oil lamp and hot-water pipes, which would be occasionally lighted for raising seed and striking cuttings, principally in early spring. The structure is to be used almost exclusively for Roses (Teas, Noisette, and H.P.), with a few Camellias, and possibly a Maréchal Niel, and a couple of Lapagerias for roof climbers. Is it likely the arrangements I have roughly sketched will give satisfactory results in a rural district of our northern climate of East Yorks? One firm has estimated for £25, but I shall be most reluctantly compelled to relinquish the idea of a greenhouse altogether, unless I can by purchasing the materials myself, and employing our country carpenter, do it for about £15.

I shall be exceedingly grateful if some competent reader will tell me whether it can be done for this amount, and how I should go about purchasing the necessary materials? What is the best timber for side and roof, the height at eaves and ridge, and dimensions of the glazing bars and width they should be apart, &c.? Would it be absolutely necessary to have ventilation at roof as well as at both sides? Would it be advisable to have the glass about 15 inches by 18 inches, or would it cost much more and be a corresponding benefit to have the roof glass in large pieces, say 1 foot to 15 inches in width, and the whole length from ridge to eaves in one piece? Would it answer to build the sides by placing, say, a planed deal board with tongues and grooves on its edge lengthways, instead of cutting into lengths and erecting them upwards, the required height? In the winter and early spring we are subject to very heavy easterly winds, and the whole structure would have to be very strong and firm, especially the roof, and for this reason it would, I presume, be better to keep the building pretty low, without sacrificing more internal space than possible. I should like about 2 feet wood work and 2 feet glass at sides, and ends glazed to ridge; if possible, the ridge not to exceed 8 feet to 9 feet at extreme point outside measurement. If it would not be imposing too severe a test on some one's good nature and time, I think a detailed list of the different materials required, and the price, showing the total cost and how it is compiled, would prove a most useful and interesting study for many others beside myself. EAST ANGLICAN.

POULTRY.

QUERIES.

15685.—**Poultry for dry run.**—I am thinking of keeping fowls, and should be glad if any readers of GARDENING would inform me of a suitable kind. They would have a run of 1¼ acres—1 acre gravel, the remainder Grass; the situation is dry and well sheltered. I would prefer a showy sort, at the same time profitable.—STATION-MASTER, *Essex*

15686.—**Best egg-producing fowls.**—A lady wishes for advice as to the best breed of fowls as egg producers—in winter chiefly. Having tried Brahmas, and found them too much inclined to sit, a cross of Houdan was tried, but these also seemed to give up laying directly, and only began when nine months old. Would pure Houdans do? They have an acre of Grass, but rather shaded by trees in winter.—DORSET.

REPLIES.

15687.—**Egg preserving** (*M. M. B.*).—The eggs exhibited in the preserved egg class at the Dairy show in October last had been in charge of the show authorities for, I think, rather more than three months when the judging took place; they must, therefore, have been nearly four months old. The competition proved that two plans of egg preserving stood out far in advance of the others adopted by the various exhibitions, "inasmuch as they were equal in producing good, though somewhat different, results, and were far less troublesome than any other systems that were efficacious." The two methods alluded to are—one, placing the eggs in a preparation of lime-water; the other, packing them in dry, common salt. The judge who made the awards, Mr. Tegetmeier, in his report, says: "Although it cannot be maintained that eggs preserved by these methods are equal to fresh eggs for use when plainly boiled or poached, or even that they could be sold by shops in the ordinary way, yet they are perfectly sweet, and the white, tested raw, is tasteless, and quite inodorous. The difference in the results of the two systems is that, whereas the eggs placed in lime-water do not lose anything by evaporation, those packed in salt have so much of the water extracted by the saline that the air-space is greatly enlarged, and on opening the egg after boiling it looks as if it had been laid some time." On the other hand, the white of the lime-preserved egg, after being boiled, remains very liquid, like that of one recently laid. Mr. Tegetmeier also had the eggs tested in his own kitchen, and his cook expressed herself as being perfectly satisfied with them. My experience of eggs preserved in lime corresponds with this. Nothing can be more unpleasant at breakfast than the presence of an egg which in appearance or taste is not what it should be. With the drawbacks above alluded to, preserved eggs are, therefore, scarcely likely to figure much upon the table in their natural shape. But the careful housewife who requires a large number of eggs for cooking purposes cannot do better than lay in a stock some time in August and September, to draw upon in the coming winter. She has the satisfaction of feeling that the eggs, if not fresh, are at least good, and this reliance cannot be placed in

ordinary shop-eggs. I do not advise "M. M. B." to put them down as early as March or April, for eggs are cheaper some months later, and will remain good until wanted. There is, of course, no reason why an experiment should not be made to see how long eggs may be kept without becoming worthless. Still, very little good can come of it, for it is only in very rare instances that people will want eggs kept for more than four months at the outside, as their price after Christmas is over brings fresh eggs within the reach of everybody.—DOULTING.

15688.—**Eggs for sitting** (*P. A.*).—Blue Andalusian eggs for sitting purposes can, I believe, be obtained at the proper season from either of the undermentioned:—The St. Leonard's Poultry Farm, Ringwood, Hants; the Rev. E. R. O. Bridgemau, Blymhill Rectory, Shifnal, Salop; and Robert Peak, Lawnhurst, Didsbury, Manchester. Roughly speaking, the yards are situate in Southern, Central, and Northern England. So far as I know, each of the above gentlemen keeps good stock. Mr. Bridgeman is the breeder of birds which have taken high honours at first-class shows. In the other yards egg-production and hardihood appear to have been the principal points aimed at. Under the circumstances stated in the query I advise "P. A." to get the eggs from the nearest yard to his friend's house. They will then get less knocking about, and therefore be more likely to produce a good brood. It often happens when eggs are sent long distances that they are changed from train to train several times on the way, and, being roughly handled by the porters, are considerably shaken. Very unsatisfactory results must then be looked for. It is true that many egg-sellers pack the eggs most carefully, and give instructions on the label for proper care to be taken by the railway officials, some of whom obey the directions laid down for their guidance. But, unfortunately, there are exceptions to the rule, and many a costly egg is rendered worthless before the journey is accomplished. If "P. A." is anxious to get eggs from prize-winning stock he will have to pay a higher price, and must buy regardless of distance. If, on the other hand, he prefers profitable to fancy points, I recommend him to follow the instructions given above. He must remember that the two, profit and fancy points, do not, as a rule, accompany each other, for whenever one breeds for feather, useful qualities are disregarded altogether. For instance, however good a hen may be, she is absolutely worthless in competition if her feathering is not perfect according to the standard laid down for the breed. She is, therefore, not used for breeding lest the defect should be reproduced in her progeny, as it most surely would be, and probably in an aggravated form. The best layer I ever had or knew, a wretched dark Brahma pullet, had she been in a prize-winning establishment, would have been condemned months before she laid her first egg. It is the same with all kinds of stock which are kept for exhibition purposes. If they are able to hold their own in competition with other animals, the probability is they will be worthless as far as profit and usefulness are concerned when compared with specimens unfit for the show-pen. In breeding for feather or other fancy points everything useful is generally sacrificed. The white face of the Spanish fowl, for instance, has had much to do with the bringing about of the delicacy of the breed. Yet the prominent feature just alluded to was insisted upon by the judges, and Spanish fanciers had to follow the lines laid down, or lose their chance of obtaining prizes. The Brown Leghorn again has not been improved in usefulness since its importation some years since, everything else having to give way to colour in the show-pen. There are two other points on which it will be well to say a few words. First, the date at which the eggs should be purchased. It is a mistake to hatch pullets too early in the year—March or the beginning of April is quite soon enough. If the chicks are hatched before this, they will not thrive during the cold, damp weather, unless considerable care be taken. Such pullets also begin to lay late in the summer and then rest in November and December, when eggs are fetching a good price. The probability is, too, that smaller broods will be the rule in February, for cocks are never so active in the early part of the year as later in the season when warm weather comes. The other matter to which I wish to call attention to is, the eggs must be placed under a close-sitting hen directly the railway journey is over. Fresh eggs, we know, always hatch much better than stale ones, and a higher percentage of chickens from purchased eggs may be hoped for if the latter can be set at once. Egg-buyers too frequently forget this, and then blame the seller for having supplied them with a worthless article, whereas the fault is entirely their own. Their practice is to keep the eggs waiting for the hen, but the opposite to this should be the rule. It is easy enough to keep a hen sitting on some china eggs until the real ones arrive, although they may have to come a long distance. The best plan is to have the order booked beforehand, for in many cases, especially in noted yards, the eggs are sold for weeks to come. The cash should, of course, be sent with the order, and then all that will be required afterwards is a postcard or, it may be, a telegram, asking that the eggs may be sent on without delay.—DOULTING.

BEES.

FOUL BROOD.

THE disease among bees, commonly known as "foul brood," which has of late years done so much mischief in many apiaries, has not hitherto been properly understood; various opinions existed as to its nature and origin. It has, however, recently been investigated in a most careful and painstaking manner by Mr. F. R. Cheshire, who has published the result of his labours in the August part of the *Journal of the Royal Microscopical Society*. This subject is of great interest to all bee-keepers, and I think a condensed account of Mr. Cheshire's investigations cannot fail to be acceptable to those who have not the opportunity of seeing the journal alluded to. He says: "It is certain that not until very recent times have its ravages become so widespread as to make it the terror of bee-keepers. In ancient days bees rarely changed haunts except at the death of their owner, and in our country, at least, the selling of a hive was even half a century back discountenanced as unlucky; but now bee dealing is an established industry, not only here but on the continents of Europe and America; and the stock of the bee-farmer, having once become infected, is inevitably the means of distributing the fatal germs into the private apiaries which he supplies. Man not alone suffers from diseases propagated by modern civilisation, but the animals which he has associated with himself necessarily suffer with him." As is well-known, the grubs which die of this disease become very dark in colour, and soon decompose. If a minute portion of the dark-coloured matter be examined under a microscope with a tolerably high power (⅛ of an inch), it will be found to contain swarms of very minute bodies, in which are the spores of a minute organism, in shape resembling a short piece of stick, called Bacillus alvei. If a grub be examined when it is first seen to be suffering from this disease, a great number of these bacilli will be found swimming about in the fluids of the body. As the disease runs its course they lose their stick-like appearance, and assume an oval form. These organisms are very minute. Mr. Cheshire computes that so great would be the number of them required to make a cubic inch that they would form four lines long enough to reach from London to New York, and he has examined many grubs which must have contained at least one thousand millions; so that it can easily be understood that they may without difficulty be carried about by the slightest breath of air. Most writers on this disease assume that it it affects the grubs only, but this Mr. Cheshire has proved to be a mistake, as a large proportion of workers and drones in an affected hive die of this complaint, and queens are by no means exempt. A queen from a badly-infected hive was carefully dissected, and bacilli were found in her, and even in her eggs. The disease seems to attack the bees in a different manner from the grubs. In the case of the former it appears to assume a chronic condition and be confined to a portion of the frame, at least, temporarily, and may be several weeks, and possibly in queens months, in running its course. The disease in the grubs is always acute, and is evidently in the blood, and not in the digestive organs, so that it permeates the whole creature; even if the grub in a hive, in which the disease exists, is hatched without any taint of this complaint in its system, it is liable to be infected by the nurse bees, who, moving about the hive, must come in contact with the germs sooner or later, and when they do they will probably leave some in the cell of the next grub it feeds. The germs may easily be transferred from one hive to another by bees, a bee with some attached to its feet or proboscis visits several flowers and will probably leave some on them, which the next bee unconsciously picks up. Salicylic acid has long been used as a means of arresting this disease, as Mr. Cheshire says, "with fluctuating and partial success;" but, he adds, "phenol (carbolic acid) I have found perfectly specific. The difficulty of administration I overcame as follows:—Phenol was mingled with ordinary sugar syrup of a density most suitable for feeding, in the proportion of 1 to 500 by weight of the syrup, and this was then poured into the comb in which brood was being raised. The nurse bees immediately accepted the medicated food, and as a result this malady in the worst cases disappeared, the exceptions being those in which the queen herself was badly diseased." It would appear from those investigations that a bee-keeper cannot be too careful when importing fresh stocks or queens into his apiary to make certain that they are untainted with this disease, and he should pay no attention to the assertions of some bee-keepers that swarms are incapable of being contaminated by it, and that queens cannot communicate it to uninfested stocks. The safest way of dealing with hives which have contained badly-infested stock is to burn them at once; if such an heroic measure is unadvisable for financial reasons they must be most thoroughly disinfected, or when a fresh swarm is put into them it will certainly be contaminated. This most interesting paper is followed by one by Mr. Watson Cheyne on "The History of these Organisms when Cultivated" (grown artificially in his laboratory), which, though highly interesting to those who study these bacilli scientifically, is of no practical use to the ordinary apiculturist, who is, however, under great obligations to both Mr. Cheshire and Mr. Cheyne for their most valuable papers. G. S. S.

HOUSEHOLD.

15689.—**Wine made in copper vessel.**—My wife has made 6 gallons of Black Currant and Rhubarb wine, boiled it in an old copper for one hour, and it has the taste of the copper after drinking or tasting—leaves quite an unpleasant and nasty taste on the tongue. Is it injurious, or can anything be put in to take away the coppery taste? The wine is very clear, and of a good colour.—KENT.

Pumpkin soup.—Noticing some correspondence lately in GARDENING ILLUSTRATED on the use of the Pumpkin as an article of food, I send a recipe for making "Potage au Potiron," thinking it may be useful to some of your readers. Take about 2 lb. or more of Pumpkin, pare away the rind and seedy inside part, cut the Pumpkin into large dice, boil gently in enough water to cover it till tender but not broken (about quarter of an hour, more or less, according to ripeness), turn into a colander, throw away the water thus strained off, pass the pulp through the colander, add two teaspoonfuls of salt, a little pepper, and, if liked, a little sugar; boil up with three pints of milk. Have ready two tablespoonfuls of flour, mixed thin with cold milk; stir quickly with the boiling soup, and when it thickens serve. This was taught me by a French cook, and is, with modifications, the usual way of making Pumpkin soup in France. It is a favourite "soupe maigre," and when set down in the bill of fare for the day at Duval's, the supply is exhausted in a short time after dinner hour, so numerous are the orders. I have made this soup both in Paris and in England. The French Pumpkins do not, to my taste, require sugar, being better ripened than ours; but here in England a little sugar is generally an improvement.—ARISTOPHANES.

BIRDS.

15690.—**Larks** (*E. G.*).—These do not sing until they are a year old; the young males are nearly yellow, the hens a greyish brown.—S.

15691.—**Greenfinches and linnets.**—Can any correspondent advise me how to breed greenfinches; also how to rear them and feed them? Will linnets breed in an aviary? If so I should be glad to receive hints as to treatment, &c.—F. W. F.

GARDENING ILLUSTRATED.

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EXHIBITIONS v. USEFULNESS.

TO THE EDITOR.

SIR,—There are two remarks in two different articles in GARDENING of last week that seem to me to be worthy of the serious consideration of the large number of individuals who are engaged in what they consider to be the useful work of supporting or conducting horticultural and other exhibitions. I refer to certain incidental observations made by "J. C. C." in writing on the culture of Peas (p. 652), and by "Doulting" in an article on Poultry (p. 660). The former, whose initials are well known to your readers, and who, if I mistake not, has told us recently that he himself has often acted as a judge at these exhibitions, makes the astounding statement that "*appearance is everything*, flavour being of secondary importance, as the longest and best-filled pods, *even when the table quality is known to be inferior*, will invariably take the highest honours." "Doulting" also deplores the fact that in poultry breeding great importance is attached to the marking; little or none to the real value of the bird. It is not because these facts come upon me as a revelation that I write now to you. I have attended numerous exhibitions of different kinds in various parts of the country, and my experience, generally speaking, agrees with the views expressed by "J. C. C." and "Doulting," that, as a rule, whether the exhibit is a fruit, a bird, or an animal, appearance is everything—real value is nothing. Poultry fanciers, for instance, as was shown recently in your columns by Sir Henry Thompson, set up an arbitrary standard—a bird must be marked in one particular part, in one particular way, and any deviation from this is a blemish, the marking, at the same time, having no effect at all upon the hardiness of the breed, its laying, or its table qualities. In agricultural shows the same plan is followed, and I have seen a prize awarded to a bull which was so fat that it could scarcely support its own weight, and was, for all practical purposes, of no value. So in fruit, a rosy-cheeked, well-shaped Apple will catch the eye and meet with the approval of the judge, while its better-flavoured, but not so attractive-looking, neighbour is passed over in disdain. As to vegetables, let "J. C. C." speak. Flower shows I do not know so much about, but recent articles that I have read would seem to show that even here some line or marking is insisted on, and no deviatious allowed, even though an artistic eye would consider the flowers objected to more beautiful than those admitted.

I think it is time, sir, we asked where this is to stop. If all the good that promoters of fruit and vegetable shows do is to sacrifice flavour to appearance, what is the value of their work to the public generally—what becomes of their much-vaunted usefulness? It is no excuse to put the blame for this state of things upon the shoulders of the undiscoverable authors of everything wrong, and say—"*They* do it everywhere." Each judge or each committee is responsible for his own award or for its own rules, and the responsibility cannot be shirked. Shall I give an illustration of their system, suggested by "Doulting's" note on the preservation of eggs? What if a committee were to offer premiums for the best system of preserving eggs, and were to award the prize to that method which preserved the shells best in their original purity, ignoring entirely the question of the soundness or otherwise of the contents? "Absurd," I fancy I hear some person say. Of course it is; but is it more so than the plan admittedly followed of giving a bird a prize for a feather, whether its flesh can be eaten or not?—than that of giving all the honours to animals which are not suited for food, and yet cannot perpetuate their supposed good qualities? or of selecting for special commendation an Apple or Pear that cannot be eaten *because it looks nice?* This is a matter that deserves, as I have said, the careful consideration of all who care for these exhibitions—which, after all, if they serve no other purpose, are pleasant gatherings—and I think the fact that two writers should have thus expressed their views at the same time shows that there is a revolt arising against this pernicious system. I should be glad if other readers would express their opinions on this matter, and it may then be that GARDENING will be the means of restoring to many of these gatherings a usefulness which they seem to have lost, but which, in my opinion, constitutes their only "right of existence." COMMON SENSE.

OUTDOOR PLANTS.

THE HOLLYHOCK AS AN ANNUAL.

LET me say at the outset that I do not wish it to be understood that as fine spikes of Hollyhock flowers can be obtained from plants treated as annuals as from those raised from seed or cuttings in the previous autumn. But, provided the treatment is right, I have no hesitation in stating that a very satisfactory display of flowers may be obtained from plants raised from seeds sown the same year in which the plants are to flower. It must, however, be understood that the seed should be sown early in January, in a warm temperature, and that through all the stages of growth, the treatment must be of the most generous kind. Prepare, in the first instance, one or more seed pans, according to the number of plants required, but, in estimating the space to be planted, remember that the

SEED SHOULD BE PLANTED AN INCH APART, so that when the plants come up they may have room to grow on for some time, and get furnished with a good number of leaves and plenty of roots before they become so thick as to require to be moved. As soon as sown, the pans should be placed in a temperature of 60 degs.—even a few degrees higher will do no harm, but it should not be below that point; and if the pans can stand on bottom-heat until the seedlings appear, the seed will vegetate all the quicker. As soon as the young plants come through the soil (and that will not be many days), the pans should have a position on a light bench or shelf, in order to prevent the plants from becoming drawn. About the middle of March they will be large enough to put singly into 4-inch pots, in which they may remain until the time comes to plant them out, as the less the roots are disturbed the more progress they will make. It is a good plan to harden the plants a little before they are potted off. This can be done by placing them in a cooler temperature, say in a warm corner in an ordinary greenhouse, and the same position will suit them after they are placed in their pots, and until the end of April. After that, a fortnight's gradual hardening in a cold pit or frame will prepare them for planting out. While in pots a rather light sandy soil suits them best, and they certainly make more roots in a compost composed of half leaf-soil than they do when loam forms the chief part. The same description of light soil should also be used for the seed pans. The Hollyhock reproduces itself pretty correctly from seed, but if the flowers do not come precisely the same as those of the parent, the percentage of good flowers will be far above that produced by any other double-flowered plant.

POSITION AND SOIL.—It is useless attempting to grow Hollyhocks in the way in which they were grown twenty years ago. At that time we planted them amongst shrubs in mixed borders, and they produced fairly good flower-spikes. In a similar position we used to grow them here, but under such treatment disease attacked them, even though the ground was well manured. We have now to be content with shorter spikes, and these sometimes with leaves terribly disfigured by Hollyhock fungus. Hollyhocks can, however, be successfully grown now where the position is open, the soil rich and deep, and root moisture pleutiful. Of this there was abundant evidence in one of the Exeter nurseries last year. There I saw two long lines of plants equal in every respect to any I ever saw when the plant was so popular twenty years ago, and when we used to plant it anywhere in ordinary soil, and then get flower stems 5 feet and 6 feet in height. The plants which I saw last summer doing so well had grown beyond that height, for they were from 10 feet to 14 feet high, and bore a proportionately large number of flowers. It cannot, therefore, be said that this grand flower cannot sometimes be grown as it used to be. All that is necessary is to adopt our course of proceeding to the exigencies of the case, and then success will follow; but ordinary results may be obtained without an extravagant outlay of either time or patience. Those who wish to be successful should begin now. First sow the seed, and while that is growing, positions for the plants can be prepared—first by digging up deeply the places which they are to occupy. If they are to stand singly, a hole 2 feet square must be got ready. If in lines, a space 3 feet wide must be trenched up 2 feet deep, and then a layer of well-rotted farmyard manure should be spread on the surface and forked in, so as to mix it up well with the staple. If the soil should be naturally dry and light, some good heavy loam should be added to it. Fresh manure they do not like, but it may be as strong as it is possible to get it. It must, however, have lain six months in a heap, so that every part of it is in proper condition for the roots to lay hold of; and it is important that a layer of it should be placed 9 inches under the surface.

PLANTING OUT AND SUMMER MANAGEMENT are both easy enough. Whether the plants are to stand singly or not they should be planted in a sort of basin, so that the roots may get the benefit of any water that may be given. A favourable time for planting out should be

selected towards the end of May, and the pots out of which the plants came should be left close by, so that they can be turned over them at night for the first week, and also, if the sun should be strong or the wind cold, during the day. It is necessary to pay attention to these details, and also to see that the roots are kept supplied with moisture, because it is important that the plants should have every encouragement early in the season. As soon as they have got a fairly good hold of the soil, a heavy mulch of rotten manure should be spread on the surface, and extend 18 inches or 2 feet away from each plant. As soon as the flower stem begins to rise, the cultivator may be sure that the roots are active, and that they require to live sumptuously. At this time, if the weather is at all dry, they will be grateful for a good soaking of manure water twice a week. In favourable soil the Hollyhock is a strong and deep rooter; it will send out large and long white roots 3 feet away from the centre, so that when applying water the cultivator must be prepared to give enough to reach to a good depth and width. Supports of sufficient height and strength they must have, and for single plants the stakes must be very strong. If in lines stakes may be driven into the ground at every 10 feet apart; along these two pieces of wire should be stretched, one at 3 feet, the other at 6 feet from the ground, and the spikes should be tied to the wires, which will be all the support they want. The Fungoid disease on the leaves is a serious business, as applications to destroy it must be used as often as new leaves develop themselves. For those, however, who can battle with it, I may mention that the simplest remedy I have found is to wash the foliage with Gishurst compound, at the rate of 2 ounces to one gallon of water; either sponge or syringe frequently both sides of the leaves with this solution.—*Field.*

Milla biflora.—As an outdoor summer-flowering bulbous plant none can be more lovely than the charming Milla biflora. Here, in rather light and rich soil, in a sheltered bed, it grew and flowered last year as well as anyone could desire. I planted the bulbs in April, placing a dozen in a clump about 12 inches in diameter, and setting them about 3 inches under the surface. Owing to the dry summer, we had to keep them well watered, as I noticed that without it they made little progress. They certainly liked the heat, for they lasted in flower for a month or more. As will therefore be seen, its requirements are of the simplest kind. Before frost occurs to reach the bulbs in November they must be taken up and packed away, either in dry sand or a paper bag. For furnishing choice white flowers in August or September I know of nothing else that can be grown in the open air with so little trouble to equal this Milla. Those who are in possession of a sufficient number of bulbs of it should put some in pots early in March and bring them on to flower in cold frames. It is possible that if a portion of those to be planted in the open were not put in until the middle of May they would flower later and so come on in succession.—SOMERSET.

The Early white-flowered Forget-me-not (Myosotis dissitiflora alba) is an invaluable plant for supplying cut flowers early in the season. It blooms naturally very early, but is liable to suffer if fully exposed to the full force of the cutting winds that prevail in spring. If, however, it is afforded the slightest protection by means of temporary covering, its lovely blooms of the purest white prove excellent for mixing with blooms of a more massive character in decorations of all kinds, notably in wreaths and crosses, for which white flowers are in constant request. I find that this Myosotis, like the blue-flowered form, makes a capital pot plant; anyone, therefore, having a good stock of it will find that by lifting good sized clumps and placing them in 5-inch or 6-inch pots, and setting them in a cool vinery or glasshouse of any kind, they will quickly develop quite a cloud of blossoms. The plan which we adopt in getting up a stock of this plant is division of the roots after the plants have done flowering; every piece if dibbled into a shaded border will make a good plant. Seedlings also make excellent plants for potting, but, like the older blue variety, it is difficult to collect any quantity of seed. Birds are so fond of it, that unless it is carefully netted over they make a clean sweep of it as fast as it ripens. If the seed is only required for home use, the best plan is to cover the plants with fish nets and allow the seeds to shed on the soil; if the latter is kept moist by means of frequent waterings, a colony of young plants will spring up around the parent, and as soon as large enough to handle they may be pricked off into beds. The old clumps may be pulled to pieces and replanted.—J. G.

Montbretia Pottsi.—Some people find it difficult to flower this plant. I have no trouble in getting it to bloom if I take care of its leaves and keep them green—*i.e.*, if they chose to remain so all the winter. Sometimes we lift the bulbs in November with a fork, drop them into large pots, and keep them there in a cool Peach house until spring, when they are planted out in the borders. A way which with me has never failed to induce it to flower is to secure some strong offsets with green leaves upon them and put half a dozen of them in a 6-inch pot, keeping the pots in a greenhouse all the winter, where they will continue to grow slowly. Towards the end of April they should be hardened off, and then planted out in a fairly rich and deep piece of ground. As the leaves are somewhat delicate after being kept under glass all the winter, a few green branches should be stuck in the ground round them when the wind is very cold. After the middle of May they will take no harm from the weather, unless it should be very dry, and then they must have water as often as they want it. Plants treated in this way will flower in July and August.—J. C.

North American Ox-eye (Heliopsis lævis).—This herbaceous perennial possesses considerable beauty. It is nearly allied to the Sunflowers, but is much smaller in all its parts, and, therefore, may be grown in many places for which Sunflowers would be too strong or

North American Ox-eye (Heliopsis lævis).

strong-growing. It has a bushy habit, and grows from 2 feet to 3 feet high; the flowers, produced in August and September, are dark orange in colour. The plant is best suited for a somewhat shaded position, and a stiff, loamy soil, as it is very susceptible of drought in summer.

Duration of hardy plants.—The duration of many hardy plants is not of that fixed character under cultivation which one would like. Soil and climate are known to have influenced many by shortening their days, and usually these, rather than such as have their lives prolonged, have received notice. On the other hand, light warm soils, raised borders, and mild winters have presumably lengthened the span of life in several instances, and no doubt what has happened here will have occurred in other gardens. Yet few will credit that the common annual pot Marigold, or rather the variety called Meteor, is now in its third year having plenty of foliage and woody stems. Calandrinia umbellata is in its fourth year, though often proving but biennial. Plants of Linaria alpina, which seeded last summer, promise flower, and the same may be said of L. reticulata, though both are annuals. The Italian Garland Pea (Hedysarum coronarium), a biennial, is strong and healthy in its third year. All have flowered each year, except Calandrinia the first season, and all are cultivated either on raised beds or on rockwork. Though in the years added to the lives of the plants just named the bloom was of fine quality and more profuse than on younger plants, there may not be very much gained by what must be considered as but a chance extension of duration; the fact of cultural conditions may be worth noting.—J. W.

Daisies deservedly rank amongst the most popular of garden flowers. They need only simple culture, increase rapidly, and freely accommodate themselves to soils and situations. In the decoration of the spring garden they are of great service, the several varieties and hues of colour in the flowers, when grown in large clumps or masses, producing striking effects. The common garden double Daisy has sprung from the wild Daisy of the field, just as the double Primrose has come from its wild single parent; and both owe their origin to some of the Continental florists of previous generations. Though we have numerous kinds, popular favour has adhered most closely to the old flat-petalled white and quilled red, both of which are grown by millions as market plants, and may be found in the spring in every costermonger's barrow. Added to these are the flat-petalled pink known as Pink Beauty, a charming pink of the quilled class; a deep rich red or crimson quilled kind, called Rob Roy; White Globe, large white quilled petals; an almost perpetual-flowered kind of medium size, having flat white petals, named Virginia, most useful for bouquets; and several others. As the double Daisy both sports and on the Continent seeds freely, new kinds of good quality are often cropping up; and it is by sporting that the yellow-blotched or Aucuba-leaved kinds have originated. Of these there are red, pink, and white-flowered sorts, the most effective being those having dark red flowers, as the comparison with the yellow leafage is very striking. These variegated forms, curiously enough, regain the usual green leafage in the summer, and exhibit their variableness only in the winter and spring months. Though somewhat more tender than the green-leaved or normal-leaved section, they will do well on a free porous soil in the winter, and in a cool shady border in the summer if transplanted there. Intense heat and drought or excessive moisture standing about the plant and foliage are the chief enemies of the double Daisy. Propagating is simple, and may be done both in the spring and the autumn. Well dug soil, into which the plants, pulled to pieces, are dibbled at 6 inches apart each way, suits well, and if a good mass of bloom is desired, either in beds or as edgings, the plants may be put a little closer. Where the soil is good, the Daisy increases so rapidly that it may be transplanted twice in the year. One of the prettiest effects we have seen was a bed of white and red Daisies, planted in diamonds, with a strong plant of Blue King Pansy dotted into the centre of each. The giant or crown-flowered Daisies form almost a distinct section, and, though very vigorous, are not nearly so free of bloom as the better known kinds. These produce large and usually mottled red flowers upon long stalks, and are best suited for mixed borders. A very old favourite is the proliferous or Hen-and-Chickens Daisy. It differs in no respect of habit or foliage from its double congeners, except that when the flowers are at their best they send out numerous lesser ones from the axils of the involucral scales, hence the designation Hen-and-Chickens. It is worth a place as a floral curiosity; its flowers are usually rosy pink, and before starting its progeny very pretty. It may be propagated and cultivated as easily as the common garden kinds.

Treatment of early-flowering Chrysanthemums.—These with most people are becoming favourites, owing, perhaps, to the treatment which they require being better understood, for they were decidedly more attractive last year than in preceding years. We used to plant them out in good ground, and take them up and pot them in September. By this means we got large plants and plenty of flowers, but they expanded so irregularly that I did not value them very much. Last season we divided the plants early in spring, and put a good-sized piece in a 7-in. pot. About the middle of May the pots were plunged an inch below the rims in a sheltered, warm border, and the soil was levelled about them close up to the stems. This soon induced the roots to rise to the surface, and extend over the rims of the pots. They were, therefore, not wholly dependent on the soil in

the pots for either food or moisture, and the consequence was that they grew away freely all the summer, requiring but little attention as regards watering. When we lifted them, which was in September, just as the flower buds were visible, they had sent out roots all around over the tops of the pots, and these we had to remove. After standing in a shady place for a few days they soon recovered the loss thus sustained, and when taken to the greenhouse the flowers opened in a few days, and such sorts as Chromatel, Albion, Anastasia, St. Mary, and Madame Desgrange were quite handsome specimens, considering they had not had any support from a stick or tie. The compactness in growth which they exhibited was no doubt due to two causes —one that to a great extent the roots were restricted for some time; the other that, finding in the month of July that they would probably be in flower early in September, I cut them all over down to the hard wood. This checked growth, and caused them to become much more bushy than they otherwise would have been. Besides this, they stood quite clear from each other while growing. Some of the plants measured much more in diameter than in height; so that, taken altogether, I think, when the treatment is right, early Chrysanthemums may be made available for furnishing flowers in October to a greater extent than I had previously given them credit for. Besides the varieties just named, I may mention Inimitable, Gold Button, and St. Crouts as distinct and useful varieties, La Vierge is a charming white kind that, for purity of colour, is not surpassed by any of the late-flowering sorts. Alex. Dufour is a rich dark flower of excellent form, and Golden Madame Domage is a useful kind. If I only wanted to grow six varieties, I should select the following: Madame Desgrange, white; Early Casey, light, tipped with purple; Chromatel, bronze; Inimitable, creamy pink; La Vierge, white; and Anastasia, magenta. If a yellow kind were wanted, I would substitute Gold Button for Madame Desgrange or La Vierge.—SOMERSET.

Double yellow Wallflowers.—One seldom meets nowadays with the fine old double Wallflower that used to be so well grown in old times in cottage gardens; in fact, in many parts of the kingdom it has disappeared altogether, and we now find the single and semi-double German Wallflower filling its place. On the south coast, however, I frequently come across some grand old specimens of the true golden yellow Wallflower with blossoms as double as those of an Oleander, and a fine show they make in snug little seaside gardens, the thick hedges of which are proof against the ruthless gales with which they are assailed. The soil here is light and stony, so that growth is not very luxuriant, but the wood gets hard and well matured, and the frosts of winter being modified by the sea breeze, plants of this Wallflower keep vigorous for years. I would by no means, however, recommend retaining such very old plants, except as curiosities, for young ones are altogether better. The little side shoots of this Wallflower, dibbled into sandy soil with a hand-glass placed over them, strike readily, and as soon as rooted plenty of air may be admitted. They are best kept under the friendly shelter of glass until all danger from sharp frost is over; then they may be planted out in beds a foot apart, where they will soon form nice bushes, and must then be carefully transplanted where they are to remain; for, although they move well enough in a young state, they are by no means good subjects to disturb when old.—HANTS.

15608.—**Japanese Chrysanthemums.**—I should advise "Herbert" to plant George Gordon. This is a good dark variety, and one of the earliest of the late flowering varieties to open. As to his other query, most probably the bloom he has bought at a florist's is a bloom of Peter the Great. This is a late yellow variety, and grown for cut bloom. Another late yellow variety is grandiflora. The petals being crimson at the base may be accounted for by the blooms being past their best.—W. E. BOYCE, *Holloway*.

15604.—**Plants for grave in shade.**—The dense shade of the trees you name will be against healthy growth, but it is very likely that a great part of the evil is in droughty condition of the soil in summer. This is often overlooked to the loss of many newly planted so-called shade lovers. Such things never get the heavy night dews that plants do in the open, nor the slight refreshing showers; it has to rain, and heavily, before their thirsty roots can get a drop. You might try the herbaceous Solomon's Seal, Primroses, Lily of the Valley, or plant the evergreen Rose of Sharon, or Periwinkle in a mass, and finish by throwing a packet of Forget-me-not seed over the rough soil without covering it. When the over-shadowing trees get into leaf, do not forget to water the plants—at any rate, for the first summer.—J. WOOD.

ROSES

CLIMBING AND PILLAR ROSES.

AN early sunny morning in June at Lyons, a pleasant walk beside and by the ferry across the swift bright Rhone, and walking in his garden of seedling Roses with M. Lacharme, he drew my attention to the difference of habit amongst some seedling climbing Roses, springing from, I think, the R. polyantha or R. multiflora. Some might be called creeping Roses, lying flat almost along the ground, and most vigorous in their extension; and he suggested, if I recollect aright, that some of these might develop a race clinging like Ivy to the walls. The idea has often recurred to me, the Rose being a freely rooting plant, when accident, such as a shoot burying itself, favours; but I have never yet seen a kind emitting roots when in juxtaposition to a damp wall. Others had the vigorous uprising shoots such as most of the evergreen Roses already in our collections have. But none had, so far as I noticed, the erect, zigzag growth which the accidental climbing sports of the Hybrid Perpetuals have assumed. This leads up to the fact that in climbing Roses we have a great variety of growth and habit as well as of flowers, and well it is that it is so, for the Rose garden has room for other than exhibition Roses and Roses grown for exhibition only, as the National Society has recognised in its latest catalogue. Only in this respect the catalogue is not inclusive enough; by not including the singles, for example, it omits some of our best arch Roses, such as R. Brunoni and R. sinica (the Rose Camellia of the Riviera), two of the best for the purpose.

ROSE ARCHES are amongst the most picturesque features of the modern garden, and it is astonishing how few sorts make perfect all-wire-covering growths. It is mostly amongst the evergreen Roses we find this habit of long vigorous shoots very freely produced, and bearing, when bent, flowers in great profusion along the length of the shoots; the finest is Félicité Perpetue, creamy white, perfectly evergreen, and making the best arch we have. Leopoldine d'Orleans, a flower lightly tipped crimson, has a slender, less furnishing growth, but is good. Flora and Princess Marie (pinks) are of like small and more slender habit, but make, either singly or together, a pretty pink arch; all these are very hardy, and make also good coverings for north walls. Of the single Roses, R. sinica, with large single white flowers, if it proves quite hardy here, will make one of our best arches; it has the foliage of the Banksians, evergreen and shining, but it will need warm summers and being left unpruned to make it flower. R. Brunoni, blooming in numerous clusters, and with glaucous bluish foliage, will be the Rose for very large arches, say one over a carriage drive, producing 20-feet long shoots, and these in great profusion. Of Hybrid Chinas, vivid, dark carmine, Madame Plantier, pure white, and Fulgens, crimson, are first-class arch Roses, free, and the shoots well covered all the winter with evergreen foliage. None of the Teas seem to me to be perfect arch Roses. The Dijon race show too much stick for too little flower. Marie Van Houtte would be the perfection of an arch Rose where climate permits. The hybrid Teas have the fault of the Dijon Teas, if we except the two semi-double ever green hybrid Teas from Nabonnand—which are good additions to Roses for arches—Madame Alphonse Lavallée (pink), and Reine Olga de Wurtemburg, both with grand leaves. Of Noisettes, the only one I can recognise as a first-rate arch Rose is the glossy-foliaged evergreen Céline Forestier, and, perhaps, the climbing form of Aimée Vibert. So much for arch Roses. The sorts recommended are few, but arches are not plentiful in gardens, and the list is probably sufficiently long.

FESTOON ROSES, for want of a clearer name I should call such sorts as lend themselves to being led up to the top of a post, and then giving shoots to extend on chains or swinging wire from post to post. There are very few that lend themselves well to this. Nearly all the Ayrshire Roses do. Bennett's Seedling and Countess of Lieven as whites, Dundee Rambler and splendens (with pink-edged white flowers), and Queen (purple), Ruga (pink), all blooming in clusters, and with their long-extending leafy shoots, are the best. Of hybrid Chinas, Fulgens (a crimson), and Blairii No. 2 (light-tinted white, are both long-shooted sorts, which we know from experience make effective chains. Gracilis amongst the double alpine or Boursault Roses is the only one having shoots long and slender enough. Of the evergreen Roses, Flora and Leopoldine d'Orleans are the two best. Of the "species" Roses, anemone flora-plena and Musk Roses in the warmer climes lend themselves to this culture; whilst the Noisettes, Rêve d'Or and Wm. Allen Richardson, should also succeed. Covered chains are certainly worthy of much freer use. In the old Broxbournebury Rose garden of Mrs. Bosanquet they are one of the prettiest features.

CLIMBING ROSES.—Then there comes the larger subject of Roses for walls and fences, and for use wherever it is possible, by affording support and shelter to make Roses succeed and flower, which do not do so under the ordinary bed treatment. Not an inch of wall, N. S. E. or W. be the aspect, need be left without its decking of fragrant Rose flowers and leaves. To take the Dijon Teas, Gloire may well occupy a space on each of these aspects. The flowers may be followed round with the season—first it gives its flower on the south wall in April and May, following on the east in May and June, and on the west in later June, finally giving even a show bloom or two from the north wall in July. All of its slightly varying coloured family and successors—Bouquet d'Or, Beauté de l'Europe, Gloire de Bordeaux, and May Paul (the two best pinks), Madame Barthelemy Levet, Madame Trifle, and Melanie Soupert, a rather dwarfer form, are all equally hardy, and succeed in all aspects. Belle Lyonnaise and Madame Berard, the other Dijon Tea Roses, are more tender, and need a southern or western wall; all, as will be noted further on, make fairly good pillar Roses. Then, for south aspect alone, comes climbing Devoniensis, needing the warm sun to make its wood ripe enough to stand the first winter; and one never forgets the glorious facing of Marie Van Houtte Teas which the Bakerian garden at Heavitree used to boast. Most of the Noisettes, for example, Maréchal Niel and Lamarque, need to look south, and Céline Forestier blooms more freely from the wood ripened by such an aspect. Wm. Allen Richardson and Rêve d'Or are fairly hardy all round, bar the north. The two Hybrid Teas, reds as they are, and so much needed, Reine Marie Henriette and Cheshunt Hybrid, seem to accommodate themselves to all sites. For purely northern aspects, after the Dijon Teas we must again revert to the Evergreen, Ayrshire, and Hybrid Chinas, and some of the stronger Hybrid Perpetuals, the reds, such as Monsieur Boncenne, Maréchal Vaillant, and Glories of Cheshunt and Waltham doing better, even in such a position, than with a southern exposure—the flowers open more slowly. The Banksians, the small flowered double yellow and white, are the freest flowering, and therefore the best, need, according to the accepted theory, the very hottest southern exposure to make them flower, but I have noted a yellow, on an east wall in Cheshunt, that mostly flowers, and as it is the only one in the neighbourhood that does, may we not have made a mistake in our theory? Lastly for dwarf, warm walls. These are the beautiful evergreen single and double Macartney and Microphylla Roses, with their quaint distinct flowers and glossy foliage, but they need warm positions. But what may not be done with climbing Roses on supports? The pretty William Allen Richardson covering the wire fence of my orchard; and the wire walls covered with Rêve d'Or and the Dijon Roses, struck even the editor of the *Garden* this summer—the Polyantha Roses running up amongst the trees of the Sisly garden at Lyons. (Have we sun enough in England to

let the climbers combat the shade when planted at the foot of trees?) Groups of free climbers planted on mounds and allowed to gracefully throw their shoots down the sloping sides, furnish the safest of retreats for birds nesting. All are amongst the purpose for which climbing Roses may be used in the garden.

Pillar Roses.—My paper has grown too long, so I will spare the reader how I have selected the following, but he may rely on the choice. The best are:—

Reds and Crimsons.

H.P. Annie Wood.
H.P. Camille Bernardin.
H.T. Cheshunt Hybrid.
H.C. Chénédole.
*H.P. Duke of Edinburgh.
*H.P. Duke of Teck.
H.P Dr. Hogg.
*H.P. Climbing Mad. Victor Verdier.
*H.P. Glory of Cheshunt.
*H.P. Madame de Trotter.
H.P. Madame Isaac Perrière.
H.P. Maréchal Vaillant.
H.P. Mons. Boncenne.
H.P. Ulrich Brunner.
*H.T. Reine Olga de Wurtemberg.
H.C. Vivid.
*H.T. Reine Marie Henriette.
H.P. Climbing Capt. Christy.
H.P. John Hopper.
H.P. Mdme. Marie Lavallée.
H.P. Mdme. Clemence Joigneaux and its salmon form, William Warden.

Whites and Yellows.

N. Aimée Vibert scandens.
H.P. Climbing Bessie Johnson.
T. Gloire de Dijon.
*K.Cl. The Garland.
H.P. Madame Plantier.
*T. Madame Berard.
H.P. Princess L. Victoria.
H.P. Paul's Single White.
S. Rosa sinica.

Rose Colours.

H.P. Anna Alexieff.
*H.C. Coupe d'Hébe.
H.P. Climbing Jules Margottin.
*H.P. Climbing Edouard Morren.
*H.P. Climbing Victor Verdier.
*H.C. Charles Lawson.
H.P. Paul Neron.
H.P. Princess Mary of Cambridge.
H.C. Russelliana.

Those marked * are the very best

There is care needed in planting them to ensure good covered pillars and long life to them. See that the soil is good and rich, get your post or iron pillar firmly fixed and as permanent as possible. Choose good, vigorous plants if worked with a sound union with stock. In pruning leave the shoots long. Try what M. Jean Sisley has pleaded for the extension system, and let Nature have nearly its sway. What pruning you do, let it be in thinning and guiding, not in shortening. Feed the roots freely to support the vigorous top. The result will be a glorious show of bloom.—*From "The Rosarian's Year Book" for* 1886.

PRUNING ROSES.

The pruning season to most rosarians is an interesting, and yet an anxious, time—interesting because it is really the beginning of the new Rose year, and an anxious time because some morning in April or May we may awake to find, much to our discouragement, a frost of from 8 degs. to 10 degs., putting an end to all our cherished hopes. To say that we have a good Rose season once in a decade is, perhaps, too ungrateful, and yet it is not far off the truth, taking into account severe winters, late spring frosts, too much rainfall or the want of it, the after gales, to say nothing of insect pests, against which the rosarian has to contend. And yet how fully are we repaid when in some June or July morning we stroll among our Roses and behold them a "thing of beauty and a joy for ever." A well-built bloom of Marie Baumann or Alfred Colomb, or it may be the equally fine form of a Monsieur E. Y. Teas or La France, at once banishes all our murmurings, and inspires us with further and fuller zeal.

Our Roses here, *i.e.*, the Hybrid Perpetual class, we have usually pruned about the middle or third week in March, but in forward seasons we do the work earlier. The time being fixed, the question arises how we shall best perform the operation—not as I have frequently noticed, by cutting all sorts down alike. No; pruning must be done in accordance with the forms of growth and the flowering habits of each variety. For Marie Baumann, Louis Van Houtte, Lord Macaulay, Xavier Olibo, Senateur Vaisse, La France, Monsieur E. Y. Teas, Alfred Colomb, A. K. Williams, Duke of Wellington, Dr. Andry, Beauty of Waltham, Baroness Rothschild, and Marquise de Castellane, severe pruning is necessary to insure fine well-built exhibition blooms, and for those who prefer this class of flowers to those of an inferior type, but in greater quantity, I should recommend that they be pruned back to, say, three or four eyes from the base of the young shoots, never forgetting to cut away all thin and weakly wood.

To prune the following varieties in the same way as the above would be to court failure. Being of stronger growth and not so floriferous, I would suggest that they be left with from six to eight eyes from the base of the shoots. Among Roses of this class are to be found the following:—Madame Clemence Joigneaux, Madame Lacharme, Madame Hippolyte Jamain, Paul Neron, Paul Verdier, Auguste Rigotard, Madame Gabriel Luizet, Francois Michelon, Duke of Edinburgh, Baron de Bonstettin, Edouard Morren, Abel Carrière, Madame Sophie Fropot, John Hopper, John Stuart Mill, and Mdlle. Annie Wood. Some of the above, and, indeed, many of the stronger-growing varieties of the Hybrid Perpetual class, are not unfrequently used as pillar Roses, and with success. Where they are used as such they may be treated the same as climbers properly so-called, pruning sparingly, taking out worthless shoots, and shortening those left only at the extremities. W. H. F.

THE COLLINSIAS.

These constitute a very pretty family of North American annuals belonging to the Pentstemon order. If sown in autumn, they will, on many soils, survive the winter and flower much earlier and better than spring-sown plants. They are of the easiest culture sown in the open air; if sown in spring, the plants flower in about twelve weeks' time. There are about a dozen species in cultivation, the only one requiring special

Collinsia bicolor.

treatment, being C. verna, which must be sown in autumn. Seeds of this should be sown about the end of August or up to the middle of September, in pans of light vegetable soil which should be kept thoroughly damp. In a fortnight the seedlings will show themselves, and when they have made their first pair of leaves (beside the seed lobes), they are to be pricked out singly in pans, boxes, or pots, the latter if intended for blooming under glass. From this time forward it is important that the seedlings should be kept cool and damp, and as near the glass as practicable, that their growth may not be forced. If intended to bloom in the open ground, they may be planted out in light, rich soil in partially-shaded situations, or in a north or north-west aspect, and will require no other attention than slight protection during severe weather. Thus treated, they will in ordinary seasons begin to bloom early in April, and continue in flower for six or eight weeks. Notwithstanding its charm of colouring, however, this has never become so well known as C. bicolor (shown in our illustration), grandiflora, violacea, heterophylla, and the various other forms. The prettiest use for these plants is in the spring garden in beds, or occasionally as a broad edging. T.

Late Chrysanthemums.—The show of Chrysanthemums at the Royal Aquarium, Westminster, on January 13th, has attracted a great amount of interest, and it is gratifying to know that the bold experiment of holding an exhibition in the second week of January was crowned with success. The value of Chrysanthemums in the dullest month of the year need not be dilated upon, as it will be recognised by everybody, and we do not doubt that owners of conservatories will make a note of the best varieties shown, and that the increased demand will stimulate raisers to the production of new late-flowering sorts. Among the prize collections were Elaine, Triomphe de la Rue du Châtelet, Sceptre de Toulouse (yellow), Mdlle. Augustine Gautheut, Bend Or, grandiflorum, Comte (violet purple), Japonaise (yellow), Peter the Great, Thunberg, Meg Merrilies, Mad. C. Andiguier, Fanny Boucharlet, Madame L. de Reydellet, Baron de Prailly, Miss Maréchaux (white, with outer surface flushed with pink), and Princess of Teck. Golden Christine, Jeanne d'Arc, Pink Pearl, Boule d'Or, Syringa, Boule de Neige, Beauté des Jardins, Mad. Eugenie Langelet were also shown. Many of the flowers seemed to have been retarded too much, but the following looked fresh and seasonable, and are those that seem to us the most desirable for late flowering. The best of the white incurved sorts was Miss Maréchaux; its white florets, tinged with rose, are very pretty. The best Japanese were grandiflorum, Lowe's Bronze Queen, Ceres, Triomphe de la Rue du Châtelet, Elaine, Thunberg, Mons. Astorg, Golden Dragon, and Meg Merrilies. Anemone-flowered: Fleur de Marie, Sunflower, and Virginale; among the Anemone Pompons none were so fresh as the golden yellow Madame Langelet.

THE COMING WEEK'S WORK.

Work in the Town Garden.

There are several kinds of plants, usually regarded and treated as perennial or biennial, that, if raised from seed early, form very good flowering specimens the same season. Some of these are very suitable for cultivation in the town garden, and, indeed, when grown in this way, form more vigorous and shapely plants than when propagated in the usual manner by division of the old roots. Moreover, thus treated, they escape the ordeal of a winter, which in thickly-populated districts is a serious matter, so that, especially where expense is an object, and a moderate amount of trouble is not, this is a very good plan, and the present is the time when operations must be commenced. Among the most useful of the above class are Hollyhocks, Delphiniums, Antirrhinums, Lupines, Œnotheras, Pansies, Chrysanthemums, and the always delightful Nicotiana affinis, which, though practically a hardy perennial in dry soils, forms much better plants when raised afresh from seed each year. It may be as well to state plainly that it will scarcely be worth while to attempt the above unless they can be properly attended to throughout, for if stuck away in odd corners, allowed to starve in the seed-boxes, or in any way neglected, failure, in whole or part, is almost sure to result. To do any good the young plants must be kept growing on freely, and without a check from first to last; but if this can be managed, and the seeds are got in in a suitable temperature sufficiently early in the season, they will probably all bloom well before the summer is over.

Hollyhocks are always an acceptable addition to any garden of an appreciable size, their stately habit and handsome flowers rendering them very effective, either as solitary plants, in groups, or placed at intervals towards the back of mixed herbaceous borders. Seed should be sown towards the end of January or first week in February in well-drained boxes of sandy loam, and placed in a gentle heat, or on a greenhouse shelf. When up, keep close to the glass, pot off singly into 3-inch pots when showing one or two rough leaves, and grow on in an airy, moist greenhouse temperature; a spent hotbed frame is as good a place as any, for the plants will do much better on a moist bottom, such as a layer of damp Hops, or the like, than on a dry shelf or stage. Shift them into 5-inch or 6-inch pots as soon as fit, using a rich loamy soil, or if there is but little room indoors, and the plants can be protected by handlights for a short time, they may be planted in deep rich soil where they are to bloom as early as March. All must be put out by the first week in May, at the latest, or they cannot be expected to bloom till another year. It is of importance to secure a good class of Hollyhock seed, as it is very disappointing to have a lot of single flowers after bestowing so much care upon them. I have always found that what is sold as "Chater's strain" can be depended upon as good, it always producing a large proportion of fine double flowers.

Delphiniums (perennial Larkspurs) are to be treated in much the same way as the foregoing,

but they need not be potted off singly, merely pricked off into a bed of soil in a cold frame, or protected nursery beds, and transplanted thence to the flower-borders. The colours of many of these, both double and single, are now very fine indeed, some of the blue shades being remarkably bright and delicate, and the purples very rich in tone. The smaller spikes and side shoots come in very useful as cut flowers.

ANTIRRHINUMS (Snapdragons) are very bright and easily grown. Seed sown in February or March, pricked off once into boxes or nursery beds, and planted out in May, will bloom abundantly in late summer and autumn. Lupines of the perennial section should be treated exactly as Delphiniums, and will make fine stately plants in good soil very quickly.

THE COMMON EVENING PRIMROSE is one of the best town plants, and the faintly-scented, bright yellow blooms are produced very freely. Self-sown plants are the best, and are found in abundance wherever old plants are established; these stand the winter well, and bloom early in the summer. But seed sown thinly under glass in January or February, and pricked off out-of-doors when strong enough, will generally flower in autumn.

PANSIES can really only be had in town gardens, properly so called, from seed—divided plants, or those from cuttings, dwindling sadly in an impure atmosphere. Sow in a rich loamy soil, which must be kept moist, in February or March, prick off once, and plant out when fit in either a sunny or moderately shady position; the first batch will come into bloom in June, and the others later on. The large Belgian spotted or fancy kinds seem to do better than the "show" varieties, as a rule, being more vigorous in growth.

CHRYSANTHEMUMS from seed sown early will mostly all bloom the same autumn. They must, of course, have a gentle warmth to germinate the seeds, and during the early stages, but a greenhouse temperature will be sufficient for this, and the plants are grown out-of-doors during the summer. Unfortunately Chrysanthemum blooms, unless they expand very early, become so soiled and disfigured by the smoke and dirt of a large town, that it is generally advisable either to grow them in pots, or to plant them where they can have some kind of protection over head in autumn. Nevertheless a few seedlings are well worth growing, and very little trouble. Many will produce single and semi-double flowers, which are often very beautiful, and all flower very freely.

NICOTIANA AFFINIS must be sown in January, or early in February, in light rich soil, to bloom the same year. Keep in a gentle heat, prick off into boxes, or pot singly when large enough. Plant out about the 1st of June, and the white deliciously scented flowers are sure to be appreciated during the warm summer evenings.

B. C. R.

GLASSHOUSES.

PRIMULAS.—To have Primulas in good flowering condition through the winter and on during spring, there should have been at least two sowings made last season, as the plants that come earliest into flower cannot be expected to keep on bearing a full head of bloom for more than six or eight weeks, when those raised from the later sowing will succeed them. These should now be pushing up their flower-stems, and ought to be well supplied with manure water; if applied in a weak state they may have it regularly, as, in common with most plants that make comparatively quick growth, they will bear more assistance of this nature than is often supposed. Where Primulas are kept through the winter in a house where no more heat is used than is necessary to keep out frost, they are liable to damp off at the bottom during severe weather such as we have lately had. When subjected to cold treatment in this way the stock should be looked over from time to time, removing any leaves that die off, otherwise they communicate disease to the stems of the plants. One of the best safeguards against damping, which Primulas, more than most plants, are liable to when kept cooler than they like, is to keep the plants on a dry shelf as near the roof as possible.

CINERARIAS intended to come into flower later on should, like the last-named plants, from the time when the roots have got well hold of the soil and the flower-stems begin to push up, have manure water given every time the soil requires moistening, especially if the plants are confined to small pots. This, and keeping them in a moist atmosphere, and perfectly free from aphides, are the principal things to be observed in the cultivation of Cinerarias.

HERBACEOUS CALCEOLARIAS. — Where the stock of these is tolerably forward, the plants will shortly begin to grow faster, especially if there is the means of keeping up a temperature a little higher than that required by the generality of greenhouse plants. These Calceolarias like to be in a temperature of about 45 degs. in the night; if no more warmth is given them than is requisite to keep out frost through the winter, they will make much less progress in size, although there will be comparatively little difference in the time of their flowering, but there will be much difference in the display of bloom between strong, vigorous examples that have been kept moving through February and March, and that forthcoming from weak plants that make little progress until later on.

SHRUBBY CALCEOLARIAS.—The different varieties of shrubby Calceolarias, especially the yellow sorts, are not so much used as pot plants now as they used to be, yet there are few things that make a better display in the spring, or that better repay the little trouble requisite to have them in good condition. If fairly treated the same plants will go on for years, attaining a large size, each season producing quantities of flowers during the spring and summer. Plants that were cut back after blooming last autumn should by this time have made some progress in growth, and should be turned out of the pots, removing as much of the old soil as can be got away without unduly disturbing the roots; they ought to have pots 2 or 3 inches larger than they have occupied during the preceding season, unless already large, in which case they will require to be well supplied with manure water later on. The old variety, aurea floribunda, is still one of the best for growing in this way. Amateurs who have had little experience in plant growing would find these, and similar plants that are easy to manage give much more satisfaction than things that are difficult to grow and not always so well worth the attention bestowed on them.

SINGLE PETUNIAS.—Such beautiful varieties of these can now be had from seed that many growers depend annually on seedlings. But there is one advantage in growing them from cuttings, which is that the plants arrive at a flowering size earlier in the season than they can be had from seed. Cuttings that were struck last autumn, and are now in small pots, should at once have more root room, for if allowed to remain too long with their roots confined they get into a hard stunted condition, from which it is difficult to move them. In common with all quick-growing, soft-wooded plants, they like rich light soil; ordinary turfy loam, with a good portion of rotten manure, leaf-mould, and some sand added, answers well for them. If well rooted, they should have pots 3 inches or 4 inches larger than those they have occupied. Pinch out the points of the shoots, so as to induce them to branch out.

DOUBLE PETUNIAS.—Young plants struck at the latter end of summer should also be moved on into larger pots, and be treated as advised for the single sorts. Where the flowers are required for cutting, these double varieties will be found the most useful, as they will last much longer than the single ones. Plants of either double or single Petunias, cut back in autumn with a view to their being grown on for the present year's flowering, will by this time have made enough top growth to admit of their being turned out of the pots and some of the old soil removed, putting them in others two or three sizes larger, using soil similar to that advised for the younger stock. It is better to move the plants thus early in the season than to let them go on until later, when the growth, being further advanced, would suffer through the disturbance of the roots in the removal of the old soil.

HELIOTROPES.—Young plants of these fragrant favourites should also be moved into larger pots, and old specimens that were cut back after blooming last season will require partially shaking out of the old soil, and should, if wanted to grow larger than they have been before, have larger pots. If as big as they are required they may be returned to the same pots, giving them rich, light soil, such as is recommended for the plants previously spoken of. Heliotropes will last for a number of years if a portion of the soil is removed annually, and they are well supplied with manure water further on in the season when the pots are full of roots. These plants do well grown standard fashion, by removing all the side shoots from the stem until the desired height is attained, and then pinching out the top; in this manner they can easily be induced to form bushy heads. Grown in this way they look well in greenhouses amongst other plants, relieving the even surface presented by the things that are bush-shaped. If there is the means at hand all soft-wooded plants, such as the different kinds noticed, should, after potting, be kept a little warmer than they may be supposed to have been through the winter up to now. In fact, the general soft-wooded occupants of the greenhouse are none the worse for having the temperature raised a few degrees about this season, as under such conditions they make more progress, coming into bloom considerably earlier than when no more warmth is used than will simply exclude frost.

HYBRID PERPETUAL ROSES for forcing, that were potted from the open ground in autumn should now be put in heat, but they ought not to be hurried; about 48 degs. or 50 degs. in the night is quite enough, as the hybrid Roses in question will not bear so much heat as the Tea varieties. More Hyacinths, Narcissus, Tulips, Crocuses, and Scillas should be put in heat. It is much better to start these, and similar plants, in no larger numbers at a time than are sufficient to keep up the requisite supply of flowers.

AZALEAS should also be started, to succeed the earliest forced. See that the plants are quite free from thrips before placing them in heat, as if any of the insects, or their eggs, are present the warmth will quickly bring them into activity, when they will not only be difficult to deal with on the Azaleas, but will affect other things within the house as well. Amateur plant-growers cannot be too much impressed with the necessity for waging an incessant warfare against all kinds of insect pests, as in the cultivation of plants under glass some or other of the various kinds are almost continuously making their appearance, and if there is any delay in their destruction it not only entails much more difficulty in getting rid of them, but the plants on which they are thus allowed to get to a head never do well. THOMAS BAINES.

FLOWER GARDEN.

If a large stock of Dahlias is required, the roots must now be placed in heat after they have either been potted singly, or a number of roots placed together in suitable boxes. The best place is a forcing house, where the temperature ranges from 50 degs. to 55 degs. at night. They may be placed over the pipes in vineries or Peach houses, and started with them. The shoots start well and healthily over a bed of leaves or tan with just a mild heat. Start the shoots of Phloxes in pots into growth in order to obtain early cuttings. The heat of a greenhouse will cause a very early growth. Shoots about 1 inch long may be slipped off and placed singly in very small pots. They will soon form roots, and grow away freely with a little bottom-heat. Pyrethrums, Delphiniums, &c., in beds will be putting forth their very tender leaves as soon as the frost will allow them. See that they do not receive any injury from birds. If it be necessary to increase the stock, the plants can be lifted and divided.

FRUIT GARDEN.

NEGLECTED ORCHARD TREES.—Many of these would be better if their root and stem-suckers were removed, cankered branches cut off, and other branches thinned out together with any long spurs, in order that the trees may have a chance of renewing their vigour by the production of new wood. Any trees that are affected with Moss or Lichen should be splashed over with a mixture of soot and lime, a simple but sure remedy. Planting fruit trees when the soil is in a sodden state is ruinous, no matter how well drained the soil may be. For obvious reasons, in stiff or clayey soils the plants should be raised a few inches above the ground line, but in light or gravelly soils they are best

planted on a level with the surface, care being taken that in neither case are the stems buried too deeply.

KITCHEN GARDEN.

A WELL-DRAINED AND DEEPLY-TRENCHED GARDEN will, other things being equal, yield double the produce of an undrained and badly cultivated one. The first suffers neither from wet nor from drought. The crops can be got in at the proper time, and they require but little cultural attention afterwards, and that little is the more expeditiously accomplished owing to the workable state of the soil in almost all weathers; consequently the crops are finer and earlier matured, while in a garden of an opposite character seed sowing has to be deferred through the unkind state of the soil, and this late sowing, coupled with the slow progress made by reason of the water-logged ground, and the difficulties of culture through the ground getting hard and baked by the first dry weather, tends to show the economy there is in deep trenching and effective draining, a large proportion of which may be done in weather when it is not practicable to do anything else. After a few early Peas, Beans, and Carrots have been got in on a warm border, space for the main crops of Onions and Parsnips will require attention; both of these flourish best if sown as early in February as circumstances permit. Drill culture is greatly preferable to sowing broadcast for all kinds of kitchen garden crops. The space apart of the drills for Onions should be at least 12 inches, and for Parsnips 15 inches. The ground for Onions cannot be too highly manured or deeply trenched, but previous to sowing it should be rolled to make the surface firm. Parsnips, on the other hand, cannot have the soil too open, and the manure for these should be buried rather deeply, for nomatter how deep it is they will search it out. Surface manuring for these has a tendency to the production of forked or malformed roots, so that it is better not to manure at all in soils of good or medium quality than to have it too near the surface. Fresh stable manure—sufficient to make a good bed for one or two light frames, in which to raise Cucumbers and similar plants, as well as for making beds for Radishes, Potatoes, and early Carrots—ought now to be got together. It is well to mix the manure with its bulk in leaves, as when thus mixed it does not heat so excessively, is ready to use sooner, and keeps its heat better. The material for these beds, whether it is manure alone or mixed, must be shaken, thrown into a heap, and watered if necessary. In this state let it remain for five or six days, then turn and shake it, an operation which ought to be repeated a second time in a similar way soon afterwards. Rhubarb that is growing must have plenty of water, for if neglected at all in this respect it will not come nearly so strong as if properly attended to. Seakale roots after being forced ought to be put in sand or ashes; if there be a scarcity of young roots for planting some of these will do when the time arrives for putting them in. A little Lettuce and Cauliflower seed should now be put in boxes, and placed in a house or pit in which there is a little warmth. G.

Protecting plants from frost by fire heat.—It is, I believe, generally admitted that when bedding plants are wintered in glass-houses, as long as frost is kept from them, the less fire heat employed the better. I think there is more indiscretion as to the time of heating and the amount of heat employed than with respect to undue frequency of firing up. If, at nightfall, causes are in operation tending to produce frost, and the same conditions continue through the night, the cold will increase in intensity till sunrise. I have often, about day-dawn, examined the ground in the open and found it quite soft, and have observed as daylight appeared that it was frozen hard. From this it is manifest that, as is the practice of some, to light up in the afternoon, get up a high temperature in the early part of the night, and then allow the fire to get very low, if not to go out entirely towards morning, is to do just the reverse of what the nature of the case demands. Here, most of the bedding plants are wintered in a vinery heated by a saddle boiler. Sometimes, when it seems uncertain as to whether or not the cold will be sufficient to need the assistance of fire-heat, the fire is not lighted till eight o'clock, and then as soon as it is burnt up sufficiently it is banked up. The pipes get warm towards morning, and sometimes when it is considered necessary, at daybreak or before, the damper is drawn out, to brighten up the fire. By this means fuel is economised, and an unnecessarily high temperature avoided. I should perhaps observe that here, in the Isle of Wight, it is not often that the temperature sinks very low, especially in lean-to houses with a south aspect, and in a sheltered situation. The house referred to is in an exposed situation, with glass on every side. There is a large conservatory attached to the south side of the dwelling-house; the latter forms one of the sides. It (the conservatory) is gable-ended, the two gable ends being brick, there being only the front side and the roof of glass. On frosty nights blinds are let down inside of the glass front. There is a heating apparatus to the structure, but it is seldom used. We have not had a fire there this winter, and the frost has not got into the house. We have Primulas, Abutilons, Cyclamens, &c., in bloom there. In pages 619 and 638 in GARDENING are notes on outside protection to glasshouses, which I think are well worthy the attention of every reader.—L. C. K.

FRUIT.

CHERRY CULTURE.

IN Kent and the lower parts of Hertfordshire, Cherries are largely grown as standards in orchards, but in gardens they are generally trained to walls, not so much, perhaps, for the sake of shelter as to have them in a position where the fruit can be protected from birds. I should like to say something about varieties before the season for planting gets further advanced. Taking the earliest first, the one I would recommend is Governor Wood, which is a most prolific kind, and bears medium-sized fruit of a pale yellowish white, suffused with colour on the side next to the sun, the juice, of which this Cherry is full, being very sweet and delicious. The next to ripen after this is the Frogmore Bigarreau, which is a little larger and brighter than the foregoing, and, like the old Bigarreau, of exquisite flavour. Black Eagle and Knight's Early Black come in quickly after, the first-named being a small kind with very black shining fruit, that is sweet and agreeable; Knight's is the same in colour, but much larger, and not equal in flavour, as it is more fleshy and less sweet in the juice.

To come in after these there is not one equal to the Elton, which is the most showy and the best of all Cherries, as the fruit is large and high coloured, and very rich in the flesh. As a black companion to this, ripening at the same time, the Tartarian is the best, the fruit being large and conical and deep blue-black in colour. Although there are many others of the dessert kinds, those mentioned above are the most distinct and desirable. For cooking, till the Morellos come in, none are equal to the May Duke, which is a prodigious bearer, and the fruit will hang a long time. The Morello is quite indispensable; is the most serviceable of all Cherries, as it may be used in such a variety of ways, and its season is a prolonged one, as by keeping the trees dry the fruit will remain sound and good till very late in the autumn—and the longer, in reason, that it remains, the better it is.

To have it to the period referred to, it is necessary to train the trees to a wall or fence, that with a north, north-west, or north-east aspect being the most suitable, and if the young shoots are allowed a little freedom to grow out as breastwood, much time will be saved in tying them in, and they will bear heavily and keep cleaner and more free from insects through the washing they get. Morello Cherries also do remarkably well grown as dwarf standards or loose espaliers, with the main branches just held to strained wires, which is a good plan of growing them, as they may be protected easily when in flower or fruit—in the first case, by sticking a few evergreen branches along their sides, and in the latter by dropping nets over the tops. All Morello Cherries require in the way of pruning, when grown loosely, is just an annual thinning-out to prevent them becoming too dense, as, unlike the dessert sorts, they must not be spurred, or have the shoots stopped, but be left to grow full length.

THE MOST FAVOURABLE SITUATION for the dessert sorts is south-east or south-west, but it is always advisable to have some in different aspects, as when frost comes with wind from one quarter and kills the blossom, it often escapes in the other, and, besides, a longer succession of fruit is maintained. To keep the spurs close to the wall, which is the only way of taking full advantage of the shelter, the shoots the trees make during the summer should be pinched back about the middle of July, when they will form fruit buds at the base. Although Cherries do fairly well in almost any soil, that of a light sandy nature suits them best, and, therefore, in planting the young trees they should be started by having a barrow-load or so of sharp turfy loam to each, in which they will root and soon make some fine shoots. These ought to be laid in full length, and not stopped or shortened at any time till they have filled the allotted space and met the other trained at their sides. For destroying green or black fly, to which insects they are very subject when the young shoots are young and tender, there is nothing so safe as Tobacco-water, in which the points may be dipped. S. D.

The Service Tree (Pyrus Sorbus).—A tree commonly known by its more popular name in Sussex, "The Chequer Tree." I can well remember that during the Hop-picking season we used to go and break off branches from the so-called Chequer Tree, with its small Pear-shaped fruit, to put by for a few weeks, and when quite ripe they were eaten with great relish. The trees are thinly scattered in some of the woods, and as far as I can remember attain a height of from 20 feet to 30 feet.—H. G. B., *Reading*.

Currants and Gooseberries.—How seldom do we find these grown on stems high enough to keep their fruit clean, and especially is this so with Gooseberries, which are naturally drooping. To prevent this the plants should be furnished with longer legs while young, *i.e.*, when the cuttings are made. They should be as straight and long as possible, and if they cannot be got to the height required, the best shoot they make in the spring should be staked and led up straight till it has reached the desired length; it may then be stopped to cause it to branch out and form the head on which to bear the next season's fruit. The most suitable height for the plants to stand without support is about 2 feet, but even at that height they may require some assistance till the stems get strong, as while in leaf the wind has great power on bushes. A good plan of growing Gooseberries, in order to keep them well up from the ground, is to tie the branches to strained wires, and train them espalier fashion, a way in which the fruit is well exposed to the sun and very easy to pick, as it may be got at from both sides of the rows without having to thrust the hand among thick shoots full of sharp spines. Currants of the Red and White kinds are more amenable to standard training than Gooseberries. Nothing is, however, gained by having them too high, as they are then more difficult to protect, and they must have stakes to keep them erect. Many experience great difficulty, even during the winter, in keeping birds off the buds; sparrows often pick them out, and in that way do great damage. The way in which we protect ours is to syringe limewash over them. This not only preserves the buds from the attacks of feathered depredators, but frees the bark of the bushes from all Moss, and makes them clean and healthy for the rest of the year.—S.

15520.—**Defective boiler.**—Most undoubtedly there is a stoppage in the return pipe. I should advise disconnecting the return at the boiler, as it points to the boiler being stopped up with the sediment from the water used, or the pipes may have been very much corroded before they were fixed, and continuous hot water has scaled it off, and worked it down into the boiler.—CHAS. HEIRONS.

15603.—**Diamond-shaped hoe.**—The diamond-shaped hoe is occasionally used in large gardens in the west of England. We use them for drawing shallow drills for crops in the kitchen garden; but any other form of hoe is quite as useful for all purposes of the garden. We get our supply from an ironmonger in the neighbourhood.—J. C. C.

THE VIRGINIAN POKE.

THE Virginian Poke (Phytolacca decandra) is a plant that is often sent us in fruit by readers who are puzzled by finding it unexpectedly in their gardens, the fruit being like a long string of small Blackberries. It is a stout, vigorous-growing, herbaceous perennial, which reaches a height of 5 feet or 6 feet, and bears numerous wide-spreading branches, the leaves on which are about 6 inches in length and 2 inches or 3 inches in breadth. The flowers, which are produced in long pendulous racemes, are succeeded by berries of a blackish-purple colour, which, when in perfection, render the plant very ornamental. The juice of the berries, which is of a beautiful purple colour, is employed to impart a deep rich tint to wines, and the young shoots, cooked like Asparagus, are eaten in America. P. dioica is noteworthy as forming one of the largest trees met with in the open pampas of Buenos Ayres, where, scattered over the country, it forms one of the most prominent features in the landscape. It generally occurs singly or in groups of two or three, and forms a stout, thick trunk, the wood of which is soft and of little value. Another species, P. icosandra, in some of the tropical regions of the western hemisphere, is one of the first plants to spring up wherever the ground has been cleared. Its young shoots, like those of the Virginian Poke, are also gathered and eaten. Several other Phytolaccas are widely distributed throughout the Tropics, where they form stout herbaceous plants of but little beauty. With us their cultural requirements consist in giving them a good deep soil, and, as seed is readily obtainable, there is seldom need to propagate them by means of cuttings, although they may be increased readily enough in that way. H. P.

Virginian Poke (Phytolacca decandra).

15606.—**Plants and wire-worms.**—All the plants "J. G. T. L." names would suffer from wire-worms, especially Carnations and Anemones; fortunately, one load of infected fibrous loam may be easily dealt with at this period. Spread it out thinly and let the poor robins have a favourite feed; they will do the picking out business more quickly and thoroughly than you can do it if this hard weather lasts. True, it will get frozen, and they may not then be able to work, but by the combined action of frosts and robins, you may expect to clear the soil of this pest. Give it a turn twice or thrice a week when not frozen. All my potting composts are thus exposed in winter before they are placed for use. You should see the birds hover about when the turning process is going on.—J. WOOD.

—— I recommend "J. G. T. L." to hide small pieces of Turnips, Carrots, or Potatoes in his loam; they will be sure to attract the wire-worms, and, if examined every day, will soon free the soil from these pests. If the loam is placed where poultry can get to it, they will soon pick out the wire-worms.—G. S. S.

NOTES ON DIFFERENT SYSTEMS OF HEATING.

HEATING WITH FLUES.—I was much interested in "L.'s" communication on page 640, as he appears to wish that the flue system of heating may be revived; and in regard to the use of flues for heating houses of moderate size, I am quite in sympathy with him, because, although flues consume more fuel than would a small boiler to heat the same space, the flue has the advantage, as it requires less attention. In the case of flues, if you once get the house sufficiently warm, you may bank up the fire and leave it with safety for at least eight hours, and at the expiration of that time find the temperature pretty near what is required, although in the interval since making up the fire there may have been a sharpish frost. But in the case of a small boiler it would not be so; for although you can get up the heat more rapidly, it as quickly cools down after the draught is taken off; and unless the draught is regulated to a nicety, the fire either goes out or burns out, and then there is a sudden lowering of the temperature, which is not good for the plants. My opinion of flues is this, that they are only suitable for houses that are 12 feet and more in length and 10 feet wide, and then they must be properly built by an experienced workman, or in a few years the joints between the bricks will crack, and the fumes from the fire will find their way into the house and do much mischief to the plants. Shorter lengths of flue than 12 feet get so over-heated, unless the fire receives very careful attention, that it is almost impossible to maintain anything like a regular temperature in the house. I am aware that even many gardeners object to the use of flues, and where there is a large house or a range of houses to be heated they are right, but in the case of a single house a well-built flue is not to be despised. My experience of flues dates back further than I care to mention. I have had them to manage in various parts of the country, and I must confess that where there is a single house to heat of not large dimensions I prefer a good flue to a small boiler, for the latter is nothing but a constant worry and anxiety. I am not speaking of what I may call the toy boilers—I have had no experience with them, and therefore do not wish to offer an opinion on their merits. While on the subject of boilers I may mention that we have used here the dome-top cast iron independent boilers for heating a span-roof greenhouse 32 feet long and 14 feet wide, there being two rows of 4-inch pipe allowed, except just at the entrance door, and it leaves nothing to be desired. As a matter of fact I was so pleased with its working that I had another two sizes smaller to warm another house, but it required so much attention that I was thankful when fresh arrangements of the houses required its removal; and if I had to do the same work over again I would put down a flue in preference to one of these small boilers, and the flue would not cost half as much money. I am quite sure that where there is not more than 200 feet to 250 feet of 4-inch pipe to heat there is no more serviceable boiler invented than the dome-top, as, apart from its heating capacity, it requires no brick-work, and not a very deep stoke-hole; and there is not so great a waste of surface heat as one would suppose. Of other systems of heating which a lengthened experience has brought under my notice I may mention the "Polmaise," which was introduced, I believe nearly forty years ago, but which has now quite gone out of date, for what reason I do not know, as the system had much to recommend it. In the first place, it took up but a very small space in the house, and for cleanliness it was quite equal to hot-water pipes; in fact, it was the best system of heating by hot air that I have ever seen, and required less attention than even a large boiler. In this case the heat is derived from an iron furnace, set in brickwork inside the house, the fire being fed from the outside. A hollow chamber surrounded the furnace, and connected with this chamber was a series of flues under the floor. The flues were carried to different parts of the house, and there was an opening at each end on a level with the floor. The heat from the chamber finds an outlet in these flues, and by that means the house is heated. The only fault I find with it is that you cannot get up the heat so quickly as with a flue or boiler; but once the furnace gets heated there is no further trouble, and the amount of fuel consumed is less than by any other system I have yet tried.—J. C. C.

—— The difficulty that is experienced by "Norfolk Amateur" may arise from an imperfect draught regulator at the ash-pit, or from the furnace not containing sufficient fuel. If "Norfolk Amateur" will send particulars as to the size of the flue and the furnace to Harford Villa, Dogsthorpe-road, Peterborough, it is possible that a remedy may be suggested by—CALORIC.

—— I think "Norfolk Amateur" need have no difficulty in making his fire burn for 12 hours, if he will check the draught in front. I find the most effectual way is by means of ashes, throwing them up in a heap in front of the furnace till they nearly reach the top of the furnace door; by this means, my fire will keep in from 18 hours to 24 hours, and give a temperature of from 45 degs. to 55 degs. My first experience of a flue was similar to "Norfolk Amateur's," and during severe weather, I had to fire early in the morning, late at night, and once or twice during the day; the result was a temperature of 70 degs. or more, when 50 degs. would have been much more suitable. In fact, it was so much trouble, my garden being nearly a mile from the house, and the result so unsatisfactory, that I had serious thoughts of discontinuing its use altogether, and adopting some other method of heating. With a little more patience and experience, however, I overcame the difficulty, and could not now wish for a better means of heating. I make up my fire at 4 p.m. and it remains in until 9 the next morning, when the fire simply requires raking together, and a little fresh fuel putting on. If not convenient to attend to it in the morning, I can be certain either of finding the fire in, or the flue still warm, at the usual time in the afternoon. I have found the following precautions necessary to insure success. Always contrive to have the flue nicely heated before banking up for the night; if it is cold at the time it will be some hours before the greenhouse receives any benefit. Do not have too much fire—a layer of red-hot coal is sufficient—throw on a few bits of coal, and fill up the furnace with small dry coal-slack. See that there is a clear space of about 3 inches underneath the furnace bars; more heat is thus retained than by clearing away all the ashes. Lastly, use plenty of ashes to check the draught, or the fire will burn out more quickly.—EXPERIENTIA DOCET.

—— My object in writing the following facts is the hope that "Norfolk Amateur" will find them a remedy for his ill success with the flue. To be certain of his flue keeping alight for nine or ten hours without attention, the furnace should be quite 2 feet long, 12 inches wide, and 18 inches deep (inside measurement). These are the dimensions of my flue. He should

have an iron door at the bottom, and a small one at the top—the one at the top for making up the fire, the one at the bottom for taking out ashes and dust when relighting. He should also have a piece of zinc or tin for regulating the draught according to the state of the weather. I find, from experience, that very small coal and coal dust, with ashes from the house fires, well mixed together and damped, make the best fuel for a flue. Before making up for the night, he should have, if possible, a bright, clear fire; he should fill his furnace with the above material to a level with his flue, which should be near the top of his furnace. My personal experience with the flue is that it is a first-rate heating apparatus for a small greenhouse. By making up the fire at ten o'clock at night with the fuel spoken of above, I find at half-past seven the next morning a nice bright fire, and the thermometer ranging between 50 and 60 degs. I must add that my greenhouse is a lean-to, facing the east, 10 feet by 9 feet, the flue is made of ordinary bricks, with a fire tile over the fire, 2 feet by 1, and 2 inches thick, and 6-inch glazed drain pipes, the furnace being at the south end of the greenhouse.—E. C. W., *Tottenham, Middlesex.*

—— Seeing so many inquiries about heating greenhouses with flues I will state my experience respecting them. I built a greenhouse 13 feet by 8 feet about four years ago, and had always a deal of trouble with my flue. I tried all sorts of ways, but I could not get it to act satisfactorily. It always smoked out of the firehole, on account of so much dampness in the flue; and at last I thought I would try drain-pipes, so I got some 6-inch drain-pipes. The pipes cost me 9d. a piece, and three elbows at 9d. each, making a cost of 6s. 3d.; and I find they answer well, providing there is between 2 yards and 3 yards of brick flue from the furnace, as the pipes are liable to crack if the blaze gets near them. During all the frosty weather I have got 60 degs. to 70 degs. of heat after the fire has been alight about a hour, and I can get more heat if required. The fire will keep in for ten or twelve hours.—JOHN BARTON, *Nottingham.*

15560. — FIXING COIL IN GREENHOUSE. — "W. S." can obtain a ready-made coil of wrought steam tube from any hot-water engineer for a few shillings; home-made coils are, as a rule, melancholy failures, unless done by some one who thoroughly understands the work. It must be set in solid brickwork, using, of course, fire-bricks next the fire. Get a small furnace door and frame, with ashpit door and ventilator all in one, and a set of small fire-bars with dead-plate and two bearing bars, also a corresponding furnace, top and cover (round), and a piece of 4-inch smoke-pipe, unless a brick chimney and pot on top are preferred. Set as follows: Ash-pit, 9 inches to 1 foot in depth, up to the fire-bars, or the frame will guide you as to this; lowest part of the coil about 6 inches above the bars, to leave room for fire below; inside of furnace-chamber, not more than 1 or 2 inches or 3 for a very large coil, clear of the outside of coil—this is important, as much space outside the coil is wasteful and bad in every way; exit into chimney, which should be at back, if possible just above the highest turn of coil; make this opening as wide and shallow as you can. Now, except in the case of a large coil, you must have a reserve chamber, or hopper, above the fire in the coil, or it will go out during the night. Therefore, as close as possible above the top of the coil and flue-exit, bring your brickwork in at once to the diameter of the inside of the coil, and carry it up thus a couple of feet or so, slightly narrowing upwards, and making the inside face of the work as smooth as possible, so as to prevent, as far as may be, the fuel sticking or hanging instead of falling. On the top set your circular cover and lid. A better plan is to have a stout sheet iron lining made for this hopper, going down to within 2 inches of the top of coil, and tapering slightly towards the top, and build this in. When all is dry, light your fire, and if the hopper is filled up with smallish coke in the evening it should keep in all night, the fuel dropping down from above as the lower part burns away. If economy is an object, a common "copper" grate and fire-door may be used, stopping the draught into the ash-pit by a piece of iron or slate cut to fit, and banked up at night with ashes; but this is only a makeshift, as the power of regulating this indraught to a nicety is a very important matter; if you have too much draught on at night, your fire will be burnt right out before morning, and perhaps half the water boiled or blown out of the pipes as well. If too little, the fire may go out for want of air. Experience will soon show how much to leave. If I remember rightly, a coil of four turns of inch pipe will heat from 100 feet to 150 feet of 4-inch piping, but any engineer's catalogue will tell you this. Do not choose a wide or "open" coil—*i.e.*, with much space between each turn. Slightly less than the diameter of the pipe between each is the right thing, anything more causing great waste of heat and fuel. On the whole, however, I should recommend obtaining one of the independent slow-combustion coil stoves in preference to the above plan, especially if only a small coil is required. These are self-contained, need no setting, work with wonderful regularity, and the draught can be adjusted to a nicety. One could be purchased for less than a plain coil, with the bricks, mortar, bars, and other necessary fittings, would cost; or a plain-wrought "Star" or "Gem" boiler would answer the same purpose, be more economical, and last a very long time.—B. C. R.

—— I do not think "W. S." would succeed in making a coil boiler, and he would not find it worth while experimenting while they are so cheap. I purchased one some two or three years back capable of heating 100 feet of piping, which cost only £1. I fixed this coil in brickwork, and have been nothing but pleased with it ever since. "W. S." could place his boiler in the furnace which heats his flue, and with a properly

The Cotton Plant (Gossypium herbaceum).

set damper in the chimney and ash-pit door would find it everything that could be desired. I built mine capable of holding sufficient fuel for three days and nights with a certainty of having an even and constant temperature in the greenhouse all the time.—W. C. C.

15609.—BOILER BETWEEN GREENHOUSE DIVISIONS.—There is not the slightest cause to fear any annoyance from the cause suggested—that is, if the thing is arranged in a common-sense manner. Of course, there will be no openings in the ends of the houses into the stoke-hole; these should be made as close and tight as possible. The door should open from outside, and should be kept as much as possible open; or a front ventilator, which from the description would seem to exist, will answer the same purpose, and another ventilator, or opening of some kind, in the roof will afford free exit to any objectionable product. But if the furnace is properly constructed, and the draught good, everything of this kind passes up the chimney, and is discharged well above the roof. As a matter-of-fact covered stokeholes are to be found close against some part of the house in very many places, and in more than one establishment that I know there is a large furnace in or under the potting shed, from which doors open into the different houses.—B. C. R.

15641.—HEATING GREENHOUSE FROM KITCHEN BOILER.—I tried oil for heating purposes; failure followed. I tried a slow-combustion stove, with a fine name, but failure was the result. Consulted a plumber. He could put hot water from kitchen range into any room in my house—then why not the greenhouse, since it adjoins my dwelling? Oh, yes! so he could; but the pipes would be cold in about three hours after the kitchen fire died out, unless I had a large cistern to preserve the heat until next morning. I got a cistern. It contains about six or eight cubic feet of water, and is 3 feet above the level of kitchen range. A flow-pipe, 1-inch bore, passes from top of boiler to top of cistern, and a return-pipe, same bore, from bottom of cistern to bottom of boiler, and I am perfectly satisfied. Cost of new range, cistern, &c., complete, £20. No extra fuel except 6 lbs. on retiring to rest at 11 p.m.; water quite warm every morning. I have in full bloom Heliotrope, Cyclamen, Genista, Lady Sheffield Geranium, and Mrs. Rundle Fuchsia. Now the climate is not quite so favourable for such flowers in the north of Ireland as it is in the Isle of Wight.—JOSEPH WEAVER, C.E., *Enniskillen.*

THE COTTON PLANT.

THIS plant (Gossypium herbaceum) although interesting chiefly because of its yielding a vegetable product of great commercial value, deserves cultivation for its large yellow Hibiscus-like flowers, and the wool-ball-like capsules which succeed them. A well-grown specimen of it could not fail to prove attractive.

Its cultural requirements are very simple, and the seeds are easily obtained. At Kew plants of it may be seen in the economic houses, but these fail to give any idea of the beauty of a really well-grown specimen, such, for instance, as that exhibited in a dry state in the museum, and which appears to have been grown in the United States. Liberal treatment and a warm, moist house would, no doubt, produce perfect Cotton Plants in about six months from the time of sowing. In the Southern United States, now the great cotton-growing region of the world, the seeds are sown in March or April much as we sow Turnip seed. They germinate in a week or ten days, and in about a fortnight after germinating the seedlings are thinned out. In from three to four months from sowing the plants are in bloom, and as the flowers fall the capsules rapidly swell, and continue to form and develop until frost nips them. The cotton pods are picked as they ripen, otherwise they would hang on the plants a long time. There is no reason why handsome pot specimens of the Cotton Plant should not be grown in this country by following the main lines adopted for its cultivation on a gigantic scale in America. The flowers are exceedingly beautiful, but, like those of many of the plants of the Malva family, they last only about a day. Being produced, however, very freely, their fugacious character would not rob the plants of their beauty; and as each flower is followed by a ball of white fleece, which will remain on the plant as long as it is allowed to do so, it will be seen how handsome a well-managed Cotton Plant must be. The use of cotton for clothing and other purposes is almost pre-historic. In India the species generally cultivated is G. herbaceum, while in the United States G. barbadense is preferred.

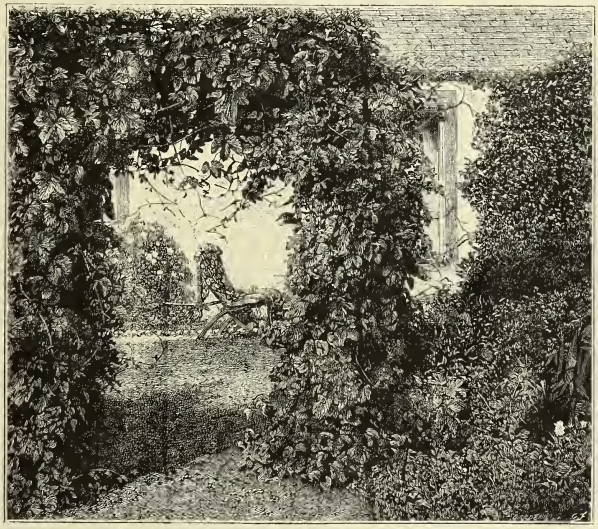
B.

The fruiting Duckweed (Nertera depressa) although generally grown in greenhouses and frames, is perfectly hardy when placed in a suitable position. In pots one is not always sure that its fruits will set, but outside they never fail to do so in profusion; they are small, round, and about the size of a Pea, orange-red in colour, but attaining a deep shining red when nearing maturity. They are produced on short stalks and can just be seen above the light green oval-shaped foliage, which is not more than an inch high. Perpetual shade, or only a little of the morning sun, with plenty of water, are its principal requirements. It seems to do best in peat to which has been added a little loam. It creeps along the ground at a good pace, and may be easily increased by nipping off the points, which will be found to be rooted at every joint. In spring, when in flower, it should receive copious waterings, which should be continued until after the fruit has set. It is a native of New Zealand.—K.

OUR READERS' ILLUSTRATIONS.

HOP ARCH AT THE BANK COTTAGE, ARDROSAN.

THE subject of the illustration is a "bit" from a view of a humble Scottish cottage on Earl Eglinton's estate in Ayrshire, situated on a lonely spot, far removed from any town, with look-out towards the sea, and the blue peaks of the Island of Arran. We have here a desirable retreat from the busy haunts of men. The garden is in keeping with the surroundings, for there is an absence of all that is formal, and in this light the place might delight a Ruskin. Here there is the lack neither of flowers nor of the love of them. Jessamine, Virginian Creeper, and Honeysuckle are over the walls of the house, while annuals and bedding plants make gay the border. All is done that an earnest, tidy hand can do to make the best of everything for beauty at little outlay. The arch, as shown in illustration, leads from the flower garden (on a gentle slope) to a portion allotted to fruits and vegetables.—A. B.



OUR READERS' ILLUSTRATIONS: Hop Arch at the Bank Cottage, Ardrossan. From photo sent by Mr. Alexander Borthwick, Wendover-crescent, Mount Florida, Glasgow.

FAVOURITE FLOWERS AND HOW TO GROW THEM.—V.

TREE OR PERPETUAL-FLOWERING CARNATIONS. THIS is a very distinct section, and one that is highly valued by all who love flowers for sweetness and beauty combined; moreover, they are inexpensive in the first place, and easily grown afterwards. We do not grow more than three scores of flowering plants, and we manage from that number to cut flowers from October until the ordinary varieties grown in the borders come into flower about the end of July. Of course it is not to be expected that they can be cut in large quantities, but if only a few are required each week they are there when they are wanted. The simple details of their culture are easily explained, and can be carried into practice by those who have but little knowledge of gardening matters; but it must be fully understood that flowers cannot be obtained during winter unless they have the advantage of a heated house, light and airy, in which to place the plants during autumn, winter, and early spring. The best plants are those propagated early in the year in an artificially-heated propagating house.

CUTTINGS can generally be obtained in the month of January, and those put in and rooted at that time will with careful management grow into large flowering specimens by the end of the year. It will be necessary to look out for cuttings of some of the varieties up to the end of March, as some are not so free as others in sending out lateral growths. The small, very recently-formed, clean lateral growths should be slipped off with the fingers; and be dibbed into 4-inch or 5-inch pots of fine sandy soil; a sprinkling of sharp silver sand ought to be laid over the surface. The pots must be plunged in a gentle bottom-heat, the temperature of the house by preference being 50 degs. to 55 degs. A hand-glass ought to be placed over them, or what answers as well, perhaps better, is a square of glass laid over them. This is easily done if the labels are allowed to stand a little above the points of the cuttings. This slight glass protection is sufficient to cause moisture to hang about the cuttings, and so prevent their shrinking before roots are formed. When it is seen by the new growth that the cuttings have formed roots, they may be removed from under the glass. Some varieties take very much longer to form roots than others. Very soon after they are rooted each plant must be separately potted in small pots; and if possible they ought to be placed near the glass, as they make very weak, lanky growths in heat unless this is done. The potting soil ought to be good loam, a fourth part leaf-mould, as much sandy peat, and a little quite-decayed stable manure and sand. When the plants are older the same potting soil may be used, with the addition of a little more decayed manure, and the loam ought to be of a more fibrous character, torn to pieces by the hands. A little experience will teach the cultivator how firmly the compost ought to be pressed in with the fingers, and also the fact that some are of a robust, stately growth, others weak and straggly. They ought to be kept in a gentle heat after the first potting, and be encouraged to make clean, healthy growths in the heat, to be inured to cold frames in April, and then

TURNED OUT-OF-DOORS about the end of May or early in June. It will soon be seen that the growth out-of-doors is much better than that made in hothouses, or even in the frames; and as some encouragement to those who of necessity must grow their plants in the more or less impure atmosphere of large towns, I may state that the best grown collection of plants of this class of Carnations that I ever saw was in a London nursery, where they had first been grown as I have described, and ultimately, when the weather was warm enough, the plants were placed out-of-doors, with the pots plunged to half their depth in Cocoa fibre refuse. As soon as the cold autumn rains set in all the plants must be placed in the glasshouses, where the flower-buds already formed will develop very beautiful flowers in the warm, dry atmosphere; in dull, wet weather the hot-water pipes should be made warm during the day, and as soon as the nights are cold, with prospects of frost, the temperature should be kept up to 50 degs. or 55 degs., and the same temperature should be maintained during the winter. It is only fair to state that in the dull, dreary days of midwinter there are but few flowers produced, and such as do open cannot be considered of much value. They require sunshine to open the flowers well, and no amount of artificial heat can supply this. The largest yearling plants may be flowered in 8-inch pots, and the smaller sizes in 6-inch and 7-inch, according to their strength. I have also seen large specimens, two and three years old, spreading out vigorously and growing in 10-inch and 11-inch pots, flowering well during the late autumn. The best specimens of this kind were grown at Floors Castle, near Kelso, some fifteen years ago. Mr. Knight, the gardener in charge at that time, told me they were grown to produce flowers which were required in quantity about the end of October.

INSECT PESTS.—The only insect pest that is likely to do any damage to the plants is green fly. This troublesome parasite clings closely to the flower-buds when they are very small, and also to the points of the young growths. Its presence is soon seen in the dirty, sticky state of the parts where the insects congregate. The tendency of the plants to run up with long, lanky stems when under glass may be checked by giving more air and keeping them as close as possible to the glass. A close, damp atmosphere may cause more rapid growth, but it is not a healthy one. Fumigate to destroy green fly; but if the plants are few it may be better to dip the points in Tobacco-water or soft soapy water. It is quite impossible that the plants can do well unless they are kept quite clean. A good deal also depends upon the careful way in which the water is applied to the roots. We collect all our rain water in substantial brick-built tanks, well cemented, under the stage of the house in which the plants are growing, and we seldom require to use any other than rain water either for watering or syringing with.

THE CHOICE OF VARIETIES to grow is a matter of some importance. There are certain kinds which, as flowers, are very good, but they require sunshine to open the blooms well, and are of little use in the short days of winter. And yet no admirers of the Carnation would like to be without these flowers. Souvenir de la Malmaison, and the pink variety of this, may be forced to flower beautifully as early as March. So, also, may the beautiful white variety, the Queen, and also The Bride. Mrs. McLaren is a very beautiful crimson bizarre of the perpetual flowering type. Of the true perpetual types, I recommend the following self colours:—White: La Belle and Empress of Germany, the last-named, slightly striped rose. Scarlet: Worthington Smith, Whipper-in. Crimson: Mrs. Keen. Deep rose: Mrs. Llewellyn, Juliette. Pink or flesh: Miss Joliffe. Andalusia is primrose yellow with fringed flowers. Mrs. George Hawtrey, bright yellow.

JAS. DOUGLAS.

The Tree Flax (Linum arboreum) is a yellow-flowered species invaluable for either borders or rockeries, and equally useful in pots. Plants of it potted in the autumn and placed in the greenhouse commence to flower about the beginning of April, and continue to do so throughout the summer, standing well where it would be almost impossible to have L. trigynum in flower, as the latter requires a higher temperature than L. arboreum. On the rockery when left alone it attains a height of some 2 feet or 3 feet. Its flowers are borne in loose clusters, and the leaves, which are oval, are of a light glaucous green. Another species, L. flavum, also known as L. luteum, with which arboreum is often confounded, is also an extremely useful border plant and a continuous flowerer during June, July, and August. It rarely grows more than a foot high. It has much narrower leaves and larger flowers than L. arboreum. It is a plant of easy culture, and succeeds well in ordinary garden soil, especially if moderately moist and stiff. It ripens seed freely, and it may be increased by means of cuttings put in in early spring, but it must be remembered that every cutting taken off is probably a flower-stem lost, for that season at least.—K.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15692.—**Christmas Roses.**—Will someone kindly give me advice about Hellebores, the best varieties for amateurs to grow, their cultivation in pots, &c.?—READER, *Ozon.*

15693.—**Plants for town balcony.**—Will anyone tell me the names of a few plants that would grow on a balcony, in town, facing east?—C. H. B.

15694.—**Dissolving bones for manure.**—Can anyone tell me the easiest way of dissolving bones for manure?—CARBONIFEROUS.

15695.—**Annuals for competition.**—Will anyone kindly tell me the names of the best twelve annuals for competition? I want a small bouquet of each.—COATBRIDGE.

15696.—**Paint for wooden spout.**—Could any of your readers kindly tell me what is the best material to paint the inside of a wooden spouting, so as to render it impervious to damp, &c.?—P.

15697.—**Stamped zinc labels.**—Will any reader tell me where I can obtain some cheap zinc labels stamped with consecutive numbers for fastening to fruit and other trees, &c., so that if I have with me my tree register book I can tell at any time what each is?—A. H. O.

15698.—**Walnuts.**—All our Walnuts this season have two holes at one end. I should be glad to know if this is a peculiarity of any particular kind of Walnut, or can any reason be given? The tree is a young one, and the Nuts are all good though small.—BEDDINGTON.

15699.—**Cost of boiler.**—Will "J. K., Southend," or "J. C. B." inform me approximately what the entire cost would be of a small-sized saddle boiler, say 18 inches by 12 inches, with about 60 feet of 4-inch piping, to heat well a house 15 feet by 8 feet?—H. W.

15700.—**Bleaching Pampas Grass.**—Will some kind reader of this paper tell me the best way of bleaching Pampas Grass to make it of a creamy-white colour?—DAISY. ⁂ *In recent numbers of* GARDENING *"Daisy" will find full information on this subject.*—ED.

15701.—**Prize herbaceous plants.**—Would A. Sweet kindly name eight of the best from his lists for June, July, August, and September, as they appeared in GARDENING of November 21, and oblige one that wants a small but good selection of prize plants?—MAC, *Coupar Angus.*

15702.—**Culture of Poinsettias.**—Will some reader kindly give me details how to treat my Poinsettias now? My flowers were not successful last year; they lost their leaves, and did not develop the showy bracts. What is the lowest temperature in which I can grow them successfully?—M. M. C.

15703.—**Large-flowered Chrysanthemums.**—What is a large-flowered Chrysanthemum? I was until lately under the impression that the term applied only to incurved blooms; but at a show that I was present at a prize was awarded to a stand containing incurved, reflexed, and Japanese varieties.—WRAITH.

15704.—**Cankered fruit trees.**—I have several Pear trees planted about nine years ago against the south wall of my garden, and for some time they have become covered with scales, which contain animalculæ, and now the trees are cankering and dying from the bottom. Can any practical reader tell me the cause of this, and suggest a remedy? I may say that they were planted well in good soil and manure, and the subsoil is rockwork.—C. L. H., *Brierley Hill.*

15705.—**Striking Rose cuttings.**—Will any reader who has succeeded in striking Rose cuttings kindly tell me why my cuttings failed? I made them of the current year's wood, and planted them in pots in my greenhouse, thinking that they would strike sooner than in the open ground, as recommended in the garden book; but after a month they were all dried up, though kept moderately moist. They were Hybrid Perpetuals and a few of Maréchal Niel and Gloire de Dijon.—AMATEUR.

15706.—**Failure with greenhouse plants.**—Will some kind reader help me? I have a wooden leanto greenhouse 9 feet by 6 feet, which I built myself, and this is my first winter. It is heated with a Rippingille's stove, which keeps up the temperature easily. The plants, however, do not look at all healthy, the cuttings die off at the tops, and a fine mould settles on them, and the other plants get brown and die off. How often should I water? I give air whenever the weather is at all suitable. When I was from home in December my folks let the lamp out and the frost in; but the change in the plants I noticed before then. I have nothing but the most ordinary things in the house, and some Hyacinth bulbs are doing well. Is the failure due to a fault in the stove?—YOUNG AMATEUR.

15707.—**Plants to grow under stage of greenhouse.**—Would any reader kindly inform me what would be the most likely plants to thrive well underneath the stage of a greenhouse? It is an ordinary open stage, with a border 1 foot to 15 inches deep underneath; they would naturally be exposed to all the drip from plants above. Temperature in winter from 60 degs. to 45 degs. with hot-water pipes.—AN ANXIOUS ONE.

15708.—**Dressing a garden.**—I am thinking of dressing my garden, which last summer was infested with grubs and wireworm, with soot and lime. When should they be applied, and in what quantities? Can they be dug in round growing plants as well as in fallow ground? When is the best time to dress the ground with crushed oil-cake, which is, I hear, a cure for wireworm?—WRAITH, *Weymouth.*

15709.—**Damage caused by falling snow.**—If snow falls from the roof of a dwelling-house on to a conservatory attached to said house, and smashes the glass of conservatory, is it the duty of the landlord or tenant to make good the damage?—J. B.

15710.—**Variety in the garden.**—I have a garden consisting of borders all round, a Grass plot in the centre, with a flower bed at either end. In the summer I filled the beds with scarlet Pelargoniums and other flowers; but I like to see my two beds on the grass plot different from those of my neighbours. The year before last I filled them with single Dahlias, and last year with foliage Pelargoniums, and I should like some suggestions as to other things that will bloom freely and look effective during the summer.—PUTNEY.

15711.—**An amateur's failure.**—I should like to know why my plants will not flower. They are in a small conservatory leading out of a first floor sitting-room, which is heated in summer to 70 degs., and in winter to 50 degs., and gets the sun nearly all day. They grow and flourish well, but will not flower; they either turn yellow before they open, or partly open and wither. Everything is the same—Pelargoniums, Chrysanthemums, and Begonias. Will anyone kindly tell me what I am to do?—A. A. T., *Lincoln.*

15712.—**Permanent hotbeds.**—I have commenced building some permanent hotbeds in the manner described by "B. C. R.," 17th October, 1885; but a neighbouring nurseryman has advised me, before proceeding to ask and be sure on the following points, which perhaps "B. C. R." will deal with: Would the manure or fermenting material give off sufficient heat in the lower chamber to warm the upper one, unless in absolute contact with the kiln-tiles, which would be difficult to maintain? The steam from the lower chamber is required to rise through the perforation into the upper chamber, and this appears to be to the nurseryman and my gardener a dangerous arrangement; to have any heat the manure must be somewhat fresh, steam from which would be death to the plants in the upper chamber. If the communication between the two chambers were closed, then all would depend upon the first question for sufficient bottom-heat. If "B. C. R.," or anyone who has used this kind of pits will give me any information on the subject I shall be much obliged. I should also be obliged if "S. W." would explain how the fermenting material is used in the brick pits described 28th November, 1885, and where I could see one near London?—T. T. JENNINGS.

15713.—**Retarding show Chrysanthemums.**—Is there any way of retarding show Chrysanthemums without diminishing the size or symmetry of the blooms? Some of my plants showed the bud in the middle of August, three months before the show at which I intended to exhibit took place. As I saw they would be too early I put under glass, I stood them in an open shed as soon as they showed colour; but they were rather on the wane when wanted, and quantities of mildewed petals had to be removed, thus making the blooms smaller, and convincing me that they would have stood no chance with the same blooms grown on quickly under glass and cut at their prime, with all their petals in perfection; however, though this is beside the question, they carried off two firsts. Some say, grow the plants in the shade, or give very little manure water; but surely these plans would lessen the size, even if delaying the bloom somewhat. I have always found that November and December-struck cuttings give finer blooms than those struck in January and February, also that the crown bud gives a much finer bloom than the terminal; but, as my experience has not been large, I should be glad of other opinions. The new year cutting and the terminal bud would delay the blooming a little; but would it compensate for the greater size obtained, as I believe, by the November cutting and the crown bud?—WRAITH.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15714.—**Manuring Strawberry bed** *(Mischief)*—You can manure it now.

15715.—**Propagating Chrysanthemums** *(Charlton).*—You will find in this week's issue an article dealing fully with the subject.

15716.—**Pelargoniums not blooming** *(G. H. A., City).*—You give us no information to aid us in coming to a conclusion. We suspect that your failure is due to the plants being kept too much in shade.

15717.—**The Lawson's Cypress as a lawn tree** *(J. G. S. H.).*—As a single specimen we prefer the original Cupressus Lawsoniana; the variety called erecta viridis is also good, but quite columnar.

15718.—**Painting Apple and Pear trees** *(J. A.).*—No; there is no need to paint the smaller twigs, unless they are covered with Moss or Lichen.

15719.—**Neglected fruit trees** *(H. S.).*—Prune them during any open weather between this and March. Their bearing depends upon their condition; but proper pruning will not lessen their chances of producing fruit this year.

15720.—**Grazing or Hay-cropping** *(H.).*—Taking a crop of Hay would, as a matter of course, be more exhausting to the meadow than grazing on it; in fact, if the animals were well fed they would probably do the ground good.

15721.—**Pyrethrum used for carpet bedding** *(A. C., Bedford).*—We know of no other Pyrethrum that is used for the purpose in the parks than the common Golden Feverfew (Pyrethrum Parthenium aureum).

15722.—**Clematis indivisa and Tacsonia** *(A. B.).*—It is hardly correct to say that one of these is preferable to the other, because they are totally different things. The Tacsonia flowers more freely; but the other has the advantage of being evergreen, and bears clusters of white flowers. Tacsonia is the showiest.

15723.—**Obtaining Passiflora Loudoni** *(S. W.).*—We fear this is too rare to be included in price lists. Nurserymen, however, do not always catalogue every plant they keep, and some of the best firms might have it in stock or be able to get it for you.

15724.—**Geraniums becoming drawn** *(Charlton).*—This is not uncommon at this time of the year; as the season advances they will improve, and you should then be particular about giving them all the light you can and well ventilating the frame or light or whatever place they occupy.

15725.—**English names of plants** *(Constant Reader).*—You can get Miller's "Dictionary of English Names of Plants" through any bookseller or direct from the publisher, Mr. Murray, Albemarle-street. The published price is 12s.

15726.—**Books on Roses** *(Mischief).*—Rivers' "Rose Amateur's Guide" (Longman), Canon Hole's "Book about Roses" (Blackwood and Sons), Ellwanger's book (published in America), and Mr. Ryder's pamphlet, lately quoted and advertised in GARDENING (published by the author).

15727.—**A gardener's working hours** *(Rosa Dartle).*—In the case of gardeners who live on the place the usual hours are from six to six from spring until autumn, allowing half an hour for breakfast and an hour for dinner. In winter time work generally begins about seven, and is carried on until dusk, one hour being allowed for dinner.

15728.—**Terrestrial and epiphytal Orchids** *(Orchid).*—Nearly all the British Orchids are what are called terrestrial; but the vast majority of the Orchid family are epiphytes—that is, they do not derive their nutriment from soil, but produce air roots plentifully, and derive the greater part of their sustenance from the air. As to your second question—Do such plants get any nourishment from blocks upon which they are placed?—we are inclined to think they do not; but perhaps they derive nutriment when growing in their native countries when the branch is alive, or when growing in forks of trees where the detritus accumulates.

15729.—**Insects on Fuchsias and other plants** *(Mary Myrtle).*—The injury is caused by thrips, one of the worst of the pests that plants are heir to. Fumigation is, in your case, a good remedy. It should be repeated until they are cleared away.

15730.—**Grubs in garden** *(W. Cross).*—The grubs you forwarded are those of a small fly. They will not injure the plants in your garden; they are feeding on the cow dung which is a favourite food of many kinds of grubs.—G. S. S.

15731.—**Insects on plants** *(Newcastle).*—Your plants are attacked by the grubs of the Marguerite Daisy fly (Phytomyza affinis). You will find where the grubs are with very little trouble by examining the leaves; that portion of the injured part where the grub is feeding looks fuller than the rest, and by holding the leaf up to the light the grub may be seen. A pinch at that part will prevent any further mischief. If a leaf is very badly attacked cut it off as it will be of no further use to the plant, and burn it. If thrown on to the rubbish-heap, and the grubs are full grown, the fly will "hatch out" as if nothing had happened. Cineraria often suffer from this pest.—G. S. S.

UNANSWERED QUERIES.

15373.—**A chemical question.**—A portion of my garden has been overflowed in time past by a stream impregnated with iron pyrites (brass, the miners call it) from coal. The soil is quite red, and trees grow in it with difficulty, and flower hardly at all. Could any readers who are learned in chemistry tell me whether there is any chemical manure that would neutralise the iron? Would nitrate of soda be any use? I fear that removing the soil is impracticable.—PERPLEXED VICAR.

15376.—**Rose growing in London.**—I have a well-fitted, span-roof greenhouse in the neighbourhood of Addison-road, Kensington. Will any reader who has actual experience or knowledge be good enough to say whether it is worth my while to try a Tea Rose or two, either in pots or border, inside the house? If it is really possible to succeed, I presume Gloire de Dijon would do best. Would Maréchal Niel do as well? I know that in no case is it so prolific as Gloire de Dijon; but would it suffer more than the latter? I have plenty of good soil (imported), and plenty of light.—WEST KENSINGTON.

15468.—**Best flavoured Raspberries.**—I should be glad to learn the names of the best flavoured red Raspberries—fine fruit.—DADO.

15518.—**Culture of Blackberries.**—Now that the Blackberry is brought forward more prominently as a cultivable fruit, and must have been adopted by many amateurs like myself, I should like to ask through your journal if some competent fruit grower will kindly give full cultural directions as to aspect, soil, training, and pruning, so as to ensure the best possible results for the labour devoted therefor, for which I shall be deeply obliged.—J. T., *Stockport.*

TO CORRESPONDENTS.

H. Wassell.—The treatment of dogs hardly comes within the scope of GARDENING ILLUSTRATED.——*R. Davies.*—Why not apply to those whose business it is to supply these things, instead of to a chance correspondent who perhaps has no desire to sell?——*Gang Forward.*—Simpson's book on the Vine is published by Routledge.——*J. Ingham.*—You have misdirected your letter, or you are labouring under a misapprehension. We do not issue price lists of stoves of any kind.——*A. B.*—Try Paul's, Waltham-cross.——*Constant Reader, Botley.*—Try Bull, of Chelsea.——*Gang Forward.*—We cannot insert

the query.——*Evergreen.*—We have repeatedly stated that notes written on both sides of the paper cannot be used. Generally speaking, writers for the press know the absolutely necessity for using one side of the paper only; but, unfortunately, many of our correspondents think it unnecessary to observe the rule, and sometimes we are obliged, on this account, to throw aside matter for which we would willingly find a place.——*F. W. Davis.*—Try Sutton and Sons, Reading.——*A. V. Z.*—The number for March 31st, 1883, in which the design for a useful propagating frame was published, can still be obtained from the publisher.——*M. E. Parker.*—You will find some notes on the subject in this week's issue. We think any coal merchant would get it for you, or you could be supplied from some of the South Wales collieries.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Morning Star.*—We cannot name from your description; send us a bit of the plant and, if possible, a flower.——*G. H. A.*—Variety of Begonia Rex; requires warm greenhouse treatment throughout the year.——*J. C. S. H.*—The specimen you send appears to be Taxodium sempervirens; but it is insufficient for naming with certainty.

Names of fruit.—*W. H. M. Phinney.*—Apples not recognised; Pears: 3, Winter Nelis; 4, Winter Crasanne ——*Carbon.*—Beachamwell.

Anthracite coal.—Will you allow me to give in a few words my experience of anthracite coal. I was much amused by the remarks of "W. C. C." on page 637 of GARDENING. I have not only made "many inquiries" about this coal, but have actually used it for two years in my greenhouse furnace, and never mean to revert to coke again. My coal comes from South Wales, and costs me eighteen shillings per ton. There is some little difficulty in lighting the fire at first; but this disappears when a few small lumps of ordinary house coal are employed after the wood has caught fire. My boiler is set with a good draught, and is a small tubular one. I obtain my anthracite from one of the leading nurserymen in this neighbourhood, who uses nothing else, I believe, to heat his houses. As for the "very extreme heat" to which "W. C. C." alludes, no doubt if all the dampers were left open the water would boil in the pipes, the house would be filled with steam, and the boiler might even crack; but experience and care will soon enable anyone to regulate the dampers and the heat to the most extreme nicety. I can leave my fire for twelve hours without attention, and for forty-eight hours without adding any of the coal, and the result is most satisfactory in every way. My boiler was specially constructed to burn coke, but it succeeds as well, nay, better, with anthracite. I cannot imagine why it should "crack an ordinary saddle boiler in a very short while," nor why, always supposing due intelligence and care, it should not be used in "our large locomotive engines." It is smokeless, it makes less dust and ash than coke, it gives more heat, it lasts longer, and is here, at any rate, cheaper in the long run; therefore, my advice to "W. C. C." is to make no more inquiries, but to try it for himself. Many gardeners and hot-water engineers are prejudiced against it, till they have given it a fair trial. I shall be greatly obliged by your allowing these remarks to appear in the columns of your very interesting paper, as many of your readers might, after reading what "W. C. C." has said, be prevented from even giving anthracite coal a trial, much to their own loss. —CLIFTON.

Catalogues received.—*Garden and Flower Seeds, Gladioli Roots, &c.* John Forbes, Hawick, N.B.——*Vegetable Seeds, Bulbous Roots, &c.* Wm. Strike, 62, High-street, Stockton-on-Tees.——*Descriptive Spring Catalogue.* Barr and Son, King-street, Covent-garden, W.C. ——*Spring Catalogue.* Young, Oakenhead, and Co., 86, Patrick-street, Cork.——*Garden Seeds.* Hogg and Wood, Coldstream, N.B.

Smithfield market, Evesham.—List of prices realised Jan. 14, 1886:—Brussels Sprouts, 3s. 9d. to 4s. per pot; Carrots, 1s. 3d. to 1s. 9d. per cwt.; Onions, 3s. 3d. to 3s. 9d. per cwt.; Parsnips, 2s. 5d. to 2s. 10d. per cwt.; Potatoes, 1s. 5d. to 2s. per pot; Savoys, 2d. to 4d. per doz.; Turnips, 1s. to 1s. 5d. per pot; Apples, 2s. to 4s per pot

INDOOR PLANTS.

THE ÆTHIOPIAN TINNÆA.

THE illustration shows a rare little shrub, of which every nurseryman ought to keep a small stock, but which, we suppose, is not often found at present outside botanical collections. It cannot be called a showy plant, but the delightful Violet-like fragrance of its flowers render it extremely desirable. The Shrub Violet we may call it, for though in appearance the flowers of the Tinnæa do not bear a close resemblance to a Violet, there is no plant known to us the odour of which is so similar to that of Violets as are the flowers of this. One plant in a large stove emits odour sufficient to permeate the whole house, especially in the early morning. The flowers of T. æthiopica are pretty as well as fragrant, a well-grown plant of it producing quantities of pendent, crimson-lipped flowers, which last for several days. T. æthiopica grows freely in a warm, moist house. It may be propagated by means of cuttings at any time of the year. It is, however, for its fragrance that we recommend this plant as worthy of general favour. A variety with small, thick, toothed leaves and darker flowers, which has been recently introduced into cultivation, is called T. æthiopica var. dentata. The fragrance of the flowers of this variety is quite as strong and sweet as in those of the type. It would seem almost superfluous to urge the claims of a plant possessed of a strong Violet aroma, but looking at the time this plant has been in cultivation (it was introduced in 1865), it is surprising how rarely it is to be met with in gardens. B.

Flowers of Tinnæa æthiopica; flowers deep crimson (natural size).

Propagating Ferns from spores.—Having noted so many enquiries as regards the above subject, and believing that many of the enquirers are deterred from the attempt from a mistaken notion that heat (that is, a heated glasshouse) is required, I will endeavour to convey to readers of GARDENING the simple way in which I have grown some thousands of both native and foreign specimens during the last seven years, and I have at the present moment some thousands of the varieties (crested, furcate, and marginate) of Scolopendriums, and the normal forms of Asplenium, Hemionites, Mohria achiliæfolia, and Athyrium Richardsii, all in a healthy state, and growing in my kitchen window. The stove varieties I grow on until they are ready for potting off, when I exchange them for varieties of our hardy native Ferns of which I am not already possessed. My plan is to sow the spores in a biscuit box, the soil being 2 inches from the top, and cover over with a sheet of glass; the box stands on an old iron tray, which is upon a table in the kitchen window, and every other night I fill the tray with boiling water, previously pouring off the old water. The best soil I find to be inclined to clay, mixed with one-third broken bricks, one-third peat or German Moss, with a small quantity of burnt freestone, bruised fine. The hardy Ferns can be bedded out in any good free loam, if well drained and shaded from the mid-day sun, say from eleven a.m. to three p.m., the sun before and after these hours having but little injurious power. I have a bed 6 feet by 40 feet facing east, in which some of the finest varieties of Athyriums, Lastreas, Polystichums, and Scolopendriums are now growing.—TOM, *Cheshire.*

ABUTILONS.

THESE remarkably free-growing greenhouse plants are natives of South America. Their handsome drooping flowers are produced freely from the young shoots through the greater part of the growing season. They are at no time clothed with the profusion of inflorescence that characterises some things that open most of their flowers simultaneously, but this is amply compensated for by the continuity of their production, rendering them objects of interest for a good part of the year. Most of the greenhouse section are of a somewhat straggling yet vigorous habit, which makes them especially adapted for covering walls or the draping of pillars or rafters; in such situations their beautiful pendulous blooms are seen to advantage. Their miniature Vine-like foliage is very handsome, and in some of the newer varieties is beautifully variegated, a good part of the surface being profusely marbled with yellow. They are plants of very easy culture, but the season of their flowering is much prolonged by their being grown where they receive through the winter and spring a few degrees more heat than the temperature of an ordinary greenhouse, such as usually kept up in a conservatory where plants in bloom are displayed through the dull season of the year; in a situation like this Abutilons keep growing and retain their leaves better. The flowers are well adapted for cutting, their natural drooping habit fitting them for associating with others of more upright form. The charming white variety, Boule de Neige, is one of the most lovely flowers grown, possessing the advantage of blooming in a very small state; plants of this sort, in 4-inch or 6-inch pots, flower from the axil of every leaf.

PROPAGATION.—Abutilons are easily propagated in spring from cuttings of the young wood, if taken off when some 4 inches or 6 inches in length—if with a heel all the better; insert these in sand in small pots placed in a temperature of 60 degs., and covered with a bell-glass. Here they will soon make roots, and should then be moved into 6-inch pots. They will succeed in either peat or loam, but with these, as with most other free-growing plants, peat has a greater tendency to promote leaf-growth than loam has, and it is not well to encourage too much development in the foliage. This should rather be restricted, as foliage, when present in too great quantity, is prejudicial to free-flowering. Let the loam be of good quality, and mix with it enough sand to keep the whole in an open, healthy state; if, whilst they are in the younger stages of their growth, a little leaf-mould is added, it will assist them. As soon as they begin to grow, pinch out the points so as to induce them to break back. The free-rooting disposition of the plants will cause them to soon require more room; they must have larger pots before the roots become matted By midsummer they will need moving. The stronger growers will bear a 4-inch shift, using the loam in lumps as large as pigeon's eggs; but at this potting add no leaf-mould, as they will flower more freely without it. Stop the points a second time, and keep them well syringed, both on the upper and

under sides of the leaves, every afternoon; place them where they will be fully exposed to the light. They will require only a very slight shade for a few hours in the middle of the day in the hottest weather. After they have again broken into growth the shoots will flower as soon as they acquire strength sufficient. As the autumn approaches they will show signs of going to rest, and must not receive much water. During the winter keep them in a temperature of not lower than 45 degs. in the night; by the beginning of March they should be kept a little warmer, and when growth has commenced, they can be moved into larger pots—13 inches or 14 inches diameter will not be too much if large specimens are wanted. When Abutilons are required to be

GROWN AS TRAINED PLANTS their natural disposition to spire up must be counteracted by regularly stopping and opening the shoots well out; so managed they make good decorative plants for the conservatory, and, as such, are very useful. After flowering they may be put anywhere where a temperature such as advised for the preceding winter can be maintained, and here allowed to remain until the spring. Then they should be cut close in, the heads reduced to within a foot or 15 inches of the pots, and, as soon as they have made a little growth, turned out of the pots; one-third of the soil should be removed and replaced with new, and the plants treated through the summer as before. If the plants are required for the purpose of

COVERING WALLS they may at once be placed where they are intended to be grown, and either planted out or kept in pots as deemed advisable for best attaining the object in view. If a large space has to be covered it will be better to plant out in a border prepared by, in the first place, sufficiently draining the bottom with a few inches of broken bricks, or something similar; over these place some suitable material, such as pieces of fibrous turf, on which put the soil, like in character to that advised for pot culture. Turn out the plants in this, making the soil firm round the ball, and at the same time training the branches so as best to effect the covering of the allotted space. Nothing further will be required than to attend to training and stopping, with a regular use of the syringe to keep in check spider, which they are subject to. A portion of the shoots will require shortening back at different lengths each spring, which will cause their breaking into fresh growth, so as to keep the whole space regularly furnished with young flowering wood; if this is not attended to, the bottom will get bare and destitute of both leaves and flowers. For clothing a pillar or rafter when the room to be occupied is somewhat limited, it is well to confine the roots to a pot, as, so managed, their naturally vigorous disposition is kept in bounds. For the purpose here under consideration the plants will not need stopping so early, but should be kept to a single stem until they have attained the height where they are wanted to branch out. For such uses as these they ought to be grown in not less than 15-inch pots; into these they may be transferred from 8-inch or 10-inch ones in the spring. The drainage must be ample, and well secured against the washing of the soil into it by the large quantities of water required through the summer. Keep them, as they advance in growth, well but not too closely trained in the places they are wanted to fill, and regulate the stopping according to the number of shoots requisite to furnish the pillar or rafter without being too much crowded. Where overcrowding occurs the light elegant arrangement that should always exist in the training of plants in such positions is wanting, and the health and flowering capabilities of the subjects employed interfered with. Do not give too much water until the roots have got well hold of the soil; but when the pots are filled they will, in the summer, when in full growth, need a copious supply, gradually reduced as winter approaches, when no more must be given than will just suffice to keep the soil a little moist. Before they begin growing in the spring, the strongest shoots should be cut back at different points, so as to induce the plants to break afresh regularly from bottom to top. When they have made some progress they ought to be liberally supplied with manure water: by this in a great measure they will require to be sustained, as the limited quantity of soil they occupy will become exhausted. Previous to growth commencing the third season they may be cut back freely and turned out of the pots, a portion of the old soil shaken away, the roots shortened, and replaced in the same pots with new material; further on in the season, if they show any signs of weakness, give manure water freely. Abutilons are gross feeders, and will bear it moderately strong. By the use of this, and by periodically replacing the exhausted soil with new, the plants can be kept going for years in a healthy flowering condition, or they may be at any time replaced by young ones. Abutilons can be raised from seed, sown and subsequently treated as other warm greenhouse plants, but cutting propagation will usually be found best for the generality of growers.

VARIETIES.—Of late years immense numbers of new varietics have been raised; the following are a good selection of both old and newer kinds:—A. Agatha, orange yellow, striped with crimson; A. Aurelia, deep yellow; A. Blandii, dark yellow, veined and netted with crimson; A. Boule de Neige—this is a beautiful plant, extremely free in flowering, producing its snow-white bells when in a small or large state; it is also very free in growth, and adapted for a pot specimen, or for a rafter or pillar; A. Cleopatra, rosy pink, veined with crimson; A. Duc de Malakoff, a free-growing kind with very large highly-coloured flowers, handsomely marked—suitable for a climber; A. Eclipse, bright orange, shaded with crimson, purple veins—a good compact-habited sort; A. lilaceum album, white shaded with mauve—a dwarf habited sort, suitable for a pot specimen; A. megapotamicum, a very free, handsome-flowered variety; will answer either as a pot specimen or as a roof-climber; also known as A. vexillarium; A. Mons. Ed. Pynaert van Geert, amaranth purple, veined with carmine, white throat; A. Mons. Perpignan, bright reddish orange, veined with crimson, dark yellow throat; A. roseum album, rose, veined with white, white throat; A. Royal Scarlet, brilliant scarlet; a dwarf habited variety; A. Sellowianum variegatum, a very handsome kind, the leaves beautifully suffused with yellow and green; A. striatum, a strong-growing bright-coloured kind, suitable for a wall, pillar, or rafter; A. violaceum purpureum variegatum, flowers purplish violet, the leaves handsomely variegated; very effective, especially when covering the back wall of a conservatory.

Abutilons are plants not very much subject to insects, although aphides and scale will live upon them. The former can be destroyed by fumigation or washing with Tobacco or quassia water; scale, if it exist, must be removed with sponge and brush; red spider, to which they are liable, is best kept under by continuous use of the syringe during the growing season. T. B.

STRIKING CUTTINGS OF CHRYSANTHEMUMS.

WHERE very large blooms are required, Chrysanthemum cuttings are generally put in during November, but for general purposes the earlier months of the year is a more convenient time, especially where space and appliances are limited, as the cuttings strike root far more readily at that season, and may then be grown away without a check, while if struck in the autumn the young plants need careful attention during the dull days of winter, and a light, airy position, free from damp throughout the whole of that time. If a slight protection has been given to the plants that were cut down after flowering last autumn, in most cases a quantity of young shoots will by this time have made their appearance, and, when long enough, they may be taken off as cuttings. The most vigorous, yet sturdy, shoots should be chosen for the purpose, and the best length for them is from 3 inches to 4 inches. In separating them from the parent plant a good practice is, where possible, to cut off the shoot below the surface of the soil, as then a few roots may sometimes be obtained with it, or, at all events, the underground portion of the shoot is more ready to emit roots than a cutting taken at some little distance above the soil. If the shoot is separated by a clean cut at the base it is, when the bottom leaves have been removed for about 1½ inches, quite ready for insertion. To carry this out it is the general practice to use small pots of about 2 inches in diameter, and put one cutting in each; but this is by no means necessary, as if desired larger pots can be employed, the size of which will regulate the number of cuttings they are to contain. For instance, a pot 4 inches in diameter will, generally speaking, hold five cuttings, while one of 5 inches will, without undue crowding, contain 8 or 9. In no case must they be packed too closely together, as if this is done many will, in all probability, perish from decay. The pots should be prepared for the cuttings in the following manner: Fill the small pots about one-third, and the larger pots one-half, full of broken crocks, or some substitute for drainage; then fill up moderately firm with a soil consisting of equal part of loam, leaf-mould, and sand, or in other words a good open compost, such as will allow the water to pass through freely even if pressed down. For convenience of using, the whole may be sifted through a sieve, with a quarter or half an inch mesh, just to separate the rougher portions of the soil. After the pots are filled almost to their rim with soil, a thin layer of silver sand on the top will tend to arrest decay. In inserting the cuttings a hole should be made with a pointed stick in the centre of the pot, then the cutting is put in, and made firm by the stick being inserted at about half an inch from the cutting and pressed towards it. In making the hole care must be taken that it is not too deep for the base of the cutting to rest on the bottom without burying some of the lower leaves, as, if this be done, decay is sure to follow, while, if a vacant space is left in the soil around the bottom of the cutting (which will be the case if the hole is made too deep), its rooting will be much retarded. After the pots are filled with cuttings they must be given a thorough watering from a fine-rosed water-pot, enough to settle the sand down quite smooth, thus making the whole perfectly air-tight. After all this,

THE BEST PLACE FOR THE CUTTINGS is a cold frame, in which the tops of the plants will not be more than 3 or 4 inches from the glass. If the frame is deeper it should be filled up to that depth, and for this purpose nothing is better than coal ashes. The lights must be kept close till the cuttings are rooted, being removed occasionally to pick off any signs of decay should it put in an appearance, or to water when required. If the foliage gets too damp the lights may be removed for a little time during a bright sunny day, in order to dry up the superabundant moisture. As the cuttings form roots, air must be given by degrees, so that when sufficiently established the lights will only be required to shield them from frosts or very heavy rains. Where a frame does not exist for the reception of the cuttings, a good substitute is a shallow packing case, with a few panes of glass laid over the top. An impromptu frame is thus readily formed, and one that will answer all purposes; indeed, a favourite propagating frame of mine is simply an egg box, with glass laid on the top. The upper part of the box is so cut that the glass slopes somewhat, and a strip of wood along the middle tends to prevent breakage. Such a box can be placed under the shelter of a south wall, and where so situated it forms as suitable a spot for Chrysanthemum cuttings as any elaborate frame or greenhouse. In any case the cuttings must be covered up during frost. In the case of a few cuttings they may be put in a small pot, that in its turn is dropped into a larger one, over which a pane of glass is laid, the whole thus forming a small almost air-tight frame. Where a quantity of one kind is required, or it is not needed to keep the different sorts separate, the soil may be placed in the frame, and the cuttings dibbled therein without the intervention of pots at all. Chrysanthemum cuttings may also be

STRUCK IN THE OPEN BORDER, but no great success can be expected till the spring. As sheltered a spot as possible must be chosen, and the cuttings dibbled therein; but if some protection in the shape of old lights can be afforded, so much the better. In the case of many plants, more especially those in the open ground, they may be so divided up, that almost every shoot will have a few attendant fibres, and, consequently, little in the shape of propagation will be then needed. In selecting the cuttings the most sturdy shoots should always be chosen, for upon this depends the after success of the plant, but of course in the case of

any particular sort this principle of selection cannot always be carried out. Again, there is a great difference in the vigour of some kinds compared with others; for what would be in one accounted weak would in another be looked upon as robust. T.

The Snake Gourds.—Many of the members of the Cucumber family are remarkable for the strange forms and rich colours assumed by their fruits when ripe, the Lagenarias, Luffas, Benincasas, Echalliums, along with numerous forms of Cucurbita cultivated in gardens, being some of the best known examples. Besides these there are the species of Trichosanthes, or Snake Gourds, as they are called, because of the curiously close resemblance of their fruit when ripe to a snake. The best of these is what is called the Serpent Cucumber (T. colubrina). In habit this plant resembles a common Cucumber; the flowers are white and beautifully fringed, and the fruit grows to a length of 6 feet, is twisted into a coil near what we may term the tail, and in the process of ripening the colour changes in stripes from green to yellow and white, finally assuming a deep orange hue. This plant we have seen in fine fruiting condition at Kew. The Snake Gourd (T. anguina) bears fruit about 3 feet in length, which when ripe are striped with green and white. T. cucumerina is shorter still in length of fruit, but is quite as brilliant in colour as the above-mentioned. Being natives of the Tropics, these three species require to be treated as stove plants, and are always better when planted where they would have a little bottom-heat. Trained along a rafter in a moist, warm house, the effect made by their "snaky"-looking fruit hanging in large numbers from the branches is novel and attractive. Seeds sown in the spring will produce plants which, if properly treated, ought to bear a good crop of fruit by the autumn.—B.

REPLIES.

15602.—**Chrysanthemums.**—"Rochford Amateur" should have no difficulty in blooming the varieties he names. As soon as the buds are set, keep them liberally supplied with manure water, giving it weak at first, and gradually increasing the strength until the buds show colour. Only two or three blooms should be allowed on each plant if good exhibition flowers are desired.—W. E. BOYCE, *Holloway.*

15509.—**Propagating large-leaved Begonias.**—These, which are often termed fibrous-rooted, or ornamental-foliaged, Begonias, to distinguish them from the flowering tuberous-rooted section, are increased by layering the leaves on sandy soil in a moderate warmth. Take leaves that are fully developed, or nearly so—old battered leaves should be avoided—with not more than an inch of stalk, cut through the principal midribs on the back of each in six or eight places, and, with some very small hooked wooden pegs, fasten them down to the surface of well-drained boxes or pans of light sandy soil; or a few stones will answer the purpose almost as well as pegs. Place these in a rather close and moist house at 70 degs. or 80 degs., or on a gentle hotbed, keep the soil just moist, shade from strong sun, and in two or three weeks roots and a small tuber will be formed at each cut, and shortly afterwards a tiny leaf will be seen to rise, forming the embryo plant. When these are strong enough, divide and pot them off singly, and afterwards shift on as required. About the best mixture in which to root the leaves is composed of equal parts of loam, Cocoanut-fibre, and coarse sand, with a little leaf-mould if this is at hand.—B. C. R.

15605—**Chrysanthemum growing.**—If "Herbert" carefully watches his plants from about the middle of August and during September he will observe at the end of each stem a cluster of buds. To have good exhibition blooms, all these buds, except the centre one, should be taken off. This is best done with the point of a sharp pen-knife, but care must be taken in so doing that the centre bud is not injured. There will also be seen at the axils of the leaves young buds or growths—these should also be taken off if exhibition blooms are desired. For decorative purposes the plants should only be slightly disbudded, as the object here is to have a quantity of bloom instead of quality. There is no difficulty in having Chrysanthemums in bloom in October, but to be able to do this some of the early section of the late-flowering varieties should be grown. A few of the best of the early-flowering varieties should also be grown for this purpose, striking the cuttings about March and stopping them about twice. A few good early-flowering varieties for this purpose are: Mandarin (very fine), Mons. A. Dufour, Pomponium, Mrs. Cullingford, Boule d'Argent, Isadore Feral, Lyon, Madame C. Desgrange, G. Wermig, and Mr. J. Laing (good). Later varieties are: Mrs. Rundle, George Glenny, Golden George Glenny, Elaine, L'Africaine, Virgin Queen, Frizou, Madame de Sevin, Galathée, Fernand Feral, James Salter, Lady Selborne, and Comte de Germiny.—W. E. BOYCE, *Holloway.*

—— In reply to "Herbert," I would explain that taking the bud of a Chrysanthemum means really thinning out the blooms, in order that the plant may not have too many buds to carry. If you want large blooms you must be content with, say five or six on each plant. Chrysanthemums can be increased by cuttings, or division of the roots in the spring. They should always be well staked. For large blooms they must be well manured and watered, and only six or seven shoots left to each plant, only the top bud being left on each shoot. This should be done when the buds are about the size of small Peas. The shoots should then be severally staked out, allowing plenty of room for light and air between the plants. If "Herbert" wishes his Chrysanthemums to flower late he should stop them, this being done by pinching out the "eyes" of the shoots. What I have said about pinching out the buds, &c., refers to exhibition plants, border plants not requiring this. The large flowering plants may be trained to screens, walls, &c., and will make a splendid show in October and November. The following are some of the best sorts to grow:—*Incurved:* John Salter, Her Majesty, Pink Pearl, Isabella Bott, Mrs. Sharp, Beverley, Mr. Brunlees, Guernsey Nugget, Golden John Salter. *Reflexed:* Christine, Alma, Countess of Granville, Prince Albert, Sam Slick. *Large Anemones:* Emperor, Georges Sands, Gluck, Lady Margaret, Sunflower. *Pompones:* Adonis, Cedo Nulli, Prince Renna, Salamon. *Japanese:* Giant, Bismark, Dr. Masters, Red Dragon, The Mikado, James Salter, Grandiflora.—A. HENRY DAVIS, *Carshalton.*

15600.—**Euphorbia splendens.**—Too much water and not enough heat has been given, which causes the leaves to turn yellow and the flowers to fall off. I have seen this plant wintered safely for several years in a greenhouse to which fire heat was only applied to keep out frost, but then the roots were kept dry all the winter. Towards the end of the summer the plant flowered regularly every year, but not so profusely as when treated to a warmer temperature. In regard to repotting, this plant does not want much root room. A plant 3 feet in height and as much through should have a pot 12 inches in diameter, and only be repotted once in three years; half peat and half loam used in small lumps would be a suitable compost for it.—J. C. C.

THE KITCHEN GARDEN.

RUNNER BEANS IN LIGHT SOILS.

RUNNER Beans are held in universal esteem, and it is unnecessary to insist on their merits, but I think that they often fail to get all the cultural care they need. There are several points connected with their culture which, if attended to, will largely increase their productiveness. In the first place, I would direct the attention of those of your readers who have light, porous soils to deal with to the advantages derivable from growing runners in trenches. After they have escaped the perils of frost in late spring, runners have but one great enemy to contend with, viz., droughts; and in light soils, unless some means are taken to ensure moisture at the roots when they come into bearing, the crop in dry seasons is likely to be a light one. Thoroughly breaking the ground and mulching constitute one way of avoiding the evil consequences of a parching summer; but there is no way so good as taking out trenches 15 inches deep and putting in a good layer of manure at the bottom and filling up with the soil to within a couple of inches or so of the surface. Everyone who has had anything to do with light soils knows how difficult it is to make them thoroughly moist when once they have become quite dry to the depth of some inches; the watering of soils which approach sand in character, when in such a condition, is like pouring water on a duck's back—scarcely any goes where it ought to; but pouring it into a

SHALLOW TRENCH, to which by reason of the presence of an enticing amount of nourishment the roots almost entirely confine themselves, is quite another affair. Enough being given to moisten the amount of soil therein, that soil is perforce wetted through, the roots get it all, time, labour, and material are economised, and the plants pass triumphantly through trying ordeals which must otherwise seriously impair their fertility. Manure is, of course, the best thing to use, but when scarce any organic partially decomposed matter will do. Straw, lawn sweepings, weeds, and such miscellaneous matter as forms the rubbish-heap in gardens will answer well, and if as much can be used as will leave only some 4 inches of soil for sowing in so much the better. In this way the welfare of the crop will be better assured, and the soil will be permanently enriched and broken. The time of sowing is naturally in a measure regulated by the nature of the soil, but in any case I see but little good in putting the seeds in before the middle of May, for if the plants appear before the end of the first week in June they are very liable to get frosted, and then you are later than if sowing had been deferred until this danger was no longer to be feared. Protection may, of course, be resorted to for an early sowing, but gardeners in a general way have enough to do at that time of year without protecting Runner Beans from frost.

SUCCESSIONAL SOWINGS.—All know how important is the successional sowing of Peas, and it therefore seems strange that so many should consider one sowing of Runner Beans enough, but, as a fact, there are more gardens where only one lot of seed is set than where a second sowing is made. The advantage of sowing again at the latter end of June is that the secondary crop just escapes the most trying weather before coming into full bearing, and therefore experiences the greatest strain when the plants get the help of cooler nights and occasional refreshing rains. Sometimes the first crop is a partial or may be an almost complete failure; then how gladly does the grower see another lot bursting into bloom. Moreover, how tender and juicy are these autumnal Beans, in a general way a different vegetable from those perfected under the cloudless sky and moistureless nights of July and August. In a kind autumn and mild early winter we get plenty of good Beans from these late sowings until the days are approaching their shortest, and I have even known the time when in Surrey Runner Beans freshly gathered formed one of the vegetables on Christmas Day. But such winters are like the rosarian's perfect spring—only one or two of them are seen in a lifetime; and if we get Runners from August to the latter end of October, we may be thankful, and rest under the pleasing consciousness of having made the most of a wholesome and delicious vegetable. Because Runners naturally make many feet of bine in one season it has been the general practice to allow them to develop as much as practicable, thus seemingly, by following Nature, encouraging a maximum productiveness. Bean sticks 10 feet high, with the Beans at the top and none at the bottom, are the rule with many. But why climb up a ladder to gather Beans when we can do so with our feet on solid ground? And if we top the plants 5 feet from the soil we make Bean gathering easy work. It is all very well to say you do not get a profitable crop this way; but how about the market growers, who convert runners into bush Beans by reason of persistently ref sing to allow them to run from the time they first show the will so to do?

RUNNERS REQUIRE FIRM SUPPORT, and a good way to give them this is to put in the sticks when the seeds are sown. Rake the ground level, stretch the line, mark it down on the soil, and then cut on it with the spade, taking out a spit at a time and inserting the stakes as you go on, pressing them against the firm side of the trench. This way of staking materially increases the stability of the Beans, as there is no need to point the sticks, and they, consequently, are more firmly fixed in the soil. Then

sow the seeds and the job is complete, and the Beans when they come up find the supports in readiness for them, and what is, perhaps, of some little importance, they get a slight shelter from the time they come through the soil; indeed, if sown earlier than here advised some branches of evergreens stuck in on the north or east side would do much to keep them from harm, and would certainly favour their development. Another detail connected with the desire to secure an average yield is the sowing of the red, white, and Painted Lady varieties indiscriminately and in about equal proportions, as it is found that seasons more or less favour or otherwise the development of the three kinds in a disproportionate manner, and to the extent at times that one of them scarcely grows, whilst the others thrive fairly well. A moist summer, by increasing the amount of all kinds of green crops, reduces the value of Runners, and a parching July sends up the prices to a height which renders them a prohibited luxury to the poor in towns. By September, when Runner Beans are no longer favoured by the rich, they drop to 3s. per bushel—a price which puts them within reach of all. Many market growers sow about 3 feet apart, which allows of running the horse-hoe between them. As soon as they begin to grow they are frequently gone over and topped, so that they never become more than 2 feet high. C.

LEEKS AND THEIR CULTURE.

LIVING in a district where the Leek is extensively grown for exhibition, and having an opportunity of seeing some of the best "stands" placed upon the show tables on both sides of the border, I may say that perhaps the best Leeks ever placed upon a show table were those exhibited some years ago at the Edinburgh International Show by Mr. Dobie. "Dobie's Leek" took the lead for many years; but several other varieties are now in the market said to be larger and of better quality than any ever grown by Mr. Dobie—I may mention the Lyon Leek and Renton's Monarch. That the Leek by careful selection has been greatly improved in size is evident, but the care and attention required to grow a "stand" of show Leeks are greater than most gardeners can bestow upon them. Mr. Leach, on page 641, gives a very good idea of the care and attention necessary to grow prize Leeks to perfection. My purpose is to supplement his remarks upon the excellence of the Leek as a vegetable. It seems a singular thing that it is so seldom placed upon the dinner-table, for I feel certain that no winter vegetable can surpass it when properly grown and well cooked. Here we grow it extensively, the soil and situation being favourable. The seed is sown at the end of February, or early in March, on the open ground on a south border. In preparing the seed-bed, we use soot very largely; after sowing, a thin covering of fine soil is sprinkled over the bed, and nothing more is necessary, until the plants are ready to be planted out about the first or second week in June, when they are about the size of a large goose-quill. The ground intended for their reception, being either trenched or dug two spathes deep, well manured with rotten dung and soot during the winter, is in good condition to grow Leeks of good quality. Here we plant them in rows one foot apart; a drill to the depth of three or four inches is drawn, a long dibble is used in making the hole to receive the plant, the roots being well draggled in a composition of soot and cow dung, about the thickness of cream. The plant is then dropped into the hole, and if it is found to be deeper than the length of the Leek, a little earth is pushed in with the point of the dibble until the parting leaves of the plants are level with the bottom of the drill. Planted in this way when the weather is moist the plants hardly feel the check. With the exception of a little earth sufficient to cover the roots, the hole is left open for the plant to expand. After planting a little water is poured into the holes and nothing more is required beyond keeping the weeds clear. Leeks grown in this way will be found of excellent quality, from six inches to eight inches long, white as milk. If the autumn and winter are mild the Leek continues to grow in March; it is best to lift the plants and place them behind a north wall—by this means they can be kept until June. Leeks, such as these, ought to be boiled at least one hour in milk and water, the white only being used; some prefer to serve them up with melted butter, but fine salad oil with a little vinegar, beaten up into a cream, is the best thing to serve them up with. Let anyone eat the Leek served up properly, and it may be safely predicted that the dish will be oftener on the table. Besides being palatable, it is one of the most wholesome vegetables grown. Here, we grow the four following sorts: The Musselburgh, Ayton Castle, Henry's Prize, and Careutau, a French variety; the first-named sort is well known throughout Scotland, and when kept pure one of the best grown. Ayton Castle differs little from it in quality, but much depends upon the purity of the seed. It may not be generally known, that to keep the Leek pure it requires to be kept isolated from other sorts. When in flower, bees come from great distances to feed upon the flowers. The possessor of a bit of garden ground or allotment, cannot do better than grow a few Leeks; he will find them invaluable in the winter months. When other vegetables are scarce or hard frozen, a dish of Leeks can always be had, no matter how severe the frost may be.

Shawdon, Northumberland. J. THOMSON.

BORECOLE.

OF this there are several varieties, all of which possess a constitution sufficiently hardy to enable them to stand the severest weather, and to supply us with greens during the winter and spring months. They all have open heads, and leaves of different shapes and shades of colour. Some have curled or wrinkled foliage, others smooth. The dark green curled kind keeps its colour during the whole winter, and when properly cooked is always acceptable. It will be found advisable not to enrich the soil too much for this crop—that is, if it be in fairly good condition; if too rich, the plants grow too strong and vigorous during the early part of their growth, rendering the stems soft and unripened, and causing them during very severe frosts sometimes to get injured; whereas, when hard and ripe, it is seldom that anything injures them. The soil most suitable for Kale is a rich, friable loam, resting upon a dry subsoil; but fine crops may be grown upon rich, heavy soil, provided the ground is well drained to carry off the water during winter.

CULTIVATION.—The ground should be trenched or deeply dug before planting. If manured for the previous crop, it will generally be rich enough for Kale; but if poor a slight dressing of stable manure will be found to answer best for this crop, working it deeply into the ground as the digging proceeds. The seeds may be sown at two different times; the first sowing should be made the second week in March, and that for the main crop from the 11th to the 15th of April, choosing a dry, warm border for the seed beds under a south or west wall. The beds may either be 4 feet wide, or the seeds may be sown in drills 1 inch deep and from 3 inches to 4 inches apart. As soon as the young plants are large enough to handle transplant them into a piece of open ground freely exposed to the sun; plant 4 inches apart, which gives the plants a chance of growing short and stocky before being planted into their permanent quarters. On ground on which the plants are inclined to club, use a good dressing of soot and lime, mixing it well with the soil before sowing the seeds, and also before transplanting the young plants from the seed beds. The earliest sown ones will be large enough to plant out about the middle of June, planting them in rows 2 feet apart and 18 inches plant from plant. The main crop should be planted out early in July, so that the plants may attain full growth early in autumn, when the stems will get well matured to withstand the winter's frosts. Hoe frequently between the rows to keep down weeds. In poor soil as soon as the plants get well established, give a dressing of some artificial manure between the rows, hoeing it deeply into the ground with a draw hoe. Liquid manure may be given once a week until the plants get nearly full-grown. When large enough draw some soil round their stems to keep them in their proper positions, and little more attention, except pulling off dead leaves in autumn, will be needed until they are required for use.

VARIETIES.—Cottager's Kale, a hardy variety, produces plenty of leaves for use early in the autumn, and later on it forms numbers of sprouts upon the stems. Dwarf Scotch Kale is one of the best for the main crop hardy kinds. Tall Scotch Kale, a vigorous growing sort, produces quantities of leaves and sprouts. The Acme, a dwarf-growing variety, furnishes finely curled leaves, that are delicious in flavour. Melville's is also a useful hardy sort. Variegated Kales, of which there are many, are ornamental in borders or shrubberies, and also very good when cooked. C.

REPLIES.

15590.—**Cucumber for cold frame.**—"G. Marsh cannot do better than select Rollisson's Telegraph for a cold frame. If a more hardy sort is wanted Cuthill's Black Spine is a useful variety.—J. C. C.

15591.—**Best Tomato for pot culture.**—King Humbert does exceedingly well in a pot; but for that method, or, indeed, for any other, the old red sort is not surpassed by any of the new ones. It is the improved system of cultivation of the Tomato, and not the superiority of the new varieties over the old ones, that has made them so popular.—J. C. C.

15658.—**Potatoes for heavy soil.**—For "Eta's" information, let me say that I tried last year, on newly broken ground, similar in soil and condition, Sutton's Pride of the Market, Reading Hero, Clarke's Main Crop Kidney, and Lady Truscott, with the result that I propose to grow the first two almost exclusively as a main crop, the Reading Hero being decidedly good, both as a cropper and for eating.—H. I. T., *Whetstone, N.*

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXXIV.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

VEGETABLE SOUPS.

IN making soups take care to have all the ingredients as fresh as possible, use seasoning with discretion and moderation; let the utensils be thoroughly clean; skim and stir the soup carefully while it is being cooked. Do not be over-anxious while making soup, as often the less pretentious the soup is, the more appetising and exhilarating it will prove, and some good and acceptable soups may be made out of very inexpensive materials.

VEGETABLE STOCK FOR SAUCES OR SOUPS.—Clean and prepare two Carrots, one Turnip, one head of Celery, two Onions, two Parsnips, one small Cabbage, three Shallots, one clove of Garlic, and a small bunch of mixed herbs. Chop and dry all well, melt three ounces of butter in a saucepan, add the vegetables, and toss them over the fire for about ten minutes, until the butter is absorbed, but the vegetables must not be browned. Add two quarts of cold spring water, one teaspoonful of salt, twenty peppercorns, six cloves, and a blade of mace; stir over the fire until boiling, skim well, put the lid on the pan, and simmer by the side of the fire for three hours, strain through a hair sieve, and use as required. Do not press the vegetables when straining the stock.

LENTIL SOUP WITH CRUSTS.—Take one pound of Lentils, two ounces of dripping or butter, two quarts of vegetable stock, and sufficient bread cut into small dice. Wash the Lentils thoroughly, put them into a saucepan, with one pint of cold water and half a teaspoonful of salt, place the pan over the fire, and as soon as the water boils pour all into a sieve, and let cold water run well over the Lentils. This preparation will effectually remove the strong flavour from the Lentils, which to many is very objectionable. When thus prepared, put the Lentils, stock, and butter into a saucepan, with a few seasonings, and let all simmer gently for two hours. When done, press through a hair sieve, return to a saucepan, and again place over the fire, and let boil. Fry the bread, in enough fat to cover them, to a pale brown colour, drain them upon porous paper, throw them into a very hot soup-tureen, pour the boiling soup over, and serve at once.

VEGETABLE MILK SOUP.—Take three pints of milk, one pint of water, one large Carrot, one White Turnip, one Portugal Onion, half-a-head of Celery, one Lettuce, two Shallots, one clove

of Garlic, one Parsnip, a small bunch of Parsley, Bay-leaf, Thyme and Marjoram, twenty peppercorns, a grate of nutmeg, blade of mace, six cloves, and a dessert-spoonful of salt. Prepare and slice the vegetables thinly, and put all into a saucepan with the seasonings, water, and milk, cover and place by the side of the fire for one hour, but do not on any account allow the milk, &c., to boil. Strain, mix one ounce of cornflour with a little cold milk, free from lumps, and add it to the strained and seasoned milk, with two ounces of butter; put all into a saucepan, and stir until boiling. Serve with fried crusts as described in last recipe, or beat the yolks of two eggs with one gill of milk, and add to the soup after it has boiled, stirring continually; and then pour on to the crusts and serve very hot.

VEGETABLE MACCARONI SOUP.—Take half-a-pound of the small pipe maccaroni, three pints of vegetable stock, one pint of milk, two ounces of butter, and two ounces of grated Parmesan cheese. Break the maccaroni in very small pieces, wash it thoroughly, add it to the vegetable stock when it is nearly boiling, and cook with the lid off the pan until the maccaroni is swollen and soft; add the milk and butter, broken in pieces, let boil, and pour into a very hot soup tureen. Strew the cheese in, mix thoroughly, and serve with fried bread separately upon a napkin.

WINTER HOTCH-POTCH.—Take one pound of lean beef, two pounds of chops from the best end of the neck of mutton, one pint of dried Green Peas, two Carrots, one Turnip, three Onions, half-a-head of Celery, three pints of water, and two pints of vegetable stock, seasonings to taste. Soak the dried Green Peas for twelve hours before making the hotch-potch. Wash them again, and put them into a saucepan with the water, stock, and other vegetables cut into small pieces. Simmer for two hours, then add the beef, cut into small square pieces, and the chops; skim thoroughly, and simmer again for three quarters of an hour, and serve as hot as possible.

COCK-A-LEEKIE OR LEEK SOUP.—Take one large fowl, trussed as for boiling, two quarts of vegetable stock, twenty-four Leeks, seasonings of pepper and salt. Trim the roots and dark green leaves from the Leeks, cut them in pieces about an inch long, and put them into a basin, with a handful of salt, and enough boiling water to cover them, put a plate on the top, and let stand for half an hour; pour away the water, and put half the Leeks into a saucepan with the stock and seasonings, boil rapidly for half an hour, then add the fowl and the remainder of the Leeks, and simmer gently for one hour. Lift out the fowl, cut it into neat but small joints, put them into a very hot soup-tureen, carefully skim the soup, and when it is boiling pour it over the fowl in the tureen, and serve very hot.

POULTRY.

QUERIES.

15732.—**Sex of Guinea fowls.**—Will any reader kindly tell me how to distinguish male from female Guinea fowls? They are eight months old, and are of the spotted kind.—HIGH PEAK.

15733.—**Irregular laying.**—I shall be glad if "Doulting" can give me the reason why my hens do not lay regularly. For example, I have one eighteen months old; she laid well during last summer and autumn, stopped 7th October, and moulted. She laid again on 3 d January, but not since. I shall be glad also to know at what age fowls are supposed to be full grown, and if there is any recognised method of determining the age of poultry?—H. HUTCHINS BROWN. *** *See p. 562, Dec. 5th.*—ED.

REPLIES.

15635 and 15636.—**Egg producing fowls.**—In reply to these queries I would recommend Minorcas before all others. They are prolific in eggs, which are very large.—V. C.

15734.—**Incubators** *(A. R. C., Blantyre).*—I have not any recent reports of incubator experiments by me; all that I can say is, I believe Christy's to be a useful machine, and one that has been successfully used.—DOULTING.

15735.—**Disease in fowls** *(A. P., Tunbridge Wells).*—1. I regret that my experience in dissecting poultry is so very limited that I cannot give an opinion worth having as to the disease from which your Black Hamburgh hen has suffered. If a similar case should occur, I advise you to send the bird to Mr. Sewell, 53, Elizabeth-street, Eaton-square, W., who makes this kind of work a specialty, and, therefore, can speak on the subject with some authority. The fowl should not be packed until cold, and the package must be sent carriage paid. A description of the feeding and general management, together with some information as to the symptoms of the disease, ought also to accompany the parcel. I cannot say what is the amount charged for the examination. Money, however, expended in this way is not lost, for the information obtained may be the means of saving much valuable stock at some future time. 2. The cockerel appears to be suffering from bronchitis—at least, the frequent coughing is a well-known symptom of that disease. The spots round the neck point to something more serious. Bronchitis is not difficult to cure. The fowl should be removed to a dry and moderately warm place, and generously supplied with warm food, with which a little cayenne or ginger seasoning may be mixed. A small dose of nitric acid should be added to the drinking water, also enough glycerine to make the whole slightly sweet and barely acid to the taste. Under this simple treatment the fowl soon recovers. If there be a discharge from the nostrils, in addition to the cough, the birds are suffering from a severe cold, and this may eventually turn to roup, if not to something worse. Roup itself is very contagious; hence the advisability of separating unhealthy birds from the others at once. If the disease spread, or more aggravated symptoms appear, please write again.—DOULTING.

15736.—**Houdans** *(Roxburghshire).*—Any of the following can probably help you:—D. Ainsworth, Highbank, Darwen; W. Dunderdale, Tarnacre Farm, Garstang; The St. Leonard's Poultry Farm, Ringwood; and John Till, Warton, Camforth, Lancashire. The price of stock birds depends principally upon the strain and the class of fowl. An exhibitor who can win prizes at the leading shows will rarely sell good birds under a couple of guineas each, and in some cases even more will be asked. But every fancier breeds a large number of chicken every year, which, although of excellent lineage, are, on account of some defect more or less trifling, unfit for the show pen. They are too valuable for killing purposes, and are, accordingly, sold to breeders, who, so long as their birds are purely bred, do not object to a blemish or two. Of course, these birds do not command the price which their more perfect relatives obtain, and cockerels of this class may be bought from half-a-guinea upwards, while pullets will not cost so much. Good birds of pure breed may be got for still less money, and you should watch advertisements in the different journals. There is something to be said in favour of buying birds of this stamp when starting with a new breed. The purchaser can compare his birds with more valuable specimens, and by careful breeding endeavour to remove the blemishes which his fowls possess. "Roxburghshire" must remember that imperfectly marked hens are quite as valuable for laying purposes as those birds which possess all the points of the breed to perfection. Indeed, the latter are too often lacking, as far as profit is concerned. In buying stock a cockerel of 1885 should be chosen, if possible, for older birds are less reliable. I once bought an aged cock of this breed, which came to me with a strong recommendation as to stock-getting, but he proved to be entirely worthless, and the hatching season that year was lost in consequence. If it can be managed I should buy a breeding pen rather than a sitting of eggs. The former will cost but a little more in the first place, and provide several sittings of eggs during the season, whilst only a few chickens may be got from the eggs bought.—DOULTING.

15737—**Fowls in limited space** *(J. M. W.)*—Your run is very small indeed, and you must be content with four birds at the outside. I should not keep a cock, for breeding will be out of the question, and his room will be far more precious than his company. As eggs are the principal object in view, I consider Minorca or Andalusian hens will be better than the Plymouth Rocks. The position of the house and run will be also very favourable for them. Quality of meat is really not worth considering at all, for there will be too few birds to think much about table purposes. I should not trouble about the cinder bottom to the run. It may certainly add to the dryness, still, there cannot be much fear of damp if the situation is as high as it is represented to be. The run will indeed be much better, because sweeter, if it can be dug over a spit deep once a week or fortnight. The fowls will scratch about the more, and thus keep themselves occupied. This is a point much to be desired when fowls are kept in confinement, for, when they have nothing to do, they often fall into the habit of feather eating, and this is very difficult to cure. Green food must also be plentifully supplied and fresh water always be within reach of the fowls. I should not from choice care to keep poultry in so small a run; there is no reason, however, why they should not succeed, but to do this, they must be attended to in earnest.—DOULTING.

15738.—**Fowl keeping in stable** *(J. B. N.).*—Your accommodation for poultry keeping is about as unsuitable as can well be imagined. Fowls, if they are to thrive and pay, must at least get an occasional run in the fresh air; this it seems almost impossible for yours to do. I do not say that hens cannot be kept in a healthy state when confined; what I do say is that so much attention is necessary in keeping the pen clean that profit is altogether out of the question. Chicken rearing is impossible, that is, if anything more than puny specimens are desired. I can understand your anxiety to keep live stock of some kind, and advise you to keep rabbits instead of poultry. If properly managed they can be made to pay their way. The building too, would suit them well.—DOULTING.

Poultry for profit.—I was much interested in reading the article by "Doulting," in GARDENING, January 9th, on keeping accounts in connection with poultry. As I did this last year, I have pleasure in submitting the following, which, I think, is satisfactory. I hope to do better this year as last year was an experimental one. I have now a good stock, and am getting between 6 dozen and 7 dozen eggs a week, which, unfortunately, are fetching only 1s. 3d. a dozen. I have never got more than 1s. 8d. per dozen. My ducks, likewise, are laying. I feed on the best food, but can reduce the amount this year, I think.

		£	s.	d.
DR.	1885.			
24	Fowls at 2s. 6d. each..	3	0	0
14	Pigeons at 1s. each	0	14	0
2	sittings' eggs 2s. 3d. each	0	4	6
42	Duck's eggs 1d. each..	0	3	6
	Food	16	18	9
		£21	0	9
CR.	1885.			
35	Fowls at 2s. 6d. each	4	7	6
24	Pigeons at 9d. each	0	18	0
4	Ducks at 3s. 6d. each	0	14	0
2,339	Eggs at 1d. each	11	16	7
30	Pigeons, killed, at 9d. each ..	1	2	6
35	Fowls, killed, at 2s 6d. each ..	4	7	6
35	Ducks, killed, at 2s. 6d. each ..	4	7	6
	Food in hand	0	7	6
		£23	1	1
	Less	21	0	9
	Profit	£7	0	4

Budleigh-Salterton, Devon. AN AMATEUR.

BIRDS.

15739.—**Goldfinches** *(F. Oliver).*—The female is a trifle smaller than the male bird, and is not so brilliantly coloured.

15740.—**Raven** *(A. G. C.).*—"E. J. M." (p. 634) refers to a live raven; but perhaps he will give further particulars as to how it is made useful. We think you could get what you want if you applied to a bird dealer.

15741.—**Sick parrot** *(Erin).*—The enquirer does not say the kind of parrot. If, as we surmise, it is a grey, it is evidently suffering from indigestion, probably caused by improper food. A parrot's diet should be boiled Maize, mixed with Hemp seed—milk sop occasionally; but on no account m at fat or water. Try a little cayenne with his sops. Large flat Maize is the best if obtainable.—S.

15648.—**Birds for an outdoor aviary.**—"V. V." will find the following birds do very well in an outdoor aviary:—Red-crested cardinals, splendid songster and very hardy; Pekin nightingales, exquisite songsters; cockatiels, Java sparrows, spice birds, weavers, red rump, bobolink, budgerigar's, finches of the various kinds, and a host of others, almost too numerous to mention. I have got most of the above, and they are all in the best of health and plumage, and if the aviary is large enough and suitable nesting material provided, most of them will be prolific breeders. Should "V. V." require any information respecting any of the above birds, or any other, I shall be pleased to give it him as far as my own experience goes.—G. H. D., *Handsworth.*

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THE KITCHEN GARDEN.

MAKING ASPARAGUS BEDS.

THIS is the time to prepare for new Asparagus beds by deeply trenching and well enriching the soil, for so valuable a crop as this, that stands for many years in one position, and needs but little attention when once started, can hardly be too well done in the first place. Those who live near the sea should endeavour to get a good lot of Sea-weed to bury under the plants; the roots revel in it, as, being maritime plants, it is the most natural dressing that can be produced. When the soil is trenched, mark it out into beds 4 feet or 5 feet wide, with alleys between for convenience of gathering the produce, as, in addition to the facility it affords for getting at the crop without treading on the crowns, there is really no loss of space, for the roots soon take possession of the alleys, and they become the best feeding ground of the crowns, which could not exist so closely together as they are usually planted in the beds, if it were not for these spaces. In soil that is of an adhesive nature, a good dressing of sand or grit is most useful; in porous, well-drained soil, such as is usually found by the sea, ample drainage is assured, the roots keep healthy for years, and the crown attains a great age, but in heavy soil the roots perish in periods of excessive rainfall, and the crowns are weakened and are but short-lived. In such soils it is a good plan to spread a good coat of old mortar rubbish, road scrapings, or sand on the surface, and let it work in about the roots at planting time. The best period for planting depends on whether the plants are close at hand, or have to be procured from a long distance, as in the latter case they cannot be long exposed to the atmosphere after they have started into growth; but if they have only to be removed from the seed bed to their permanent quarters there can be no question that the best time to plant is as soon as the young growth pushes through the soil, for then the young roots are ready to take hold of the soil directly. The way we proceed is to draw wide drills where the rows of plants are to be, then lift the young plants with all the roots that can be got at full length, and spread them out in the drills, covering them with the sandy soil at once; if the weather is dry, water, to settle the soil about the roots; but, as a rule, in April the weather is showery and the soil moist, and no artificial application of water is necessary. The proper distance to plant depends on whether very large crowns are required or a full crop of medium-sized heads, for very large heads can only be produced from plants that are at wide distances apart. Some allow a yard from plant to plant, but for ordinary use two or three rows of plants are put into each bed, so that the plants stand from 15 inches to 18 inches apart each way. During the first season's growth but little attention beyond keeping clear of weeds will be required, and in the autumn, when the tops die down, cut them off just above the soil, and spread a dressing of partly decayed manure on the surface; this will not only protect the crowns from severe weather, but the rains will carry down the nutriment to invigorate the roots, and prepare the crowns for a vigorous growth in the following year. The same treatment will be required the second year, when, if strong plants were put in at planting, some good Grass may be cut, and a full crop be obtained the third year.

Gosport. J. GROOM.

BRUSSELS SPROUTS.

I VERY much question whether amateurs and others with limited space in which to grow winter vegetables make as much use of Brussels Sprouts as they should, for I have no hesitation in saying that it is the most profitable of all the Brassica family; and when its cultivation is begun in the right way it is not more difficult to grow than an ordinary Cabbage. As evidence of its profitable character I may mention that we have now about 250 plants from which we first began picking sprouts early in October. From these we have been picking almost daily for a large family, and there is still left upon the plants a sufficient supply to last us for at least another six weeks. So that from this plantation we shall have had a regular supply for five months. Apart from their productive character the tender Sprouts are much appreciated in most families. This vegetable requires a rich and deep soil to grow it to perfection, but if its cultivation is undertaken in good time in the spring it is such a hardy subject that in less favourable soils it never fails to produce a good return. The principal point to attend to in cases where there is not plenty of manure at command is to get the plants well established where they are to stand before hot and dry weather sets in. If the plants can be got large enough to pretty well shade all the ground between them they will not seriously feel a long spell of dry weather, and they will do this by the middle of June if the following directions are liberally carried out: Prepare the ground by digging it up from 18 inches to 2 feet deep, and if there is only a limited supply of manure it should be placed about 9 inches under the surface, but where manure is plentiful it may be incorporated with the soil at various depths. With regard to purchasing the seed, I must confess that although I have grown most of the reputed distinct varieties I have not found them any better than a good strain of imported seed, which any respectable seedsman can supply.

SOWING THE SEED.—I am writing for those who cannot command a cold frame in which to raise the plants, so as to get them early; so I advise them to sow the seed where the plants are to stand, as it is the only plan to gain time. The plants do not require transplanting, so they grow on without a check, whereas if they are raised in a seed-bed and have to be transplanted it takes them, under the most favourable conditions, a fortnight to get established; but this is not all. Plants sown where they are to stand do not have their main roots injured by removal, consequently they strike down deep into the soil, and get a firm hold before the season of heat and drought comes. The result is a much finer growth, with only a minimum amount of trouble. To receive the seed, drills should be drawn about half an inch deep. In a strong, rich soil the drills should be 2½ feet apart, but in poorer mediums 2 feet will suffice. The seeds should be sown thinly in the drills, and lightly covered with fine soil, and the earlier in March the seed is sown the better. The plants will, of course, come up much thicker than they are wanted, and as soon as they get 3 inches high some of them must be pulled out, leaving the final thinning until they get larger. At the last thinning the plants should stand singly 2 feet apart. All the attention they require during the summer is to have the surface hoed between them to keep down weeds; but if they have made satisfactory progress they will have covered the ground so completely that the weeds will not have much chance to grow. About the end of October many of the first formed leaves will be getting yellow, and will be of no further use to the plants; these should be removed, as by taking them away light and air will be admitted to the stems, which will benefit the young sprouts. The tops of Brussels Sprouts should not be cut off until the spring. If cut off in the winter a severe frost may come and do them much harm, but with the tops intact only the severest frost will injure them.

J. C. C.

TOMATOES WITHOUT MANURE.

MANY of us, I am inclined to think, use too much manure in the case of our Tomatoes, and even Vegetable Marrows. In years gone by almost everyone who had anything to say on the culture of these recommended at least one part of the compost to be manure from the stable or cow-shed, and plenty of plants and fruit, too, were produced under this treatment; but it must be owned that there was also a great deal of superfluous wood, and in the case of Tomatoes the fruits in many instances were not so perfect in form, large in size, nor so numerous as they might have been. Three parts of the time spent in cultivating Tomatoes were devoted to cutting back and thinning out the shoots, work which surely could not be over and above good for the plants. The majority of Tomatoes make a great deal of unnecessary wood before any fruits are formed, and many of them grow so freely that they do not fruit until their feeding supplies have become somewhat exhausted. My idea of a good bearing Tomato plant is one which begins to fruit about 10 inches from the ground, and continues to bear closely as far up as the cultivator chooses to lead the main stems. The fruits should be numerous and the superfluous growths in no way predominating. It is, however, a difficult matter to have Tomatoes in this condition where much manure is used, as the manure has a tendency to induce the plants to make wood rather than fruit. For some years we have been using less and less manure in Tomato growing, and last season in several instances we dispensed with it altogether, and found our crops to be altogether more satisfactory than hitherto. The growths were short and robust, and the fruit formed in large quantities and swelled off and coloured beautifully; indeed, we never had Tomatoes so fine when manure mixtures were employed, and this year again we do not intend using any manure for them. Our autumn cuttings, now being potted off into 6-inch pots, have nothing but pure loam on which to exist, and on this we know they will succeed

admirably. Early in summer we are in the habit of planting a Tomato here and there along the walls wherever a small vacancy occurs, and before planting we used to fork in a quantity of manure to assist them, but last spring no manure was employed, but the crop was never more satisfactory. The very poorest of soil without any manure might not answer, but ordinary potting turf will be found to grow them to the highest state of perfection.

The same remarks apply to Vegetable Marrows. As a rule, they are planted on the tops of manure heaps or in very rich soil, and the growths soon become an intricate mass, with fruits at long intervals apart. Fruits at every joint are seldom the rule, but they would be if the plants were grown only in pure loam, in which they only produce a reasonable amount of growths. The latter, too, are very hardy, short-jointed, and fruitful. It is all a mistake to suppose that the stronger the plants are the finer will be the fruits, as ten out of every dozen blooms which open will fail to form a fruit, and those which do will not be extra good, as crowds of leaves and shade do not suit them. We all know how well Melons succeed in pure loam, and I would place Tomatoes and Vegetable Marrows under the same treatment. Not only is a saving effected by growing them without manure, but an advantage is gained in every way. J. M.

THE PARSLEY CROP.

THERE is no more important crop in the kitchen garden than Parsley, and people who can gather abundance of it daily from the beginning of January until the end of December are very fortunate. It will not, however, be produced for all that time, or, indeed, for half of it, unless a good deal of forethought and attention are devoted to its culture. It grows like a weed in some gardens, and in others the reverse is the case, and even in places in which it has been doing well it may take a turn any day the other way; so capricious is it, that it may go all off in a short time and cause much inconvenience, as Parsley is one of those things which are in daily use. Of varieties, many are recommended, but all kinds are valued about alike by the cook, the main object being to have the leaves large and well curled, and any good kind will supply leaves of this sort. Myatt's Green Curled, when selected with ordinary care, is a good variety. In most plantations of Parsley young plants will be observed with an appearance like that of hybrids between Celery and Parsley. These are not valuable, and should be drawn up and thrown away. In order to have plenty of good Parsley all the year round,

IT IS WELL TO MAKE THREE SOWINGS. The first should be made as early in spring as the weather will allow, the second in April, and the third in July. Gatherings may be made from the first sowing in May, the second in July, and from the third during the whole of the winter. Where the first sowing succeeds really well it may keep up the supply for a year or more, but with a crop which is so liable to go off and so indispensable it is always a satisfactory plan to sow, as I have said, three times. The best part of the garden is not too good for Parsley. In many instances it is sown in odd corners and treated as something of little importance; but those who wish to have it good and plentiful should not follow this practice. A little corner of it badly grown will never meet the demands of a large establishment, but a good piece in the main quarters will do so if properly managed. A light soil does not suit Parsley, as in dry weather it shrivels up, and fails to produce large, healthy, green leaves, which alone are useful. A deep, cool, and good soil is best. Plenty of manure is required to produce luxuriant growth, and a good deal of salt, lime, or soot should be added everywhere to prevent insects from harming it. The ground for all the sowings should have a thick coating of manure placed on the surface, with a good sprinkling of salt and soot thrown over it, and then dug in. For the April sowing the manure may be dug in now, and before putting in the seed, fork a quantity of lime into the surface. I do not mention any weight or quantity to be put on the square yard, because this should be in accordance with the character of the soil and the insect pests therein. The young plants are very hardy, although they do not come up very quickly at this season. Seed sown on a dry day during the early part of February, will produce plants in about four weeks. Sowing broadcast is not a good way.

ROWS ARE THE BEST, but they should not, however, be too close together. Some may think they are saving good ground and valuable space by sowing closely and in odd corners, but that is not my opinion. I have tried both ways and found the close rows very unsatisfactory; 15 inches from row to row is none too close in good soil, and where the plants are expected to develop good leaves, the drills should be opened to the depth of 2 inches and the seed sown in them very thinly. By placing some sandy soil over the seed germination is much assisted. This is of more importance now than later in the season.

THINNING OUT.—As soon as the young plants are about 1½ inches in height they should be thinned out to 3 inches apart; as growth proceeds they may be thinned again to 6 inches apart. This practice applies to all young Parsley plantations. To sow the seed in rows widely apart from each other and then neglect to thin out would destroy all the benefits derived therefrom. When the plants are fully established and producing more leaves than can be used some of them may become yellow in colour from old age; these are of no advantage to the plants, and may be removed before they become too numerous. As winter approaches each plant should be furnished with a quantity of robust healthy green leaves, which will be in great demand in December and January, and, indeed, throughout the winter, but as growth is not rapid now it is best to depend on that formed in autumn. In many instances, doubtless a good deal of the Parsley has been gathered, and all that remains is the root and some too old or very young growths. The old ones are of no use, and should be picked off; then sprinkle a little soot all over the surface, even between the plants, and fork it in slightly. This will induce the young growths to push out and become ready for gathering and useful before the spring seedlings will furnish any supply. C.

REPLIES.

15591.—**Tomatoes for pot culture.**—Nearly every or quite every kind of Tomato in cultivation may be most successfully grown as pot plants, but the following varieties I have proved over and over again to be exceptionally well suited for the purpose:—Hathaway's Excelsior, one of the finest Tomatoes in cultivation; Vick's Criterion, a medium-sized fruit, very prolific; the Old Smooth Red, and Conqueror; but the success of the undertaking will depend more on the cultivation than on the variety. The best way to get a heavy crop in pots is to sow the seed in February in a warm house or pit, and as soon as the young plants are large enough pot them off singly into 3-inch pots, and shift them as required into larger ones, until they are in 10-inch or 12-inch pots that are large enough to produce heavy crops of fruit. The soil we use is good fresh turf, cut thick from rather stiff soil, with a little rotten manure added, and in potting for the last time into the fruiting pots press the soil firmly, as in loose soil the plants make long-jointed wood and but little fruit. A light position fully exposed to all the sunlight we get is of the utmost importance, for if shaded it is useless to expect good high-coloured fruit. Keep the lateral growths cut in closely, as one or two main shoots will produce all the fruits a plant can swell off. Never let the soil get dry enough for the plants to flag, but avoid much moisture in the atmosphere, or the disease that attacks them out-of-doors in wet seasons will make its appearance, and is very difficult to cure. When the fruit is swelling off a good supply of liquid manure is of the greatest service, as Tomatoes are strong rooting plants, and unless kept well supplied with liquid food, they either cease fruiting or get covered with some insect pests that soon render them worthless.—JAMES GROOM, *Gosport*.

15658.—**Potatoes for heavy soil.**—The following varieties we have found by experience to be of first-rate quality when grown here in heavy land, being also first-class croppers. They are arranged in the order of their earliness: Myatt's Ashleaf (white Kidney), Sutton's Early Regent (white round), Sutton's Favourite (white round), Reading Russet (red round), and Reading Hero (white round). The last named variety seems peculiarly fitted for poor, heavy soil. Last season we tried it along with the Magnum Bonum and Beauty of Hebron, in a newly broken-up piece of poor, heavy soil, which was nearly all clay. The two last mentioned were very poor yield, but the Reading Hero was a heavy crop, and when cooked for the table was of first-rate quality. Yet, being like the Magnum Bonum a late cropper, it is scarcely fitted for a small garden, as it does not come out of the ground early enough to get a second crop. I would advise "Eta," if he has not already done so, to bastard-trench his garden. This is accomplished by first taking out a trench one spit deep and two spits wide, and wheeling it to the place of finishing. Then break up the bottom of the trench another spit deep; next measure off two more spits wide, and put the top spit upon the bottom spit just broken up in the trench. Break up the bottom spit in this trench also, and put the next two spits on that. Continue in the same way to the end. Lastly, put the earth taken out of the first trench on the bottom spit of the last one. I should, perhaps, mention that these last two years have been more than ordinarily favourable to Potato culture in heavy lands. There has been an advantage to light land culture relatively as regards quality and absolutely as regards quantity. The favourable planting seasons and the subsequent dry summer weather brought the texture of the soil nearer to that of light land, and its superior moisture-retaining qualities, where the land was fairly rich, rendered it capable of bearing heavy crops, while the crops in many instances in light lands were very poor.—L. C. K.

15603.—**Diamond-shaped hoe.**—I think G. Marsh would find a "three-sided hoe" most convenient. I have used one for years, and for clearing edges and getting up Grass in gravel neatly I know no tool that can be compared with it.—PERTHSHIRE.

Sprinkling the leaves of plants.—We very often are told in GARDENING that little trickles of water given in summer are worse than no water at all, and that we should either give a good soaking or let it alone; but then it is generally added, gentle sprinkling over the leaves is, however, beneficial and refreshing. There is the greatest temptation to perform the latter operation—every plant seems so grateful for it; but a high scientific authority (who is, at the same time, a great gardener), Mr. Matthieu Williams, tells us that we cannot do anything worse than this in hot, dry weather; that by so doing we open the pores of the leaves, and make them evaporate the moisture from their tissues and from the ground at a hundred horse-power. It would be interesting to have this question ventilated.—D. K., *Virginia Rectory*.

Remarkable persistency of bloom.—The following remarkable instance of floral persistency may interest readers of GARDENING: On the 15th or 16th of September last a friend presented my wife with a Geranium (Mrs. Robertson) which had produced three trusses of bloom: one nearly fully blown, a second partially so, and a third with its first few expanded blossoms. No. 1 was at once cut off, Nos. 2 and 3 were allowed to remain, the plant being a few days after removed from Oxfordshire to a new home in Gloucestershire without injury. Here, placed in a cold conservatory, it remained, with ordinary attention, until the 15th of December, when to escape the frost which then prevailed, it was brought into the house. The two trusses of bloom were then cut off, and, although a few of the petals of No. 2 were a trifle white at the edges, it was in excellent condition, the fully-exposed flowers of No. 3 being as spotless as on the days they first opened. Nothwithstanding that these trusses were placed in a vase of water, No. 2 was not considered shabby until a week since, when it was thrown away; No. 3 looks as fresh as ever now (January 20th), and will probably continue so for at least another fortnight. I attribute this persistency of bloom to the fact of the plant being kept in still, cold air, the absence of sun, with just sufficient root moisture—no more. During the time the truss has been in the house it has always been kept out of any room wherein a fire has been burning. —E. H. R.

INDOOR PLANTS.

TUBEROUS-ROOTED BEGONIAS.

THE tuberous-rooted Begonias, which now form so conspicuous a feature in many greenhouses and conservatories, have been raised by crossing several species differing considerably in habit. They are of easy cultivation, and, being free and continuous bloomers, producing their flowers from every bit of growth made over a good part of the year, have naturally become favourites. They are increased by seeds, the cuttings made of the shoots. In adopting the former method

Tuberous Begonia, showing habit of growth.

THE SEED SHOULD BE SOWN in an intermediate temperature early in the year—say about the beginning of February; pots or pans may be used, and should be filled with finely-sifted peat to which some leaf-mould and sand has been added. Press the material moderately firm and make the top smooth; on this scatter the seed thinly, cover very lightly, pressing the surface a little. Stand the pots in a heat of 55 degs. or 60 degs., and keep the soil just slightly damp; when the young plants appear give a little more water, and place them near the glass. After sufficient growth has been made prick them out in pots or pans, a couple of inches apart; they will grow fast, and must be shaded slightly from the sun in the middle of the day. Give a little air also in the daytime, and keep the atmosphere moderately moist. When leaves an inch or two long have been formed move the little plants singly into 3-inch pots, and as the sun gets powerful give more air and shade, still standing them close to the glass. Keep the night temperature about 60 degs., with a rise by day proportionate to the state of the weather. These Begonias will grow in either peat or loam, but we prefer the former in their early stages. They will soon want more root-room—6-inch pots will be large enough; give sufficient drainage, and now use good loam, mixed with a little leaf-mould and sufficient sand to keep it porous. A greenhouse temperature will now be sufficient night and day; give plenty of air and light, with no more shade than needed to break the sun's rays in very bright weather. So naturally disposed to flower, even in a small state, are these plants, that they will bloom the first season. As the autumn gets advanced give less water, gradually withholding it altogether as the tops die down. If the pots can be laid on their sides, in a pit or greenhouse where no water can reach the soil, in a temperature of about 40 degs., they will be safe.

ABOUT THE END OF FEBRUARY turn the tubers out, shake the old soil away, and give pots 2 inches larger, using good loam prepared as before. If they can now be accommodated with a night temperature of 45 degs. to 50 degs., with warmth proportionate in the day, they will soon begin to grow, after which give more water to the soil. As the shoots advance put a small stick to each, with a view to tying them out a little, in which way they will be less liable to draw up weakly. As the weather gets warmer a greenhouse temperature night and day will answer, with plenty of air and light and a little shade again when the sun is bright. This summer they will, if all goes well, bloom freely, and be available for conservatory decoration, where they will be found very useful for mixing with other plants, their distinct bright flowers contrasting well with most other things. In autumn again dry them off and winter as before, The tubers will last for several years, increasing in size, requiring larger pots, and bearing proportionately more flowers. When it is desirable to increase any sort by cuttings, these can be made of the shoots in pieces about 3 inches long; inserted in sand, kept moist, moderately close, and shaded in a temperature of 60 degs., they will root; then pot singly, and treat as advised for the seedlings while at a corresponding size. If desired these Begonias can, when strong, be kept on flowering through a good part of the winter.

VARIETIES.—Like Gloxinias, Petunias, and some other soft-wooded plants, the strains of which have been so much improved, there is an almost endless number of good varieties in cultivation. The following are all fine sorts:—*Doubles:* Canary Bird, yellow; Clarinda, buff, flaked white, petals edged with pink; Davisi flore-pleno, crimson-scarlet; Dr. Duke, bright scarlet; Formosa, carmine, centre white; Francis Buchner, cerise-red; Gabriel Legros, sulphur-white; Jules Lequin, red, shaded salmon-vermilion; Little Gem, pure white; Madame Truffaut, orange; Queen of Doubles, rosy-crimson; Souvenir de Michel Saunders, bright red, shaded. *Singles:* Acme, purple-carmine; Arthur G. Soames, crimson-scarlet; Ball of Fire, glowing scarlet; Black Douglas, rich dark crimson; Charles Baltet, vermilion; Dr. Masters, crimson; Empress of India, yellow; Hon. and Rev. J. T. Boscawen, deep crimson; J. L. Macfarlane, deep orange; Lady Hume Campbell, light pink; Madame Laing, bright red; Marquis of Bute, carmine-crimson; Mrs. Dr. Duke, brilliant purple-cerise; Mrs. J. Freeman, rose, shaded purplish-violet; Nymph, white, tinted rose; Scarlet Gem, dark scarlet; Sir Trevor Lawrence, dark crimson; Snowflake, pure white; Stanstead Rival, salmon-red; Sulphur Queen, sulphur-yellow. These Begonias are little troubled by insects; for thrips, which sometimes establish themselves on the undersides of the leaves, syringe freely with clean water.

T. B.

Chrysanthemums.—I find the best way to grow specimen plants is to start with old plants. Cut them down to within 8 inches of the soil, remove all suckers as they make their appearance through the soil, and stand the plants in a warm pit or house. As soon as they make shoots about 1 inch long, knock them out of the pots they are in, shake all the old soil away, and pot in 6-inch pots, using nice open soil. Give a gentle watering through a rose, and stand them in a little more heat, until they get started to grow. Keep the shoots well tied out to stakes, and never allow them to get pot-bound. Pot on as they require, using a little richer soil—two parts fibry loam, one part rotten dung, one part leaf-mould, a few oyster shells pounded very fine, and plenty of sand to keep it open. The last shift should be given about the beginning of June. Then, as soon as the pots are full of roots, commence feeding with strong water. Put strong stakes in at the last shift, and as soon as the plants are tall enough tie the shoots from one stake to the other, so as to completely cover the top. They should measure from 2 feet to 3 feet across. They require a great deal of water, and should be syringed every day.—YOUNG GARDENER, *Kent.*

Propagating Geraniums.—Although the majority of gardeners strike a sufficient stock of Geraniums in autumn for the ordinary demand of bedding and pot culture, it frequently happens that a good many losses occur during the winter months, and as the present winter has been marked by sudden variations from extreme cold to mild damp weather, and excessive rainfalls, there is no doubt that many owners of gardens, when they come to take stock of what has survived the trying ordeal, will find that a considerable percentage of cuttings that they inserted in autumn are no longer in existence, and that spring propagation must be resorted to. Now there is nothing easier than the striking of Geranium cuttings, but still there are some ways much superior to others, and, after trying several plans, I am convinced that if the plan here described is adopted, the cuttings that are struck in the spring will be as good plants by May as those that have been standing in boxes all the winter. In autumn we lift the old plants carefully, and divest them of all the large old leaves, but do not cut off a single shoot; they are then packed moderately thick in boxes or pots, according to quantity, and given a good watering to settle the soil around the roots. Then they are set in a light, airy position near the glass, in any of the fruit-houses that are vacant, and only enough water is given to keep the soil from getting dust-dry; a little fire-heat must be employed to expel both frost and damp, for the latter is frequently more destructive to plants under glass than the former. If they are kept growing gently there will be abundance of cuttings fit for taking off in February, and the old plants will make beautiful bushy specimens. I find single pots the best for spring propagation, as it does away with all checks to growth. One good cutting is put in the centre of each pot, which is filled with light, rich soil; after a good watering the pots are set on a shelf near the glass in any house with a temperature of 50 degs.; do not wet the foliage, nor water the soil more than is necessary to keep it moist until roots are formed, when the plants may be treated like the ordinary stock. Great care, however, must be taken to avoid sudden checks to growth by exposure to the keen spring winds, for, under the plea of what is called hardening them off, we find succulent young plants, that have been growing freely in warm houses, set out-of-doors at the first approach of spring-like weather, with only a mat or some other covering to shield them from frost, while, with some temporary pits and moveable lights to put over them whenever cutting winds prevail, so as to avoid all checks, as good plants may be had from spring-cut cuttings as are usually got by the longer period of growth.—J. GROOM, *Gosport.*

REPLIES.

15650.—Bouvardias after flowering.—Like all plants, these require a period of rest after blooming. If the plants have been kept in an intermediate temperature—as is often the case when they are required to be in flower early—in winter they should be removed to a cool house, where the temperature does not drop lower than 40 degs. Up to the middle of January only just enough water should be given to keep the roots and the wood from shrivelling, and then they should be pruned hard back, and kept quite dry at the roots for about three weeks. The best growers of Bouvardias give their plants this period of absolute rest as it is said to cause them to break with greater freedom and strength. At the expiration of this time give a moderate watering, repeating it when the soil appears to be quite dry, and in a few weeks young growths will burst from the old wood. When these are about an inch long

Single-flowered tuberous-rooted Begonias.

shake away all the old soil and repot in clean pots just about large enough to contain the roots, in two parts loam and one part leaf soil, with about a fifth of white sand. After potting considerable care must be exercised not to overwater; but as growth advances more liberal supplies will be needed. When the pots are fairly filled with roots shift into larger pots.—J. C. B.

—— These very useful plants require a warm greenhouse, or what is called an intermediate house, of a minimum temperature of 45 degs. to 50 degs. When they cease flowering keep them rather dry at the root, set them in the coolest part of the house, cut them down pretty close, and let them have a month's rest; then put them into the warmest part of the house, and water moderately. They will soon push forth abundance of shoots, which, when long enough, may be pinched back, and the points utilised for cuttings, as they strike as freely as Verbenas. The old plants may then be shaken out, and repotted in light, rich soil, and grown on for early flowering. A mixture of peat, loam, leaf-mould, and sand suits Bouvardias, and, if kept free from the attacks of fly by timely fumigation, no plant that we cultivate is more useful or beautiful, either as a pot plant or for supplying cut flowers.—J. G., *Hants.*

15651.—**Heaths after flowering.**—This is a very vague question, as there are two distinct classes of Heaths, each requiring quite different treatment. What are known as the hard-wooded section should have all the dead flowers picked off after flowering, and be put in larger pots, if they require it. As a general rule, after they get into 7-inch pots they do not want potting into larger ones more than once in two years. The soil which suits them best is composed of good fibrous peat and silver sand. This section being more hardy than the majority of greenhouse plants they require plenty of air, and if grown in a house with other plants they should stand at the coldest end; they also require very careful watering, as an excess of root moisture will soon prove fatal. The soft wood section includes such varieties as Willmorei and hyemalis; after flowering these require to have the long shoots which have flowered cut down to within an inch of the old wood, at the same time they may be repotted, if they require it. This section should be kept warmer through the spring and early summer months to make a good growth; unless they make a satisfactory growth they do not flower well. These also require care in watering, so that they should not have too much water.—J. C. C.

—— Some of the many species of the Erica family require slightly different treatment from others; but if the common E. hyemalis is referred to, the following treatment is suitable, and, with slight modifications, according to the season, &c., will suit most of the other varieties. When the bloom is past, remove all dead flowers, to prevent the formation of seed-pods, and keep the plants rather dry in a cool, airy, and sunny greenhouse. In about six weeks' time, or when the days are perceptibly lengthening, cut back the long shoots to about a third of their length, remove all weak growths and clean off all but healthy active foliage. Now keep close and rather warm, syringing overhead on fine mornings. This will encourage the formation of young growths, and when these are an inch or so in length, re-pot into a size larger, using good, fibry peat and sand only, rammed hard round the old ball. Still keep close for a time and water very cautiously until growth is again advancing. Gradually harden off, and early in June stand in a sunny position out-of-doors on a bed of ashes or slates, never allowing the plants to want for water. Bring under glass again before frost or cold autumn rains can injure them.—B. C. R.

—— Those kinds which are of upright habit, and which bloom in winter and spring, such as gracilis, hyemalis, Syndriana, &c., require to be cut down as soon as they have done flowering. They should be cut down to below the lowermost flowers, as if not pruned back so severely they lose in the course of a season or two the neat, compact habit, which is one of their most pleasing characteristics. Moreover, the growth made from the base is stronger than that which would come from the flower-bearing shoot. Such kinds as Caffra nana, ventricosa, coccinea minor, and suaveolens, which always retain a close, compact habit, should have the flowers picked off as soon as they fade, but they do not need cutting back. This remark also applies to what is called the hard-wooded section, which is distinguished by a short wiry growth. Heaths require at all times very careful watering, but especially so after being cut back, as an overdose of water at that time will be sure to cripple them. At the same time the soil must not become dust dry. The time for repotting is when young growths about an inch long are made, the compost must be the best peat, with plenty of white sand, and it should be pressed in firmly round the old soil, and the surface be made quite firm.—J. C. B.

15656.—**Hoya carnosa not flowering.**—The fact that your plant makes good growth, but does not produce any flowers, is due to too kindly treatment. Your soil is too rich, and the plant has too much root-room, and probably too much water. The temperature is none too warm, but it would endure it if the roots had little or no water all the winter. I have always found that people who are not experienced in plant growing succeed in flowering this plant best when the roots are growing in a pot.—J. C. C.

—— "W. J." has probably planted his Hoya in too rich soil, for, as he says it grows freely, there is little doubt that it grows too freely, which is the cause of its not flowering. For covering a trellis 4 feet square a pot from 10 inches to 12 inches in diameter would be ample root room, as it is surprising how long plants of this kind keep healthy, and flower freely in very small pots indeed. I have some in 4-inch and 6-inch pots that are quite large plants, and produce a quantity of bloom every year. I would advise "W. J." to lift his plant and put it in a pot or box, as the temperature he mentions ought to suit it well.—J. G., *Hants.*

—— I should imagine that the cause of "W. J.'s" Hoya carnosa not flowering is that he has not enough heat in his house. "W. J." does not say in what kind of soil he has planted his Hoya. It requires a good peaty loam, kept well open with broken crocks, and it should be plentifully watered in summer, and be kept rather dry in winter.—A. HENRY DAVIS, *Carshalton.*

15649.—**Nephrolepis exaltata** is growing abundantly in a fernhouse in this neighbourhood, the original plant being in a wire basket, hung against the wall, from which runners spread in all directions, clinging to the bricks, to the distance of 10 feet, throwing out tufts of fronds at intervals of from a few inches to two feet. The temperature averages 60 degs., the wall faces north, and is syringed daily. Single plants are thriving in pots in a sitting-room, moderately watered, and kept from the sun; the soil is a mixture of decayed leaf-mould, sand, and loam; peat would be a beneficial addition, as for all Ferns. Shifting into larger pots when necessary appears the only attention required beyond keeping fairly moist and warm.—HAWKHURST, *Kent.*

15595.—**Striking Oleander cuttings.**—This is a good time to take cuttings of Oleanders, but if there is no bottom-heat available, wait a little longer until the spring propagation is commenced, or a Cucumber frame is made up; then take off the small shoots with a "heel" of the old wood attached, and insert them round the edge of small pots in light sandy soil. Give a good watering, and cover with a bell-glass, and nearly every cutting will make a rooted plant. As soon as they are well rooted pot off singly, and return to a genial temperature until well established, when they may be gradually hardened off and inured to greenhouse temperature. Keep the leaves free from scale by sponging with soft soap frequently.—J. G. H.

15593.—**Roman Hyacinths.**—"M. A. M., Rosshire," may get his Roman Hyacinths to flower fairly well the second year, provided he takes care of the foliage, and keeps them well up to the light; but heat is not at all necessary—in fact, it would be injurious in drawing up the leaves too long. I find that if grown and flowered in a medium temperature of about 50 degs. the Roman Hyacinth will perfect good bulbs, and flower well the second year; but if grown in strong heat, and as soon as the bloom is cut set out of doors to withstand the cutting winds of spring, there is little use looking for flowers. One of the most barbarous practices in gardening is the way in which bulbs of all kinds are treated after flowering, for, as soon as the blooms fade, or are cut off, the pots are set out in any out-of-the-way place, to shift for themselves as best they can. Hyacinths are not tropical plants, but delight in a temperate climate, therefore give them greenhouse treatment until the weather is warm enough to ripen off their growth outside.—J. G. H.

THE COMING WEEK'S WORK.

WORK IN THE TOWN GARDEN.

THE end of this month, or the early part of next, is, under ordinary circumstances, the right time to get in seeds of a few things that are naturally slow in growth—under glass, of course—in order to have good forward plants ready to put out about the end of May, or for the earlier decoration of the conservatory.

THE COMMON GOLDEN FEATHER (Pyrethrum aureum), which will flourish and look bright anywhere, must be sown as early as almost anything, for if taken in hand in good time the plants will do well under cool treatment, and, growing slowly in poor soil, may be turned out into cold frames, or under a shelter of any kind, before most other things; and, being well hardened, can be put out as strong wiry, well-coloured plants, much superior in every way to the tender soft green stuff that, sown late, has had to be pushed on in heat. Sow this rather thickly in flat boxes of rather poor sandy soil, place on a greenhouse shelf, and when strong enough prick out about an inch apart in other boxes, and grow on in cool light situation.

LOBELIAS should also be sown now, in pots or boxes of well-drained; fine, rich soil. For edgings, carpet-bedding, &c. Lobelias from cuttings of good proved varieties are to be preferred to seedlings, being dwarfer or more floriferous in growth, as well as much more even. Seedlings always vary greatly, but the stock plants sometimes fail, or great exactness is not desired, while for hanging baskets, window boxes, or pots, seedlings are very desirable, the long straggling growth being much more effective in such positions. For such a purpose seed of L. pumila magnifica (as usually sold), or perhaps better, one of the L. ramosa class, is best, while, if for bedding, I have found Carter's "Blue King," or "Blue Stone," very good (from seed); but if plants from cuttings are grown I would have no stock in towns but pumila magnifica (true variety) or Emperor William. Lobelias need a little more warmth to do well than the Pyrethrum. When large enough, prick these off into boxes in the same way, or they may be potted singly into thumb-pots.

MIMULUS again, the pretty "Monkey Plant," succeeds much better when sown early, and grown slowly in cool quarters than when it has to be pushed along rapidly in heat. Started now, or shortly, and pricked off once, these will make fine flowering plants in 3-inch or 4-inch pots by the middle or end of May, fit either for planting out or for decoration as pot plants. A good strain of Mimulus produces a large proportion of extremely handsome flowers of great size.

A FEW PETUNIAS (single) may also be got in, for though there is still plenty of time for these as bedding plants, good examples in 5-inch or 6-inch pots look so well in the greenhouse in June, that a few early ones are worth growing. They are also fine for window-box and balcony work, and, under any circumstances, succeed so admirably in towns, that no garden should be without a few Petunias. Be sure to obtain a good strain, for bad and good single Petunias differ as much as light and darkness. The double forms, too, come well from seed, though you must only expect half, or less, to come anything like double. Sow these now, or soon, and grow as pot plants for conservatory. They are not much good out-of-doors.

STOCKS are such capital town subjects that they deserve every attention, and the earlier they are sown, in reason, the finer the plants and blooms will be. I have always found the "dwarf German" from a trustworthy source very satisfactory. Sow the last week in January, or early in February, in extra well-drained pots or pans of rich open soil—loam, leaf-mould, and sand. When up, keep quite near the glass in full light, and, if possible, near a ventilator, as they are given to shanking off early in the season. If this is troublesome, prick them off and place in a frame, if there is one to spare. The ideal way of growing Stocks to get all

double, is to pot the whole off singly into 60's (3-inch pots) and keep them there until the first buds can be seen, then plant out the double ones, and throw the others away. But this cannot always be done, and if the seed is good, and all the strong, rank growers discarded, they will mostly turn out double; I really believe that starving these plants (judiciously) has a certain tendency to increasing the proportion of double flowers.

DAHLIAS, GLOXINIAS, BEGONIAS, &c.—Single Dahlia seed must be got in soon in a gentle heat, to make good-sized plants by bedding out time. Gloxinia and Begonia (tuberous) to flower in the summer should also be sown now in well-drained pans of leaf-mould and sand, very finely sifted on the surface. A steady heat of 65 degs. to 70 degs. is, however, required to succeed with these, and if this is not at command, they had better not be attempted, beautiful as they are. It is, perhaps, not generally known that Geraniums (Zonal) and Fuchsias raised from seed sown now will nearly all bloom this season; and as seedlings often produce some interesting varieties, and the process of raising and watching them bloom in succession is very delightful to the true florist, they are worth a trial where there is room to spare for such things. But I fear my list is becoming too long; experience has long ago taught that it is impossible to grow everything, especially where room is limited; and it is far better to grow a few things well than to be crowded with a lot, few or none of which can come to perfection. Seedling plants of all kinds are now offered so cheaply, and by so many growers, in the columns of GARDENING and elsewhere, that anything that cannot be managed, or has been forgotten, or has failed, is easily obtainable for a few pence. Get Dahlia roots in heat to encourage early growth for propagation from the cuttings. Also Gloxinia tubers, for early summer flowering, and a few Begonias may also be started if wanted early. Auriculas in pots now require feeding with liquid manure, and constant attention, as they will soon be showing for bloom.

B. C. R.

GLASSHOUSES.

FERNS.—The greater portion of the species of Ferns grown under glass admit of the different operations connected with their cultivation being carried out at stated times in a greater degree than other plants. For instance, all the kinds usually met with will bear potting at the same time. The best season for potting them is just before they begin to grow, as, if the operation is deferred until the young fronds are in course of formation, they are almost sure to be so far injured by the disturbance of the roots, even if this is carried no further than necessary to admit of the drainage material being removed from the bottoms of the balls, that the partially-developed leaves will make little more progress. Under ordinary conditions, where the collection of these plants is kept at an intermediate temperature of about 50 degs. in the night, which is the best for all but a few kinds, they will begin to move towards the close of winter, say about March. My practice with those grown in a temperature such as named has been to pot in February. Peat is the best soil for nearly all the kinds; it should be of an open, fibrous nature, not the soft boggy stuff that is sometimes used, and which is not fit for any kind of cultivated plant, as the roots will not make progress in it to any extent, and even the few that enter it perish.

PREPARATION OF THE SOIL.—Ferns are plants that naturally require a good deal of water at the roots; to meet this, with the view of preventing the more rapid decomposition of the vegetable matter in the soil consequent on the use of so much water, the soil requires the addition of some material besides the usual portion of sand. Broken pot-shreds are often employed, but fine coal cinders are just as good, if not better. These may be liberally mixed with the soil, breaking them to about the size of Horse Beans. A good sprinkling of sand is also requisite. The peat should be pulled to pieces by hand or chopped up with a spade. For these, as for all other plants, except small seedlings or newly-struck cuttings, it is well to advise amateurs not to sift the soil in the way sometimes practised, under the impression that it is better for the plants. It is just the reverse, especially in the case of such things as Ferns, which do not like shaking out, as, when sifted, it so much sooner gets into a compact adhesive state, rendering it too retentive of water. Ferns, more than most other plants, after they have attained sufficient size, can be kept in good condition in comparatively small pots—consequently large shifts are not necessary, neither is it requisite to repot them so often as other things. There are, however, a few kinds that are exceptions in the matter of pot-room: those are the sorts that form long creeping rhizomes, such as Gleichenias, and some of the Davallias. If the creeping stems of these are allowed to extend much over the rims of the pots they get injured so that they make no more growth, but break back, which, with plants that are required to attain a large size, occasions a loss of time. All Ferns of this character need to be carefully handled in potting, so as not to bruise the creeping stems, which are susceptible of injury to an extent that their appearance often gives little idea of. In addition to the precautions advised to keep the soil in a healthy state the pots should have a little more drainage material put in them than would be necessary for most things. Before use, the soil should be placed for a day or two where it will get something like the temperature of the house in which the plants to be potted are grown. To put a plant that is grown warm

Double-flowered tuberous-rooted Begonias.
(See article on page 679.)

into cold soil is at all times bad, but still more so in winter when the chill causes stagnation in the roots. See that all the plants about to be potted are sufficiently moist at the roots before moving them. Do not disturb the roots more than the removal of the crocks from the bottoms of the balls renders necessary. Pot moderately firm, and give a moderate watering immediately the potting is completed. In being benefited by this, Ferns are an exception to most things, as most plants are much better for not being watered for a short time after the unavoidable disturbance of the roots. All old fronds that are decayed should be cut away, but no more reduction of the tops than this should take place, except in the case of plants that are already as large as required, as the removal of living fronds causes the next growth that is made to be weaker than it otherwise would.

Some kinds of Ferns, such as the Adiantums, and most of the species of Pteris, the Davallias, and such sorts as multiply their crowns, can be increased by dividing them, securing a portion of roots to each piece that is to form a future plant. This can best be done at the time of potting. Select good-sized examples for the purpose; no more roots should be sacrificed in the operation than cannot be avoided. In the case of such as are treated in this way a few degrees more warmth will be an advantage afterwards to get them into growth; indeed, a little more warmth, where it can be applied to all that are repotted, will be beneficial.

TREE FERNS will succeed well with much less root-room than they are often given. The large tubs or boxes that these plants are frequently placed in cause them to make such large heads that they encroach on the smaller-growing kinds associated with them, and give the small ones little chance of thriving.

FERNS PLANTED OUT.—In the case of Ferns that are planted out in a house on rockwork, or covering walls, any rearrangement, such as becomes necessary through the space getting over-crowded, or the introduction of new kinds, should be carried out at once.

LYCOPODIUMS.—The different kinds of Lycopodiums used for carpeting the surface of the beds, and as a covering to walls, that may require renewing, should now be attended to. Soil similar to that advised for Ferns will answer for Lycopodiums. Where a wall is to be covered the best way to proceed is to get some galvanised wire netting and fix it with studs driven into the wall, leaving a cavity of about 3 inches, which fill with pieces of turfy peat and some chopped Sphagnum; in this plant the Lycopodium which is to form the base wherein to put the Ferns; these may consist of such kinds as Nephrolepis exaltata, Platycerium alcicorne (the Elk's Horn Fern), Davallia canariense (the Hare's Foot Fern), Polypodium glaucophyllum, Pteris serrulata, P. tremula, and similar-habited kinds that have drooping fronds, or will not grow too large. Begonias with ornamental foliage, such as the B. rex section, are very effective planted here and there amongst the Ferns on a wall of this description, or similarly introduced amongst the Ferns in the masses of rockwork usually present in Ferneries.

IMANTOPHYLLUMS.—Where a sufficient stock of these useful, easily-managed plants is grown so as to give a succession of bloom, a few plants that have been at rest for a time in the greenhouse may now be put in the stove, where they will soon push up their flowers. See that the soil is well soaked at the time they are transferred to heat. The best means of securing this with these and other plants that have been allowed to get very dry is to plunge the pots in a pail of water for some hours.

CYTISUS.—A few plants of this bright yellow-flowered subject may now also be stood in moderate heat. If the growth was well matured in autumn almost every shoot will yield racemes of flower. They should not be hurried with too high a temperature; otherwise, like most other plants of a similar description, the flowers will be soft, and not last long either on the plant or when cut.

EPIPHYLLUMS.—A few more plants of these useful winter bloomers should be moved to the stove, giving them a light position from the time their flowers begin to move, otherwise they will be deficient in substance.

POTTING SOIL FOR STOVE PLANTS.—The different kinds of soil advised some time since to be got under cover, should be turned, so that it may get dry enough for use, as the time is now approaching when some of the stock will require potting. All empty pots should be washed clean, so as to be in readiness. Crocks also for drainage ought to be broken into different sizes to suit the large or small plants that will require moving.

THOMAS BAINES.

OUTDOOR GARDEN.

THE SHRUBBERY.—The often meaningless character of the masses of shrubs enclosing the dwelling may be much improved at a small expense by cutting openings here and there, and dropping in specimens possessing distinct characters, such as Hollies, Cedar of Lebanon, Lawson's Cypress, Wellingtonias, &c. The Maiden-hair tree, the Tulip tree, the Silver Weeping Birch, the Purple Beech, and the Scarlet Horse Chestnut, are each calculated to add a special grace and beauty of its own to any place where there is scope enough for development. The planting of deciduous things may be proceeded with in open weather, but Evergreens should be delayed till the end of March or beginning of April, and even then the planting should not take place during a period of drying winds, accompanied by bright sunshine. Showery or dull sunless weather is the best for moving Evergreens. Any shrubs needing pruning, such as Lilacs, Ribes, &c., may be cut back now, as may also those evergreens which require

only a little assistance to maintain symmetry; but if any large branches require amputation it will be better to wait till the sap is on the move in March. In pruning ornamental trees or shrubs we should have a well-defined object in view, the leading tendency of which should be to mend, not mar, natural effort. Here, say, for instance, is a young Scarlet Thorn; if the leading shoots are shortened back for a year or two it will thicken the head, and give it a more graceful appearance; but when the effect has been secured no more pruning should be done.

HARDY FERNERY.—The advantages of the fernery or the rockery are so many, and so well calculated to inspire interest, and at the same time these are so easily made and planted, that all gardens should possess its alpine mound and its fern bank at least. Those having means may, if they like, call in the professional man to design and construct; but the frugal minded should think over all the fern banks they have seen in their country rambles in Devon, Shropshire, or Norfolk, or wherever ferns can be found in deep, shady country lanes, and, having thought the matter well out, should set to work with the spade and throw up shelving banks, with winding paths, of different heights and levels, connecting them with rustic steps, over which rustic arches may be thrown, the latter by-and-bye to be covered with creepers. The work of laying out and constructing should be done now, but the planting may be delayed till April. Pinus clanbrasiliana, Pernettya mucronata, Gaultheria Shallon, Bambusa Metake, Yucca filamentosa, and others are suitable subjects to drop down here and there to give elevation and picturesqueness.

FRUIT GARDEN.

THE STRAWBERRY.—In warm, deep soils the Old British Queen is still unbeaten as a dessert fruit, and on good land Keen's Seedling still maintains its old reputation. But the tendency of the age is to run after novelty, and this tendency has led to the multiplication of varieties without increasing the pleasure of the fruit eater. As a late fruit Sir C. Napier, for those who are not fond of sweet things, is an excellent kind, and for town gardens, or wherever the soil is not first-rate, I should recommend Garibaldi, or Viscomtesse de Thury and President. The best time to make new plantations is early in August, or if that time is missed, as it may have been last year in consequence of the drought, the next best season for planting is in March, as early as the weather is suitable. But a very wide margin must always be left for the exercise of individual judgment, and it may be taken as a fixed principle that nothing should be planted or sown when the land does not work freely. The land should now be manured and thrown up into ridges to pulverise and sweeten. When the time comes to plant I shall refer to it again, but I want to specially emphasise now the importance of efficient preparatory work.

PLANTING APPLES.—In a letter I received the other day, an amateur friend says:—"I want six good Apples for succession—three for eating and three for cooking—and I do not want any more." Now, if a man says he has only room for six Apple trees, and we send him the names of a dozen, we still leave it open to him to make a wrong selection, even though all we recommend may be good. The following are half-a-dozen useful Apples:—Dessert: Red Quarrenden, Cox's Orange Pippin, and Cockle Pippin. Kitchen: Lord Suffield, Waltham Abbey Seedling (this never fails to bear with me, and is a splendid kitchen fruit till January), and Dumelow's Seedling. In planting Apples or any other kind of fruit tree, the soil should be thoroughly worked for at least 3 feet or 4 feet in diameter on the site of each tree, adding some fresh turfy loam, if possible. This will answer the same purpose as a dressing of manure, without its tendency to encourage grossness. Make the bottom of the hole beneath the tree firm by treading. This will prevent the trees settling too deeply in the land. For orchard planting the best kind of trees are standards worked on the Crab stock. For the garden I like the Espalier system, and for very small gardens dwarf trees on the Paradise stock have many advantages. They begin bearing shortly after planting, do not require much space, and are not much trouble to prune or manage—indeed, as regards pruning, a little thinning of the young shoots in summer is all that is needed. But in summer the soil over the roots should be mulched with manure, to keep the roots near the surface; and, by all means, keep the spade away from them.

KITCHEN GARDEN.

Dig or trench up every bit of vacant land, exposing its surface for the atmosphere to work its will upon. The manure question is an important one, and in applying it try to fit the land for the crop that it is intended to carry. The land can scarcely be too rich for early Potatoes, Cauliflowers, Cabbages, Turnips, Onions, Lettuces, and Radishes. Peas and Beans require the land to be in good heart, but the roots of the plants need not be brought into direct contact with fresh manure. Carrots, Parsnips, Beet, and Salsify must not have fresh manure. Late Potatoes do better on fresh, deep land without much manure, unless it be old and mellow. When we know how to manure, one at least of our difficulties will be removed.

Sow Peas and Beans in succession to those already planted, indeed, there is not much gained by planting before this date; still, five or six days are, in some places, an important consideration. American Wonder planted now at the foot of a south wall will come in early. William I. and Ringleader may be sown in drills across the quarter. Draw the drills shallower than will be necessary by-and-bye, and cover with dry, warm surface soil, or bring a barrowful or two of fresh, warm, dry soil from elsewhere to cover the seeds with. Sow Radishes and early Horn Carrots; sow a pinch of Lettuce seed in a box, and place under glass. The Paris Market is an excellent one for early sowing in a sheltered place. Plant early Ashtop Potatoes in a frame on a bed of leaves and manure of sufficient bulk to cause a nice gentle heat to arise. Plant Cabbages and Lettuces from the seed beds. On fine days use fork and hoe freely among growing crops.

E. HOBDAY.

FRUIT.

MELON CULTURE

IT is generally supposed that Melons require more heat and attention than they really do, and many refrain from cultivating them on that account, but if plants are started any time from the beginning of April up to the end of May or middle of June, they may be grown successfully in any ordinary pit or frame deep enough to admit of light fermenting material to afford a little warmth for the roots, as sun heat will do the rest. The most important point is to obtain good strong plants to start with, and, as many of these can be raised and got up to a proper size in a one-light box, the best way, where there are not houses in which to sow and rear them, is to make up a hotbed specially for the purpose, as by so doing they may be nursed on till the frames are clear of bedding plants and the weather is favourable for planting them out.

THE HOTBED, to be sweet and wholesome, should be made of manure and leaves or tan that have been mixed up and turned over a few times to let out the fiery gases and to sweeten, when the material will be ready for putting together and may be used without risk of injury to the most tender foliage. To save having to disturb the young Melons after they are up, it is a good plan to sow two seeds in the centre or sides of a pot, and, when up, to pull out the weakest and leave the other to grow; or if sown in a pan it should be done thinly in finely sifted leaf soil, from which they will lift with plenty of roots. They may then be potted singly in fibry loam and shaded slightly for a day or two till they get fresh hold, when the more sun and light they get the more stocky and robust will they grow. If the temperature in the frame stands anywhere above 60 by night, that will be quite hot enough, and, to conserve the warmth and keep it steadily at that, the glass should be covered with mats or protected in some way against wind and frost. In the morning, as soon as the heat in the frame reaches 75 degs., air should be admitted by tilting the backs of the lights, but this must be done cautiously, so as not to let in cold, cutting draughts, or to lower the heat beyond the point mentioned. With air on, no harm will accrue if the heat runs up to 85 degs., and when it reaches that point it will be necessary to raise the lights higher, or the foliage may burn. By two or three in the afternoon the frame may be closed, but the plants and interior on fine sunny days should be syringed with tepid water to make the atmosphere moist, which will keep the plants clean and help to push them along. As soon as they have made a rough leaf or two,

THEY SHOULD BE STOPPED by having the points nipped out, which will cause them to break from below and to branch, so that when planted out they will lie flat on the ground. All that is requisite by way of bottom-heat to grow Melons during the summer is, as above stated, just enough to give them a good start, which a foot or two deep of any fermenting material will do. This, put into the pits or frame in a hot state, should have a good ridge of soil laid along the middle, and if the lights are then kept close for a few days, sufficient warmth will have been driven into it to make it ready for planting. Before doing this, however, it should be rendered firm by pressing or treading, as Melons do best in a firm root-run. If the pits or frames are wide, the plants may be placed about 2-feet apart, and a yard, if narrow, which will afford ample room for them to run and spread. By the time the shoots reach the outside of the ridge it will be necessary to nip out the points, as when they lengthen out they will reach the limits of the frame, and the stopping causes laterals to form. On these the fruit show, and the laterals should at once be stopped one joint beyond the fruit; as the flowers open they must be fertilised otherwise they will not set. As soon as it can be seen that they are set and swelling, all, except three or four of the best situated, should be removed, as either three or four are quite enough for a plant, unless each can have a great deal of room. The principal point to be attended to in growing Melons in frames is to

KEEP ALL LATERAL GROWTHS STOPPED as they show, so as not to allow them to overshadow the main foliage, which should have plenty of room, and the branches so trained by pegging out as to cover the whole of the ground. To prevent red spider there is nothing like clear water, which may be sprinkled on daily during sunny weather just before closing the frames, but, to save chilling the leaves, the water must be warm and so poured on as to avoid wetting the collars of the plants, as when that is done continuously they are apt to canker at that particular part. The heat Melons will stand and enjoy when damped down and closed is surprising; the frames may, therefore, be always shut by three at the latest; but during the day they should have plenty of air, which will keep them healthy and strong. When the fruits are swelling fast liquid manure is a great help, but this should be discontinued some time before they ripen or the flavour will be impaired; this will also be the case if they are kept too wet at the roots. As to sorts of Melons to grow, their name is legion, and each cultivator has his particular favourite. The following, though not new, are as good as any, and all do well in a frame: Read's Scarlet Flesh and Scarlet Gem among the coloured kinds, and Eastnor Castle, Bailey's Hybrid, Golden Perfection, and Queen Emma in the green-fleshed class; and all these grow to a moderate size, are handsomely netted, and look well on a table.

S. D

Quince varieties and culture.—The most satisfactory returns in Quince culture are where the most care is taken in the culture of the tree. Variety has less to do with it than the planting, pruning, and manuring. The mistaken idea prevails that the Quince is a tree, and that a tree must be made of it, no matter how much of its health and vigour may be sacrificed. The Quince is a bush, properly speaking, and should be so grown. The branches should start from the trunk at not over 2 feet from the ground, and allowed to branch freely, and thus keep the trunk well protected from the sun, which is very essential. When the tree has grown to some size, and begins to produce, the old branches should be pruned out, and only enough of them left to give the tree a moderately full top, and the long new shoots cut back severely to five or six buds. The Quince, unlike other fruits, does not bear from buds that are formed the previous year, but forms on spurs a few inches long, which are produced before they blossom. The

pruning we advise pushes these spurs vigorously, and produces the finest fruit, and enough of it for the vigour of the tree to ripen. This is all the secret there is in pruning the Quince. Leaving the old wood all remain makes small fruit and a sickly tree. Allowing the strong, new shoots to grow, makes a lot of wood and an irregular tree, with only little fruit. Pruning for size is as important as variety. For manures use any kind you have, and plenty of it. The roots of the Quince are shallow, and do not allow deep culture, hence a mulch is valuable, to produce the finest returns of fruit. The idea that salt is beneficial is perhaps of no more importance than it is in moderate quantities for any fruit. The Quince does not thrive in a dry location, and, while thriving in moist soils, does not grow in wet soils where there is stagnant water. Such soils should be well drained before planting. A successful Quince orchard is a profitable investment.—*American Farm and Garden.*

Cranberries.—On Thanksgiving Day, in Ohio, Cranberry sauce was served with the roast turkey as the proper accompaniment. Probably, eaten like Currant jelly or Apple sauce as a condiment with meat, this acid fruit might become more popular in these islands than made into tarts, &c. Some twenty years ago I partook of North American Cranberries, grown in the garden of Mr. James Backhouse. At that time those sold in the fruit shop were Russian. A small kind of Cranberry grows wild in some of our Irish bogs. They are gathered and sold as "bogberries." It is a pity that some enterprising farmer should not try the larger and better-flavoured species in similar localities. In the number of GARDENING for December 20th, 1884, there is an article with full directions for the culture of this fruit. —AIDYL.

15660.—**Quince tree.**—No amount of pruning will induce your tree to be fruitful; what it requires is more root room and more moisture. I have never seen anyone grow Quinces better than cottagers, who plant the trees by the side of a hole into which they throw slops from the house, and make heaps of garden refuse over the roots. Trees so treated I have seen bending down with fruit in the autumn.—J. C. C.

ROSES.

PRUNING ROSES.

I HAVE some Roses budded last season on the Manetti stock, and now they are beginning to shoot. When ought the stock to be pruned? They are now several feet long, and should they be cut back to the bud? I am thinking of planting them in rows about 2 feet apart when the weather breaks, and have had the ground well manured, but I fear they will not bloom this season.—CHARLTON.

*** The inquiry of "Charlton" about pruning his Roses that were budded last year, and his proposal to prune them and replant them directly, shows but too plainly the kind of treatment to which Roses are often subjected by those who are not experienced in their management; for it is too much the practice of amateurs to replant them the next season after being budded. I am quite aware that when the buds are inserted early they will make some growth, and bear transplanting the next spring, but it is not advisable to do so nevertheless, for all Roses, no matter whether they are standards or dwarf plants, should be allowed to make one summer's growth before being removed. Referring now to the inquiry of "Charlton," I wish to say that he may cut back the growth of the Manetti stock close to the bud; this should not be done until the end of February, and, instead of removing them, he ought to let them remain until the autumn of the present year. If they are allowed to remain they will, no doubt, flower this year. It may be useful, perhaps, to other readers to refer to the subject of pruning Roses at greater length. With reference to

NEWLY-PLANTED ROSES. These should be the last to be pruned, no matter whether they are standards or dwarfs, and ordinary-sized climbing Roses should not be pruned at all the first year after planting. The last week in March is quite soon enough to prune those which have been planted at any time since last November. Those who wish for exhibition flowers must prune much harder than for garden decoration. The exhibitor requires quality, not quantity; and to secure the first he must be prepared to sacrifice the latter, and, whether pruning standards or dwarfs, he must not spare the tree. Standards must have open heads, that light and air can play between the branches. All weak and misplaced shoots must be cut clean away to the old wood, so that the roots may not be burdened with a lot of useless growth; and in the case of standards several years old some of the branches in the middle of the head may require cutting out, for there must be no crowding of the growth, or the flowers will suffer in size and substance. It is much the best plan to cut out all useless growth first, and then take a survey of the head to ascertain the position of the branches, for a skilful pruner will so act as to have the head in a symmetrical form, and a due proportion of branches in every part. Having decided on the number of branches to be left they must be cut back to within three buds of the old wood where the growth is strong, but the weak growers should be cut back to two buds. These instructions, it must be understood, are for the Hybrid Perpetuals. The Noisette and Tea-scented sections must have five and six buds left on the strongest shoots, if it is necessary to prune them so hard, which I do not think it is. Such Roses as Gloire de Dijon, Céline Forestier, Aimée Vibert, Solfaterre, Ophire, La Marque, Jaune Desprez, and Rêve d'Or, should have the old flowering shoots cut clean out where they can be spared, and the strongest of the young shoots left one foot long; but in the case of Gloire de Dijon, that will not do, for the young shoots ought not to be cut back at all. If anyone wishes to test the capacity of this fine old Rose as a standard, he must ignore pruning, except to cut away an occasional branch to let in light and air, and he will get such a feast of Roses as cannot be had by any other treatment. When grown as a standard this Rose requires to grow its own way, and then in a suitable soil it may be had with long arching branches, covered with flowers, that will require supporting to prevent them from sweeping the ground.

THE PRUNING OF DWARF ROSES for the production of exhibition flowers must be conducted on the same lines as the standards; all the shoots must be cut back to within three buds of the old wood; the end of March is quite soon enough to prune Roses of any kind in all the northern counties, and the first week in that month is early enough for the warmer parts of England. If a late bloom is required the pruning should be delayed until a fortnight later. In mild seasons the Roses will probably commence to make new growth before that time, but this should not influence the cultivator sufficiently to induce him to depart from the time stated. It is better for the after growth for the plants to exhaust themselves a little in making a premature growth than to prune early and jeopardise the first crop of flowers, which are invariably the best. In dealing with dwarf bushes for garden decoration, I am strongly in favour of allowing the plants to grow pretty much in their own way for three or four years, except it be to shorten back any strong long shoots. The short sprays and shoots that have flowered should only have the points taken off. If this treatment is continued for several years the strong growers will develop into large bushes, capable of producing several dozens of flowers each, while weaker ones will attain to a size that is never seen when hard cutting back of all the branches is practised every year. At the end of five years the largest plants are benefited if some of the oldest branches are cut out to make room for young growth, which is sure to spring up from the bottom; but this must be done judiciously, and then it will be found that the plants are much longer lived than under a severe system of annual pruning. If

CLIMBING ROSES have not yet been attended to they may be done at once, if desired, as, having the protection of walls or fences, we are not likely to get frost of sufficient severity now to do them any harm. In dealing with this class of Roses the aim should be to substitute young wood for old whenever practicable. It is too much the practice during the summer to cut away the young growth as a quick way of making the plants presentable, but the practice is bad. Some of the strongest growths should be preserved every season, so that at the winter pruning the old, exhausted growth can be cut away and the young and vigorous take its place, for the young wood always gives the finest flowers.

J. C. C.

Dead wood on Rose trees.—In all the correspondence about Roses in your columns I do not recollect seeing anything as to the advantage of cutting off stems close to the branch from which they are cut, and never leaving dead wood. Dead wood is a wonderful home for insects and grubs. I cut off a bit about 2½ inches long about New Year's day, and found where the pith had been five grubs and a caterpillar. The grubs were light yellow. I did not keep any of them, which I am rather sorry for, as without an example I suppose it is no use speculating on what they were. At any rate the caterpillar was better out of the way, and such places as I have described form effectual cover for these and other creatures, and are better got rid off.—M.

15657.—**What are the best labels?**—Undoubtedly the best labels for suspending to Rose trees are the "Imperishable Labels," manufactured at Stratford-on-Avon. These are both cheap and durable. If you find that wire injures your trees, use small tarred twine, and make a point of renewing the twine once a-year. If you send a list of your Roses to the factory, the maker will supply you without any further trouble. I have had these labels in use for 15 years, and they are as legible now as when I first had them.—J. C. C.

—— For Roses and other plants to which the labels are to be tied you cannot have anything better for attaching them than wire of some kind, as any other kind of material will be sure to rot. If injury has resulted from the use of the copper wire, give it a coat of paint. It is best to do this in the case of all wirework to which plants are to be attached. For ordinary use in border, the Willesden metallic card labels are good, and they are not dear. As regards the common wood labels, their durability may be increased by painting them all over, both sides, from the point to the top. As generally painted on one side only, and not up to the point, they soon partially decay, and are rendered useless.—J. C. B.

—— Zinc labels are good, and if you will use lead wire instead of copper you will lose no more trees.—T. H. F.

—— Probably the best label for gardening purposes is of the following description: It consists of a small glass tube, with one end closed and bent into a little ring, the other end being open; a small paper label may be written with ordinary ink, placed in the tube, which is then closed with a touch of sealing wax, the ring, of course, being used to affix the label to the tree.—J. J.

—— Your correspondent may use either lead or zinc wire, but there are objections to both of these. The lead wire is very soon cut by the zinc label; the zinc wire is hard to twist. But if your querist will cut up with a strong pair of scissors one of his labels into strips of one-sixteenth of an inch wide he will find that he can easily twist these, being thin, and make a satisfactory tie.—W. F.

15372.—**A chemical question.**—The iron pyrites of which you complain are generally called mundic, and are a sulphuret of iron containing 52·70 of sulphur and 47·30 of iron. It is not the iron, but the sulphur which destroys the vegetation. I should recommend you to try any manure strong in ammonia, such as fresh stable manure, fish, urine, which, in decomposing, would combine with the sulphur, and form sulphate of ammonia, a powerful fertiliser. Lime, on the same principle, in decomposing, would form sulphate of lime or gypsum, which is also a fertiliser. This is purely theoretical—I have had no experience from the practical side—but it is worth trying. Nitrate of soda, though in itself a fertiliser, I should think would do harm, as the soda might combine with the sulphur, and form sulphate of soda or glauber salt, which, I believe, is bad for vegetation. Iron will do no harm in the soil, but it influences certain plants and trees wonderfully, especially the vine. I know districts in France and Spain where iron abounds in the soil, and imparts to the wine grown there a strong Burgundy character.—T. T. J.

OUR READERS' ILLUSTRATIONS.

A VIEW AT TORQUAY.

WE are acquainted with few localities where natural beauty has been so much enhanced by skilful treatment as Torquay. One by one the local authorities have taken in hand nooks and corners, and have transformed rocky wildernesses into pleasant resting-places. Such a one is here depicted. The whole space forms a terrace some 300 feet long by about 20 feet broad, and it is situated a few feet above the road, from which access is gained by several winding paths and steps, and from which it is completely secluded in a sense. Some five years ago the terrace was laid out in its present form at the foot of the cliff—a solid mass of stone which here rises some 200 feet or more perpendicularly; large boulders were piled up here and there, and planted with creepers and flowering and ornamental shrubs. Between these mounds are seats—there are hardly two alike—and if our Editor could see them they would gladden his heart. Unfortunately, I am compelled to show in my photograph almost the only common place one; it was a fixture, or I should have removed it for the moment. The other seat—in which a lady sits, who was gracious enough to put back her parasol, and run imminent risk of spoiling her complexion when the picture was being taken — is formed from the trunk of a tree, and a most luxurious arm-chair it makes. These seats are so arranged that the occupants of one do not interfere with the privacy of those occupying adjoining ones. John Bull, even in public gardens, generally likes to keep himself to himself; here his peculiarity on this point is carefully studied and provided for. Between the broad walk and the road is a green sward, dotted here and there with gay flowers and choice shrubs, which blossom and thrive as they do nowhere else. No matter how dry the season, vegetation of all sorts retains its verdure here. At the further end of the walk, and not shown in the picture, is a shady nook—a natural hollow in the cliff, where the water trickles down into a pool, and from the overhanging rock the delicate Maiden-hair Fern grows in profusion. As seen in the picture, the cliff is rapidly becoming overgrown with creepers, which have long since surmounted the boulder stones, and now vie with each other in their silent race and aim of topping eventually the very precipice itself. Few spots are there in the whole of the pleasant neighbourhood, beautiful wherever we may turn, more charming than this. Removed from the dust and glare of the road, the occupant of one of the comfortable seats may pass an afternoon pleasantly enough, catching glimpses of the ever-flowing streams of pedestrians and carriages, for the road is a favourite promenade. At the base of Torbay, which juts beyond, the waves of the magnificent expanse of water lap soothingly against the sea wall; and then the eye travels further and sees the trim yachts, gliding hither and thither, while, further out, the brown sails of the far-famed Brixham trawlers tell of sterner work, and, further still, yon thin line of smoke, and, to the unassisted eye, the undefined form, tells of one of our ocean palaces making her way to Dartmouth or Plymouth, where many of those on board will take a last farewell of Old England and the imagination readily travels across the intervening space, and sees the anxious gaze of those clustered on her decks who are straining their eyes to catch a last sight of those lofty cliffs they will never behold again! May I add one word—it is this: that Torquay deserves to be better known as a summer residence. Every variety of climate is obtainable there—warm, sheltered spots for the invalid and the delicate, but bracing parts, too, for the strong. The mean temperature proves it to be one of the coolest places in England in the summer.

ARTHUR P. JACKSON.

OUR READERS' ILLUSTRATIONS: A view at Torquay. From a photograph taken by Mr. Arthur P. Jackson, 7, Cannon-street, London.

HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XVII.

ANNUALS.

MANY a window that is now flowerless all through the spring and early summer might be brightened in an easy and inexpensive manner. Hardy annuals are among the fairest of garden flowers, and yet very few appear to realise their value as window plants. It is not too much to say that for one shilling all the windows of a moderate-sized dwelling may be made gay from April till November. Window gardeners of limited means should think of this, for with them expense of purchase is one great drawback to the satisfactory decoration of their windows during the finest months of the year. Bedding plants, such as are commonly used for that purpose, cannot be bought for less than 2s. 6d. per dozen, and, even with the best management, the window gardener can scarcely hope to keep enough of them through the winter to create the requisite effect in summer. What so few know is that the very best time for sowing many kinds of hardy annuals is in autumn. Most people wait till the first gleams of the spring sun come before thinking of sowing any kind of annuals, which is wrong, as two months are thereby lost, for if the hardy kinds are sown in September, they will bloom in May and June, and, having the cool weather of early spring to perfect their growth in, they come better, and produce larger flowers than later on, when the weather is more parching. With generous treatment it is possible to have handsome specimens in 6-inch pots bearing individually a hundred or more blooms of such gay kinds as Clarkia, Collinsia, Godetia, &c., which during the month of June will do well on the window-ledge, and will have quite a charming appearance. It is just at that time of year that windows in a general way present such a flowerless appearance. The seed should be sown not later than the 15th of September in either 4½-inch pots or in 6-inch pots, as convenience may dictate. One crock is enough for drainage, and any good free soil will do. Fill to within half-an-inch of the rim, make the surface firm, sow very thinly, cover lightly, and give a gentle watering. If the pots are stood in a cool place and kept moist, the young plants will appear in the course of a fortnight, and when they have a pair of leaves they should be thinned-out to an inch apart, leaving one or two as near the centre of the pot as possible. For a 4½ pot one plant is quite enough, as nothing is gained by crowding, and when an upright-growing kind, like the Lobelia, has fair play, a single plant will attain a height of 15 inches, and will be almost as much through, and dwarf, spreading kinds, such as the Nemophila and Saponaria will cover a square foot of soil. It is not, however, well to thin out so severely at once; as slugs are apt to eat some of the plants in their earlier stages of growth, it is best to wait until they are a couple of inches high before doing so. One plant in a 4½ pot is quite enough, and two may be allowed to a 6-inch pot. Place them where they can enjoy an abundance of sun and air, so that they make a sturdy, strong growth, for they will possess no beauty of form and will lose much of their blooming capabilities if they are deprived of light and air during the autumn. About the middle of November, they should be placed in a room where fire is rarely made during the winter, and where air can be admitted freely in fine weather. After March they will do very well on a window-ledge if the position is sheltered from rough winds, if not, it is better to keep them inside, but exposing them freely on fine days. The upright-growing kinds will need some support, and as soon as they are 6 inches high a neat stake should be fixed to each one, so that the main stems can be firmly tied thereto, the longer branches being kept in place by loops from the stake. It is necessary to observe this detail, because, when the plants become fully grown and laden with flowers, a heavy shower or a sudden gust of wind will often break off whole branches, which, of course, quite mars the symmetry of the specimen.

TO SUCCEED THESE AUTUMN SOWN PLANTS, more seed should be sown the first week in March, proceeding in the same manner, but keeping the pots inside until the young plants have a pair of leaves, and then placing them in the open air. Another sowing may be made about the middle of April, which will ensure a continuous display up to autumn. A good selection of hardy annuals for pot culture would comprise the following:—Clarkia elegans, Godetia Lady Albemarle, and the Bride; Collinsia bicolor, Saponaria calabrica, Nemophila insignis, Myosotis dissitiflora, Silene pendula compacta, Whitlavia grandiflora, and Erysimum Peroffskianum. These may be supplemented by the half-hardy kinds, such as Phlox Drummondi, Asters, and Tom Thumb Nasturtiums. The last are very showy, and are amongst the most continuous flowering of summer-blooming plants. For very sunny windows they are well suited, as, provided they get enough moisture at the roots, they will not suffer from too much heat. Another family of sun-loving plants are the Portulacas, and they are very beautiful when

fairly open in the bright sunshine. The double varieties are sure to please, and generally agreeably surprise, by their beauty of form and curious and striking colours, those who see them for the first time. The seed is very minute, and, in sowing, the soil should first be watered, the seed scattered thinly thereon, and very lightly covered with silver sand, putting a pane of glass on the pot till germination takes place. Sow about the middle of March, and grow entirely in the open air and in the sunniest place at command, for of all annuals these love sunshine the most. German Asters may be grown in pots—not so well, of course, as in the open ground, but to a fair degree of perfection. The plants should be raised indoors in April, putting them separately into small pots when large enough to handle, and when these are filled with roots transferring them to 6-inch pots, using good loam and a fifth of rotten dung, or two teaspoonsful of Clay's Fertiliser to each potful of soil. From the end of May grow entirely in the open air, giving plenty of water and frequent doses of liquid manure as soon as the roots reach the sides of the pot. Asters are greedy of both food and moisture, and unless both are supplied plentifully these handsome annuals cannot bring their flowers to the dimensions and fulness which render them such striking objects. The Victoria is the most satisfactory kind for pot culture. Sometimes the points of the shoots are attacked by a kind of black fly; this can easily be removed by means of a soft brush, but it must on no account be allowed to remain on for any time, or the young plants will come into a permanently crippled condition. BYFLEET.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15742.—**Cuttings of Vitis heterophylla.**—Will someone kindly tell me the best time to take cuttings of Vitis heterophylla?—E. M. P., *Mirfield.*

15743.—**Onion for exhibition.**—Would some good vegetable grower kindly give me the name of the best spring-sown Onion for exhibition?—TALLY HO, *Carlow.*

15744.—**Beet for exhibition.**—Would some good vegetable grower kindly tell me what is the best Beet for exhibition purposes?—TALLY HO, *Carlow.*

15745.—**Eradicating Yarrow from lawn.**—What is the best way of destroying Yarrow in a lawn? It is spreading fast with me.—FERNSIDE.

15746.—**Stephanotis.**—I have a Stephanotis which has made good growth, and should be glad if any reader who grows this plant well will tell me how to treat it, and whether it likes manure water.—J. P.

15747.—**Ivies.**—Will anyone tell me if any decided acquisitions in Ivies have been introduced during the last year or two—green or variegated, strong or dwarf?—W. G.

15748.—**Rochea falcata.**—Will someone kindly give me a few plain directions for growing Rochea falcata? I have ordered a plant from a nurseryman, and hope to get it during February.—E. M. POPPLETON.

15749.—**Photinia variegata.**—Can any of your readers tell me where I can obtain any of the above, as I cannot get any, although they were obtainable in New Zealand?—HAWKDUN. ⁂ *We fear this is not hardy or obtainable in this country.*—ED.

15750.—**Pruning Marechal Niel Rose.**—When should I prune a Marechal Niel Rose which is trained to the wall of a cool house? It has been planted two years on a 4-foot standard, and has grown very strongly, but has not blossomed.—NEW SUBSCRIBER.

15751.—**Flowers for cutting.**—I have a new conservatory 16 feet by 8 feet, heated, but it does not get much sun. Will any of your readers inform me the best way of stocking it, by giving a list of plants most suitable for producing flowers for cutting, &c.?—B.

15752.—**Oil fumes.**—I have a lean-to greenhouse 12 feet by 8 feet, portable; the only means I have of heating it is by a square Rippingille oil stove, but the fumes of the oil entirely destroyed the foliage of the Arum Lilies last year. Can anyone tell me how to avoid this?—BARTON FARM, *Dover.*

15753.—**Plants for gate vases.**—Will any reader kindly recommend some hardy plants for growing in vases resting on country gate pillars? Hardy lasting plants would be most liked, white or blue. Would any Lilies be suitable for such a position?—IRISHWOMAN, *Drogheda.*

15754.—**Scarlet Elder.**—Would "J. Davison" be good enough to give me particulars as to how he started the cuttings of the above? I have tried them several times, but never successfully; the wood always shrivelled up, and seemed to be too soft and full of pith to strike properly. Perhaps he took this year's wood with a "heel" of last year's?—PERTHSHIRE.

15755.—**Freesias from seed.**—I noticed some time back a remark that Freesias raised from seed bloom more certainly than purchased bulbs. I cannot, however, lay my hand upon the paragraph, and should be glad if someone would give me information about the time and manner of raising Freesias from seed.—LINCOLNSHIRE RECTOR.

15756.—**Worms in fernery.**—I have a part of my greenhouse wall covered with Virgin Cork and planted with Ferns. I expect seedlings will grow; but I find the surface of the soil greatly disturbed and made very unsuited for the spores to germinate by the action of worms. Could anyone recommend some means to prevent this and not injure the plants?—BEDFAST.

15757.—**Quick-growing climber.**—Will any reader of GARDENING who lives in this part of Ireland tell me the name of a suitable plant for covering a garden arch over gate entrance? I should like something of fast growth and with flowers, and would be glad of information as to planting, &c. Would a Passion-flower be suitable?—IRISHWOMAN, *Drogheda.*

15758.—**Azalea indica not flowering.**—I shall be glad to know the reason why two large plants of white Azalea indica, which have flowered well for about fourteen years out-of-doors, have suddenly ceased to bloom. They flowered last in 1883 very well, and were a splendid sight as the shrubs are in good size. Since then there have been about three flowers on each plant, and this year they appear not to be going to flower at all, though they look healthy.—FEILDEN, *Bonchurch, Isle of Wight.*

15759.—**Quick-growing evergreen hedge.**—I have a bank about 3 feet high on which I wish to plant an evergreen hedge some 20 yards long. Situation, fairly sheltered; soil, loam on chalk; winters severe. I should be much obliged if any reader would advise me as to the kind of hedge to plant, especially with a view to quickness of growth and ornamental appearance. Any hints as to time and mode of planting that may be given would be thankfully received.—A. C. R., *Micheldever.*

15760.—**Thysanotus.**—I have been given some Australian seeds of what Australians call the fringed Violet; but I think, from the description, that they must be the Thysanotus mentioned on page 657 of GARDENING. Will "B. W." please say whether they should be sown in heat, and when, or whether they will do in any ordinary greenhouse without bottom-heat? I sowed some in sandy loam in December without heat, but they show no signs of sprouting. Will they flower the same year that they are sown?—L. D.

15761.—**Pigeons in gardens.**—I have a large garden—flower garden, lawn, and fruit trees—and I am desirous of erecting in the centre of lawn a pigeon cote for a few white fantailed birds; but before so doing I should like to know if these birds would be in any way destructive to the garden. Would they spoil the fruit or pick up the seed, and do they encourage other birds? Any information on the matter would oblige, as I would sooner give up the idea of keeping them than have the garden injured.—A. O. F.

15762.—**Plants for bed over pipes.**—I have a bed of soil, 14 feet by 1 foot, 4 inches deep, placed over two 4-inch pipes in my greenhouse. The pipes have wood trellis work in front, and walk. The distance from top of bed to underside of staging over is 1 foot. I should be glad if any reader would kindly inform me what is the best class of plants to stand the heat and grow well. I should like in front to have some runners to hang down the trellis work. I keep the house as near 50 degs. as possible day and night.—SALTAIRE.

15763.—**Scale.**—Learning that a neighbour was losing all his Cotoneasters through scale, I examined those in our own garden. On two, widely apart, I found quantities of scale. The small-leaved Cotoneaster, an example of which I send, seems to be the only shrub affected. What can I do, and where can I learn something of the habits of this insect and its changes? Some of the scale coverings seem to be full of eggs and some of live insects, but I have no glass of sufficient power to observe them closely. Is it not curious that bushes hundreds of yards apart should be affected in this way, while on trees can be found on intermediate ones of different sorts?—M. ⁂ *The Cotoneaster is affected with scale, for which a dressing with paraffin would be an effectual remedy.*—ED.

15764.—**An amateur's troubles.**—I am an amateur of only a few months' standing, and, as might be expected, I find more difficulties in the management of a greenhouse than I could have thought possible before I got one, though I have got great help from GARDENING since I began to read it. One thing that puzzles me very much is—to know which plants die down and which do not; a goodly number of plants have died down, and I cannot tell whether they naturally do this, or whether I have lost them through my ignorance of their proper treatment. Could you give a list of plants that do die down, also one of plants that simply cast their leaves, als one of evergreens? Another thing on which I should like advice is fumigating. Last week I found green fly appearing on some of my plants. I got some Tobacco paper (about ½ lb.), and burnt it in the house, which is 20 feet square. The result is that I am afraid I have killed more plants than flies, as I have found flies on some of the plants to-day, while I find that all my Cinerarias and Primulas, some of my young Rose trees, and other plants, are hanging or shrivelling up their leaves as though they had been in a severe frost. I cannot understand this, as I have always been given to understand that fumigating did not injure plants. Was it the smoke from the coals that did the mischief? The way I made the fire was this: I got a large pot, put some chips in it, fired them, then put some coals on, let them burn awhile, drew the lights off while this was burning, put the lights on, and then burnt the paper in the pot, with the result as I have stated. If anyone can say where the mistake was he will oblige one who is—PUZZLED. ⁂ *The number of plants grown is so great that it would be difficult and not desirable to publish a list of those that do and those that do not die down, but if "Puzzled" sends us a list of the plants that he grows we will separate them into these classes. His difficulties will bring him the sympathy and advice of many of our readers who have had the same troubles and disappointments to bear.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15765.—**Arum Dracunculus** (*U.*). It requires a warm border of light soil. Plant the tubers in March.

15766.—**Trenching garden** (*Cestrian*).—No; do not bring the yellow clayey soil to the top.

15767.—**Manure water for Hyacinths** (*Inquirer*). No; do not give Hyacinths sulphate of ammonia. We should advise you to use nothing but rain water.

15768.—**Paris Daisy** (*M. A. M.*).—The proper name of the Paris Daisy is Chrysanthemum frutescens. It is propagated by cuttings.

15769.—**Azaleas** (*Saltaire*).—Your Azaleas should bloom in April, May, and June, and if they are going to flower then the buds should be developed by this time.

15770.—**Culture of tuberous Begonias** (*Urbs*).—There has been some error in your treatment, and the article in this week's issue will materially assist you.

15771.—**Chinese Primulas dying** (*Saltaire*).—We cannot suggest any reason why the plants are dying. Could you not show them to some gardening friend in the neighbourhood?

15772.—**Dividing Hellebores** (*J. S.*).—Divide in spring into small pieces. Helleborus altifolius is the earliest. We did not find a leaf enclosed in your letter; if you send us one we may be able to identify the variety.

15773.—**Fertilising Aucubas** (*J. R. C.*).—When the female flowers exude a gummy substance a portion of a pollen-bearing plant should be shaken over them. That is all that is necessary.

15774.—**Winter-flowering Jasmine** (*H. Mulley*). —A sunny aspect would be the best for this Jasmine, and you can plant it in ordinary garden soil in spring or autumn.

15775.—**Cyclamen persicum in draughty room** (*Boojum*).—The Cyclamen likes a well-ventilated place, but, in common with other plants, dislikes a cutting draught.

15776.—**Snowdrops from seeds** (*An Apple Turnover*).—You should sow the seeds in pots or boxes, and plant out in autumn. Snowdrops will grow in almost any soil.

15777.—**Pinus insignis, Picea Nordmanniana and Cupressus macrocarpa** (*J. R. C.*).—Heat is not necessary in raising these from seed. You can raise under glass if you like, but if you use heat the plants will be drawn and weak. Sow in April.

15778.—**Ferns decaying** (*Saltaire*).—Unfortunately you do not say what the Ferns are, and therefore it is impossible to offer you advice. However, if you send us some of the damaged fronds, and repeat your question, we will do our best to assist you.

15779.—**Lilium longiflorum not flowering** (*H. Mulley*).—If they are in tolerably rich soil you may leave them as they are. Probably the bulbs were not strong enough to flower last year, and they may do so next season.

15780.—**Double White Primroses** (*S. H. F. J.*). Yes; you can plant the Primroses after the Hyacinths have done blooming. Take them up with a good ball of soil. There is no reason why the Primroses should not flourish in such a position as you describe.

15781.—**Barberries** (*H. Mulley*)—Berberis Hookeri is a handsome evergreen plant, and so is B. Darwini. The latter is preferable if you want to grow only one, as it flowers very freely; if you want another good flowering Barberry try that called stenophylla.

15782.—**Dracæna leaves turning brown** (*In a Fix*).—If you have, as you suggest, used sulphur, that would be sufficient to cause the injury to the leaves. You will find an article on the Dracæna in GARDENING, Oct. 17th last; in this the questions you raise are fully dealt with.

15783.—**Diseased French Beans** (*Young Beginner*). —We cannot say what has injured your Bean leaves; we can find no insects on them. If the attack increases send some more leaves in a tin box, so that they may keep fresh. —G. S. S.

15784.—**Seeds of Conifers** (*Hawkdun*).—We think you ought to be able to get the seeds that you mention from any good London or provincial nurseryman. If you fail to do so we will tell you where to get them on the Continent.

15785.—**Maiden-hair Ferns** (*Hortus*).—We presume you refer to the common Maiden-hair Fern, Adiantum cuneatum; if so, the temperature of your house is quite high enough. We shall shortly publish a general article dealing fully with the many important and distinct plants grown under the name of Maiden-hair Ferns.

15786.—**Climber for brick wall** (*Irishwoman, Drogheda*).—Plant any of the white cluster Roses, which you can get from almost any nursery. Wistaria, the Trumpet Honeysuckle, and some of the Clematis—particularly C. montana—are suitable. Plant any time between now and the end of March.

15787.—**Belladonna Lilies** (*A. P. H.*).—It is not a question of depth of planting at all, but rather of soil and position. We have seen them growing near the surface; but in this case they must be protected during winter.

They want a warm soil and a sunny, sheltered position. No place suits them better than the foot of a south wall, which is generally warm and dry.

15788.—**Ground Cherry** *(Roxburgh).*—From your description we should say your plant is Physalis Alkekengi—that is, if the capsule is bright orange-scarlet. This Winter Cherry is hardy, whereas the Cape Gooseberry (Physalis edulis, or P. pubescens) requires greenhouse treatment and bears greenish fruit.

15789.—**Forcing Lily of the Valley** *(Amateur).*—It is the usual thing for Lilies of the Valley when forced to produce flowers without leaves. What amateurs generally complain of is that their plants produce foliage instead of bloom, and so you must consider that your culture has been successful. You will not get leaves until later in the season.

15790.—**African Lily** *(Lover of Flowers).*—If your Agapanthus plants are in pots large enough we should say that liquid manure, made in the way often described in GARDENING, would be the best thing for them, though the patent manure you mention is also good. Do not use it often—not more than once a fortnight—and let it be very weak.

15791.—**Lilium auratum** *(J. A. Smith).*—If the bulb is sound it will flower again. You should lose no time in repotting it. Leave plenty of soil round the bulb, and pot in a tolerably rich soil; use plenty of drainage, and put a little layer of sand under the bulb. If the soil is moist at potting time do not water until the growth appears. Put in any new bulbs you have as soon as possible—they ought to have been potted before.

15792.—**Glazing** *(J. H. M.).*—The usual mode of fastening squares of glass in their places is by means of thin strips of lead about the thickness of writing paper and cut about ¾ inch wide and 2 inches long. Begin by glazing at the bottom, and fasten with brads, then to every square put a strip of the lead, bending it over the first square, and down under, and turning up over the lap of the next, until the whole are fixed; this will keep them in position until the putty gets hard, when they may be removed.—G.

15793.—**Failure in striking Apple and Pear cuttings** *(J. C.).*—It is not all kinds of Apples or Pears that will grow from cuttings; but some kinds strike freely enough—in fact, the embryo roots appear on the bark of some, as in the case of vines in a damp house. Old wood of Apples root more freely than young, and we have put in good-sized branches, planting them 1 foot deep, and they have made good trees. Try again, but you are not likely to get a large percentage to strike root, especially of smooth-barked varieties.—G.

15794.—**Illustration competitions** *(Tamberry).*—In the announcement of each competition you will find clearly stated the rules under which it is held. In answer to your questions, however, we may say that the views have not hitherto been confined to English gardens; the photographs need not necessarily be taken by the sender; but none should be sent in regard to which any question of copyright may arise. The views, if approved of, are to be engraved; others will, if the sender wishes it, be returned. We do not absolutely exclude photographs in which figures are shown; but we have already expressed the opinion that for our purpose it is a mistake to include figures in the views.

15795.—**Plants in vinery** *(Young Beginner).*—You may grow Ferns and foliage plants, such as cool house Palms, Aralias, and Dracænas, also Pelargoniums, Fuchsias, Balsams, Achimenes, Coleus, Musk, Primulas, &c., with the vines, most satisfactorily, as the only time that plants are injurious is when the fruit is ripe, and in the autumn the plants will be benefited by a month out-of-doors. The treatment of vines is simple enough; give a good border of fresh soil or good kitchen garden soil, train them up about 1 foot from the glass, and be very careful as to the watering. Inside borders take a large quantity to soak them thoroughly. Keep the shoots thin, and only one bunch of fruit to a shoot. Ventilate early in the morning, and shut up so as to economise sun heat as far as possible; keep a gentle heat in pipes to avoid cold chills at night, and few evils will befal your vines.—G.

TO CORRESPONDENTS.

M. C.—Thanks for your note, which is very pleasant reading.——*G. W.*—We do not know what patent guano you refer to; but probably it could be used with advantage in the case you mention. You should ask the vendors for information as to quantities.——*W. G.*—We may do so later on.——*D. E. Pugh.*—Mr. Iggulden has published a book on the Tomato, which any bookseller would procure for you ——*Constant Reader.*—We do not know; the book can be obtained only from the author. ——*J. Nicholas.*—We will publish some articles on the subject during the season.——*Cocos.*—No.——*Saltaire.*—We know no Rose of that name.——*J. J.*—Write to Mr. J. Douglas Dick, Royal Horticultural Society's Gardens, South Kensington.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*J. T. H.*—The Gladwin (Iris fœtidissima). This is rarely raised from seed; the common way is to divide the bulbs.——*T. P. P.*—Narcissus tazetta papyraceus.——*Cocos.*—Centaurea ragusina.——*Wm. Shaddock.*—We do not name Camellias, and they should be sent to some specialist.

LAWNS AND THEIR FORMATION.

THE lawn has always been regarded as one of the best and most pleasing features of an English garden, and through all the changes of style which have taken place in regard to the floral decoration of our pleasure grounds no one has, so far as I am aware, ever suggested any alteration in regard to it, or objected to its extent, provided it can be kept in proper order. The lawn may be described as the frame in which the garden picture is set, and without which, or failing to keep it in good order, no garden can ever look as it ought to do any more than fine paintings and other works of art can be displayed to advantage in an unfurnished or unsuitable building. Seasons may vary, and our flower beds may vary with them, sometimes be successful and sometimes disappointing, but in our peculiar and fitful climate the Grass lawn always affords satisfaction and pleasure, provided it has been properly made at the outset, and properly treated afterwards. A lawn should be spacious in proportion to the size of the garden, even, smooth, always green, and pleasant to walk upon. To have it like this, it must be well made and well kept, but most depends on the making of it; and the main points to consider in regard to this matter are the levelling, drainage, trenching, or digging, sowing or turfing, and keeping; and these I propose to treat of separately.

ROUGH LEVELLING.—This is a term which applies to lawn making, whether the ground is intended to be flat or undulating. As a rule, the latter feature predominates, only tennis lawns and croquet grounds, &c., being laid out quite flat and level. Levelling undulating ground consists in simply filling up hollows and reducing knolls or hillocks, on the give-and-take principle, so as to give the ground an even and pleasing contour without disturbing its general form, except in the case of slopes and terraces, which must be set out accordingly at the beginning. In cases where the ground is very uneven, however, it sometimes becomes necessary to remove the good surface soil temporarily and from its place—work which involves considerable expense. On no account should the good soil be buried under such circumstances; it should be put aside to go on the top again when the work is finished. Much needless labour and expense in forming a lawn on difficult ground may be saved by the judicious planning and planting of the ground, and no steps should be taken in regard to the lawn till the shrubberies, clumps, and bed, &c., are all set out, and their position and levels ascertained; and, as far as possible, all heavy planting should be finished beforehand. All tree roots and large stones should be removed from the lawn, particularly the former, which, if left in the ground, will decay in time, causing the soil to fall in and making the surface very uneven. In gardens where lawns have been made on the sites of plantations, where the stumps have not been carefully removed, the after subsidence of the ground where the roots have been decayed renders the lawn very uneven and unsightly, not to speak of the fungus which the decaying roots generate, and which appears annually in the shape of masses of offensive Toadstools all through the autumn.

DRAINAGE.—A general rough level having been effected, the drainage must be seen to; the extent and nature of it will depend a good deal upon the formation. Thin and naturally dry soils are better without drainage, as it only tends to starve the Grass in dry seasons; but, as a rule, drainage is necessary to carry away superfluous water quickly, and prevent melted snow and heavy rains flooding the lawn for any length of time. For comfort's sake, lawns, like walks, should be dry. Drains 4 feet deep, and from 15 feet to 30 feet apart, according to the situation, with a 3-inch tile in the bottom, and 6 inches of broken stones or rough cinders down on the tiles, and a ready outfall to a main drain of sufficient capacity to prevent "drowning," will be sufficient in most cases; but in retentive soils or swampy peat even more than this may be needed. As a rule, a good guide in such cases is the amount of drainage found to be necessary on the farm lands of the district; what is sufficient for these will be sufficient also for a garden lawn, and what this is can soon be found.

TRENCHING THE GROUND.—The main beauty of a lawn consists in its freshness of appearance, and, to secure this for as long a period as possible throughout the year, the soil must be deep, rich, and dry; hence trenching in all cases is almost a necessity. It is rarely that a piece of natural ground is found to be of uniform depth throughout. Nor is it needful that it should be so; but it is important that the gradations from the shallow to the deeper portion should be gradual and even, otherwise the ground is certain to be "patchy"—one of the worst faults a lawn can have. The finer Grasses and Clover will prefer those spots where the soil is deepest and richest, and forsake those portions where it is thin and poor, which will be usurped by Moss and weeds; and in dry seasons the latter will suffer first, and become brown and dead-looking, thus spoiling the appearance of the sward. I have seen lawns on which obliterated walks, that had not been trenched to the same depth as the rest of the ground, remained perfectly distinct, owing to the colour of the vegetation they produced, for thirty years afterwards. Whatever depth, therefore, the ground can be trenched to, which will depend upon the nature of the ground and the cost, it must be trenched to a uniform depth, and the subsoil in the bottom of the trench should be turned up rough with a strong fork as well; but any bad soil which may be dug up must be thoroughly mixed with the good soil and not left on the surface next the sod; for bringing up bad bottom soils on a lawn ground is not like doing the same on ground constantly cultivated by the spade or plough. Proceed by opening a good wide trench the width of the piece, and turn over the ground in a regular manner till the whole is finished, and then leave it for a good while to settle. Afterwards the surface should be finally levelled, and if any manure is to be given, it should be dug into the surface at the same time. If the soil be naturally good, no manure will be needed; but if poor, it will be much benefited by the application of rotten farmyard manure, rotten leaves, or vegetable refuse. Good fresh loam, free from weeds, is also excellent for the purpose. This trenching and manuring should be performed as early in autumn as possible; and the winter rains and frosts will settle the soil better and more evenly than ramming or rolling, neither of which is advisable.

LAYING DOWN A LAWN FROM SEED.—This is by far the best plan of forming a pure, clean Grass sward, free from those weeds and coarse Grasses which mar the appearance of so many lawns, and which are inseparable from lawns made from the natural turf. Where seed has to be sown, the ground, being already prepared as advised, should be made ready for sowing in April by treading (rolling will not do) the soil evenly, raking it smooth, and removing all stones and lumps projecting above the surface; after that the seed should be sown thickly and harrowed slightly in by a short, blunt-toothed iron rake and rolled down. Grass seeds mixed in the right proportions for the purpose are most conveniently procured from respectable seed houses; but samples differ greatly, some "mixtures" containing more weeds and coarse Grasses than others, and these give the lawn quite a coarse appearance. With a list of the different Grasses which the mixtures are said to contain, no one should have any difficulty in procuring what he wants. The quantity of seed to an acre should not be less than 50 lbs., and if much more can be afforded, all the better. As a rule seed is sown much too thinly, and years elapse before a deuse turf is formed. By sowing thickly enough, however, and manuring judiciously, a good lawn may be had the same season that the seed is sown. Remarkable examples of results from seeds in the course of a few months were exhibited in the grounds of the Paris Exhibition in 1878. Several English firms competed for the prize offered for the best example of lawn Grasses, each exhibitor being portioned out a considerable piece of ground, which they sowed and tended themselves. All the examples presented differences, some being fine and some coarse, just according to the proportion of the varieties of Grasses sown and the cleanliness of the samples; but although in each case the seed had only been sown about May, the Grass was quite thick and dense by the month of August, and beautifully fresh and green. The seed had been sown thickly in well-enriched soil, and the grass had been regularly cut during the season, and the cuttings left evenly scattered upon the lawn by the mowing

machine. Good seed is rather dear; but when we take into consideration the cost of procuring turf, laying it down, watering, rolling, and tending it, sowing is probably the cheapest plan, and in other respects it is undoubtedly the best.

LAYING DOWN TURF.—For turf or sods the ground is prepared in the same way as for seed. The turf should be of the finest quality procurable; but it is only on certain formations and under certain conditions that it can be procured free from weeds and coarse Grasses. The turf should be taken off in pieces about 18 inches square, of an even thickness of 2 inches or thereabout, and brought to the place in rolls where it is wanted, and laid down at the same time that it is taken up. The sods should be beaten shapely by the spade as they are laid, and afterwards the whole lawn should be rolled frequently by a heavy roller in moist weather to render the surface level. In summer, should the sods shrink—as they will do in dry weather—the seams should be filled up with fine soil to prevent evaporation and to bind the sods together. Turfing by inoculation consists in chopping the sods up in small pieces, scattering them over the ground, and rolling them in. This plan is only resorted to when turf is too scarce to permit laying down the turves whole; but it answers very well, and if a few seeds are sown at the same time, a very good lawn is thereby formed in one season.

KEEPING THE LAWN IN ORDER.—To keep a Grass lawn permanently in good order it must be cut regularly by the machine or scythe, by the former if possible, and periodically manured by means of top-dressings. When the clippings are left on the lawn, manure need not be applied so often, as the short Grass acts as manure, much in the same manner as wood ashes; but the practice helps to propagate weeds, Daisies, Dandelions, Plantains, and the like, and on the whole had better not be adopted, except on very clean lawns. Under any circumstances the cutting of the Grass should begin as soon as the Grass begins to grow in spring, and be continued till it ceases to grow in autumn. A smooth, dense, carpety turf can only be preserved by these means, as the cutting prevents the Grass going to seed, and causes the roots and fibres to spread, until in a short time the turf becomes a dense, velvety mass, such as is only found on a closely shaven lawn. At the same time, this constant removal of the short Grass is certain, sooner or later, just according to the quality of the soil, to impoverish a lawn, and must therefore be made good by annual or periodical top-dressings in the form of guano, soot, or wood ashes, or a mixture of all the three, than which there is nothing better, and one dressing in spring will be sufficient. To this end any garden refuse should be burned, and with it all the short Grass collected during the season, and as much earth as possible. The ashes can afterwards be sifted through a fine sieve, and have the soot and guano added to them when they are used, which may be at the rate of 3 cwts. or 4 cwts. to the acre. The fine siftings of coal ashes may also be applied with advantage alone, but more advantageously in conjunction with other manures. Two inches of coal ashes laid under the turf will prevent worms rising, and this plan may be adopted in the case of tennis courts and cricket grounds. In winter, lawns should be frequently swept and rolled. As to weeds, the most troublesome in Grass are Dandelions, Plantains, and Daisies, which when once established are difficult to eradicate. They may be kept out of a well-made lawn with little trouble by removing them as they appear; but where they exist in quantities, Daisies and Plantains are not easily got rid of, except by much labour. Dandelions may be extirpated by cutting the crowns of the plants off and pouring a few drops of carbolic acid on the root, but the operation may have to be repeated several times. J. S.

15467.—**Chrysanthemums.**—In reply to "L. C. S.," I beg to say in training Chrysanthemums round a circle of sticks to form specimens I do *not* stop or pinch off the tops in any stage of the growth, but train on spirally. The idea, however, of a single stem is altogether beside the subject, as I commence with four, five, or six separate plants, or rooted cuttings, which are planted around the edge of the pot in spring.—J. WEAVER.

OUTDOOR PLANTS.

PENTSTEMONS.

AMONG genera peculiar to the northern portion of the New World, to which our herbaceous borders are indebted for their gaiety, there is, perhaps, none more important than the Pentstemon. The North American continent, amid the rocky ravines whence the mighty rivers of that part of the world derive their origin, is the home of the Pentstemon. Varied in colour, profusely floriferous, and possessing a graceful habit of growth, Pentstemons have a value for the decoration of our flower beds, rock gardens, and shrubberies, that few other plants possess, the more so as their blooming season may be said to be distributed over a period of at least five months, commencing with the charming blue P. procerus in June, and finishing off with the endless varieties of P. Hartwegi, in all shades of rose, scarlet, and crimson, whose beauty holds its own even in the dull, dreary month of November long after the more fragile denizens of the flower garden have become things of the past. Within the past few years much has been done also in regard to the improvement of the Pentstemon by judicious selection of seminal varieties of the old P. Hartwegi and P. gentianoides, which, though they possess a wide variation in colour, lack the beautiful clear blue which we find in some of the species,

Pentstemon glaber.

and therefore have a somewhat monotonous effect. These garden varieties, or so-called hybrids, may be ranged under two series of colours—those from P. Hartwegi belonging to the red-flowered set, and those from P. gentianoides to the purple-flowered class; and, strange to remark, these species of colours will be found to run strictly parallel with other structural peculiarities.

AS REGARDS CULTURE, the species have unfortunately gained the reputation of being somewhat difficult to manage, as some, especially those of the shrubby section, show a remarkable tendency to suddenly die away when they are apparently in robust health. In order to ensure ordinary success, thorough drainage of the spot in which they are planted is a primary consideration, as it is a well-known fact that these, as well as a host of other Californian plants, suffer more from excessive moisture at the roots than from the coldness of our winters. The soil best suited for all Pentstemons consists of good friable loam, with an admixture of well-decayed leaf-mould and sharp sand. It is specially advisable in the case of Pentstemons to have, in addition to the border specimens, a few plants in cold frames, in order to be able to fill vacancies should they occur. They may be propagated either by means of cuttings or seeds. The former mode applies chiefly to the shrubby kinds, which strike freely in spring; and in favourable seasons seeds are freely produced from those from which it is not practicable to obtain cuttings. Any attempt to multiply them by division of the tufts will be found to result for the most part in the entire loss of the plants. P. barbatus and P. procerus, however, endure this mode of propagation.

SEED SHOULD BE SOWN in February or March on a gentle hotbed under a frame, in seed-pans well drained with broken plaster and filled with a compost of peat soil and sand. In April the seedlings should be pricked out under a frame, and these, planted out in May, will, as a rule, usually come into flower by autumn of the same year. Another mode is to sow in May or June in the open air, in ground enriched with leaf-mould. The seed beds should be covered with chopped Moss to preserve a uniform coolness and humidity. In August the seedlings should be potted and removed to a greenhouse or conservatory for the winter. It is necessary to observe that the seed sown at either of these seasons frequently does not germinate until the following year.

P. GLABER, represented in the annexed illustration, is one of the most useful of the whole group for mixed border or rockery decoration. It is an extremely free flowerer, neat and bushy in habit, and compact in appearance. It grows generally from 1 foot to 2 feet in height, and has oblong lanceolate leaves, slightly glaucous and destitute of hairs. The stems are many-flowered; the corolla is about 2 inches long and varies from bright blue—the form generally in cultivation — to violet-purple. The variety alpinus, an extreme form, grows only from nine inches to a foot high, and is sparse or few-flowered. It is confined to the Rocky Mountains. Cyananthus is of a handsome light blue colour, but is tall and rather ungainly in appearance. Utahensis, also considered to be a variety, is very slender-habited and has very narrow leaves. Speciosus, also a form of glaber, has narrow leaves and is very handsome; it often attains 3 feet in height, and bears bright dense blue flowers, which are later than any of the others in making their appearance. R.

Hepatica angulosa.—From the various kinds of H. triloba there may often be gathered a few solitary flowers during winter, but for a full display of bold and seasonable bloom angulosa is entitled to be placed as the earliest of Hepaticas. In a not over stiff loam, where moisture settles, but is not stagnant, with its roots between big stones high enough to shelter the tops from north winds, big light-blue flowers open with the second month. It is not, I believe, generally known that this, the finest of all Hepaticas, is the easiest to grow; not only is it less particular as to soil and situation than the others, but its habit is far more vigorous, the offsets not being so few and compacted, but more in the style of underground stems than is to be found in all the triloba sorts. These offsets become rooted their entire length, thus either rapidly forming large masses or affording a ready means of propagation; one thing, however, is needful—the situation should be flat and moist. Many years ago—six at least—a root was set in a dry part of the rockwork; it flowers every year, but the plant has increased but little in size, having but six or eight leaves. The proper time to transplant Hepaticas is of importance; I would sooner divide and plant in August than at any other time, but few amateurs care to be digging up roots at that season of the year. As soon as the flowering is past, and before the leaves grow, transplant, say some, but several varieties have their young foliage well out ere the flowers are over. Before blossoming I should prefer to move them, so as to be a little further off the drying March winds. Of course, the flower crop would suffer, but not much; besides, that is not the question. I have shifted Hepaticas about at all times with little or no injury. The chief care should be to protect the stringy, down-beset roots from drought. Summer-planted roots get well established and flower freely the following season.—W.

Anemone fulgens.—It is well known that this tuberous-rooted Windflower miserably fails to do any good in many gardens; this is all the more to be regretted from the fact that we have not another early scarlet flower for the open garden that will nearly match it for effect. In every instance where failure has occurred here the evil has been at the roots—the tubers had been eaten, or decay had so honeycombed them, that no heart was left. Is not this the result of setting the tubers in ground either too freshly manured, or too long left undressed? I have

fancied such to be the case. Let me give an example. The land being deemed hungry nine years ago, a four years' course of heavy manuring was given it; during that time it was found that well-established plants and trees were benefited by it, but that many bulbs and plants of the hardiest constitution when newly set in it absolutely refused to start. This did not, of course, apply to nearly all, and such as were thought to need it had special care in the way of surrounding the roots with sand or maiden loam when being set. Such care, however, was not deemed needful for this Anemone, and for years new plantings dwindled away, sometimes from dry rot, but more frequently from being eaten by grubs and other pests infesting manure. To show that the tubers may be improved by being carefully lifted and placed in deeply-dug soil without manure being employed, a square yard consisting of two dozen roots was planted adjoining some Hepaticas. This plot had been dressed with "shoddy," a refuse from woollen mills, largely charged with sulphuric acid; here from the first the Anemones did well, with the exception of last season. By chance we dug out the Hepaticas, which had become very large, necessitatiug the lifting of a row of the Anemones, and before they were put back, so far as the spade could work, deep digging was done. Now we are able to observe the results; that lifted row has twice the vigour of the other plants. Naturally one must learn by such accidental results; doubtless most hardy plants would be improved by being placed in newly-dug and mellow soil with timely liftings; but, generally speaking, it is not practicable to give such conditions to all; it is, therefore, well to find out such as really refuse to grow, unless special treatment is given them, especially kinds of the stamp of Anemone fulgens. Many, I know, grow this tuberous-rooted Windflower without the least trouble, but not a few whom I have met have failed to get a flower, and in many cases even a leaf.—J. W.

Schizostylis coccinea.—I return to the charge, in spite of "J. C. C.'s" assurances that this is "about as easy a plant to grow and flower as any he knows." All I can say is that I find it the most obstinate plant to flower that I know. It grows freely enough—in fact, too freely—but it will not flower. Last spring I broke up and replanted in the open border my clumps of this bulb. In September I lifted four strong healthy plants which had made good growth all the summer, and potted them carefully. These have been grown on since in a cold frame and cool greenhouse. Result—one dwindled bloom. As for the remainder left in the ground, they have shown no appearance of blooming. I shall repeat the same treatment this year and report results. It may be that the cold sunless weather which characterised the summer of 1885, may, in part, account for the failure. Perhaps others will give us their experience with this plant during the same season?—LINCOLNSHIRE RECTOR.

Lilium auratum with fasciated stem.—I have often seen flower stalks grown together, but never to such an extent as in the example I send of this Lily. The part I send is 2 feet 5 inches in length, quite flat, and 1 inch in breadth at the base, increasing to 2 inches at the top. There were between 70 and 80 buds on the stem, and out of these about 50 developed into flowers. They were, however, rather late, and for want of sun did not show as they might have done. They grew close to the stem. I don't know whether this is unusual, but send the stalk, thinking you may be interested in the matter.—M. *** *This is a good specimen of fasciation, but the occurrence is not unusual.*—ED.

Tree roots in flower beds.—Last summer we planted beds some 9 yards long on either side of a wide walk; those on one side succeeded admirably, while nearly half of the others were a failure, the plants dying away from exhaustion of the soil and from drought. As all were kept watered and had been similarly prepared in every way, we were at a loss to know the cause. Some Elms stand about 20 yards or more away in the case of a number of the beds, but we had not suspected their roots being injurious at that distance; yet, when giving the annual digging some years ago, we found the whole soil permeated by them. It has since been replaced by new material and a trench cut through some distance nearer the trees, so as to stop their roots for some time in that direction. It would be advisable for everybody to examine at this season the soil of his flower beds, or any that is under cultivation in the neighbourhood of trees, as otherwise the attention bestowed in enriching and watering it for the good of the plants placed therein may result in the food supplied being conducted into channels for which it was not intended.—B.

REPLIES.

15653 and 15659.—**Chrysanthemums in Scotland.**—Like "M. F.," and "L. M. B.," on page 654, I have to complain of a nearly total failure in my border Chrysanthemums last season to produce bloom. I grow only the early flowering sorts, and previous to last year had always a fair amount of bloom. The only reason I can give is that the season was so very backward; the young plants although well-rooted when planted out made slow progress in growth, and did not reach the blooming stage before the winter frosts spoilt them. Several other plants which flower in autumn never bloomed with me last year, such as Anemone japonica, &c. Height above sea level 350 feet.—ROXBURGH.

—— There were two causes for the failure of Chrysanthemums in Scotland and, perhaps, elsewhere this season: 1. The long drought, with occasional frosts at night, which interfered with the habits of the plants and their robustness in summer and autumn. 2. The early and severe frosts in September, commencing, if I mistake not, from the eleventh of that month, when the thermometer showed 11 degs. of frost, which subsequently recurred in the same month, though not, perhaps, to the same extent. As a rule, not only have Chrysanthemums this year in Scotland been not worth showing, but even those which, for want of due competition, have obtained prizes at local shows have been beneath contempt. I got better results this year from old stools than from fresh plants.—M. B.

—— This, I may say, was my first season with Chrysanthemums, and I was fairly pleased with my success. I had over seventy sorts, and all bloomed well from the first of November, and even now there are a few good blooms—Mdlle. Antoinette Brunell, Fernand Feral, and Monsieur Cochet, the blooms being from 3 inches to 4 inches across. Only one plant did not bloom well, viz., Belle Alliance. I have not heard any complaints among the gardeners about here as to Chrysanthemums not blooming well this season, although one of the principal nurserymen told me that he had not had any blooms; but that arose through his attempting to keep them back till after the English blooms had gone out of the market. "L. M. B." seems to be in the same fix as "M. F.;" in short, I think that the failure in both cases arises from the same cause, viz., too late planting in flowering pots; and from what little experience I have had I should say don't repot later than the beginning of June. The west of Scotland has been very little blessed with sunshine during the latter part of the past season, had it been otherwise July potting might have been all right. Let both try (when the buds are showing) the effect of a dessert-spoonful of sulphate of ammonia in one gallon of water, applied three times per week, and no other manure. This is a very cheap manure, as at present it can be had for 8s. per cwt.—J. STUART, *Claverton, Helensburgh, N.B.*

—— Your Chrysanthemums did not flower from one of two causes—either you over-dosed them with liquid manure, or, what I think is most probable, the flower buds were eaten by insects; a caterpillar most likely. Cut down the plants now, and strike young ones from the young shoots. Be careful in giving manure water that it is not too strong, and look out for insects at the points of the young shoots from the middle of August onwards. Do not take your plants into the greenhouse another year until the end of September.—J. C. C.

—— My experience is gained in a very cold late part of the country—namely, the locality of Bathgate. I put in my cuttings as usual about the middle of January, and they got on nicely, so that by the beginning of May I had them into their flowering pots; but it was the middle of June before I could risk them out-of-doors. They seemed to get along well enough for a time after that, but we had cold winds and frosty nights very often during the summer. About the 1st of September we had 5 degs. or 6 degs. of frost, which blackened Dahlias, French Beans, and other tender things, and of course did Chrysanthemums no good, although no apparent injury. We had no frost after this date to do any harm until the morning of the 4th October, when the thermometer registered 12 degs. of frost, and the Chrysanthemums were still out, none with buds set yet, excepting Madame Desgrange's early, which by this time was flowering nicely. I had them under cover as quickly as possible, but, alas! out of seventy pots only about thirty escaped; and some of these, instead of setting buds, began to grow again. A few of them formed buds, and flowered on the new growth, but the blooms were very poor. At present I have one variety of Mons. Crousse flowering on the young shoots which spring from the base of the old plant. I am of the opinion that we, in this district especially, have been generally too late in getting in our cuttings, so that the earlier in December they can be got in, so much the better, more especially the late-flowering varieties, so that we may have good plants when they come to be turned out to their summer quarters. I attribute the main cause of failure to being compelled to house them before they were furnished with flower-buds, consequent upon the coldness of the past summer.—W. K. B. B.

—— "L. M. B." is not alone in his distress. My own Chrysanthemums have treated me with even less consideration, for out of about three dozen plants, not one put forth a bud. I have cut them down and hardened them off for rest, and I think "L. M. B." should do the same, and trust for better fortune next season. Like "L. M. B." I should be glad to know the cause. My greenhouse is heated with a flue which is not quite tight, for at times I smell slightly the fumes from the gas coke—the fuel used. Perhaps this may be the cause; but the Chrysanthemums and all the other plants in the house look healthy.—BRIDGE END, *Lanark.*

—— "M. F." enquires if any readers of GARDENING can enlighten him as to the probable cause of the failure of Chrysanthemums to bloom satisfactorily in the north. Allow me to state that even in the most favoured parts of the south coast the Chrysanthemums, as far as out-of-door bloom was concerned, were almost a complete failure, as they did not expand a single bloom until the early frost was upon them. This was doubtless caused by the season being so unfavourable, as the summer was so extremely hot and dry that the growth of such plants as the Chrysanthemum, which needs a good supply of moisture at the root, was very much retarded, for as soon as the rain came, cold, dull weather set in, so that we really had no autumn weather, and very few autumn flowers—in fact, in the preceding year we cut more bushels of Chrysanthemum blooms from outdoor plants than we did handfuls during last autumn; yet from plants grown continuously in pots, and flowered under glass, I never remember a finer display. The extreme variability of our climate renders the flowering of late autumn plants a very precarious affair if left fully exposed to the elements; even the hardiest plants that bloom during the dull, dark days well repay the shelter of a glass roof, and cold houses may be turned to good account by sheltering Chrysanthemums, Veronicas, Schizostylis, and Hellebores, which, even if they do flower in the open air, get so tarnished by the sudden changes from frost to rain and fog that they are hardly recognisable as the same plants when grown, or rather flowered, under the friendly shelter of a glass roof.—J. G., *South Hants.*

15554.—**Mistletoe seeds.**—There is little difficulty, I find, in growing these. Get fresh berries and rub them on the bark of young Apple wood till they adhere by their own glue. Surely nature does not teach us to cut slits in the bark and insert the seeds therein? The birds are nature's Mistletoe cultivators, harvesting the berries for their own purposes, and depositing the ejected seeds upon branches of the tree. Seeds thus sown are not likely to be picked up a second time; but it is otherwise with those artificially sown by man in a fresh state. These are greedily sought after and devoured, whether placed on the upper or underside of the bough. Such, at least, is my ex-

perience. This constitutes the real difficulty in the matter. Out of some dozens of seeds which I sowed two years ago, and which even germinated, all but one were destroyed by birds in the course of the year. This season I mean to try again, and as I sow each seed I shall tie it over with a piece of coarse gauze, so as to protect it from the birds. The gauze must be so tied as not to hold the net against the seed nor to keep air from it, and it must be allowed to remain the whole year. A small piece of wire netting rolled two or three times round the bough would perhaps answer better. —LINCOLNSHIRE RECTOR.

TREES AND SHRUBS.

THE HOP HORNBEAM.

WHEN laden with its elegant male catkins, or the more globular female flowers, the Hop Hornbeam (Ostrya carpinifolia) is a very fine subject. In general aspect it much resembles the common Hornbeam, but the Hop-like catkins, shown in our illustration, offer a ready means of distinguishing it. There is a large and handsome specimen—said to be the finest in England—at Kew, and there are other good examples in English and Scotch gardens; there is one at Syon House. It is widely distributed in Europe, especially in south-eastern regions, and is also known as O. vulgaris. Another species, O. virginica, has leaves of a different form, and bears the female catkins erect instead of drooping. G.

Hop Hornbeam (Ostrya carpinifolia).

15667.—**Sowing Holly berries.**—There is no advantage gained in sowing the berries when gathered, as they do not germinate till the second year, and are in the meantime liable to the attacks of mice and birds. There is, moreover, the labour incurred of keeping the soil clean. The best way is to mix them with their bulk of dry sand, and bury them in a flower-pot in the open ground, covering it so as to exclude wet. Sow in March of the following year in drills 6 inches apart, which allows of cleaning with the hoe, and if the ground is of a heavy nature dig it roughly to sweeten a fortnight before sowing. Be careful to keep free from weeds, and allow the plants to remain two seasons before transplanting.—J. C. B.

A "Miniature Hothouse."—In these days we hear much of amateur propagators, &c., but I have been looking in vain for an appliance like the following: If the appliance were made just like a propagator, heated by means of an oil lamp, as many are, but with a distance of about 2 feet or 3 feet from the bottom of the tray containing the mould to the glass, we should get what I want, and, I believe, thousands of others want—viz., a miniature hothouse. If such an appliance were made small enough to be put inside a greenhouse it would be of immense use to force a few Tulips, Polyanthus Narcissus, or even a small Azalea, to adorn our tables and conservatories at Christmas. Is such an appliance in the market, and, if so, where can it be got, and what is the cost?—URBS.

HOW TO BUILD A GREENHOUSE.

"EAST ANGLICAN'S" query is rather a "poser," but what he requires is not an impossibility, so I will try to put him in the way of accomplishing his object to the best of my power. But it may be as well to say at the outset that I do not see how the specification given can be fulfilled *in toto* for the sum named—in fact, it would be practically impossible to do so, taking the materials at usual retail prices, and it would be a remarkably clever builder who could carry out the work for the sum named (£25), and make anything out of the job. The usual cost of ordinary nurserymen's greenhouses, which are, as a rule, by no means elaborately constructed, and are put up in the most economical manner, is reckoned at £1 per foot run for structures 12 feet in width, or thereabouts, and, though this generally includes piping, anything wider than this runs into considerably more expense, as not only is more stuff required, but this must be stouter throughout, and, therefore, more costly.

I think that if "East Anglican" intends to have a house of the size he mentions—viz., 30 feet by 15 feet, he must make up his mind to do the whole, or very nearly the whole of the necessary work for himself—for £15 will barely cover the cost of the materials, to dispense with any glass at the sides—and also to be satisfied with a good sample of 16-ounce glass. For 700 feet (the quantity needed) of 21-ounce will cost £8 15s., putting it at 3d. per foot only, whereas the usual price of this gauge is 4d., which will make too large a hole in the available capital. But good 16-ounce glass will be found quite sufficient for the purpose, if not used in too large squares; and, as a matter of fact, 16-ounce, or at least something considerably under 21-ounce, is used in the construction of all but the most expensive class of horticultural structures. Besides, heavy glass necessitates heavier bars and plates, more stays, and an increased cost in every way, so that on the whole I would almost, if not quite, as soon use the 16-ounce as the 21-ounce. There is no necessity for having brickwork or vertical woodwork for the sides; horizontal boards will do perfectly well for the purpose named, and these do not absolutely need to be either planed or tongued. Plain-sawn boards, or "lumber," will answer every purpose, if well tarred, and a strip of ½-inch or ¾-inch stuff, tacked over the joints, a much simpler and cheaper plan. We shall want:—

	£	s.	d.
2 side plates, 30 ft. long = 60 ft., and 2 ditto, 15 ft. = 30 ft. = 90 ft., or, say, 100 feet of 5 × 3 quartering, which, at 2½d. per foot, comes to	1	0	10
21 posts, 5 ft. long = 110 ft. and 6 10-ft. lengths = 60 ft. = 170 ft. 4 × 3, at 2d. ..	1	8	4
270 ft. 9 × 1 sawn boards (for the sides), at 1½d.	1	13	9
1 ridge plank, 30 ft., 8 × 1½ in., at 3d., planed and grooved each side	0	7	6
54 sash-bars, each 10 ft. long = 540 ft. of 3 × 2, at 10s. per 100	2	15	0
And 80 ft. of same, for ends	0	8	0
3 framed ventilators, for roof, each 3 ft. 4 in. × 2 ft., say	0	15	0
1 door, if glazed, will cost	0	10	0
450 squares selected 16 oz. glass, each 18 in. × 12 = nearly 700 ft., at 15s.	5	5	0
Tar and paint will cost	1	0	0
Putty	0	5	0
Nails, hinges, &c., say	0	10	0
Total	£15	18	5

I have priced most of the items, woodwork in particular, slightly above what they can be purchased for in this neighbourhood, S. E. of London, so as to allow for any discrepancy, and any respectable timber merchant ought to supply a good quality of stuff at the figures set down—for ready money, of course. Here we get very good yellow or pitch-pine sashbars, rebated and chamfered, for 9s. per 100 feet—size, 3 inches by 1¾ inches, or nearly so, but I have allowed 10s., as the bars, being rather longer than usual, should be full 3 inches by 2 inches, if possible. Again the 9 inches by 1 inch boards we get for 1¼d. per foot run; I have allowed 1½d. The quartering will be in the rough, and should be planed, with the exception of the posts.

NOW TO GET TO WORK. Sharpen the lower ends of the posts, cut a tenon 1½ inches wide on the top of each, except the four for the corners, which may be plain, and give them a good coat of hot tar. Having planed the plates, cut mortices in them corresponding with the tenons on the posts, at equal distances, allowing the extra inch in width of the plate to overhang on the outside, and halve the ends together at the corners. There will be 8 posts on each side, 3 at the one end and 2 at the other, 1 between each corner, and the door-post; this will bring them nearly 4 feet apart all round. Leave a space of 2 feet wide for the door, and cut a tenon on the end of each plate to fit into the door-post; or a better way, perhaps, is to cut a "return" on each, and simply nail them on, sinking the return ½-inch or so into the post from the outside; this plan does not weaken the posts so much as the mortice. The posts are to stand 2 feet 3 inches out of the ground to the underside of the plates, that is, the shoulder of the tenon. Get them all in, and fit the plates on, nailing the tenons in, and spiking the corners down with long nails. Fix the door-posts, which can go some distance into the ground (take care to tar the lower ends); these are, of course, two of the 10-feet lengths of 4 by 3. The other four must be cut to the right angle at the ends, and form the end rafters. With the help of these you can now get your ridge up, and then cut and nail in the bars, measuring the distances very carefully. As the glass is 12 inches wide the bars should be about 13 inches apart, the other inch being taken up by the tongue of the bars. You can now nail on the boards for the sides—three widths of 9 inches equal 27 inches; these, of course, go on outside. Then fit the ventilators, two on one side, one the other, tack in the end bars, and proceed with the glazing. The end rafters need not be rebated—a strip of beading tacked along inside level with the rebates of the bars will do quite well. Use no top putty, but bed the glass in well, trim and smooth off, and run a small brush down each edge, just catching the glass. Side ventilation may be provided by cutting the top board between every other or third post halfway across the post, and hanging it by a couple of hinges to the plate. These sides should have

a good coat of hot tar, which is cheaper and better than paint; and all joints should be covered with strips of thin stuff, or plain beading will do. Hang the door, and give it and all the bars, &c., two or three coats of paint. I forgot to say that before the glass is put on some means must be provided to prevent the weight thrusting the plates outwards, which it will be sure to do, though they are nearly 3 feet in the ground. As there is a central bed, perhaps the best way to do this will be to fix three neat upright supports to the ridge-plank inside the house, which will keep it up, and if the bars are securely nailed to it they cannot move far. Another way is to use a few iron tie rods across from bar to bar just overhead, and indeed it would be as well to have two or three of these as well as the supports. The 10 feet sash-bars will give as nearly as possible 6 feet from the level of the plates to the ridge, and the sides will make it 2 feet 6 inches more, or 8 feet 6 inches altogether. If more head-room is desired, sink the paths a foot, which will, perhaps, make it easier to work at the plants. The pitch of the roof will be about 40 degs.—a very good one.

I think it would be a great mistake to have four beds across the house, as this means three pathways, whereas two is quite enough for a house of this width. A much better arrangement would be a centre bed 5 feet wide, two pathways 2 feet each, and side-beds 3 feet each. Two-feet pathways are quite narrow enough, 1 foot or 1½ feet is out of the question. Roof ventilation is absolutely necessary for Roses, &c., which cannot endure a confined atmosphere, but this has been provided for. Glass of the size mentioned by "East Anglican" would be a useless expense—18 inches by 12 is a very useful size, and not nearly so expensive as larger pieces. The laps should be small, half an inch is plenty, and more only harbours dirt. The lowest pane should overlap the outside edge of the plate about 1½ inches, so as to throw the drip clear of the woodwork; or a better but more troublesome plan is to let a planed board, 6 inches by 1 inch (or "flooring"), edgewise into the ends of the rafters, the upper face being level with the rebate in the bars, so that the lowest pane can lay on it (like a frame light), and be kept up by a tack. This will save a lot of breakage. The outside edge of this board should overhang the plate a couple of inches or so, and a 3-inch or 4-inch by 1-inch batten nailed on the edge of this, with the whole well tarred, will form a capital gutter. A house constructed in this manner will answer for growing Roses, Carnations, or the like, or, if slightly heated, Geraniums, Cinerarias, or any air-loving subjects, as well as a far more pretentious structure; and nothing cheaper can possibly be had, though the cost might evidently be slightly reduced by bringing the sides down to 18 inches, or even a foot, and giving head-room by sinking the paths; only then you will need a few bricks or boards to keep the soil up at the sides of these. By the way, a row of bricks is much better for the sides to rest on than the bare earth. B. C. R.

—— In reply to "East Anglican's" letter, on p. 659, I shall be happy if the little information that I can give him will be of any service. 2 feet of wood work and 2 feet of glass at the sides of the greenhouse would be sufficiently high; the ridge should be at a height of 8 ft. 6 in. from the ground. I should certainly advise that the squares of glass be not more than 18 inches by 15 inches; 21 oz. glass is only needed for the roof, 16 oz. being quite strong enough for sides and ends. To have the panes 15 inches wide and 8½ feet long, as is proposed, would be no advantage; on the contrary, if, by any means, one got broken, it would be both troublesome and expensive to replace. As regards the construction of the house, proceed somewhat as follows:—For the four corner-posts use 4 by 4 wood (all wood should be *yellow* deal, not white). For the remainder of the frame-work employ 4 by 2; there will, of course, be seven horizontal pieces, two running along the ground, two at the top of side wood-work, two at the eaves, and one centre piece or ridge. Get for this purpose two 15 feet lengths, place uprights where they are joined together, then put six uprights at intervals of 3¾ feet throughout the whole length, continuing them across from eaves to ridge. At one end there will be three pieces (10 feet long), one along the ground, one where the glasswork commences, and one joining the two eaves, supporting them thus: One upright in the middle from ground to ridge, and one each side of centre, 3¾ feet away from it, meeting the roof to support the span. At the other end (where the door will be) have one piece across ground and two uprights (the door posts) going up to meet the roof, and each 1½ feet from centre, that is, allowing the door to be 3 feet wide. The cross-pieces above woodwork and at eaves, must be morticed into the door posts; to support these cross-pieces, one upright each side half-way from the outside will be sufficient. The framework is then complete. Now the sides: You do not say whether you intend having double walls—they are not absolutely necessary, but if they are double, match lining may be substituted for thicker wood, and if the intervening space be filled with sawdust, it will add greatly to the inside temperature. However, 11-inch deals, 1-inch thick, tongued and grooved, running lengthways will do; let them be securely nailed or screwed to the uprights, just in the same manner that flooring is laid down on the joists.

The next point is the roof, sides, and ends: You should have sashes made, this being a double advantage. The first is that the side sashes can be hinged to eaves and swing outwards so as to form ventilators, and the top sashes, if screwed on to framework, can at any time be removed for repairs or painting; secondly, if, at any time, you wish to remove the house, it is more easily taken to pieces, whereas if sash bars be merely nailed to the frame, it cannot be altered without at least breaking some of the glass, although this last is the cheapest way of building the house. If you decide upon sashes, have them made of 1½-inch stuff, and 3 inches or 3½ inches wide. The bars you could buy ready made cheaper than you could rebate them yourself. Place them about 15 or 16 inches apart. I found when constructing a house myself that the best way to glaze was this:—Place a little putty in the rebates, and press the glass evenly into position on the putty, then put two or three small pins horizontally in the bars to hold the glass firmly down, but put no putty on the top of the glass, as is common in window glazing, because outdoors the weather will eventually crumble it away, and the exposure will rot the wood. Commence glazing at the bottom of the sash and work upwards, allowing the next square above to lap over the first by about ¼ inch. Have ventilation at the top by all means. To accomplish this, do not make the top sashes to reach the ridge by 2 feet, but make smaller sashes to cover the aperture, and hinge them on to ridge, so as to open upward by means of pulleys inside. The cheapest door you could have would be boards rebated together, and without any glass. The cost and how to go about purchasing materials are difficult questions to answer. Of course, I cannot tell the price of wood where you live. I pay (in Loudon) 1¾d. per foot for the 4 by 2 quartering; 3½d. the 4 by 4 (this is expensive, but it has to be very sound); for the sash sides 6s. per board (13 feet by 11 inches). With regard to paint, that sold in tins at 4½d. per pound is very good and quite as cheap as home-made. For glass, I should think you could not do better than purchase it of one of the firms that advertise in GARDENING. You would find it economical to have all your squares as far as possible one size, as vendors are prepared to sell quantities of one size at considerably reduced rates. If you could inform me what prices you will have to pay for material, I could, perhaps, tell you very nearly what the house would cost. I should think you ought to do it for the sum you mention. I am almost afraid you will find the heating apparatus described insufficient; but if you try the plan recommended a little while ago in GARDENING of overhead covering, as I have, you will, at least, keep out all frost.—J. J.

—— In reply to "East Anglican's" inquiry about how he should build his greenhouse, I shall be glad to give him the benefit of my experience, as I have built a greenhouse 14 by 21 this spring, and I think that he ought to be able to build his for about £15 or less. For the foundation I used second-hand railway sleepers, which cost me 18d. a-piece. They are 9 feet long, 1 foot wide, and 6 inches in depth. They are very heavy, and, laid on the ground held together by iron hooks, make a capital foundation. For the framework I used Spruce scantling, 4 by 3, which I got from a dealer in second-hand timber at a cost of a penny per foot. My glass is all made in frames. The top frame, 4 feet wide, is laid on the framework, and screwed into it with 4-inch screws. The wood for the top frames, 2½ inches by 2 inches, and for the sides, 2 inches by 2 inches, is red Pine. It is less knotty than the white Pine, and works better. Sash bars for the top ought to be 2½ inches deep, and for the sides 2 inches. They can be had of any timber dealer, and are so cheap that it would not pay to make them one's-self. If I remember aright, the prices varied from 5s. 6d. to 8s., according to depth. For the top I prefer glass 21-ounce, but 15-ounce or 18-ounce glass is quite sufficient for the sides. My boarding is ½-inch tongued and grooved Pine, 6 inches wide, and costs ½d. per square foot. I think ventilators at the top are indispensable to let out the foul air, which always collects at the top of the house. Before I take a work in hand I get from the stationer one or two sheets of sectional paper. This is ruled off in 1-inch squares, and again subdivided by four, and the drawing made to the scale of 1 inch to a foot. You can much better judge of the house you intend to build when you have the drawing in black and white before you, and you are less liable to make mistakes in your construction than when you try to build it without such plan. When you have drawn all four sides of the greenhouse, and you know the price of your material, you can very soon calculate the exact cost of what you intend to build. Please remember not to get too sharp a pitch, unless it is for a vinery, as plants in houses with a sharp pitch generally get very straggling. A nice size for the glass panes is 12 inches by 8 inches; if a pane gets broken it is easily replaced by another. Allow ½-inch lap on the top and ¼-inch on the sides. I shall be very glad to furnish "E. A." with further particulars, if desired.—ALFRED SCHUMACHER.

BEES.

15796.—**Removing hives.**—*(N. O. D., Somerville).*—It is only at the time of year when bees are flying, that it is unsafe to remove established stocks a less distance than two miles, as they then, in their flight, do not get within sight of their known land-marks, and so are not attracted to the old spot. Swarms will keep to any position, and seem to forget their old home. At this season, during dull, cool weather, you may safely remove your hives the distance you name. Should, however, bright weather occur immediately after removal, it would be as well to place empty hives on the old site, as any bees that may return will enter them, and can be joined to their respective hives in the evening. But bees do not fly very far at this time of the year, and if made to notice their new locality when first leaving their hive, they will not fly out of sight of it for some time, and thus soon get used to it; it is therefore a good plan to place in front of each hive, after removal, a bush, or similar thing, which will cause the bees to notice their new locality. It is well also, to alter the appearance of their old home as much as possible.—S. S. G.

15700.—**Bleaching Pampas Grass.**—In order to obtain fine white Pampas Grass the heads should be gathered before they are quite open, and shaken before a fire every day until they have fully expanded. They can also be hung up until dry, and they will then have a fine colour.—T.

Slugs.—We often see queries as to the best means of getting rid of slugs. A pinch of new bran is an excellent trap, and I would advise slices of raw Potato where bran cannot well be employed, either on account of its being likely to be disturbed, or because the remains of the heaps would be untidy. Let me also recommend for killing when caught a jug or jam-pot full of hot water, into which the sticky creatures may easily be dropped; it is a pleasanter method of disposing of them than chopping them up where there are large numbers, as sometimes happens out of doors among a bed of Iris, and it is less cruel than salt or lime, which tortures them; whereas the hot water kills immediately, and cleans one's fingers, if used, at the same time.—A.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXXV.

(By ANNIE M. GRIGGS, Edinburgh School of Cookery.)

ORANGES.

THERE are many varieties of the Orange; amongst those in ordinary use are the Portugal Orange, which is the commonest, and may be known by the thickness of its rind; the St. Michael Orange, which is much esteemed for its juiciness and sweet flavour, and can be recognised by its thin rind and smooth skin; the Maltese Orange, distinguishable by its red pulp; the small Tangerene Orange, frequently used for dessert, and much esteemed for the volatile and aromatic oil which is lodged beneath its outer skin; and the Seville Orange, recognised by the dark tint of its skin and its bitter flavour, which renders it disagreeable for eating in the raw condition. Sweet Oranges are much in demand in the culinary art, and are frequently used in an uncooked state. Bitter Oranges are largely employed in making wine, marmalade, &c.

ORANGE TART.—Take four sweet Oranges, three ounces of loaf sugar, two eggs, one ounce of butter, two slices of thin bread, or plain cake, and a little milk. Butter a pie-dish and lay in the bread, previously soaked with milk. Wipe the Oranges and rub the lumps of sugar over the outside of the rind to obtain the aromatic flavour which it yields, then remove all the white peel, and pound the pulp with the sugar, keeping back the pips; add the yolks of the eggs and butter, slightly melted, mix thoroughly and pour over the bread. Whip the whites of eggs to a firm froth, add a little sugar, pile roughly on the top of the Orange mixture, and bake in a moderately hot oven to a pale brown colour. Sift a little white sugar over and serve hot.

ORANGE PUDDING, BAKED.—Take two stale sponge cakes, four Oranges, one ounce of butter, three ounces of loaf sugar, half a pint of milk, and three eggs. Rub the sugar over the rind of the Oranges and put it into a basin with the sponge cakes, pour the milk hot over these, let stand for ten minutes, and then beat well with a fork until there are no lumps left. Squeeze the juice of the Oranges into the basin, and then beat the eggs, yolks and whites together, stir lightly, and pour the mixture into a buttered pie-dish, break the butter in small pieces over the top, and bake in a moderately hot oven for about twenty minutes. Sift some powdered sugar over. This pudding is good served either hot or cold.

JELLY ORANGES.—Select six fine large sweet Oranges and cut them in halves, carefully remove all the pulps from the halves by means of a spoon, taking care not to break the rind, and then soak the skins in cold water for one hour. Drain them and fix each half in some rough ice or salt, and should there be any holes stop them with a piece of butter. Strain the juice from the pulp, and add water to make one pint and a-half; to this add one ounce of gelatine, six ounces of sugar, the whites and shells of two eggs, and the rind and juice of one lemon. Beat these all over the fire until nearly boiling, then remove the whisk, and let the contents of the saucepan boil for about two minutes, carefully lift from the fire, cover, and let stand for twenty minutes before straining through the cloth in the usual manner. When the jelly is quite clear, colour half of it red with a few drops of cochineal, and fill half the skins with red, and the other half with yellow jelly. Let them remain until quite cold and the jelly set firm. Wipe the Oranges dry and clean; cut them with a very sharp knife in quarters, and build them high, red and yellow alternately, upon a crystal dish.

ORANGE JELLY.—Take one ounce of gelatine, six Oranges, six ounces of loaf sugar, one Lemon, and one pint of water. Peel the Oranges and Lemon very thinly, squeeze the juice, taking care to keep back both the white pith and pips, mix the rind and juice with the gelatine, sugar, and water in a saucepan, and stir over the fire until the gelatine is dissolved, and then strain through a strainer into a previously wetted mould, and set aside to become cold. Should the jelly be desired clear, it can be made so by means of the whites and shells of two eggs, but the flavour of Orange jelly is considerably better when thick than when clarified.

ORANGE SALAD.—Take six Oranges, three ounces of loaf sugar, one gill of water, four ounces of desiccated Cocoanut, one gill of cream, and one tablespoonful of brandy. Carefully take the thin yellow rind from the Oranges, and put it into a saucepan with the sugar and water, and boil for five minutes; strain, and when cold add the brandy; remove every particle of pith from the Oranges, and slice them thinly; pile high in the centre of a crystal dish, sprinkling the Cocoanut amongst the Oranges; pour the syrup over them; whip the cream stiff, and pile on the top; sift some sugar over, and serve at once.

ORANGE CAKE.—Take two eggs, their weight in powdered sugar, and the same weight of flour, one small teaspoonful of baking powder, and two Oranges. Beat the eggs and sugar together with a wooden spoon until they are of the consistency of cream; then add the flour, and beat again until the bubbles rise; then add the grated rind of the Oranges, and baking powder; pour the mixture into a shallow buttered and papered tin, and bake in a quick oven for about fifteen minutes, during which time squeeze the juice of the Oranges over half-a-pound of icing sugar, and beat these to a very smooth batter. When the cake is cooked spread the sugar icing over the top; dry at the mouth of the oven; cut in quarters, and it is ready.

A fish sandwich.—Prepare thin slices of bread and butter in the usual way, spread lightly with anchovy paste; chop small some Mustard and Cress, and sprinkle with pepper, spread the mixture over the anchovy paste; next take some small pieces of sardine and place over the Cress, and lastly slices of hard boiled eggs; place a piece of bread and butter with anchovy paste over, and cut into neat squares.—E. J. P.

QUERIES.

15797.—**Coltsfoot wine.**—I should be greatly obliged if some reader would kindly give a good receipt for making Coltsfoot wine.—MORNING STAR.

15798.—**Tinned turtle.**—Would Miss Griggs, or any other contributor, kindly state how this is to be cooked and served? I bought some at an auction lately; but there are no instructions on the tins.—J. C.

REPLIES.

15689.—**Wine made in copper vessel.**—Highly injurious; an irritant poison; should be thrown away at once. If partaken of might produce the following symptoms: Coppery taste in mouth, giddiness, pain in bowels, vomiting, diarrhœa, wasting of body, green line round margin of gums.—A SURGEON, *Henley-on-Thames.*

—— "Kent" did wrong in boiling his wine—it would have been all right without boiling; but there is nothing injurious if his copper was clean, as jam, beer, and Ginger-beer are boiled in copper, which is considered better than anything for cooking purposes; copper kettles again are used for tea. I should think the unpleasant flavour came from the peculiar mixture; I never heard of Rhubarb and Black Currants mixed before. Another year he would do better by making the wine separate and having two sorts; try a little sugar candy, say half-a-pound to a gallon, put it in the tub or jar, and let it stand a month.—COUNTRY WINE-MAKER.

Smithfield market, Evesham.—List of prices realised Jan. 21, 1886:—Brussels Sprouts, 3s. 9d. to 4s. 3d. per pot (40 lb.); Carrots, 1s. 8d. to 2s. per cwt.; Onions, pickling, 1s. 9d. to 2s. 3d. per cwt.; Parsnips, 3s. to 3s. 3d. per cwt.; Potatoes, 1s. 6d. to 2s. 2d. per pot (80 lb.); Savoys, 2d. to 4d. per doz.; Turnips, 1s. 3d. to 1s. 6d. per pot; Apples, 2s. to 6s. 9d. per pot.

Catalogues received.—*Garden and Flower Seeds.* Richard Smith and Co, Worcester.——*Garden Flower Seeds, Seed Potatoes, &c.* W. Tait and Co., 119, Capel-street, Dublin.——*Vegetable and Flower Seeds.* George Cooling and Sons, Broad-street, Bath.——*Garden Seeds.* James Backhouse and Son, York.——*Garden and Farm Seeds.* Edmund Philip Dixon, Yorkshire Seed Establishment, Hull.——*Vegetable and Flower Seeds.* Smail and Co., 23, Lime-street, London.——*Seeds, Plants, &c.* Wm. Samson and Co., and W. and T. Samson, 8, Portland-street, Kilmarnock.——*Seed List.* P. J. Kane, Kells, Co. Meath.——*Garden Seeds.* Albert Morris and Co., Carlow and Kingstown.——*Vegetable and Flower Seeds, Gladioli, &c.* Henry Middlehurst, 11, Manchester-street, Liverpool.——*Select Flower and Vegetable Seeds, Lilies, Gladioli, and other Bulbs.* Wm. Bull, 536, King's-road, Chelsea, S.W.——*Chrysanthemums, Dahlias, Zonal Geraniums, Roses, Herbaceous Plants.* Eric F. Such, Maidenhead.——*Vegetable and Flower Seeds.* Samuel Yates, 15, Old Millgate, Manchester.——*Early and Semi-early Chrysanthemums.* W. Piercy, 80, West-road, Forest-hill, London, S.E.——*Seed Potatoes.* John Watkins, Pomona Farm, Withington, near Hereford.——*Novelties in Vegetables, Flowers, and Potatoes.* Sutton and Sons, Reading.——*Garden Seeds.* Isaac Brunning and Co., 3, Regent-street, Great Yarmouth.

POULTRY.

Egg-preserving.—Seeing in GARDENING of the 16th inst. an article upon egg-preserving by various methods, and having been a most successful amateur poultry-keeper for over ten years, I may be allowed to give my experience. When August in each year came round, I always began to save for stock. I procured a long oblong box—in fact, a croquet box—took off the lid, and filled it three parts full with thoroughly dry silver sand, and placed it upon two small beams of wood, so that a free circulation of air could pass all round it, and in a dry room where no sun could shine upon it. I then placed my eggs in the box, beginning at the top left-hand corner, gently pressing each into the sand, on end, continuing this row from left to right the length of the box, returning the next row from right to left, and so on, leaving a space of half an inch between each egg. I used to mark the eggs that I got each day in pencil with a capital letter—say, A on the first, B on the second, &c. This with a few asterisks made me a register for the month of thirty-one days. The next month I used small letters in the same way. The number of eggs on each day was recorded in a diary, so that if I wanted to use one or give any away, no one but myself could know how old they were—some folks being very fastidious—in which case I began with A, and replaced the vacancies with new eggs as they came to hand. Every Saturday morning—it is better to have a fixed date—I always turned them over to the other end, being very careful that none touched, and never omitting to turn every week each egg. By this method I never was without eggs all the year round, and an occasional bad one was a great rarity. Mentioning my method to a fellow-traveller in a train, he asked me to spare him half-a-dozen eggs, which I did, giving him those I had stored for some months. He afterwards told me that all were fresh and good, and for an experiment he placed two under a hen he was going to sit, and both hatched and thrived.—C. H. W.

—— Upon a small scale I have tried keeping eggs, and six months ago I put twelve fresh eggs in holes in a board and left them. We have used them this morning (January 15th), and find them perfectly fresh. We put the small end down, as advised in your journal some time ago.—E. M. M., *Southport.*

—— Having read an article in your paper of January 16th on "Preserving Eggs," I think a few hints from one who has been accustomed for over twenty years to preserve from six to eight score each spring (with scarcely ever a bad one among them in the whole twelve months that they are in use) may be acceptable. The following recipe will be found almost infallible, unless an egg gets a crack, or has been too long left in the nest. The most reliable and cheapest eggs are to be had in March and April, before the hens get broody and injure the eggs by sitting too long on the nest after laying. Take the following proportions:—A pint basin of common salt and one of fresh lime, pour upon these one gallon of boiling water, and stir well in a crock or large jar; when cold, put each egg carefully into the liquid, having first rubbed it all over with an oiled rag to close the pores from air and the taste of salt. Fill the crock, taking care to have all the eggs quite covered with the pickle; take them out as required, and they need no further attention, and will be as good at the end of the twelve months as at the beginning. I am now using those pickled ten months ago.—SUBSCRIBER, *Surrey.*

QUERIES.

15799.—**Covering a poultry run.**—Can any readers give me their experience of galvanised iron as a covering for a poultry run, as I have been informed that it makes a run exceedingly hot and uncomfortable in warm weather? Could this be remedied by leaving a space open (say 8 inches or a foot) at the back—*&c.*, by having the proposed roof that much higher than the present palisading (about 6 feet high) which forms the back of the run, and covering this space with wire netting? What would be the probable cost of covering a run 16 yards long, 2 yards wide, and 2 yards high?—ROOFLESS.

15800.—**Profitable stock keeping.**—I reside in one of the Gloucestershire valleys—that is to say on one of its slopes. My garden is sufficiently large to supply our table and live stock with vegetables and fruit, whilst our orchard—2 acres in extent—affords a good run for our fowls. I have, besides, two large stone buildings—one a coachhouse, with large loft overhead, the other a roomy four-horse stable, with ditto. I have also a large, well-

lighted woodhouse adjoining, and in the orchard a cow-house or stable, two dovecotes, fowlhouse, &c. Now, of this space I utilise the floor of coachhouse as a rabbitry; fowlhouse, of course, for fowls. The largest loft the pigeons have—unfortunately—taken possession of, and I cannot get them to exchange it for cotes without sacrificing the eggs and young. Can any practical reader of GARDENING suggest the best method of turning my abundant space to more profitable account? A cow or two would entail more trouble than I care for, and would necessitate the employment of outside labour, which would put an effectual stopper to any profit; the same with pigs. Now, what live stock could I go in for without risking a heavy outlay or expending too much time or labour?—E. H. R.

REPLIES.

15732.—**Distinguishing sex of Guinea fowls.**—"High Peak" can easily tell the sex of Guinea fowls as only the hen bird calls out, "Come back!" Also the wattle of the hen is about half the size of that of the cock.—E. L. H. C., *Suffolk.*

15645.—**Feeding poultry.**—If "Enquirer" will take the Editor's advice, and refer to previous numbers of GARDENING, he will find it stated that no exact quantity of food can be recommended as sufficient for all kinds of poultry. The most reliable guide to follow in such cases is the appetite of the birds themselves. To put it in another way: Do not use troughs in which to place the food, nor throw a large quantity down at once. Both systems, although practised by many, are objectionable. In the first the fowls can have their wants supplied by merely going to the trough; they are thus encouraged to become lazy, and will not forage for themselves. By adopting the second plan much food is wasted, for the birds are tempted to eat more than is good for them and then tread the remainder under foot, so that in damp weather it is lost. The proper course is to dole the food out a handful or two at a time, and, directly the fowls appear less anxious, or seem to pick out the most dainty portions, at once stop the supply. It may be said that the birds will not get enough in this way; there is, however, no fear of that, for they will be much more active, and in consequence get a great portion of their own livelihood. With regard to the kind of food used, meal or sharps should be given in the morning. This should be mixed with boiling water and given warm, especially during very cold weather. Some poultry keepers add Potatoes left from the previous day's dinner, and prepare the mixture the night before it is wanted, keeping it in the oven or on the side of the grate all night. A few Potatoes are all very well, but they should not form too large a portion of the breakfast. The second meal should take place just before the fowls are going to roost, and may consist of Wheat, Barley, Buckwheat, or Maize. Too much of the last-named ought not to be given, nor is it well to rely on one kind of grain entirely, but make an occasional change. With such an excellent Grass run, "Enquirer's" poultry will not require more than two meals per day—at least, the adult fowls. The young stock should be cleared off as soon as possible to make room for spring chickens, as stated in my notes a week or two back. The ducks ought not to be allowed to feed until the fowls have almost finished their meal, for if they are permitted to have as much as they want they will consume an enormous quantity. It is difficult to say why the querist does not get more eggs. The unsatisfactory state of affairs may be due to one or more reasons. It is scarcely the time of year to expect old hens to lay much. The pullets, perhaps, were not hatched early enough. The whole stock may be too fat, or the fowlhouse may be cold and draughty. "Enquirer's" case is not a solitary one. At the present time I know two small farmers whose holdings adjoin each other. At one homestead fresh eggs are plentiful, at the other the case is exactly the opposite to this.—DOULTING.

15685 and 15686.—**Best egg-producing fowls.**—The best egg producers are, as a rule, to be found in the non-sitting breeds of poultry—Leghorns, Andalusians, or Minorcas, and the Hamburgh variety, the eggs of the last being small. To have winter layers "Dorset" must have early-hatched pullets—March or April birds; they would probably commence laying in September or October, and, if fed upon stimulating food and warmly housed, would, perhaps, continue laying through the winter.—G. H.

—— It is possible that pure-bred Houdans may succeed where the Brahma-Houdans have failed, although the latter ought certainly to have satisfied "Dorset's" requirements. Unfortunately all strains are not alike, so that it is difficult to say whether the querist will be able to get anything better than her Brahmas, so far as winter eggs are concerned. In depending solely upon Houdans or any other free-laying variety, it becomes a case of keeping non-sitters, and this somewhat interferes with breeding from one's own stock. Why not keep a few Brahmas for winter eggs and sitting purposes, and select some non-sitting breed to supply eggs in summer? Being so far south, "Dorset" should not be afraid to try the Andalusian or Minorca. Both are splendid summer layers of very large eggs, and, if warmly housed in cold weather and carefully bred, there is no reason why they should not lay well in the winter, too. I have found Houdans satisfactory layers; still, for the reasons given above, there is no certainty that one can escape disappointment altogether. Poultry breeders should strive more after useful qualities than fancy points. The former, as I have more than once pointed out in these columns, have been hitherto lost sight of. The result is that individual specimens of most breeds are often found to be deficient in the good qualities claimed for the varieties to which they belong.—DOULTING.

—— These two questions induce me to give my experience. I have tried various well-recommended sorts, such as Houdans and Spanish, but this spring began anew, purchasing in April two barndoor hens, with early broods of eight and six chicks; I added a third brood in May. After killing the cockerels for the table, I had eleven pullets, some of which began to lay early, giving 65 eggs in July; and in the two last months, November and December, they laid 101 and 108. I believe the only way to get eggs in winter is to have early-hatched chickens. Mine have no run but a good-sized stable yard, and are regularly fed. Essex is too cold a county for very early broods, but Dorset ought to rear them as well as they can be reared in the neighbourhood of—BRISTOL.

—— The most suitable kind of fowls for "Station-master" to keep would be Minorcas; their glossy black plumage, large hanging combs, and general bearing making them particularly showy birds. For profit, my experience of them is that they are good layers of very large eggs, and, unlike many other breeds, high breeding does not affect their egg-laying qualities. They are non-sitters, consequently another breed would have to be kept for the purpose. Langshans are sitters, and, the colour being the same as Minorca, the yard would be uniform. The eggs of the two breeds being distinct in colour, Langshan, brown, Minorca, white—there would be no difficulty on that score. Langshans are good winter layers if kept warmly housed.—G. H.

—— The situation is a suitable one for Dorkings—a breed which delights in a dry and unlimited run. There is much to be said in its favour. As table fowls Dorkings cannot be surpassed, for they are of good size, and the quality of their flesh is excellent. The hens sit well, and, I think, are handsome enough for anyone, especially if care be taken to select birds as much alike as possible. But they do not rank high as layers, this being their only fault if they are kept on ground suitable for them. In spite of this defect, I think the querist may safely start with a few good hens of the coloured variety. If he intends to breed from them he should select a cock not related to the hens, for the chickens will suffer if the parent birds are from the same stock. No variety of poultry is more quickly injured by inbreeding than the Dorking.—DOULTING.

15646.—**Drake.**—One would naturally think that the bird had been kept in some small run where it was impossible to keep himself clean, in which case all traces of the neglect he had been subjected to would not disappear for some time. But some other reason must, I expect, be looked for in the present instance, as the querist appears to have taken some pains to get the bird round again. His reluctance to enter the water gives one the idea that he cannot be well. I therefore advise "W. Payne" to get rid of him at once. Of course, if he comes of very valuable stock, there is no reason why he may not be kept to see if matters will improve; still, I should not rely on him for breeding purposes. The laying season will soon be on, and, as the first eggs are the most valuable, a new drake ought, in my opinion, to be placed with the ducks without delay. "W. Payne" must not think that his ducks will commence laying later in the season merely because the drake is unhealthy. There can be no connection between the two matters in this respect.—DOULTING.

15553.—**Blue Andalusians.**—I have only now noticed the query of "H. H. B., New Barnet," in No. 355, or I would have replied sooner. I find the Andalusian easily kept within bounds if supplied with plenty of green food. They are strong on the wing, but if "H. H. B.'s" walls are too low some twine netting put on top of the walls will be sufficient to keep the fowl from wandering. As to their house, let it be dry and warm. For my fowls I have boarded off a portion (7 feet by 7 feet) of the shed where my cows are kept at night, and the heat engendered by them raises the temperature of the fowlhouse considerably. Warmth at night I look on as most important for laying fowls. I have no record of the date when my pullets were hatched, but I think it was about the end of February. The earlier the pullets are hatched the earlier they will lay. I try to have my laying birds hatched before the end of March. I then put the young birds and the old hen in a large cage in the yard, and when the weather is cold I put old window frames against the cage to shelter the chickens until they are strong enough to withstand the cold winds. It is very necessary, when setting the hen so early in the season, to put her in a warm place. I think "H. H. B." may safely try the Andalusians in a yard of the size he mentions. Give them an old root of a tree to perch on in the day time, rubbish, such as sand, ashes and lime, to pick and roll themselves in, an occasional Cabbage stalk, with the leaves and clay attached, and they will lead happy lives, and well repay this care with large delicate-flavoured eggs.—TIP, *Roscrea.*

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GARDENING ILLUSTRATED.

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INDOOR PLANTS.

SOME USEFUL BULBS FOR AMATEURS.

The following bulbs are so easily grown that I think it worth while to direct attention to them, as the present is the time to pot them, and they are so well adapted for greenhouse and conservatory decoration that amateurs, and even gardeners in large places, may grow them with advantage. I will first direct attention to the

Early-flowering section of Gladiolus. The best of these for pot culture is The Bride (white), byzantinus (purplish crimson), and brenchleyensis (scarlet). The two first-named are charming subjects, either for decorating the conservatory or as cut flowers. The bulbs should now be potted—half-a-dozen roots in a 6-inch pot make nice little specimens, but a dozen, potted in pots 7 inches in diameter, make a much better show. Any good kitchen garden soil will suit them if it is moderately dry when used and a sprinkling of sand mixed with it. Two or three crocks will suffice for drainage if they are carefully placed. The bulbs should be buried about an inch under the surface; sufficient water must be given them to keep the soil moist, but not wet; but as soon as the leaves begin to grow they will want quite moderate supplies of water. Although these bulbs may be grown in a greenhouse from the first, I prefer a cold pit or frame for them, as they come on more gently in a pit, and, as a consequence, the flower-spike is stronger, and all the protection they want is shelter from frost. The less coddling they have the more flowers they will produce on individual stems. These varieties will, in a general way, be in flower about the end of June when potted early in February, and the potting ought not to be delayed after that, as the bulbs begin to grow after the turn of the year, and they, consequently, get weakened if kept out of the earth much beyond that time. The variety brenchleyensis having larger bulbs, it is not necessary to put so many in a pot—four or five bulbs in a 7-inch pot are quite sufficient. They should be potted at once, and treated in the same way as the preceding. This sort makes an admirable succession, as it is usually from a fortnight or three weeks later in coming into flower, and few plants are brighter than these fiery-coloured Gladiolus. As soon as any of these go out of flower they should be turned out of their pots into the ground, where the soil is fairly light and rich, and in dry weather they should be watered. The bulbs of the two first-mentioned sorts should not be left in the ground after the end of September, or they will begin to start into growth and form young leaves; this must be prevented by timely lifting of the bulbs and storing them away during the winter. After being dried, the bulbs should be placed in paper bags, and the bags hung up in a cool room. The variety brenchleyensis may remain in the ground until the end of October; only the strongest roots should be selected for potting the next year.

Hyacinthus candicans.—Although this is such a hardy subject, it adapts itself to pot culture so well, and can be had in good condition with such a little trouble, that it is a perfect amateurs' plant. In fact, I know of no bulbous plant which flowers at the same time that can be managed so easily, and yet be so effective when in flower. All points considered, I claim for this plant what I cannot do for many others—that it requires neither glass to protect it nor skill to grow it; all that is wanted is that four large bulbs should be potted in a 8-inch pot, or two in a 6-inch size, and only ordinary garden soil used to grow them in, and the pots plunged in the ground in the open, and watered as often as they want it. This is all that is necessary for those who will be content to have them in flower at the end of August. They can be had in bloom earlier if they receive the shelter of a pit or frame, or, if more convenient, a greenhouse. These bulbs may be potted at any time from the beginning of February until the end of March, but those who have no glass are advised to pot them as early as they can after the 1st of February.

Lilium auratum.—The present is a good time to secure a stock of bulbs of this fine Lily, and, as imported roots are offered at reasonable prices at this time of year, they may be ordered at once. But this class of bulbs requires rather careful management at first, as they are sent to this country in a dormant condition. It is necessary when they reach the hands of those who intend to grow them that care should be taken that the change of conditions is not too violent. By this I mean that they must not, when received, be placed directly in a forcing temperature, or be potted in a wet soil. I find the best way of dealing with imported bulbs is, directly they come to hand, to fill a large seed-pan or box half full of moistened Cocoa-nut fibre or damp Moss, and to bury half of the depth of the bulbs in the material. The pan is then taken to a greenhouse, where fire heat is only used to keep out frost, and a slate put over it to keep the roots in darkness. After the bulbs have been in the pan two or three weeks they are examined, and generally I find that they have extracted sufficient moisture from the Moss to cause them to plump up, and to be looking quite fresh and ready to start into active life. Some of them will be, perhaps, emitting roots, and such as are in that condition are lifted out and potted, but all are allowed to remain in the pan until they have pushed out a few roots. I am assuming that the roots were sound when received, and that they vary in size from 7 inches to 9 inches in circumference, as bulbs less in size than this do not so readily start into growth. I like to put each bulb separately in a 7-inch pot, and to bury it about an inch under the surface; a well-drained pot is essential, and the best soil for them is turfy loam, with some sand mixed with it. The after management is very simple. The watering is, perhaps, the most important part of the management, as the soil must not be kept wet about the roots until the flower stems are a foot or more high. After that they like liberal supplies of root moisture. This Lily is very accommodating in regard to protection, for it may be grown either in the greenhouse or cold frame. In the early part of the spring and summer it requires only a sufficient quantity of air to prevent its being drawn; but as the summer advances, it must have a light and airy position, if kept in the greenhouse, and if grown in frames the lights may be taken off during the day after the middle of July. Treated as I have advised, some of them will probably flower towards the end of August, and all ought to be in blossom by the end of September. J. C. C.

Propagating Alternantheras.—These plants are required in such large numbers where carpet bedding is extensively carried out, that they take up considerable time and space in the spring to get them large enough to be serviceable. I have learned, however, from experience that there is not any great gain by beginning to propagate too early; where there is a sufficient number of stock plants, the middle of March is soon enough to begin that part of the work. Through want of sufficient time and suitable space most of us have to resort to the use of hotbeds and frames in which to raise our stock of plants, and, as regards the labour and the size of the plants obtained by this system, it is undoubtedly the best that could be devised. One has only to make up a hotbed and dibble in the cuttings, and most of the labour is done. I am, however, satisfied that plants raised in this way are not the best; in fact, in point of colour they are vastly inferior to those raised in a house. If I could devote time and space I would raise all my plants in a propagating pit, heated by hot water, and each plant should be potted singly in a 2½-inch pot, and grown in a close warm house until the end of the third week in May, when I would harden them off in cold frames. By that course of culture I should obtain short-jointed, sturdy plants with sufficient colour in the leaves to make a strong contrast at once; moreover, the plants would turn out of the pots without experiencing any serious check, and would at once take kindly to the soil; whereas plants lifted from a bed of soil require more careful planting and more attention to get them established, and they are fully a month longer in acquiring their proper colour. I am aware of the fact that plants raised on hotbeds are larger than such as are raised otherwise, and cover more space when planted out—a consideration, I acknowledge, of some moment; but if we want to obtain the earliest results, no one of experience can say that pot-grown plants are not the best. As, however, but few can spare the time and space to grow plants in pots, I would advise all who may be obliged to adopt the planting-out system not to be in too great a hurry to get their plants rooted. If the bed is made, as I have said, about the third week in March, and the soil put in a week later, after the heat has risen in it, the cuttings will be in good time if dibbled in in the first week in April. In raising a stock of this plant plenty of heat and atmospheric moisture are needed. Alternantheras revel in a temperature of from 85 degs. to 95 degs., if there is a corresponding amount of humidity surrounding them.—J. C.

A few good plants.—A very useful plant for February is Toxicophlæa spectabilis. It has a white Bouvardia-like flower, with a pleasant fragrance. It is very easy to cultivate and well worth growing, owing to its coming into flower in winter. A striking plant is Gynura

aurantiaca. The stem and the back of the leaves are covered with purple hairs. This colour is so variable, when watched at different angles, as to appear like shot silk. A small plant of it, with a shield of Anthurium Warocqueanum behind it, makes a curious combination. The inexperienced are sometimes at a loss to know what plants will stand a sustained residence indoors. Here are three about which there need be no hesitation—viz., Farfugium grande, Aspidistra lurida, and Curculigo recurvata argentea. This last mentioned has been known to stand in a restaurant for over two years without showing signs of failing health. A good Palm for table decoration, and quite as graceful as Cocos Weddelliana, is Calamus ciliaris. Finally, a great deal more use might be made in conservatories and greenhouses than is, of the climbing New Zealand Fern, Arthropteris filipes. It is a dwarf-growing little plant that will cling to a piece of wood or overrun any bare corner in a conservatory rockwork, and go no further. Crowea latifolia has handsome violet-coloured flowers, and keeps on producing them till the end of January. It is not of much use as a flower for cutting, but for a warm conservatory it will be found very serviceable. Correa magnifica is more interesting than pretty. But both these epithets can be applied to Correa ventricosa. Young plants in small pots are now flowering profusely. It is available for table or room decoration, and also in some degree for bouquet making. It is curious why more people do not grow Zephyranthes (Amaryllis) Atamasco and one or more of the pinky varieties; they will stand gentle forcing very well. Another greenhouse flower of which the merits are pretty well known is Hibbertia Reidi; it is a good flowering plant.—M. C.

CULTURE OF CAMELLIAS.

Among the immense number of greenhouse flowering plants that have been introduced into this country, it would be difficult to point to any that surpass the Camellia, either in the general estimation in which it is held, or in its adaptation to the various purposes for which flowers are required. True, neither the plant, taken as a whole, nor its individual flowers, can lay claim to the graceful elegance possessed by many things in cultivation; yet, in a well-grown example of Camellia, especially of a white variety, clothed with its chaste flowers, backed by ample, glossy, deep-green foliage, there is a massive grandeur equalled by few plants. Nor do the flowers individually, when fully blown, and grouped with the choicest productions of the stove or Orchid-house in a vase or epergne, or the half-opened buds that grace a bridal bouquet, lose by comparison with the fairest of flowers grown. When we add that, if desirable, the flowers may be had nearly the year round, that the plant is easily grown, and that with fair treatment it will last individually half a century, we have an assemblage of properties that place it in the front rank of flowering subjects. The first of the species that found its way to this country came before the middle of the last century; but it was about 1824, when the double white (alba plena) and the red semi-double reticulata made their appearance, that their value was fairly understood. These were followed by numerous others, of more or less merit, and from these have sprung the numbers of grand varieties that we now possess, and which have so well rewarded the care and patience of the seedling-raiser. Some of the semi-double varieties seed tolerably freely, and the seeds can be induced to vegetate without difficulty; but the raising of new varieties may be safely left in the hands of those who interest themselves in this kind of work, and it will be better to confine these remarks to the general details of cultivation. Though Camellias strike readily from cuttings made of the half-ripened shoots, the more usual and also more satisfactory method of increase is by grafting in some of the ordinary ways on the free-growing single kinds; but this work, also, will be generally better left to those who make the propagation of this and kindred subjects their business.

In the selection of young stock to grow on, there are two things to be kept in view—first that the plants should be in a free vigorous state, not pot-bound, and that they should be of right shape. Quantities of the young plants sold are wanting in the latter requirement. They usually consist of a single shoot, inserted in the stock some 6 inches above the collar, and allowed to grow on with a leading stem; from this, at 10 inches or 12 inches above the pot, proceed several weaker shoots, which seldom get a chance of attaining their wonted strength through the leading shoot being allowed to run away with more than its share of sap; and the result is that in after years these side branches die off, and leave the plants naked and bare at the bottom. If the leader had been stopped at the proper time, so as to induce the production of three or four shoots of equal strength, and these in their turn had been again timely shortened to cause them to break back, the foundation for a well-shaped specimen in the future would have been laid. Half the Camellias we meet with are spoilt in the early stages of their existence for want of sufficient use of the knife. Camellias are naturally of a bushy habit, and for general purposes are much best grown in bush form.

Young plants procured early in the spring, just before they begin to grow, may at once be placed in a night temperature of 55 degs., and the heat may be allowed to rise 10 degs. or 15 degs. in the day-time. Keep the soil well moistened, and syringe overhead once or twice a-day, as Camellias require to be kept, especially during the growing season, moist at the roots and in a humid atmosphere. Previous to the commencement of growth the branches should be tied out, so as to admit light to the centre of the plants, and to give them the required shape; but in this training the shoots must not be bent down to a horizontal position as advised with most hard-wooded subjects. If this is done the effect will be to stop the points of the branches from extending further, and to cause them to break back in a way neither requisite nor desirable. Any branch that is stronger than the others, it will be well to tie down a little lower; thus the others will be strengthened, and when growth has fairly commenced any shoots that show a disposition to take an undue lead should be pinched out. This is much better than letting them grow on to the end of the season, and afterwards cutting them back, as the latter plan causes a waste of strength, as well as a sacrifice of time in getting the plants up to a useful size.

During the growing season they will need a thin shade to protect them from the direct influence of the sun; but nevertheless they must have plenty of light, and not be stood too close together. To overshading and overcrowding through the growing season may be attributed the unsatisfactory condition in which these plants are often found. Give a moderate amount of air in the early part of the day, and shut up soon enough to secure, by the help of the sun, a warm, close atmosphere in the evening. When the shoots have ceased to extend further, the flower-buds will form in the points. As soon as these are fairly distinguishable pot such as require it; for although Camellias are plants that do not need or will not bear so much root-room as many things, they must not be allowed to get pot-bound. If the plants are in 6 inch or 8-inch pots, a 2-inch shift will be enough. They will thrive in either loam or peat; the latter induces more luxuriant foliage, with a greater disposition to growth, but good turfy loam is preferable, as it does not so soon get exhausted, and the plants usually flower more freely in it. The turf, cut about 2½ inches thick, should be stacked sufficiently long before use, but not longer than necessary to allow of the roots of the grass dying, for if these are further decomposed the plants do not grow so freely in it, and the soil is more liable to get into an adhesive state before it is fully occupied by the roots. The turf should be broken by hand, into pieces about the size of small Walnuts for young stock, and larger for such as are older; add sand in proportion to the more or less sandy nature of the loam, bearing in mind that they should never need shaking out, or the removal of any considerable portion of the soil; therefore enough sand should be mixed with it to ensure continued porosity. Before moving the plants from the pots they occupy, see that the balls are quite moist. If in good condition the roots will be closely interlaced round the ball, often enveloping the drainage material, which should be removed completely; disentangle a portion of the outside roots, so far as can be done without much breakage—they are very brittle; drain well with clean crocks, covered with some of the turfy matter selected from the soil, so as to effectually prevent the finer portion from getting down among them. In potting, ram the new soil to make it quite close and as solid as a ball. If this is not done, when water is given it will pass off through the new material, leaving the old quite dry, in which case a sickly condition of the plants will follow.

After potting, replace them in the house or pit they have previously occupied, keep them a little close, shade as heretofore, and syringe in the afternoons. They will not need water at the root for some days, during which time any roots that have been broken will have time to heal. The reason for potting Camellias when their growth is approaching completion, and at a time different from that found the best for most plants, is that early in the season, for some time previous to any development of top growth, their roots are actually at work, and from their exceptionally brittle nature, especially whilst young, they cannot be disturbed without injury to an extent that generally seriously interferes with the top growth for the season. The evil consequences of this are avoided by moving them at the time here advised; but the potting, particularly with plants that have acquired considerable size, and whose flowering is of much consequence, must not be deferred too long—that is until the flower-buds have grown to any considerable size, or the inevitable result will be that they will fall off. The roots will soon enter the new soil, as, when the plants are in good health, they keep on growing after the wood-growth is completed. They will now require no warmth but simply ordinary greenhouse protection, with plenty of air; they should be slightly shaded during the middle of the day, when the weather is bright, so long as the sun is powerful. The soil, even during the autumn and winter, must never be allowed to get dry. As to temperature, they will need nothing more than sufficient to keep out frost.

Having a natural free disposition to flower, even in a very small state, they will bloom the ensuing spring, but if their flowers are needed for cutting, they should not have much or any of the wood removed with them while so young, or it will interfere with their growth; for most purposes in which Camellia flowers are now used, they are cut or twisted off without any wood attached, and afterwards mounted on wires. This is a great gain to the plants, even when large and strong, as it enables them to produce a full crop of flowers every year, which was not the case when many of the shoots were cut with the flowers—a practice frequently carried so far as to bring about a stunted, unhealthy condition. Each subsequent year's treatment will be similar to that advised for the first, so far as warmth, shade, and moisture during the season they are making their growth are concerned. They should be potted at such intervals as they require it, but this will not be necessary every year, even in their younger stages, and as they get large they will frequently go on for years without additional room. At the same time, they must not be too much confined at the root, and whenever they evince signs of weakness by making less growth they should be moved to larger pots or tubs. As they get big enough for the latter, any branches that show a disposition to outgrow and impoverish the weaker ones should be shortened back and bent down; but with sufficient room and fair treatment when the training has been properly attended to in the early stages of their existence, the natural habit of most varieties is such as to entail little difficulty on this head. Some growers fully expose their plants out in the open air during the summer after the flowers are set; but this is a bad practice, as if stood where the foliage is sufficiently shaded by trees or walls to prevent its getting discoloured by the sun, they are exposed to heavy rains, whereby the soil gets saturated to an extent that causes it to become sour. This often induces a diseased condition of the roots, or, if less serious in its consequences, causes the buds to fall off later on when they should be approaching expansion. The buds will drop, too, if the plants ever get too dry at the roots after the buds have attained any considerable size, or if they are kept in too high a temperature with insufficient moisture in the atmosphere; in fact, Camellias will not bear any attempt at forcing. Some kinds however

open their flowers much more freely in a temperature a little above that of an ordinary greenhouse, but where there is a disposition to accelerate their flowering, 45 degs. to 48 degs. in the night, with 6 degs. or 8 degs. more in the day, is hot enough.

If Camellias are required to bloom earlier than they have done the preceding year, they should, after the flowers are set, be kept in heat until the buds are grown to a size that will enable them to expand without the application of anything much above a greenhouse temperature, after they have once been removed from the warmth to which they have been subjected whilst making growth and setting their buds. Though they may be kept in a temperature such as existed whilst the growth was being made, even until the flowers expand, if such be desirable, their removal from the influence of such heat appears to induce a slower condition of flower development that will bear little attempt at acceleration. Camellias look well trained over a back wall in a greenhouse or cool conservatory, either grown in pots, tubs, or planted out. In the last way they increase in size more rapidly, as they do, also, when planted out in a well-prepared bed in the body of the house. So treated, they thrive in a way that cannot be equalled by pot or tub culture; but when they are to be grown in this manner they should not be planted out in a very small state, as the limited number of roots they possess are not able to take hold of the large body of soil before it gets into a sodden state. The principal objection to planting a collection of Camellias out is, that the system does not admit of a portion of the stock being removed to cooler quarters after the buds are set, so as to retard their flowering and thus afford a longer succession, or of starting some later with the same object; neither can the plants be so readily washed with any insecticide.

When Camellias get into a straggling, naked condition it is frequently desirable to cut them right back to the strong branches, or to head down so far, removing the top altogether to within 8 inches or 9 inches above where grafted. The union with the stock is usually easily to be seen, and, although no eyes on the stem are perceptible, it will break into growth at every place where there was a leaf during the earliest existence of the scion; but heading down, or even cutting back to any extent, should never be attempted unless the plants are fairly stocked with healthy roots, as death will most likely be the result. The operation ought to be carried out in the spring, a month or so before the wood-buds have begun to swell; if deferred later, the stools generally bleed to an injurious extent. When headed down they should be placed in a gentle heat and the soil kept slightly moist, but not wet. A little more water may be given when broken fairly. Keep during the summer in a growing temperature, with a moderately humid atmosphere. They usually make long, vigorous growth, which will need stopping and slightly tying out so as to make them shapely. The after treatment required will be similar to that given to the ordinary stock. There is some difference of opinion amongst growers of Camellias as to the use of manure-water. We have tried liquid stimulants of different kinds, and have found them decidedly beneficial (especially to plants that are rather deficient in pot-room), when given just before and during the season of their making growth, but at no other time. Liquid from stable manure with a little soot added will well answer the purpose. Camellias suffer from most insects that infest pot-plants, although it is only in extreme cases of neglect that thrips or red spider do them harm. Mealy bug will live and thrive upon them, but, from the nature of both wood and leaves, is easily removed; brown scale is also sometimes troublesome, increasing fast during the growing season, but as it confines itself principally to the leaves, it is easily removed by sponging. White scale is their greatest enemy, and is difficult to eradicate if once it gets to a head, getting into every crevice in the bark, on the shoots, the leaves, and on the buds. Careful and thorough brushing, with the use of a small-pointed stick of soft deal to get into the crevices, where the insect takes up its quarters, and sponging the plants afterwards, constitute the best method of keeping down the pest. T. B.

REPLIES.

15702.—**Culture of Poinsettias.**—These showy plants are very easily grown if they receive the right treatment. Plants that "lost their leaves and did not develop their bracts," cannot have well-ripened wood, and are not in condition to start into good growth next year. However, they must now be treated in the same way as plants that are in the best health. When the bracts drop off, we lay the plants on their sides in the hothouse under the stage until the end of March, when they are taken out and cut over, leaving two good eyes at the base of last season's wood. They require watering two or three times to thoroughly moisten the roots. In a week or ten days they will have started to grow, and then is the time to turn them out of the pots. Remove a large portion of the old exhausted soil, and repot in fresh material. I pot them in a compost of three parts good loam, one part peat, and one part decayed manure. After potting, grow on in the hothouse near the glass, but as the summer advances gradually inure the plants to stand in a greenhouse or in a favourable position out-of-doors until the first week in September, when they should again be placed in heat. A night temperature of not less than 55 degs. is necessary when the plants produce their flowers and the accompanying floral bracts.—J. D. E.

15651.—**Heaths after flowering.**—Free-growing, or, as they are generally called, soft-wooded Heaths, as Erica hyemalis, E. vestita, &c., should, immediately after flowering, be cut

Phlox Drummondi var. nana.

back freely, taking off half or three-fourths of the current season's growth. Hard-wooded, slow-growing kinds, as E. Jacksoni, E. retorta major, &c., require no pruning whatever. The flowers of this class should be picked off, however, as soon as they fade; for, if left on to form seed, they weaken the plants considerably. The best situation for Heaths through the winter and spring months is a light, airy position in a cool greenhouse or frame. During the summer they may be placed out-of-doors; the pots should be stood upon coal-ashes to prevent the worms obtaining egress to the pots. It is also necessary to protect the pots from the sun, or the plants will be seriously injured by the drying process to which the roots that are against the sides of the pot will be subjected. This may be accomplished by wrapping pieces of old mats, or some other non-conductive material, around the outsides of the pots; or, in the case of the free-growing kinds, the pots may be partly plunged in coal-ashes, great care being taken that they do not get water-logged in wet weather. Early spring is, I think, the best time to repot Heaths. The only compost they will thrive in is good fibrous peat, earth, and silver sand The pots used should be clean and thoroughly drained; one or two sizes larger is generally shift enough. In turning the plants out of the old pots, care should be taken to leave the ball of roots intact; beyond removing the old drainage the roots should not be disturbed in any way. They should be potted very firmly, and kept somewhat close for a few days, until the roots begin to work in the new soil. Water should be withheld for a few days after potting, to allow such roots as may be injured during the operation time to heal. Water is a very important factor in the successful cultivation of Heaths, and it is only by a close observation of the individual requirements of these plants that the best results can be obtained. One thing that should always be borne in mind is that while Heaths should never be allowed to become dry, a superfluity of water is equally to be avoided. My plan is, as soon as the soil becomes somewhat dry, to give a thorough watering, and then to leave it alone until it again shows signs of becoming dry. Free-growing kinds, as E. hyemalis, are less fastidious in this respect and take a great deal more water than the more delicate kinds.—B., *Southampton.*

15707.—**Plants to grow under stage of greenhouse.**—I should advise "An Anxious One" to plant British Ferns beneath the stage; there is nothing else so likely to succeed.—J. C. C.

OUTDOOR PLANTS.

PHLOX DRUMMONDI.

This is deservedly one of the most popular of all half-hardy annuals, and nothing can excel its beauty and usefulness either as a border plant or for furnishing cut flowers. Its colours are varied and brilliant, and are not injured by bad weather, like those of many other flowers. Considering the easy culture of this half-hardy annual, and the fact that from a shilling packet of seed so many pleasing colours may be obtained, the wonder is that it is not more generally and extensively grown in gardens. It may be used in a variety of ways apart from border decoration. Beds of standard Roses carpeted with it are highly effective; and the fact that the plant does not in any way interfere with the growth and well-being of the standard Roses, the naked stems of which they both hide and ornament, should in itself be a sufficient inducement to plant this Phlox specially for that purpose. It is also a very suitable plant for the embellishment of rustic vases and boxes; but it is when grown in masses that its beauty and diversity of colour are seen to the best advantage. The seed should be sown about the first week in March in shallow pans or boxes, using a light rich soil, and placing the seeds in a warm and rather moist temperature. As soon as the plants can be handled without injury, it is a good plan to prick them off into boxes, or on a bed in a warm house, in a temperature of from 50 degs. to 60 degs. They soon make growth, and as the weather gets warm out-of-doors the boxes should be placed out in the shade to harden the plants. Those growing in a bed should be again transplanted to a prepared bed in a cold frame, kept covered for a few days and hardened gradually. When the plants are from 3 inches to 4 inches high they should have the main shoots pinched out; this induces them to make a lateral and bushy growth, and greatly assists the prolongation of the period of flowering. The soil in which the plants are to grow should be rich; an abundance of decayed leaves suits this Phlox well. The bed should be in a position fully exposed to the sun, and as long as there is a good moist soil at the roots they will not be injured in the hottest weather. Although this Phlox is generally treated as an annual, it strikes freely from cuttings in autumn; these come in usefully for pot culture and early spring bloom in the conservatory or greenhouse. The varieties of this annual are endless, and a packet of mixed seed will suffice for ordinary purposes, though there are some very distinct named sorts that differ not only in colour, but in growth. Among these are Hortensiflora, Rose Chamois, Heynholdi, cardinalis, Radowitzi, grandiflora, Victoria, and compacta. The two first-named varieties are very dwarf and compact, and of all the strains there is an indescribable range of colour.

Schizostylis coccinea.—My experience of Schizostylis coccinea is similar to that of "Lincolnshire Rector" (see page 688). In the autumn of 1883 I got a dozen good plants, which I put into pots. Finding in the following autumn no sign of blossom, I put eight of them in a bed of good earth, keeping the rest in a pot in an unheated greenhouse. In both cases they

have grown and increased largely, but have shown no sign of blossom. I should add that Alstrœmeria chilensis planted next to those out-of-doors has flowered freely, so that there seems to be no fault in either soil or position. I should be very glad to receive any suggestion as to the means of making them flower.—C. E. H., *Cambridge.*

—— Nothing is more remarkable than the diversity of results continually being recorded in these columns. What ails "Lincolnshire Rector's" Schizostylis I cannot imagine. Mine yield a profuse and unfailing supply of their brilliant spikes, though they enjoy no systematic care, and get a little drawn from being stationed among large Currant bushes. I thin them out as they may be wanted elsewhere, and at odd times give them a dose of liquid manure. The soil is a clayey loam.—J. F. R., *Southampton.*

Protecting Christmas Roses.—Frames and hand-lights are bulky, and, where space is confined, difficult to stow. I protect my Christmas Roses in a very simple way—four sticks with crooks in them, two long transverse over, and three or more sheets of thick glass, some 2 feet by 8 inches, form a simple and easily-stowed protection.—M.

REPLIES.

15602.—**Christmas Roses.**—Two of the best varieties to grow are Helleborus niger angustifolius and H. n. altifolius. They are not very particular as to soil; but a light gravelly garden loam does not suit their requirements so well as a deep clayey loam. They do not thrive well in pots all the year round; therefore the best way is to carefully lift them before the flowers open, and plant them out again in the spring.—J. D. E.

15653 and 15659.—**Failure of Chrysanthemums in Scotland.**—It is well known that the severe night's frost which occurred about the middle of September was the cause of the general failure of Chrysanthemums in the neighbourhood of Glasgow and in other parts of Scotland. Many fine collections were completely ruined in consequence of having been left outside on that evening; and I have seen others which were afterwards taken in, but, although they seemed to be doing well, they came to nothing, so far as flowering was concerned. I had about forty pots of strong healthy plants. On the evening referred to they were taken into the greenhouse after dark, and left standing on the floor for two nights till the frost was gone. Three pots, however, containing two plants each, were left outside all night in what was supposed to be a sheltered spot. The frost came back rather suddenly about the middle of October, when all the pots were taken in again, and were not afterwards put out. There was an abundant bloom of fairish quality on all the plants, except those in the three pots that had been left out during the frost in September, and some two or three others on which buds had been fully formed; but all the plants continued quite healthy and grew vigorously. I saw some time ago a small collection of about twenty pots of Chrysanthemums that had been left outside in a high-lying district during the frosts of September and October, and I found that they corresponded exactly in appearance with the plants which I had left out in September. It seems that when the cold reaches a certain degree of intensity it kills any flower buds that may be forming on the plants, although the plants themselves have not been otherwise injured. "L. M. B." had better cut down the old stems, leaving only the growth from the roots, which, if strong and not too much coddled, will make good cuttings—P. R.

15603.—**Diamond-shaped hoe.**—The only hoe that I have seen approaching this description is one that is here called the Turnip hoe, from its special use formerly by farm labourers in hoeing and thinning Turnips when sown broadcast. In shape it is an equilateral triangle, the sides being 6 inches wide, and is simply a thin plate of steel with a socket fixed in the centre to receive the handle. This is a useful tool in the garden for drawing drills, thinning out various crops, and for cutting up weeds in gravel walks, for which purpose its angular points render it particularly suitable. If this be not the identical tool enquired for, it would, I think, prove a very good substitute. In this locality it is in general use, and every ironmonger in the surrounding towns keeps it in stock.—J. Martin, *East Worcester.*

THE KITCHEN GARDEN.

EXHIBITION VEGETABLES.—PARSNIPS.

As a general rule, the best Parsnips are grown by cottagers, and this fact goes a good way to show that the Parsnip does not require a very rich soil, for the ordinary cottager cannot command the use of so much manure as a gentleman's gardener, and in regard to growing Parsnips for exhibition he suffers nothing in consequence. What is of more importance in cultivating this useful vegetable for exhibition is a rather light and deep soil. I do not wish it to be understood that good roots can be grown in a soil that is altogether deficient of plant nutriment; but they may be successfully grown on land that was fairly manured the year previous, and I would rather depend on land so treated, if it is properly prepared, than on soil made rich by recent applications of manure. In this matter a careful inspection of a number of lots exhibited side by side at a cottagers' show will reveal the fact that the most handsome roots are those which have been able to send down deeply a long tap root, and these are invariably selected by the judges for the principal prizes, on account of their uniform size and even outline. In a rather long practice I have had many opportunities of seeing and judging the merits of this vegetable, and I have no hesitation in saying that those with a medium-sized crown and long, tapering, clear-skinned root usually take the highest honours. If we view them from another point—viz., their table quality—we shall find that all good cooks prefer the medium sized roots to those with huge crowns that have several ugly, deformed, branched roots.

Preparation of the ground.—All those who have to deal with land of a naturally heavy nature should sow their seed on newly prepared ground, for the reason that this is a tap-rooted subject, and when long handsome specimens are required, the land must be sufficiently open to allow of the root striking down in a direct line without coming into contact with any hard lumps of earth that would afford any obstruction to its course. In naturally light and dry gardens the ground may be prepared two or three months previous to the time of sowing the seed. In any case a rather fine medium for the roots is indispensable, or they will turn out to be forked; therefore, when digging the ground, the bottom of the trench should be broken up as fine as that nearer and on the surface, and this attention must be given to the soil to a depth of 2 feet. When the bottom soil is nearly as good as that on the top the ground should be trenched up 2 feet deep, and if the lower stratum of earth is not good enough to be brought to the top, it must be stirred up the required depth and left. As the Parsnip is a thoroughly hardy plant the

Seed may be sown, when the surface soil is fairly dry, at any time between the middle of February and the end of the first week in March. It is best sown in drills an inch deep, and the drills should be 2 feet apart, for to secure fine roots the leaves must have plenty of room to develop. When the plants have grown 3 inches high they may be thinned out. It is best to do the thinning at two different times so as to be able to select at the last thinning the strongest and most promising plants; when finally thinned, the plants should stand 18 inches apart in the drills. They will not require much attention during the summer, unless it is to keep them free from weeds; in the early part of the summer this may be done by running a Dutch hoe between the lines in fine weather, so as to loosen up the soil, but as the leaves begin to cover the ground, hand weeding must take the place of the hoe. It is best to set aside a couple of rows for exhibition purposes, and to have a space on each side of them to enable the cultivator to give the necessary attention without treading upon the leaves.

Watering.—The Parsnip requires a fair supply of root moisture; therefore, if dry weather sets in during the months of June and July, the crop must be well watered twice a week as long as dry weather lasts, and as they must have sufficient water to soak the soil down a considerable distance, a bank of earth should be drawn up about 6 inches away from the outside of the rows, which will prevent the water from running away to waste. In selecting the roots, choose those of a uniform size and length, and carefully wash them without breaking the skin, which is very tender early in the season; wherever the skin is broken or bruised a brown spot appears, which is a disfigurement.

Varieties.—I am not aware that there is more than one, although there are more than one usually catalogued by seedsmen. The sort named in the catalogues as the Student, was, when first introduced, distinct enough; whether it has degenerated so as not to be distinguished from the old Hollow Crown I cannot say, but I know that what is usually supplied now as the Student is identical with the original. For all the purposes of a garden, the old Hollow Crown may be relied upon, and if it is cultivated in a proper manner, it will hold its own on the exhibition table. J. C. C.

TREES AND SHRUBS.

SOME TREES FOR SMALL GARDENS.

The skilful planter should always use such trees as will be in keeping with the size and extent of the grounds, and also with the style of the mansion. For grounds of limited extent the following, under ordinary circumstances, will be found suitable:—Torreya myristica from California, where it is said to attain a height of from 20 feet to 40 feet. In this country it assumes a broad, spreading habit of growth; therefore I have found it beneficial to nip out the buds at the points of the terminal side branches, in order to encourage a more upright growth. It is a distinct and pretty tree, and one which thrives in good soil of ordinary texture, provided it is thoroughly drained and the situation not too much exposed. The leaves are rather long and flat, without any midrib; their upper surface is light green. Taxus baccata variegata (the Gold-striped Yew) is well worth a place in small collections. It thrives best in rich loamy soil, resting upon clay well broken up and not too much exposed to the heat of the sun, as in that case the leaves are apt to be burnt, more especially where the subsoil is of a warm, gravelly, or sandy character. Fitzroya patagonica is rather a tender tree, but where it does stand our winters it is one of the most graceful with which I am acquainted. I have found it to thrive best on a good, deep loamy soil resting upon a clayey subsoil, well broken up on a north exposure, and shaded from the morning and noonday sun. When the side branches are pointed or slightly cut back they produce a number of lateral twigs, which hang down in a drooping direction, and enhance very much the beauty of the tree. It is easily propagated by means of cuttings, and I have also found well-established trees to produce cones quite freely. Cephalotaxus Fortunei is said to form in China a fine ornamental tree from 40 feet to 60 feet in height. In this country it prefers a rather sheltered situation, but if confined it is apt to get drawn up. Its branches are rather slender and pendulous. It thrives on soil of ordinary texture, including well-decomposed peat bog. Arthrotaxus selaginoides is a native of Van Diemen's Land, and in this country thrives in rich, friable, well-drained soil. It should be moderately sheltered, but not confined, otherwise it gets drawn. Its leaves, which are fleshy and imbricated, lie close to the branches. It is well worthy of a place in all grounds of limited extent where contrast and variety are desired. Biota aurea is a pretty little globular plant, unrivalled where a small bush is required in order to give contrast and variety. In spring and early summer it assumes a pretty golden colour. It thrives best on good rich soil overlying a clayey subsoil. It is easily propagated by means of cuttings. Juniperus chinensis is a pretty little tree, and the hardiest of the tribe to which it belongs. It thrives on all soils of ordinary texture, and even in exposed situations. Its shape is strictly conical, and in spring, when loaded with its golden male flowers, the effect produced by it is grand. For a Grass lawn of small extent it cannot be surpassed. The Retinosporas afford a great variety, both of shape and colour, and as they are all hardy, they are admirably adapted for villa gardens.

Among deciduous trees suitable for villa planting the red-flowering Horse Chestnut should always have a place. It forms a close,

compact head, makes a fine standard, and produces its charming flowers about the middle of June. The red-flowered Pavia (P. rubra) is another fine small tree for such situations; it produces its blossoms from the middle of July till the beginning of August. Both these trees thrive best in a moderately-sheltered situation, and on good, rich, deep soil. The small-leaved Lime (Tilia europæa microphylla) is another beautiful tree, which grows from about 20 feet to 30 feet in height; it produces abundance of pretty cream-coloured flowers, grows in a great variety of soils, including peat bog, and deserves to be cultivated to a greater extent than it has hitherto been. The Weeping Birch and Trembling Poplar (P. tremula) are both hardy native trees that will grow in any situation, and both are highly ornamental. These, with some of the finer varieties of Thorn, Holly, Laburnum, double-flowering Cherries, Mountain Ash, dwarf golden Oak, Service tree, &c., are all well worthy of the attention of planters who may have in hand the embellishment of new grounds of small extent. J. B. W.

The Stuartias.—Among the numberless trees and shrubs which we have now in gardens, and for which we are indebted to North America, the two Stuartias stand out conspicuously on account of their intrinsic beauty, interest, and variety. The Virginian Stuartia is one of those plants that have been nurtured in obscurity, so to speak, for the past century at least, for so long ago as the middle of the last century it was spoken of as having been introduced. At that period when it was the commendable practice of a good many country gentlemen to plant arboreta it seems to have been much sought after, the result being that there have been handed down to us a few grand specimens of it, which, now being matured, display the full beauty of the shrub. In the rich arboretum at Syon House, formed by the late Duke of Northumberland, a large bush of it is one of the most prized objects in the garden, it being probably the finest example of this shrub in Europe. S. pentagyna is likewise an old introduction, having been brought from America about a century and a half ago. It was then, and still is, called Malachodendron ovatum, but the two species without doubt possess identical generic characters. We, therefore, possess two Stuartias, and another near ally, Gordonia pubescens, so nearly resembles them that for all practical purposes it may also be considered a Stuartia. The Virginian Stuartia is indeed a charming shrub, possessing a flower of beautiful form. It is pure white, except the little tuft of stamens in the centre, which is crimson. S. pentagyna is very similar, but it has not the red tuft of stamens, and the carpels or incipient fruits are separated, whereas in S. virginica they are gathered into a flask-shaped organ. S. pentagyna is the hardier of the two, inasmuch as its home is more northerly than that of the Virginian species; consequently, it is a more important plant for English gardens, although S. virginica is really not what one would call a tender shrub. In its native haunts, no doubt, the plant is grateful for a little shade to screen it from the full force of a Virginian sun, but here we should say it wants all the sun we can possibly give it, in order to thoroughly ripen its growth, so as to better enable it to withstand our sharp winters. We have heard S. pentagyna praised as being altogether a finer species than S. virginica, the foliage being more robust and the flowers larger. Unfortunately, it is very difficult to propagate, and this, no doubt, accounts in a great measure for its scarcity.—G.

15516.—**Straggling Hollies.**—Both green and variegated Hollies, like most other trees, invariably become weak and straggling below if the upper branches are allowed to grow too strong and overhanging as they thus rob and impoverish those beneath them. Should your Hollies be overgrown in this manner, you can only mend matters by cutting back the prominent branches, and gradually working the trees into a pyramidal shape, avoiding, of course, any formality. No unsightliness will be caused if the cuts are made where they will be hidden by overhanging foliage or at the junction of a smaller branch. They will soon break again, particularly if the rough bark left by the saw be smoothed round with a sharp knife. The effects of this treatment will soon become apparent in the increasing growth and vigour of the lower branches, which will now get their full share of nutriment. April is the best time, perhaps, for cutting Hollies; and if strong branches have to be removed, it should certainly be done then. Here, however, where we annually cut cartloads of Holly and other evergreens for church decoration at Christmas, we utilise the cuttings by doing the necessary pruning at that season, and the Holly is so hardy, that no harm arises from the practice. Many people are afraid to cut variegated Hollies at all, from the belief that some serious injury will ensue, and many an ill-shaped specimen doubtless owes its deformity to this mistaken kindness. If, instead of adopting this do-nothing policy, any fugitive shoots that threaten to destroy the balance of the trees were timely shortened back, a shapely and regular growth would follow, and the trees finally become what they were meant to be—really ornamental.—J. Martin, *Worcestershire.*

EMBELLISHMENT OF SHRUBBERY BORDERS.

The first of these illustrations is from a sketch made some years ago of a dug and mutilated shrubbery in St. James's-park. The most melancholy things to be seen in winter are such bare, naked

1.—Dug and mutilated shrubbery in London park.

shrubberies as are here shown, the soil greasy, black, seamed with the mutilated roots of poor shrubs and trees, which are none the better, but very much the worse, for the cruel annual attention of digging up their young roots without returning any adequate nourishment or doing any good to the soil. The mere fact of

2.—Margin of London square.

men having to pass through one of these shrubberies every autumn and, as they fancy, prune and otherwise attend to unfortunate trees and shrubs and low trees, leads to this, and especially to the trees taking the appearance of inverted besoms. Thus a double wrong is done, and at great waste of labour. Any interesting life that is in the ground is destroyed, and the whole appearance of the shrubbery is made hideous. From the point of view of art, all good culture of flowering or evergreen shrubs is destroyed or made impossible. The total abolition of this system would be a happy thing for gardening, and do away with these awful wastes of black soil and mutilated roots. Two ideas should be fixed in the mind of the pruner—the one being to allow all the beautiful shrubs to assume their natural shapes, either singly or in groups, with sufficient space between to allow of their fair development, so that the shrubbery might, in the flowering season, and, indeed, at all seasons, be the best kind of conservatory—a beautiful winter garden even, with the branches of most of the shrubs touching the ground, no mutilation whatever visible, and no hard dug line outside the shrubs. Care, variety in selection, taste and skill in grouping, so as to allow different subjects—whether placed singly or in groups, or in little groves—being in a position where they may grow well and be seen to advantage, would lead to the most charming results in the open air garden. With sufficient preparation at first, such shrubberies would be the cause of very little trouble afterwards. To this beautiful tree and shrub life we may add bulbs and herbaceous plants and innumerable beautiful things which go to form the ground flora, so to say, of northern and temperate countries. The surface dug and wasted in all our parks, and in numbers of our gardens, should be occupied with this varied life, not in the miserable old mixed border fashion, with each plant stuck up with a stick, but with the plants in groups and colonies between the shrubs. In the spaces where turf would not thrive, or where it might be troublesome to keep fresh, we should have Irises, Narcissi, Lupines, or French Willows, or Japanese Anemones, or any of scores of beautiful things which some people cannot find a place for in stiff gardens. Let readers picture such a shrubbery as is here described, and then compare it with the illustrations.

15684.—**Gardening and variations in climate.**—I must take exception to the remarks made in regard to "Gardening and variation of climate," as there is the difference of at least a fortnight between things grown in this town and the more favourable conditions (chiefly climatic) at Evesham, about ten miles away. This seems rather a tall statement, but one which is often remarked by gardeners hereabout.—C. H. Evans, *Redditch*

15372.—**A chemical question.**—"Perplexed Vicar" may cure his soil by liberal dressings of lime and Oak sawdust. These will reduce the iron to an insoluble and harmless condition. They must be very thoroughly mixed with the soil, and any lumps in the latter must be entirely broken up and pulverised. The dressing should be in the proportion of about 3 lb. of each article to the square yard, and it may have to be repeated next season. The present time would be none too soon for its application.—Geo. Johnson.

—— Though no gardener, I take great pleasure in a garden, and in the perusal of Gardening Illustrated. I have no data before me of the extent to which iron may exist in a soil without prejudice to the plants growing therein, but judging from the fact that in both Devonshire and Cheshire (very fertile counties) the soil is in many parts red with oxide of iron, like the garden of a "Perplexed Vicar," I conclude the proportion of iron may be very great, and yet beneficial, or, at all events, not injurious. Much more depends on the form in which the iron is present, or on its association with other elements. Now, iron pyrites is a sulphide of iron, and by exposure is converted into oxide of iron and an oxygen compound of sulphur—sulphuric acid—and it is quite within the bounds of possibility that the soil of the garden in question contains intermediate oxygen compounds of sulphur and iron—sulphate of iron, for example. On the face of it, this compound would be very undesirable in a garden, and the problem is so to change it as to produce what would be less soluble, and, consequently, less harmful. Lime, well worked into the soil, as low as the roots of the plants are likely to go, would effect this change, producing, as the ultimate results, insoluble peroxide of iron, and, sparingly, soluble sulphate of lime, which latter is a constituent of nearly all soils. Lime, being soluble in water (and carbonate of lime also, under certain conditions), would be carried downward, even below the digging point, and produce the desired change far below the surface. If a "Perplexed Vicar" acts on my suggestions, it would be interesting if he would make known the result in a future letter to Gardening Illustrated. Nitrate of soda would be of no use.—John Moss, F.I.C., F.C.S.

OUR READERS' ILLUSTRATIONS.

DAVALLIA GROWING ON TRUNK OF DICKSONIA.

These truly decorative plants, Davallias, form a genus which for several reasons has attained a very high degree of popularity. First of all, they are of a very striking appearance, their rhizomes when deprived of foliage bearing a certain resemblance individually to a hare's foot, squirrel's foot, &c., popular names under which they are generally designated. Then their fronds are most elegantly cut, being three or four times divided, and in many cases borne on long flexible stalks or stipes, by which means they acquire a very graceful aspect. They are, besides, endowed with rich colours, some of the strongest growers among them, such as D. polyantha, being in their young and undeveloped state of a bright purple, turning to a rosy pink, which with age takes a metallic hue before acquiring the glossy green colour which is particular to nearly all Davallias—at least to all those provided with creeping rhizomes, which form the subject of this note. But perhaps the most valuable character belonging to these plants, the one which greatly favours their well deserved popularity, is their easy culture, combined with the numerous ways in which they may be used for making objects always pleasing to the eye, as well as their adaptability for hiding unsightly objects from view. In that respect they are without equals even amongst Ferns, and either for covering pillars or for garnishing with fresh foliage trunks of dead Tree Ferns, the several kinds of medium growth now in cultivation are the best adapted, as will be easily conceived and readily admitted after a glance at the subjoined illustration, which represents a Davallia bullata growing upon the trunk of a Dicksonia. The piece of Tree Fern is about two feet high, and the Davallia, first planted at the top, is now taking possession of the whole surface of the trunk, its enormous rhizomes embracing it and growing in all directions. Some of these rhizomes at first required pegging down, but now they grow quite naturally, requiring no further training, and in some instances even imbedding themselves in the substance of the trunk, the surface of which they reach again an inch or more lower down. This East India species which, through its creeping rhizomes being clothed with brown fibrillose scales, has received the popular name of "Squirrel's Foot Fern," bears compound bitripinnatifid fronds of a rich green colour, and contrasts singularly with the curious D. Tyermanni, a native of China, whose rhizomes are densely covered with adpressed silvery scales, and bear dark green fronds of a more leathery texture than the majority of other Davallias. Besides the above and several other extremely useful species of the same character, but of somewhat stronger habit, which may equally be utilised for the same purposes, we have, as the gems of the family, the lovely little Davallia parvula and D. alpina, two very dwarf species from the Malayan Archipelago, which make exceedingly interesting little specimens through their diminutive dimensions and remarkably neat habit. The majority of the species which may be recommended for that method of growing come from the East and West Indies and the Malayan Archipelago, and accordingly require the temperature of a stove or, at least, of an intermediate house; while a few, such as D. Mariesii, Novæ Zealandiæ, pyxidata, canariense, &c., being natives of Japan, New Zealand, Australia, or even Madeira and the Canary Islands, may in a like manner, and with equal success, be utilised for the cool house. Davallias are also largely used for growing in brackets and especially in baskets, their twining rhizomes taking possession of the sides with surprising rapidity, and forming thus perfect balls of elegant and lasting foliage. They may also be grown in pots, but under such treatment they are much less effective, and their management is also a great deal more difficult, as they require to be elevated above the rim of the pot so that their rhizomes may be allowed to grow only on the surface of the soil, which should then be peaty and of a fibry nature; if buried in the soil they soon begin to decay, and the plants assume a sickly and wretched appearance from which they take a long time, even under a rational treatment, to recover. All the Davallias provided with creeping rhizomes may easily be increased by division of the same. These being cut into sections, and laid on the surface of some material kept constantly moist, will soon emit roots, produce young fronds and new growths from their sides, branching in all directions, and in a remarkably short time produce independent plants. Although that operation may be performed at almost any time of the year with safety, the months of February for stove kinds and March for those only requiring greenhouse temperature may be considered as the most suitable, especially where those kinds have to be propagated in great quantities. Our illustration is an engraving of a photograph sent by Dr. Good, of Ashchurch-terrace, Shepherd's-bush, W.

Our Readers' Illustrations: Davallia growing on trunk of Dicksonia. From a photograph sent by Dr. Good.

THE ILLUSTRATION COMPETITION SPECIAL PRIZES.

The special prizes that we promised to give to those persons who, during the year 1885, sent us the best photographs of garden interest have been awarded as follows:—

A water-colour drawing of the wild field Rose, by the late Mrs. Coleman, Mr. W. T. Bashford, of Argyle House, Portobello, N.B.

A water-colour drawing, by Madame Vonga, of Zurich, of the first cultivated plant of the rose-coloured hardy Water Lily flowered in Europe, the Rev. H. E. Fox, Durham.

A water-colour drawing of Pæonies, by Mrs. Duffield, Mr. Marshall, Weetwood Hall, near Leeds.

15604.—**Dissolving bones.**—The bones are best left to decay naturally; sulphuric acid poured over them will hasten the operation.—R.

Paraffin heating-lamp smelling.—I have one of these lamps, and found it very disagreeable to use in the house. The evil was completely cured by having a tin funnel fitted to the movable part of the lamp.—M.

Gardening at Torquay.—Mr. Jackson's beautiful photograph (page 684) of a part of the cliff gardens overlooking Torbay has brought back fresh to my memory the short but pleasant stay I had there last September, and I thoroughly endorse all he says about it. I may mention, as showing the mildness of the climate, that the small cottage at the end of the cliff garden nearest the railway station was almost completely covered with Cobæa scandens, very finely in blossom. I do not rememember to have seen it used so effectively before, and from the woody appearance of the main stems it might have been out more than one winter. Very fine plants of several species of Veronica and other plants not altogether hardy were in dense clusters. The view from the top of the cliff is very fine. An exceedingly picturesque zig-zag path leads from the road up the face of the cliff. The steepest parts are formed of rustic steps, and the ravines are spanned by rustic bridges. To look up from the road the ascent would seem to be almost impossible, except to animals and birds; but the engineer has so skilfully designed his paths in the side of the cliff as to make the ascent quite easy. On the sides of the paths, here and there, are little patches of gardening, and the whole face of the cliff is now covered with greenery, much of it nature's own work, though the hand of man is seen here and there helping natural effort; and it is not unlikely, in such a climate, that this cliff garden will become annually more interesting. All that is necessary is to drop in here and there such things as are likely to succeed. I don't remember anywhere, especially by the seaside, to have seen such a wealth of trees and shrubs as Torquay possesses. The public roads, leading over steep hills, and dipping down into deep valleys outside the town, seem so many leafy avenues; and the glimpses of the pleasant gardens attached to villa residences which meet one everywhere might justify one in saying that Torquay was a town of gardens, all of them richly adorned with beautiful trees and flowers. What specimens of Fuchsias are to be seen there! I have long known what an excellent seaside tree Cupressus macrocarpa was, and we find it at Torquay in very great force. I noticed one or two very handsome specimens, but for the most part the plants are of comparatively recent plantiug. In a nursery I saw a number of plants of considerable age of the Australian Dracæna indivisa, in the open air planted out, which appeared to have had full exposure for some time. There are many objects of interest within a short distance of Torquay, but I must not occupy more space.—E. Hobday.

Plants as weather guides.—The horticulturist referred to on page 640 is in error when stating that the common Pimpernel (Anagallis arvensis) and the small Bindweed (Convolvulus arvensis) "expand their flowers at the approach of wet weather." The reverse of this is the truth, as any field-labourer knows that the Pimpernel, particularly, always closes its flowers when showers are approaching. The circumstance was noticed by Gerarde hundreds of years ago, and by many writers since. We have also other barometrical plants in addition to those named by "F. S.," one being the common Daisy (Bellis perennis), which, besides closing at night, invariably folds up its petals when storms are abroad. The sensitiveness thus exhibited by plants to atmospheric changes is generally understood and regarded as one of the wonderful provisions of Nature to protect the internal organs of the flower from injury, as only the plants of humid climates, we are told, are thus affected. It has also been observed that after fructification these plants lose the power of closing their flowers, which remain open till they fall.—J. Martin.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* GARDENING *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* EDITOR *of* GARDENING, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* PUBLISHER. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* GARDENING *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* GARDENING *should mention the number in which they appeared.*

15801.—**Propagating Sweet Bay.**—How should I propagate the Sweet Bay evergreen?—NOVICE.

15802.—**Sowing Apple seeds.**—When and how must I sow Apple seeds?—C. R., *South Devon.*

15803.—**Raising Celery in propagators.**—Can I raise Celery plants in an ordinary propagator?—ALTOI, *Yorks.*

15804.—**Celery for Yorkshire.**—What are the best sorts, with the largest heart, to grow in this district?—ALTOI, *Yorks.*

15805.—**Raising India-rubber plants.**—I should be glad to learn how to raise India-rubber plants in quantity.—ENQUIRER.

15806.—**Hardy annuals.**—Will any reader of GARDENING kindly tell me the names of twelve of the best hardy annuals for mixed borders, any colours?—A. M.

15807.—**Gooseberries.**—What are the best sorts of Gooseberries that I can plant for picking green for market, and the best sorts for picking ripe?—C. R., *South Devon.*

15808.—**Clematis indivisa.**—I have Clematis indivisa lobata. Will any reader tell me whether Clematis indivisa itself is procurable in England, and, if so, where I can get it?—Q., *Holland.*

15809.—**Name of Dahlia.**—Can any readers tell me the name of a dwarf white Dahlia which is, I believe, largely grown for the London market, and is very suitable for wreaths?—W. J. U.

15810.—**The best Raspberries.**—Will any fruit grower kindly tell me the names of best sorts of Raspberries to plant?—C. R., *South Devon.* *** *See reply to query 15468 in this number.*—ED.

15811.—**Plants for carpet gardening.**—Will any readers kindly tell me the names of plants suitable for carpet gardening, as I wish to make eight small and two large beds this year?—M. G. B., *Herts.*

15812.—**Aralia Veitchii.**—I have an Aralia Veitchii which is too high for the house. If I cut it down this spring will it spring out from divided stem? Can I propagate the top part, and, if so, how am I to do the work?—NOVICE.

15813.—**Propagating Virginian Creepers.**—I should be obliged for information as to the best way of propagating Ampelopsis, hoth hederacea and Veitchii. Will cuttings strike out-of-doors or in a frame?—C. E. H., *Cambridge.*

15814.—**Sedum glaucum flowering.**—I have always been bothered with Sedum glaucum running to flower when planted in carpet beds, I planted it out with rest of bedding stuff. Can anyone tell me any way to remedy the "evil"?—J. B., *Grange-over-sands.*

15815.—**Grub in Onions.**—Will any readers advise me how to prevent grub in Onions? Last year mine were all destroyed. The bulb was eaten out by white grubs. Some of the Onions (White Spanish) got to a fair size; but all went sooner or later. Soil sandy.—F. G., *Notts.*

15816.—**A sparrow net.**—Can any reader tell "Inquirer" how to set a sparrow net which he has, but does not know how to manage? The net is composed of a number of small, deep pockets, made of coarse thread, is about 4 feet square; a large cord goes all round, and is eft in a loop at each corner.

15817.—**Crickets in greenhouses.**—Will someone oblige by saying what damage crickets do in a greenhouse, as they are classed as pests? I have heard that they feed off green fly; if so, I should think they were rather a boon than otherwise. I have some hundreds in my house, but have never observed any ill effects.—G 162.

15818.—**Kempster Pippins and Blenheim Orange.**—I want to obtain some young Kempster Pippins. All the nurserymen I have applied to state this is a synonym for the Blenheim Orange. I am under the impression, from close observation, that they are distinct varieties. Can any readers solve the doubt, and state where the Kempster is to be had?—IGNORAMUS.

15819.—**Propagating Ferns from spores.**—May I ask the favour of replies to one or two queries suggested by "Tom's" interesting paragraph on "Propagating Ferns from spores," on p. 671 of GARDENING? Will "Tom" please say (1) how and when the spores are best obtained, and (2) whether the bottoms of his biscuit tins are perforated to let in moisture from the tray?—RUSTICUS.

15820.—**Violet, Comte de Brazza.**—Would any grower of the above Violet kindly say if it is really a good free bloomer in a cold frame in the midland or northern counties? I am told it does not open well outdoors in some parts. Also if Swanley White and Comte de Brazza are really the same Violet as, I notice some growers who used to call it Swanley White at first now call it Comte de Brazza?—E. R. S., *Malvern.*

15821.—**Plants for photographic studio.**—I have a small room with glass sides and roof, about 15 feet by 8 feet; it was intended for a photographic studio, and hence has direct north side light. Of light there is plenty, but no sun. Could any reader kindly advise me as to what plants I could place there with any hopes of making the place attractive? I am not well up in gardening; but, having some spare time each day, should like to make a start. I could introduce a little heat if necessary.—G. C., *Hanover-square.*

15822.—**Pyracantha not fruiting.**—We have a fine tree of Pyracantha, planted, I think, about six years ago, which is every year covered with blossom, but never sets a berry. Can anyone kindly suggest a remedy? The Pyracantha is planted against the brick gable end of a woodshed, about 16 feet high by 12 feet wide, which it entirely covers; it faces north-west, and is rather shaded. Can want of sun be the reason? We think of training the branches along the south-west side of the roof, where they would get more sun.—A. M., *North Notts.*

15823.—**Management of propagating frame.**—I should be very thankful if some reader would kindly give a few hints respecting the management of a propagating frame. I have constructed one from the particulars given in GARDENING, April 22nd, 1882, and March 31st, 1883, but find that I can only get the necessary heat accompanied by too great an amount of moisture. Placing a sheet of tin over the pan does not produce the desired effect; and as to letting the pan run dry even for a short time, as also recommended by "B. C. R.," I fear the result would be a hole at the bottom of the pan, as hinted at by the writer of the first of the articles above referred to. I intend using the frame chiefly for starting seedlings.—FAGLEY.

15824.—**Insects on Rose trees.**—A correspondent in this week's paper mentions finding five grubs and a caterpillar in a dead stem of a Rose tree. I found last summer that four or five of my Briier stocks were destroyed by an insect boring into the pith of the main stem; sometimes the bore was 1½ in. deep, in which case the buds put in and side shoots all died. In each bore I found a grub at the bottom, and the space above it packed tight with little caterpillars, or else aphides (green fly). I believe this to be the work of one of the wood-boring wasps, the grub at the bottom being the larva, and the others being intended for its food. Nearly all my Rose trees show marks of a bore being attempt d in every clean cut branch of any size; but, fortunately, in many it had been relinquished at the beginning. I conclude the instance mentioned by "M.," on p. 683, is a similar one to mine. I should like to know what would prevent it. Would tarring the tops of the stocks do?—L. E. T., *Fleet, Hants.*

15825.—**Remedies for thrips.**—I am sadly bothered with thrip in my Cucumber house, and have tried all sorts of remedies, but cannot get rid of it. Before starting a fresh season I had the house thoroughly cleansed. Having cleared out the old beds, I first fumigated well with sulphur, then the walls, glass, floor, and every part were deluged with paraffin, and, after leaving the house open for several days to sweeten, the walls were lime-whited, and then the beds were filled with fresh mould. The young plants started well, and for a time were nice and clean; but now they are in anything but a satisfactory condition. I have several times fumigated with Tobacco paper, and latterly I have tried soot water in the evaporating troughs. This latter remedy seems the most efficacious, but yet I cannot rid the house of the pest. If any readers can suggest anything likely to be of service I shall be most thankful. I may say the thrips must have come in with the fresh mould. Is there any way of preventing this? My Tomato house, also, is infested with white fly. I have tried fumigating with Tobacco; but this does not appear to destroy them. What else can I do?—H.

15826.—**Christmas Roses.**—Will someone kindly give me advice as to treating bed of Christmas Roses? They are in a bed sheltered from the setting and afternoon sun by two Monkey Puzzles of good growth. They have been there two years; the first summer we planted Geraniums between each plant, and they produced very few flowers in the winter. Last summer they were left alone, and have produced more flowers, but not nearly so many as they ought—one or two plants having only one blossom, others a dozen. The foliage has turned quite black, and is damping off. Some advise me to cover the bed in summer with cow manure, others with Cocoa fibre, others with leaf-mould. Should the surface be carefully forked? I know one great secret is never to touch the roots. Any hints will be thankfully received by—CHRISTMAS ROSE, *Surrey.* *** *We have no doubt that some of our readers who have been very successful with these flowers will reply to "Christmas Rose;" but the remark as to never disturbing the roots must surely apply only to young and healthy plants, because we know nothing more in want of disturbance by division and replanting than old and worn-out stools of Christmas Roses.*—ED.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15827.—**Raising Palms from seed** *(A. M.).*—Sow in the warmest house you have in sandy loam. Do not water too much until the plants are up and vigorous.

15828.—**Soil for Blackberries** *(C. R., South Devon).*—Blackberries will enjoy any rich, good garden soil.

15829.—**Limewash for Currant trees** *(Rusticus).* The writer of the note on p. 666 refers to ordinary lime water as used for walls.

15830.—**Book for young gardener** *(Veronica).*—Holiday's "Cottage Gardening" (Crosby Lockwood & Co.) will meet your requirements.

15831.—**Improved tally** *(C. H. E.).*—The label is certainly original in design, but we do not think it is likely to be received with much favour.

15832.—**The Cotton plant** *(A. M.).*—The Cotton plant is not an annual, although it may be grown as such. It is naturally a shrubby plant in hot countries. It may be sown in heat this month or early in March.

15833.—**Tropæolum speciosum in pot in greenhouse** *(A. M. W).*—We have had no experience of Tropæolum speciosum flowering in a greenhouse. It will probably bloom, bu not so well as out-of doors.

15834.—**Cucumber or Melon culture in small unheated greenhouse** *(A. M. W.).*—You ought to be able to grow Cucumbers in your house, and a skilful gardener might succeed with Melons. Keep the house clean.

15835.—**Mushrooms in vaults** *(Mrs. Burdon).*—We are not given any description of the vaults; but we see no reason why Mushrooms should not grow in yours. The heat of the manure would make them of the necessary temperature.

15836.—**Scale on Peach trees** *(A. M.).*—Mix paraffin with water, 2 ozs. to the gallon, and syringe over every portion of the trees as well as the wall. Care should be taken that the oil is well mixed with the water in syringing.

15837.—**Iris stylosa** *(Westmoreland).*—If you have any sandy soil try it out-of-doors in a warm corner; if not, you must keep it in a cool frame all the summer, or put it out-of-doors in the pot where the plant will get plenty of sun.

15838.—**Ranunculus from seed** *(Q. E. D.).*—We fear your patience would be well exhausted before you saw the flowers. You must get bulbs, and plant in autumn. We presume you are referring to the Persian or Turban Ranunculus.

15839.—**Daffodils and Pheasant's-eye Narcissus** *(C. E. C.).*—It is probable that you had not such carefully-prepared bulbs as come to us from Holland of the more popular greenhouse kinds, and this may account for your failure. Keep them in a light place.

15840.—**Lilium auratum in pots** *(Lily).*—In pot culture the time of removing to the greenhouse depends upon the period at which you want them to flower. If you want them much earlier than they bloom out-of-doors you may put them in soon—about the beginning of March.

15841.—**Raising Primulas, Calceolarias, &c.** *(A. M. W.).*—You should have no trouble in raising Primulas, herbaceous Calceolarias, Begonias, Gloxinias, and Cyclamen with the appliances you have; but you do not seem to have a place to grow them on afterwards.

15842.—**Pruning and repotting Fuchsias** *(W. F.).*—Cut, prune, and repot Fuchsias early next month. They are apt to push their little buds very early, and can be potted without the least injury when they have done so; in fact, it is a common practice so to deal with them.

15843.—**The Spanish Iris** *(A. M. W.).*—Yes; the Spanish Iris would do well on your border; but why allow the Lilac hedge to eat up all the garden? Cannot you cut a trench between it and the beds? Portulacas will thrive in any warm sandy soil. It is rather too late to plant the Spanish Iris.

15844.—**Mismanaged Celery** *(Altoi, Yorks).*—Of course you could hope for nothing if you put out plants cankered at the roots. You must raise good stocky plants, not crowded. The soil has nothing to do with it. All plants should be put out on half-decayed hotbeds, which gives them the soil they want.

15845.—**Flowering Tacsonia Van Volxemi** *(A. M. W.).*—From what we know of the plant we would say that it must make fair growth in your own house before it flowers. If you purchase a strong plant in spring it should grow freely in the current year, and we do not think you will get it to flower until the second year.

15846.—**Sickly Camellia** *(Perplexed).*—The secretion that you forward seems to be tallow, and if there is much of it on the surface of the soil it might be the cause of injury to the plant. You should examine the roots and the soil by turning the plant out. If the roots are decayed or injured they must be cut in, and the plant cut down and replanted in fresh soil.

15847.—**Forcing Rhubarb** *(Aust).*—Rhubarb may be forced by the roots being taken up carefully and put in a warm place in darkness, or by covering the roots where they are with 2 feet or 3 feet of fermenting manure, placing pots or boards over the crowns so as to allow the stems to grow. You will find an article on the forcing of Rhubarb and other crops in GARDENING, No. 302.

15848.—**Plants for hanging basket in porch** *(E. D.).*—You do not give us any particulars as to your porch, or even tell us whether it has a glazed or opaque roof. If in partial darkness you would probably find nothing that would do so well in a basket as the common Irish Ivy. If lighted there is a great variety of plants to choose from, and if it is glazed you might in summer find the Ivy-leaved and other Geraniums very useful.

15849.—**Geranium leaves dying** *(Tyro).*—Geranium leaves must die like other things, and some of yours seem to have died a natural death, so far as we can judge. Other parts of the leaves seem quite healthy; one bears traces of what might be injury from gas or sulphur fumes but such leaves as you send may, we think, be picked up in any collection. If there is any escape of gas or sulphuric vapour the effect will be noticeable at once.

15850.—**Grape growing** *(W. S.).*—You do not give us very full particulars, and whether all you have done is right can only be decided by one who knows the nature of your border, &c. So far as we can judge from your letter, however, you appear to get good results, and we do not see why you should anticipate failure. We would refer you generally to Simpson's book on the Vine, or, if you care for a more expensive work, to Barron's; and if any special point arises we shall be glad to help you.

15851.—**Show Pelargonium cuttings** *(Clifton).*—As soon as the cuttings were well rooted they ought to have been potted off singly into small pots. There will be but little growth in a cool greenhouse at present; but if the weather is mild about the middle of February they ought to be potted off. It is an error to pot off such things during severe frost; under such conditions no growth is made, and the plants go backwa d.—D.

15852.—**Canker on Apple tree** *(M.).*—The example you send is not a typical case of canker, although it may be, and probably is, one form of it. The subject is too involved for a brief answer. Soil, situation as to currents of cold air, insects, and even fungi, have all alike to be considered. The soil, situation, and condition of roots are of primary importance. These points have been successively discussed in past numbers, and in the present number you will find several notes on the subject. Cut away cankered places if possible, and look to roots.—W G. S.

15853.—**Hydrangeas** (*Ignoramus*).—Hydrangeas are perfectly hardy plants, and except in large towns there is no necessity for growing them in greenhouses unless the object is to have them in flower earlier than they bloom out-of-doors, and to grow the large heads seen in Covent-garden. Ascertain if they are grown out-of-doors with advantage in your neighbourhood, and if so plant in the most fitting position in the flower garden, giving the preference to snug sunny banks or corners. When weak and young Hydrangeas are cut down, but old bushes are best not treated so.

15854.—**Plants for unheated greenhouse** (*A. M. W.*).—1, Many plants flower in winter in a whole unheated greenhouse. We published some time ago a number of articles on the subject, which you might refer to. If you had nothing else for such a house you would find it excellent for gently advancing fine hardy plants raised in pots for a time, and thus enabling you to enjoy their blossom for a longer period. We need only mention Primroses, Solomon's Seal, Christmas Roses, Lilacs, and so on. 2, The shelf that you refer to is not too close to the roof—some dwarf plants are grown quite near the glass.

15855.—**Sowing Helianthus and Castor Oil plants** (*E. C. B.*).—By Helianthus you probably mean the common Sunflower. Well-grown Castor Oils in a London district should grow higher, if anything, than the Sunflowers; at least, we have seen them do so. You do not, however, state your county, or district, and therefore we cannot judge. We have no experience of so timing sowing that the plant may be dwarfed thereby, and should not advise such a course. Sow in each case so as to get the best growth, and arrange the plants according to your previous experience of that growth. We should advise you to keep each kind separate in groups rather than to mix them up together.

15856.—**Plants for plot under window** (*Amateur, Tonywynlais*).—You do not state the exposure of your small plot. If you want something very beautiful, and have sun and soil good enough, we should say plant four or five Tea Roses—Gloire de Dijon, Anna Olivier, Marie Van Houtte, and Bouquet d'Or. Grow them as bushes, and, until they fill up the beds, put Carnations between them. Of course you must first find out that Tea Roses and Carnations do well in your soil and climate. If you want an earlier effect wait and plant what are called bedding plants; in your case we should say that a mixture of blue Salvia and large Calceolaria amplexicaulis, with a Cactus Dahlia in the centre, and any flowers you like around, would please you.

15857.—**Roses for greenhouse** (*Constant Reader*).—Roses would succeed well in such a greenhouse, but they would not flower in April unless the temperature was kept up about 5 degs. higher than that of an ordinary greenhouse, from the first day in January up to the time the Roses flowered about the end of April. A few good hybrid perpetuals are: Dr. Andry (dark red), La France (rose or pale peach colour), Duke of Edinburgh (crimson), Madame Victor Verdier (rich cherry red), Victor Verdier (rosy carmine), Captain Christy (delicate flesh). Six of the best Teas are: Adam, Comtesse de Nadaillac, Gloire de Dijon, Madame Falcot, Niphetos, and Souvenir d'Elise Vardon. Rhubarb can easily be grown, as suggested, under the stages. Chrysanthemums can be grown well in such a house, and they have the advantage over most greenhouse plants that they can be grown out-of-doors from May to October. Of course many other greenhouse plants can be cultivated with advantage. Pelargoniums, especially the zonal section, Fuchsias also, and the handsome Chrysanthemums usually termed Paris Daisies, are not only beautiful in themselves, but are easily grown and of considerable value commercially. For climbers the red and white forms of Lapageria are the most valuable; but the handsome Noisette Rose, Maréchal Niel, is one of the best climbers, and flowers very freely. With the heat required to flower Roses in April, Carnations would succeed well.—D.

TO CORRESPONDENTS.

Bullfinch.—If you look through a few recent numbers of Gardening you will find the information that you require. ——*Nemo.*—The recent change in the position of the index has, we believe, given much satisfaction to readers, and we do not think a further alteration is desirable.——*Glazier and Constant Reader.*—Write to E. Breffit and Co., 83, Upper Thames-street, London.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor, *37, Southampton-street, Strand, W.C.*

Names of plants.—*James Stuart.*—Among the Ferns you send are Lastrea dilatata, Asplenium Trichomanes, Asplenium Adiantum-nigrum, and Polystichum aculeatum. When you next send plants for naming please attach numbers to them.——*Hazelhurst.*——1, Phlebodium aureum; 2, Chellanthes elegans; 3, Pandanus graminifolius; 4, Adiantum formosum.——*Home Farm.*—1, Specimen withered, but appears to be Paper White Narcissus; the small form that you have seen might be a starved flower; if not, it would be N. dubius or N. pachybolbus; 2, Double Roman Narcissus.——*C. A. M., M. C., and others.*—Next week.——*W. N. Cheesman.*—1, Adiantum pubescens; 2, Polystichum angulare.——*Young Beginner.*—1, Adiantum Legrandii; 2, Adiantum Weigandi; 3, Nephrodium molle; 4, Pteris longifolia.

Catalogues received.—*Vegetable and Flower Seeds.* John Wilson, 24, Queen-street, Whitehaven.——*Vegetable and Flower Seeds, Bulbs, Ornamental and Fruit Trees, &c.* Liverpool Horticultural Co., Limited, 39, Bold-street, Liverpool.——*Year Book of Seeds.* Wm. Baylor Hartland, 23, Patrick-street, Cork.——*General Catalogue.* Viccars Collyer & Co., Central Hall, Leicester.

EXHIBITIONS v. USEFULNESS.

"Common Sense" appears to think that the basis upon which prizes are awarded at poultry, cattle, and horticultural shows is all wrong; but I do not think he has given the subject much consideration. Now, let us ask ourselves what is the main object of such exhibitions? Is it not to preserve in its purity the true strain in those stocks of most value, and the developing of the same in a higher degree of perfection? A true species or a well-marked variety is known to have the power of reproducing a stock similar to itself, and this similarity is as well-defined by external markings and shape as by inherent characteristics. Thus, a black Hamburg fowl, prized for the number of eggs it will produce, is known from other fowls less productive, not by an examination of its internal organs, but by its shape and plumage. The theory also is that an impure stock, however excellent in itself, cannot be depended upon to reproduce such excellence, but is liable to "go back," and beget something quite different from that required. "Common Sense" quotes "Doulting" in evidence of his views, but he forgets the advice "Doulting" gave, a couple of weeks ago, about keeping purely bred male birds in his poultry runs; and how are these birds to be known, save by external appearances? Again, it is hardly practicable for judges to award prizes otherwise than from outward markings, even in the case of vegetables, where appearances may be more deceptive; thus, the rosy, well-shaped Apple gets the award, rather than its more palatable fellow, and the over-fed bull instead of his leaner neighbour, because, no doubt, in each case the judge considered which had the best points of breeding rather than individual merit. Of course, judges have to discriminate between exhibits all sufficiently well-marked to denote pure breeding; but then there are minor points, too, to be considered, and these often are decisive. A judge does not give a prize to a bird because of a certain feather, whether the flesh can be eaten or not, as "Common Sense" asserts; the judge knows quite well that birds of a certain feather are good to eat, and birds of a different feather indifferent. Your correspondent's illustration of the preserved egg is not so strong from his point of view as he thinks, and if he can patent an invention for preserving the shells of eggs in their state of original freshness, he will find it acceptable to the public. In conclusion, sir, I believe that much can be known from appearances, and by them our exhibitions must be governed—the great safeguard being to appoint judges whose experience is sufficient to tell them what these appearances really mean.—Radix.

—— I have just read the remarks of "Common Sense" on this subject, and cannot believe that they are prompted by experience. I quite agree with him in one thing, and that is that each judge is responsible for his own award. The committee cannot be held responsible for the awards. The duty of the committee consists in selecting good men to fill the office of judges; their responsibility ends there. Did "Common Sense" ever know a case where a dish of Apples or Pears were selected for special commendation because they looked nice, but could not be eaten because of their bad quality? I think it is safe to assume that he knows of no such case. I have had considerable experience in judging fruits and vegetables, and know most of the best judges in the country, and never knew one who placed appearance first, and quality in the position suggested. In a dish of fruit or vegetables cultivation must count for something. As an illustration of this, let us suppose that two dishes of Apples are placed in competition, and one was known to be better in quality than the other, and they both evinced the same skill in culture, the Apple of admitted best quality would be placed first. Suppose, on the other hand, that the Apple of admitted superior quality was badly cultivated or badly kept, and that the other bore evidence of good culture, or perhaps had been better kept, I would consider whether the best cultivated fruit should not receive the highest award. Since I have been old enough to read a horticultural paper this question has been periodically cropping up, and it will never be settled but in one way—and that is for committees to appoint judges of proved ability, who have a good knowledge of the productions they are called to adjudicate upon, and to trust to their doing what is right.—J. Douglas, *Great Gearies, Ilford.*

—— While not inclined to think the evil quite so great as "Common Sense" considers it, I must agree with him in the opinion that the question is worthy of consideration. I would refer especially to this matter as it affects poultry; the fact that judges should insist upon retaining a marking that is, if anything, a sign of weakness in a fowl, is most detrimental to the true interests of poultry breeders, because those who wish to breed for exhibition must meet the requirements of the judges, however absurd these may be. It is, of course, well understood that by a systematic course of breeding, great improvements and changes can be brought about, and it is foolish to lavish upon the production of useless feathering an amount of care that, properly applied, would be the means of producing profitable birds. I am afraid that though each judge is responsible for his individual award, a considerable force of public opinion is required to "back up" any censor who is bold enough to show preference for useful qualities over appearance, before any radical change can take place. It is hard to make a stand against recognised principles, even though these are wrong.—R. J. M.

15696.—**Paint for wooden spout.**—I should advise "P." to dress the inside of the spout with gas tar, allowing it to get hard before use.—J. C. C.

—— The best paint for spout is gas tar if the rain water is not to be used. If the water is for use break up gas pitch in small pieces, lay it in the spout, and melt, and spread over the surface with a hot iron.—G. Johnson.

15712.—**Permanent hotbeds.**—In reply to "T. T. Jennings," the pits referred to can certainly be heated without keeping the lower chamber full of manure, which it would be next to impossible to do. In fact, one of the greatest advantages of this form of construction is that a small quantity of manure will ferment throughout, and produce many times the amount of heat that it would under an ordinary frame, where most of it would be blown out, or lost in the open air. Even a single load placed in the chamber will produce a considerable amount of warmth in a 2 or 3 light pit. Regarding the second part of the query, it would, of course, be necessary to prevent rank steam, produced by fresh manure, from entering the upper chamber; but this is easily done (as mentioned in the first description) by covering the perforated floor with turf sods, or a layer of tan, spent Hops, or mould. But when the first strong heat has passed off, the moist warmth from below, impregnated with ammonia, will encourage healthy growth just as it does in an ordinary hotbed frame. If very early fruit, either Cucumbers or Melons, be required, it is as well to run a 2-inch pipe round the pit, just above the floor, to ensure a sufficiently high temperature.—B. C. R.

Garden Stocks.—I have read with interest "D.'s" paper on garden Stocks in the issue of Jan. 16th. He will be conferring a great kindness on me, aud, I daresay, on more than me, if he will tell me where a really good strain of East Lothian Stock is to be procured. I used to get first-rate seed from Todd, Maitland-street, Edinburgh, but he seems to have disappeared, as he no longer advertises in Gardening, and for the last three years my letters to him have remained unanswered. During this latter period I have procured seeds from the firms of best fame in London; but they have been very inferior, poor blossoms, a great proportion of single flowers, and very late in flowering—as inferior to Todd's as darkness is to light. Also, I will thank him to tell me where he procures his Brompton Stock seed, for I never now see the magnificent single spikes that I used to admire so much thirty years ago. I buy seed every year, and from various seedsmen, but never get anything but low-branching plants, like Queens or Intermediates. This year I have plants from Messrs. Carters' "Cardinal Brompton," which look more like "the thing" in habit of growth. Here (Co. Cavan, Ireland), in our cold, wet climate, Brompton always requires the protection of a frame during the winter months. The plants of East Lothian that do not bloom during the summer will survive our winters in the open, provided they (the winters) be not very severe.—D. K.

THE COMING WEEK'S WORK.

Work in the Town Garden.

Where there is the conveuience of a tolerably warm house or pit, the propagation of such things as Fuchsias, Heliotropes, Lantanas, Marguerites, Abutilons, Lobelias, and some others, should be carried on as fast as cuttings can be obtained, during February and the early part of March, so as to secure good-sized, sturdy, well-hardened plants, either for putting out in beds and borders at the end of May or early in June, or to grow on in pots for summer and autumn decoration. If the usual hot-bed frame has to be depended upon for this purpose, I think it is better not to begin quite so soon, as a rule, for hot-beds got to work so early, unless a regular succession can be kept up, require so many linings to maintain the required temperature through the bitter weather that we often experience in March, April, and even in May, as to be a source of constaut trouble aud labour; and besides, most things will be found to grow much faster in the genial atmosphere of a bed of fermenting materials than in an ordinary propagating house or pit, particularly when the latter is under amateur management. In this latter case begin to prepare the manure, &c., now, make up the bed in a fortnight or three week's time, and the frame will be in a fit state to receive its occupants in the first or second week of March.

Where there is neither warm house uor pit, nor is it possible to construct a hot-bed (though, as a rule, stable manure is always cheap and plentiful in towns, and spent Hops or tan can often be obtained as well), it is very easy to arrange a little propagating frame in a light part of an ordinary greenhouse. A common wooden garden-frame of small dimensions, say 4 feet by 3, or even less, may be easily converted into a useful propagator by fixing a false bottom of thin slates or perforated galvanised iron about halfway between its upper and lower edges, and arranging, a few inches below this, a good sized flat metal pan to hold water, which is to be heated by a common paraffin lamp placed underneath it. An inch or two of damp Cocoa-nut fibre or Hops is laid on the false bottom, and on this the pots or pans of cuttings and seeds are placed, covering them more or less closely in the usual manner with the glazed light. Such an arrangement will afford a steady heat of 60 degs. to 70 degs. with a very small consumption of oil, and cuttings of any kind may be struck, and seedlings of tender subjects raised, in a perfectly efficient manner, with ordinary care and attention. A frame of this kind has been several times minutely described in back numbers of Gardening, but anyone of a mechanical turn will readily grasp the idea, and perceive how to carry it out.

Indian Shot and Castor Oils.—Seeds of the elegant Canna (Indiau Shot) should be sown now, or soon, in a pretty good heat. Soak the seeds in warm water for twelve hours previously, and sow in a mixture of loam, peat, and sand. These make very bold and handsome specimens, either planted out-of-doors in deep rich soil, or as pot plaute. Ricinus (Castor Oils) may also be sown now, to make large plants by the end of May; but as these grow much more rapidly than the Cannas a month hence will be time enough. When well grown these also have a very fine appearance either out-of-doors or in pots; are capital town plants, and by no means difficult of cultivation. It is believed by many that the Ricinus possesses the property of banishing flies from any apartment in which it is placed, but I cannot say that I consider its virtues in this direction by any means remarkable, or proved, though it may produce the effect in some degree. Wigandias, Solanums of the robustum type, and any other of the large-leaved sub-tropical subjects, may also be sown shortly, and are all more or less useful in the town garden.

Herbaceous Calceolarias should, as soon as possible, be placed in their flowering pots. They like more room at the root than most plants, so that any now in 4-inch or 5-inch pots may be placed in 7-inch or even 8-inch sizes, while sturdy specimens from boxes, in which they often winter better than in pots, should have 6-inch, and the smaller ones 5-inch pots at least. A good sound loam is the best staple, with the addition of about a third of leaf-soil or old decayed manure, and a little sand and charcoal. Do not pot these so firmly as most plants, yet the soil should not be left loose by any means. Look also to the shrubby Calceolarias, which are always useful. If in cold frames, and getting rather thick, remove every other one, and either pot the thinnings or transplant them to a similar situation. The potted ones may be grown on in a light part of the greenhouse, and got into 5-inch or 6-inch pots as soon as possible; they will be invaluable for window and balcony decoration. Remember that these plants need plenty of room at the root to do well, and should always be kept moist and liberally supplied with nourishment.

B. C. R.

Glasshouses.

Cutting-striking.—So much is said and written about propagating houses and hot-beds made up for cutting-striking, that amateurs are often led to suppose that the propagation of most plants is a difficult operatiou without the aid of such means. A propagating house is a very useful structure where large quantities of plants are to be struck annually; but where there is an ordinary stove available, it will answer all the requirements of the case. In a house where there is a centre bed filled with fermenting matter it will meet the requirements of cutting-striking: the pots should be plunged in the warm material, and kept closely covered in the ordinary way. Where a bed of this description is not present, but the house is constructed as plant stoves usually are, with the pipes running round near the walls, and a flat stage above the pipes, if a portion of this is covered with some moisture-holding material—such as coal ashes, sand, or Cocoa-nut fibre, kept damp—in which to plunge the pots or paus containing the cuttings, and these are covered with propagating glasses, and if the heat is sufficient—say not less than 60 degs. in the night—cuttings of most kinds will strike readily. If the temperature is a few degrees higher they will root more quickly. Another plan by which the use of propagating glasses can be dispensed with, is to have a small frame made to stand on the side stage, covered with a moveable light or with loose sheets of glass. It is now time to put in cuttings of many stove plants; it is well not to defer this too long, as when they get rooted and potted off early, there is much more time for them to attain size before the autumn comes on. As soon as the shoots are from 2 inches to 4 inches long, according to the natural strength of growth which the plants to be propagated make, they may be got in. Ixoras, Bougainvilleas, Allamandas, Clerodendrons, Stephanotis, Aphelandras, Franciscеas, Gardenias, Hibiscus, Hoyas, Medinellas, and Tabernæmontanas, are all plants that root readily, and collectively represent the best of the larger-growing occupants of the stove, and are better for being struck as early in the year as cuttings in the right condition are obtainable. Smaller-growing stove plants, such as Bertolonias, Centradenias, Eranthemums, Fittonias, Mussænda frondosa, Pentas, Rondeletias, Sanchesia nobilis, and Vincas should also be struck as the young shoots are sufficiently advanced to be in the requisite condition. This naturally depends on the temperature kept up; where no more heat is used during the winter than sufficient to keep the plants alive without making any growth, propagation must, necessarily, be deferred until later on.

Bouvardias.—If the plants intended to produce cuttings were treated as advised some time back, the young stock will be rooted by this time. To make the most of these plants it is necessary to get the cuttings struck early, for on the size and strength that the young plants are able to attain before autumn depends the amount of bloom they will make. As soon as the cuttings are well rooted they should be moved singly into little pots, giving them soil well enriched with rotten manure and sifted leaf-mould, with the usual complement of sand. Pinch the tops off as soon as growth begins to move; it is necessary to attend to this early, so as to lay the foundation for bushy plants, as, unlike some things, Bouvardias will run up thin and straggling if means are not taken to prevent it. All such stock as these should from the first be placed where they will be under the full influence of light to prevent their getting drawn. Old plants of Bouvardia that are to be grown on for another year should now have their branches shortened well back previous to starting them into growth. They may be cut in to within 6 inches of the collar, moistening the soil, and at once placing them in a genial-growing temperature. For those who have not had much to do with these most useful flowering plants, the last year's stock cut back, and partially shaken out and potted on after they have started into growth, will be found easier to manage than winter-struck cuttings, as such plants will require less attention to get them up to the requisite size to admit of their yielding a full crop of flowers.

Perpetual-flowering Carnations.—Whatever young stock of these are required to be raised from cuttings, there should be no time lost in getting them in. They root freely in an intermediate temperature, putting the cuttings several together in 4-inch or 5-inch pots in a mixture of sand and loam. The material must be kept moist, but the cuttings must uot be kept too close, or they will decay. Old plants of Perpetual Carnations —the newer race of these plants are more compact growers, not so inclined to spire up as the old sorts that used to be grown; nevertheless, if allowed to take their own course, they run up, and have an objectionable appearance. Before the last of the blooms produced by flowering shoots have reached maturity, the plants push out young growth lower down the shoots; a disinclination to sacrifice this young growth is often the cause of its being retained, and in this way the plauts get leggy. If, in place of letting the growth in question go on, the old flower stems are cut out a few joints from the base, as soon as they have finished blooming, the plants will be kept in a more compact condition. By this method they will be somewhat longer before again yielding flowers, but the bloom will be stronger and more satisfactory. Any plants that have flowered through the later months of the year, and that are now in the condition described, will, if shortened well back, make strong blooming examples after being grown on in larger pots.

Gloxinias.—These plants afford a better supply of flowers if in place of starting all the roots into growth at once they are potted, and placed in the stove at intervals of, say, a month between each set of plants. Small bulbs, that were propagated from leaves last summer, should now be placed singly in pots from 3 inches to 5 inches in diameter, according to the size of the bulbs. Some leaf-mould and a good sprinkling of sand should be added to the soil. It is well to get small stock of these plants into motion early, as so treated they have time to attain size enough to allow of their producing more flowers than when they remain dormant longer. Old roots should have pots proportionate in size to the strength they have attained, for though large bulbs will produce a fine head of flowers when they have only little room, still, under such conditions the flowering is soon over, as when so restricted they do not give much succession. See that the soil in which the bulbs are potted is not too wet, and do not give water until its condition is such as to require it, otherwise the roots sometimes rot. To avoid this, as soon as potted place them at once in warmth.

Sowing Gloxinia seed.—These plants have undergone so much improvement in recent times that seed from a good strain may now be depended on to produce flowers equal to the best named kinds that at one time were obtainable. Where plants are to be so raised the seed should be sown immediately, as when got in thus early they will bloom in autumn, and be found very useful during the later months of the year. In raising Gloxinias in this way a good-sized seed pan should be provided, and drained sufficiently with broken crocks; on this spread a little Sphagnum, or bits of turfy soil, and fill up the pan to within an inch or so of the top with soil composed of sifted loam, peat, and leaf-mould, in equal parts, with some sand intermixed. Press the material moderately firm, leaving the surface quite smooth; on this sow the seeds about an inch apart, covering them thinly with similar soil, which press gently. Stand the pan in the stove. Do not give any water at the time of sowing, nor until the plants are up, unless the material gets so dry as to require it. With a view to

prevent this it will be well to lay a sheet of glass on the pan, for with the seeds of most tender plants it is better not to use much moisture until after they have vegetated.

THOMAS BAINES.

OUTDOOR GARDEN.

HERBACEOUS BORDERS.—The strong-growing plants will require to have their size reduced occasionally. The Golden Rods, Phloxes, perennial Asters, Potentillas, Pyrethrums, &c., if they remain undisturbed beyond three years, not only get too large and overrun other things, but their own effectiveness is impaired; their flowers are smaller, and the bottom leaves often fail in a dry summer. Phloxes should never stand more than two years in the same place without division and the addition of manure. Choice new Phloxes may be rapidly increased by placing a plant of each kind in a gentle heat now, and striking the young, soft shoots, as they break away, as Verbenas are treated. Pentstemons may be served in the same way. In the management of borders of herbaceous plants I like, every three years or so, to take all the plants up in November, lay them carefully in thickly, where they will be safe, dividing any that need reducing in size; and then, when the border is clear, give a good dressing of manure, adding at the same time any fresh, mellow soil available; then trench it up deeply, leaving it till March to sweeten and pulverise. This is always labour well bestowed, and it is impossible to manure and cultivate a border properly when full of plants. This gives us an opportunity to rearrange the plants, and substitute any of greater merit for whatever may be inferior. Where there are several borders they need not all be done at the same time, and if they are in different aspects and positions an opportunity will be offered for much

VARIETY IN TREATMENT. In one place spring flowers may be a specialty; bulbs should be made a special feature of in some sheltered spot; and there are summer, autumn, and winter aspects, which may be brought out prominently. In winter, for instance, there is a good deal of warmth of colouring to be obtained from variegated foliage, and the use of berry-bearing plants. Beds near the windows of a room which is always occupied should never be empty long together. In the matter of foliage plants there is a great wealth now in Hollies, Ivies, and Aucubas; and among common things the common white Pink, in a broad mass, has a delightful tint of green not equalled by anything else in winter.

THE RANUNCULUS is not so much grown as its merits deserve. From the middle of February to the end of the month is a good time to plant. A layer of cow-dung should be placed about a foot deep in the bed. This holds up the moisture, and gives support and encouragement to the plants when the flowers are expanding, and adds to the size of the flowers. Work in some turfy loam, sand, and leaf-mould, or old hotbed manure, in preparing the surface. Plant only when the surface works freely. Draw drills, 2 inches deep and 6 inches apart, and scatter some coarse sand over the roots, and cover with dry, mellow soil. Anemones will succeed under somewhat similar treatment, only they will require more room. The drills for Anemones should be 8 inches apart, or in some instances more.

LAWNS.—Where the Grass is weakly this is a good season to apply top-dressings. Artificials are much used. Nitrate of soda and guano in equal parts are superior to most things of the kind, and may be scattered regularly over the weakly Grass at the rate of 4½ cwt. to 5 cwt. to the acre. Soot and wood ashes are also excellent dressings in February.

FRUIT GARDEN.

USEFUL PLUMS.—In sheltered districts, especially where the soil has a limestone basis, Plums pay well to grow. They may, with advantage, be planted in association with Gooseberries or Currants, planting the Plums 15 feet to 18 feet apart, and the bush fruits 6 feet from each other. Plums come into a bearing condition quickly, and do not require much pruning or trouble in management. The following are useful kinds for profit:—Denyer's Victoria, Goliath, Diamond, Orleans, Magnum Bonum, and Coe's Golden Drop. Where the Greengage succeeds it is very profitable; but it does not succeed everywhere as a standard, though it generally bears well on a wall.

BUD-EATING BIRDS may easily be kept off Gooseberry and Currant bushes by mixing up a tub of soot and lime-water, and syringing the trees with it. The soot gives a bitter taste to the buds, and the lime makes it stick. It may be applied twice during the season. If bullfinches abound, it may be advisable to shoot some of them. Winter is the time for clearing wall trees from their insect foes. Paraffin oil is an excellent insecticide—nothing in the way of insect life resists its power. We use it, unadulterated, upon all trees in a resting or leafless condition, applying it to all the thick branches with a brush. Where time does not permit of its use with a brush, use it at the rate of ½ pint to 4 gallons of water, and syringe over the trees. I believe all trees will benefit by its application if they have in the past been attacked by insects—Plum trees especially, and old Apple trees may have new vigour infused into them by cleansing the bark from insects and the filth which follows in their track. What is really wanted is a cheap liquid that can be easily applied; and paraffin oil at the price it is now sold seems to meet the want. Those who have never used it may do so experimentally at first, but I never saw any harm arise from its use, except once, and in that case it had been used warm on some Peach trees, and the buds had suffered.

PRUNING BLACK CURRANTS.—Sooner or later Black Currants get away from the single stem system, and form clusters of shoots at the base. There is not the same objection to this in the case of Black Currants as there would be with other members of the Ribes family. The fruit is borne on the young wood, and in pruning the old shoots should be cut back annually, and young shoots left to supply the bearing wood for the coming year. When the bushes get old and full of wood, as they do if not well thinned out every year, thin out severely, and top dress with 3 inches or 4 inches of manure.

VEGETABLES.

In the majority of gardens there is not much gained by sowing or planting anything in the way of small seeds before the middle of February, and not then till the soil is in a free, working condition. As soon as soil and season suit, early Potatoes may be planted on a warm border. Early Horn Carrots may also be sown at the same time, and Radishes to succeed those raised in frames. A very good way of getting things early is to dig out a trench and fill it with warm manure, pressing it down. Place 6 inches or 8 inches of light, rich soil on the top, and sow Carrots and Radishes, and plant early Potatoes and Cauliflowers, improvising a shelter of hoops and mats, or light frames of glazed calico or straw mats; the last-named are easily made at home, and are cheap and serviceable. Sow a box of Cauliflowers and another of Lettuces, and place in the greenhouse or in a pit where some warmth can be had. Sow also at the same time a pan of Tomatoes. There are many excellent kinds of Tomatoes; from them I select Criterion and Dedham Favourite. Seakale, Asparagus, and Rhubarb will force easily now in any place where a temperature of 55 degs. to 60 degs. can be kept up.

A HOT-BED FOR CUCUMBERS may be started any time now, where plenty of fermenting materials, in the shape of tree-leaves and stable manure, can be had. If used in equal portions the bed may be made up without much turning and mixing, as the leaves will check any tendency to over heat. All should be thoroughly intermixed and thrown into a conical-shaped heap till fermentation begins, and then make up the bed, using a moderate amount of pressure by beating or treading equally all over the bed as the work proceeds. When all is finished place on the frame, and put a thermometer or a watch-stick in the bed to denote the temperture, and when the heat seems steady between 75 degs. and 80 degs., place in the hills of soil; when that is warm through set out the plants. It is cheaper to buy them than to raise them at home. The Telegraph is a good variety.

E. HOBDAY.

15713.—**Retarding show Chrysanthemums.**—This is rather a delicate and complex question, for it is one thing to be able to grow fine flowers, and quite another to be such a master of the art as to know how to get any given kinds in perfection at a particular date. A great many things have, more or less, an influence on the time of flowering; but my experience is that (with the same varieties, of course) the time of potting has more to do with it than anything. I believe many growers put their plants in the flowering pots too early, unless they are wanted to bloom in October. If potted in May or early in June, standing pot-bound in the blazing sun of July and August, and watered freely with ammonia, they must, if the crown buds are taken, come in early. Strike the plants as soon as you like—the earlier the previous autumn, the better, I think—but if they are not finally potted until the middle or end of June, or even the first of July, are partly plunged after the first few days, and fed, until the buds are well set and swelling, with stable manure-water, which stimulates growth more than ammonia (this encourages bloom and hastens it as well), using the ammonia only towards the last, as a finish, a great difference in time will be observed. I know we have often potted such kinds as Madame Desgrange in April and May, when they bloom in September, but if left till end of June or early in July, this variety will not expand till October, and it is much the same with the naturally later-flowering kinds. Of course, it is bad practice to pot show Chrysanthemums too late—that must be very carefully avoided; but I, myself, have noticed the last two years that the blooms even of several first-class growers were decidedly past their best by the middle of November, just when they ought to be at their best, in my humble opinion, and, I feel sure, owing to potting too early. "Wraith" is quite correct in remarking that the crown bud makes the best bloom, but if this sets too soon, as it frequently does, it must be sacrificed, and one terminal only left, which will make a difference of a fortnight or more in time, and almost as good a bloom if well fed. This is where an old hand has the advantage of a beginner, in knowing which bud to take to get his blooms just when they are required. Shading is a dangerous thing, as anything permanent weakens the growth so, but a temporary protection from hot sun, kept on only as long as it lasts, has, undoubtedly a considerably retarding effect.—B. C. R.

15703.—**Large-flowered Chrysanthemums.**—The term "large-flowered," applies to all the sections, exclusive of the Pompons. But it is not a word that ought to be used as defining a class in a schedule of prizes; the right division is as follows:—1. Large-flowered incurved varieties. 2. Large-flowered reflexed varieties. 3. Japanese. 4. Large-flowered Anemone varieties. All the above might be placed in a stand if the words "large-flowered" only were used. The Pompons are also divided into two classes, or rather the Anemone-flowered Pompons are separated from the others, and formed into a section by themselves.—J. D. E.

15700.—**Bleaching Pampas Grass.**—I cannot tell "Daisy" how to bleach Pampas Grass to makes the plumes a creamy white colour, but I do know that if such are wanted they can be had from the particular varieties that produce plumes of that colour. There are a great number of varieties of Pampas, some of which produce plumes that are comparatively worthless for decorative purposes, while others have plumes of the colour that "Daisy" requires, which plumes, if cut when the inflorescence is just opening, will retain their colour for several months. The particular variety which "Daisy" requires does not produce many flower spikes, and these rarely exceed 5 feet in height.—J. C. C.

15709.—**Damage caused by falling snow.**—The answer to this question depends upon the nature of the tenancy. If the premises are held under a repairing lease the tenant would, in general, be liable to make good the damage; if under an agreement for three years or a less term he would not in general be liable, unless he has specially agreed to do such repairs, as a tenant for three years, or from year to year, is not liable—in the absence of any express or implied stipulation—to general repairs, nor even to make good mere wear and tear of the premises. But, whether the tenant holds by lease or agreement, the landlord is only liable to make good the damage in the event of his having expressly bound himself to do repairs.—LAWYER "Y."

BUILDING LEAN-TO GREENHOUSE.

"Nudis Verbis" intends building a lean-to greenhouse, 12 feet by 7 feet, for Roses and other cool-house plants, and wishes to know the best way to go to work, both as regarding building and heating the new structure.

In the first place, I should strongly advise the width being made 9 feet, or at least 8 feet, instead of 7 feet, for such narrow houses are very wasteful of space; there must be a pathway, which should be 2 feet wide, and stages under 3 feet in width are decidedly undesirable. The expense of wall, ridge, plates, piping, &c., is practically the same, and with a few feet more of bars and glass—nothing more—you make a clear gain of one or two feet in width all along the house. A lean-to will suit Roses quite well, if freely ventilated, but I should recommend, on the whole, a three-quarter span in preference, unless the wall against which it is to be built is lofty, for it is useless putting a three-quarter span against a wall rising much above the back plate. Still, as economy is an object, we will reckon for a plain lean-to, and, supposing my argument has prevailed, make it 8 feet in width.

To give the best results there should be glazed sashes, hung to open and act as ventilators along the front. These sashes may be 2 feet deep, and as the house is 12 feet long, four will be required, each nearly 3 feet long, allowing for the thickness of the posts. The framework to take them should be 2 feet 6 inches high, from the top of the upper plate to bottom of lower one, each 3 inches thick. This, with 2 feet 6 inches of brickwork (9-inch work), will bring the total height of the front to 5 feet. Now 9 feet from the ground (to the upper edge) fix a 6-inch by 1½-inch or 8-inch by 1½-inch ridge-plank to the back wall, with a groove to take the upper edge of the glass. The bars (3-inch by 2-inch or 3-inch by 1½-inch) must be cut 9 feet long, which will just reach, and a foot or 15 inches apart will be a very suitable width for the glass. Arrange three good-sized ventilators along the ridge, opening with a pulley and cord, and hang the front sashes. Fill in the end in the usual way with vertical bars and glass same width as in the roof, and door at least 6 feet by 2 feet. A stage 2 feet 6 inches high and 3 feet wide on each side the pathway will, I think, be the best arrangement—the front for the smaller plants, the larger at the back. Such stages are easily and cheaply constructed with posts and bearers of 3-inch by 2-inch quartering, and flooring-boards, placed a couple of inches apart, for the top.

If, however, glazed front lights are considered too costly, frame the front plates 9 inches apart (15 inches from outside to outside), and fill in with lengths of 9-inch board, hinged at the top. Keep the back plate at the same height, and cut the bars 10 feet long instead of 9 feet, to allow for the greater slope of the roof. Drop the front stage, in this case, 6 inches or more, to give more head-room. If the house, when finished, is considered too low, sink the pathway 6 inches or 1 foot, or the whole may be sunk partially, thus reducing the height of front brickwork, but I should not advise this. A 3-inch flow and return placed along the front under the stage will suffice to maintain a nice greenhouse temperature, and, as the pipes have to be carried round nearly three sides of the other house (12 feet by 7 feet), the same size will keep this up to 50 degs. at night, or cool stove heat, comfortably. This will make altogether about 70 feet of piping, which should be carried as straight as possible, the flow over the return, with a plain syphon at the far end. I should recommend a plain wrought-iron "Gem" or "Star" boiler (upright cylindrical), with extended top feeder, and if this is of a size well up to its work the fire will keep alight for ten or twelve hours easily, and maintain a nice heat in the pipes with a quiet fire, and therefore work very economically. The size required is the third from the smallest made, I think. A 2-inch flow, with 3-inch return, would, however, just keep up the required temperature, and, if economy is paramount, might be substituted. In this case a size smaller boiler might be made to do, but could not be relied on, and if the substitution of this is contemplated, an independent coil stove ("Acme" or the like) would, perhaps, be better, as burning more steadily, but not so economically. Steam from a hot sand-bed is generally not very dense, and, as the house is at present heated by a flue, might be even advantageous as counteracting the drying influence of the latter. When the pipes are put in it may become troublesome, but can easily be covered with a few slates.

B. C. R.

Gaultherias.—These pretty trailing shrubs are—one of them at least is—well known where American plants are grown, the largest, G. Shallon, being a very vigorous and dense grower. We have seen them used with fair effect in the rough rock garden on poor soil, and even on a rough rock wall, through which they rooted into a bank of sand. There is a fine hardy freedom about G. Shallon which makes it useful anywhere. The little procumbent species, G. procumbens, is a plant of a totally different character—a fragile rock shrublet, and yet particularly free and hardy when grown in a fully exposed position. Such a tiny shrub looks

Gaultheria procumbens.

well on the rock or near the rock, but grows with the greatest ease on any level soil, and bears pretty little Lily-of-the-Valley-like bells, succeeded by bright berries and foliage, always of a glossy hue, but changing colour with the seasons.

FRUIT.

SUMMER AND AUTUMN RASPBERRIES.

In many gardens Raspberries are relegated to some out-of-the-way place, or, worse still, they are dug between, and have all their surface roots injured. In order to give a plantation a fair chance, select a piece of light sandy land and give it a heavy manuring, when it should be trenched as deep as the nature of the soil will permit, or from 2 feet to 2 feet 6 inches. In doing this it is not advisable to bring the bottom to the top, but simply to break it up, mixing the manure with it at the same time, as then the roots of the plants find it out when most needed, and feed on it when carrying their fruit. The trenching done, the next thing is to plant, and the proper distance to put the young canes in the rows is 4 feet apart and the same distance asunder, placing them quincunx fashion; after that the canes should be cut down near the ground, as it is useless attempting to take a crop the first season. This being so, it would be waste to let the land between the plants be idle, and therefore Cauliflowers, Lettuces, Onions, or such like low-growing things, may be sown or planted between, but not sufficiently near to shade or interfere with the Raspberries.

Supports.—As soon as these break in the spring, and send up shoots, the three strongest should be selected and the others broken off or rubbed out, and when autumn comes round it will be necessary to decide how these canes are to be supported. Some use wooden stakes, but these are objectionable, as they are continually rotting, and last, at the longest, only about two years, and if they have to be purchased they become expensive. It is better to go to a little more outlay at first, and buy iron rods, which are almost imperishable if the ends are dipped in tar to begin with and the other part is painted. The proper length to have them is about 5 feet 6 inches, which admits of 4 feet standing clear out of the ground, and the 18 inches insertion is sufficient to steady them, but they may be stiffened considerably by slightly twisting the canes reverse ways up them instead of just tying them to them. Strained galvanised wire also forms a good support for Raspberry canes, as the canes may be spread out singly and every shoot exposed; but when wire is used it is necessary to have stout iron posts at each end, or very hard wooden ones, if they are to be lasting. Where economy has to be studied and stakes and supports done without, it is a good plan to bring a portion of the canes over from one stool to meet the half bent over from the other; this forms an arch, when by tying the points together they will in that way stand a good deal of wind and do very well. After bearing, the point is to clear away the old stems as quickly as possible, by doing which full light and air are at once let into the young suckers—an important matter, as by having full exposure they ripen better and yield much finer fruit than they otherwise would do.

When the plants are two years old as many as five or six canes may be left, but on no account should the ground among them be dug or forked, as neither can be done without disturbing the roots. Instead of the digging, when the pruning, thinning, and tying are complete, some rotten manure should be wheeled on and spread over the land as a mulching, and so left to rot away, as the plants feel the benefit of it when decomposing by having its juices washed down, and the shade it affords keeps the soil moist by preventing evaporation, which goes on at a great rate when the surface is bare and exposed to the sun. There are many sorts of Raspberries, but none equal, taking all points into consideration, to the old Fastolf and Yellow Antwerp, which are summer bearers, and the October red and yellow for autumn, all fine-fruited kinds and of good flavour. Although autumn sorts bear on the old or summer wood, the best way to treat them is to cut them down every winter and top-dress the ground, instead of letting the plants exhaust themselves by carrying two crops. To have these autumn kinds good they must have a sheltered, sunny position, or the fruit will not ripen.

S. D.

CANKER IN APPLE TREES.

I am very much obliged to Mr. Hiam for the additional specimens of insects from cankers. I do not think I over-looked the insects which I could not find among his first set of specimens, as I searched very carefully for them; but as they were merely folded in small pieces of stiff paper there was every chance of their escaping. Had they been put into a small glass tube, or gummed on paper, they would have travelled more safely. In the present consignment the specimens in the paper marked 3 were smashed, so that I could only just make out what order of mites they belonged to; however, that perhaps is sufficient for the present purpose. The specimens sent are as follows: Nos. 1 and 2 are eggs, probably of a mite, and are similar to those sent before. No. 3 contained specimens of one of the beetle mites (Oribatidæ), but they were so crushed that I cannot say anything more definite about them, except that they were not the same as those mentioned below. No. 3*a*, one of the beetle mites belonging to the genus Nothrus, and not, as Mr. Hiam supposes, more fully matured examples of No. 3. No. 5, said to be the larvæ of the tiny insect of the red spider type, to which much importance is attached, "as the commencers of canker by consuming the bud, and by degrees working down a spur into a branch." These are members of the genus Nothrus, and are the same as those sent me in the first lot, when they were mentioned as "occasionally found on the bark in crevices near canker." No. 5*a*, "an example of the first commencement of canker." On it were several white eggs the same as No. 2. No. 5*b*, "further development of canker." On this were two oval brown eggs, the surface of which was much reticulated. These are probably the eggs of one of the Oribatidæ. No. 5*c*, "succession of canker," from which specimen 5*d* was taken. No. 5*d*, on which Mr. Hiam says "are three kinds of insects, two of which have been mentioned in previous notes; but the very tiny specimen is No. 5 adult. I consider it will be necessary to be very vigilant to notice it, as they are only as a speck of dust when not in

motion. To give an idea—I have had under the microscope one of the larvæ (I consider), of which it would take over 40,000 to cover a square inch, if laid end to end and side by side. In all the specimens that friends were good enough to send me last winter I found this identical insect." I find on the piece of canker three different species of mites belonging to the family of Beetle mites (Oribatidæ). The name Beetle mites is given, not from the mites attacking beetles, but from a supposed resemblance to them. One is a Nothrus, similar to those already mentioned. The two others are members of the same family, but I have not yet been able to identify them from the books I have at present access to, but when I am able to determine them I will let Mr. Hiam know. One of them is, as he says, "very tiny," but they are larger than he thinks. I have measured one carefully with a micrometer, and find they are one-hundredth of an inch long, and about that in width, so that only 20,000 would be required to cover a square inch instead of 40,000. I must say I am still incredulous as to those mites being the originators of canker. At the same time, I must admit that these Beetle mites are more likely to be the culprits than any other insects which have been brought to my notice as the cause. I am making further investigations, and will let Mr. Hiam know if I can learn anything on this subject which would interest him. G. S. S.

What is canker?—There can be no doubt that, as Mrs. C. F. Davis states, broken places not distinguishable from canker may be produced by violence. A gardener, whom I had to dismiss for drunkenness some years ago, did great damage to trees on a lawn by his rough use of a mowing machine, and the bruises he made put on all the characters of canker. On the other hand, every one who has fruit trees must be aware that cankers form where there is no evidence or appearance of outward injury, and in places where any such injury is very unlikely to have occurred. Now, I think there will be some difference of opinion on the question whether the broken places noticed by Mrs. Davis are rightly named cankers. Those who think that canker is a specific disease, depending on some special cause, known or at present undiscovered, will not admit them; but those who think that canker means only the death of a portion of bark, and probably of the wood beneath it, however caused, will admit them. This is, perhaps, a matter rather of definition than of fact; and I give no opinion whether the strict or the wide use of the term is preferable. But when I saw the great variety of the specimens on which "G. S. S." founded his valuable report, I wondered whether things so different could all be cankers, and all depend on one special cause. It is easy to suppose that insects may form the small breaks often met with on young wood, with its thin tender bark; but how can we imagine them able to form the cankers, often many inches in length and breadth, which we find on old stems? Canker is presumed to indicate an unhealthy condition of the trees on which it is found, and if it consisted of the dying off of branches, such general causes as bad soil or overmuch wet, to which it is often attributed, might suffice; but it is difficult to explain the manner in which it breaks out, without supposing that there must be some local cause; and seeing what great mischief insects do, it seems very natural to attribute it to them. I fear that at present we have no proof of this. Further investigation may throw light on a point which at present seems obscure.—W. M. C., *Clapton.*

REPLIES.

15704.—**Cankered fruit trees.**—The scale on the trees is one source of debility; the canker is a disease totally different in itself from the parasitical attack of scale. The scale can be removed by scrubbing it off with a brush and some warm, soft, soapy water. The present is a good time to do this. Canker has to be dealt with in quite a different manner. It is caused by unhealthy root action; and how this has been brought about cannot be inferred from the vague remark: "They were planted well in good soil and manure, and the subsoil is rockwork." I remember a gardener well-known to me planting some fruit trees; he dug a deep hole, placed some manure in the bottom, over that the roots of the trees (which were 6 inches or 8 inches deeper than they were before) some more manure, and afterwards the soil which had been taken out. Probably he thought they were well planted. The fact is, they cankered in two years, and had to be taken up and replanted. The planting in the querist's case may be all right, but in the course of nine years the roots must have gone down to some unsuitable material. I would dig a deep trench from the wall, in the radius of a circle five feet from the hole of the tree, with a fork work out the soil from the roots, and raise them near the surface, mixing with the old soil a few barrow-loads of new loam. All the roots striking deep into the ground should be cut, they will throw out fresh fibres into the new soil, which will rejuvenate the trees, and the canker will not spread further.—J. D. E.

15518.—**Culture of Blackberries.**—Blackberries will put up with almost any careless mode of planting, and soon adapt themselves to existing circumstances; but where the very best and earliest profitable results are expected, there are one or two points that are well worthy of observation. In the first place, see that the plants are not planted any deeper than the plants were before being dug up. Blackberries are somewhat impatient when planted too deep, and this is one of the chief faults that amateurs are apt to commit. See that each hole is made sufficiently large, so that the roots have plenty of room, and are not cramped up. Do not throw in a solid lump of earth on the roots, but if the ground be heavy just knock the lump in a few pieces with the back of the spade, so that the soil which falls upon and around the roots is friable; fill up and see that the earth is then pressed firmly around the roots. If at time of planting the weather is very dry, it will be found of great advantage to "puddle" the roots before planting. "Puddling" the roots simply means mixing water with soil in a bucket or other utensil, or even a hole in the ground, until it attains the consistency of thin mud, and, before planting, dipping the roots of each plant in this mixture: this enables them to resist the drought much better until they establish themselves. If the weather is cold, bleak, or windy, expose the roots to the air as little as possible (we may here intimate that this advice really applies to all classes of plants, but we are astonished to find that it is very little acted upon; and then the nurserymen get blamed for what is really the planter's fault. Would planters but follow this simple direction, they would reap better direct benefits, and save their own and their nurserymen's feelings as well). . . . We come now to the section of "planting in the open," with culture, pruning, &c., &c., afterwards required. This will be the general method employed where the greatest profits are expected The distance apart from plant to plant and from row to row must be fixed by circumstances as may be convenient to the grower. The Americans plant them in rows 8 feet from each other, and three feet from plant to plant within the rows. This space between the rows is purposely allowed, to admit of the land being cleaned, &c., by horse labour. Here, in this country, however, 5 feet from row to row, and 3 feet from plant to plant within the rows, will be found the most convenient and economical. Keep the ground free from weeds, but do not allow the hoe to injure the roots. Cut off all suckers as they appear, with the exception of three or four of the strongest that should be left for next year's fruiting. Mulching will prove of immense benefit. In the autumn or early spring cut away the old wood, and cut back the three or four stout canes that are to fruit to about 4 or 5 feet from the ground. These can be tied and trained in any manner the cultivator may consider the most suitable; they can be arched over, or placed in any similar position, as Raspberries are done, the principal difference being that where a Raspberry is cut back to 3 feet or 4 feet from the ground, the Blackberry should be allowed a length of 4 feet or 5 feet. Blackberries may be made to form miniature trees by pinching back the tops of the canes in summer, when about 3 feet high; this pinching back causes them to throw out side branches, and keeps them dwarf and strong. It will readily be apparent to the veriest amateur that the culture is but of the simplest character, and in fact, as much like that of the Raspberry as possible.—*From "All About Blackberries."*

15463.—**Best flavoured Raspberry.**—As regards flavour I don't think there is much difference in any of the sorts in cultivation. Carter's Prolific is as good as any.—J. C. C.

ROSES.

15705.—**Striking Rose cuttings.**—"Amateur" does not say if his Roses were for the greenhouse or garden. The method that I invariably pursue, and which I have found very successful, is as follows: About the end of September, I take all the cuttings that I require, (this being done while the leaves are still on the trees), and plant them out in a border or corner of the garden where they will be out of the way, and leave them to themselves. They will strike as freely as a Currant tree or Gooseberry bush cutting. If "Amateur" will follow this mode of procedure, I think I can promise him that he will be successful with his Roses. In September, 1884, I put between two and three hundred cuttings in a sheltered corner in the garden, and in the autumn of the year 1885 I had a really splendid show of blooms from the young plants. "Amateur" may also strike Rose cuttings by layers in exactly the same manner as Carnations and Picotees. This must be done in July or August. With respect to greenhouse Roses, if "Amateur" wishes to cultivate these, he had better purchase his plants in September or October. These should be pruned some time in December, and then removed to the greenhouse or pit. When the plants are fairly started, weak liquid manure should be given. As the growth progresses, the shoots should be neatly tied out, so as to have nice compact plants. They must be protected from green fly and the Rose grub. When they have finished blooming, they should be removed out-of-doors, the same attention being given to them as when they were in the greenhouse. It will be highly beneficial to the Roses if some crocks and broken bones are mixed with the compost in which they are grown. During the summer, they should be liberally watered, and never allowed to become dry.—A. Henry Davis, *Carshalton.*

—— I should say that "Amateur's" Rose cuttings died from two causes. In the first place the cuttings were probably made from soft, unripened wood; and in the next, the air of the house was too dry. A cold pit or frame, or even the open ground, is more suitable for striking Rose cuttings than a greenhouse, unless they are very skilfully treated by being shaded from the sun, and currents of air being prevented from passing over them.—J. C. C.

—— The right treatment seems to have been followed. Perhaps it was an error to place the pots containing the cuttings in what was, doubtless, an airy greenhouse. The cuttings take some time to form roots, and during the time from putting in the cuttings until roots are formed they should not be exposed to a drying atmosphere. Had they been put into hand-glasses, the lights of which were kept close, they might probably have formed roots well. Try this next time.—J. D. E.

15376.—**Rose growing in London.**—I should advise "West Kensington" to plant a Maréchal Niel and Gloire de Dijon, if they are preferred to any other Roses, as it is possible they may do better than he expects. They would do better with their roots in a border than in pots. But in this case so much depends upon what amount of light they receive, and whether they have to contend against gas. Roses would be more likely to succeed in such a case if they were not excited by too much warmth during the winter.—J. C. C.

—— "West Kensington" ought to have no difficulty in growing Roses with the means at his command. I live in South Kensington, and have a small greenhouse, in which I cultivate a few Roses in pots, and generally get them in bloom about a month earlier than those grown out-of-doors, which makes them more appreciated. My plan is this: I procure some dwarf Roses on the Manetti, and pot them on rather rich soil—say, a mixture of good loam and rotten manure. The size of the pot varies according to the roots; should there be a long tap root

without fibres I shorten it, or cut it off altogether, leaving only the fibrous roots. As soon as they start into growth I prune them rather closely, and as they make growth syringe constantly (this is the great secret of success). When the buds begin to swell I give liquid manure; free ventilation to be maintained throughout. Should green fly make its appearance, fumigate with Tobacco paper, and well syringe afterwards. The following sorts are well adapted for pot culture:—Gloire de Dijon, La France, Comtesse de Serenye, Baroness Rothschild, Madame Marie Finger, Jules Margottin, Madame Clemence Joigneaux, Duke of Wellington, John Hopper, Magna Charta, and others. I have in a border a well-established tree of Maréchal Niel, which is rapidly filling the house since I have had hot-water pipes. I had previously tried for years without success; it is very tender and early, and requires a little warmth to keep out the frost. Should "W. K." require any further informatiou, shall be pleased to give it if I am able.—J. H., *South Kensington.*

—— I should certainly advise "West Kensington" to attempt a few Tea Roses in his greenhouse, and there is no reason why a fair amount of success should not be attained, with care and proper treatment, of course. The plants would probably do better planted in a well-drained bed or border, or even in good-sized boxes, than in pots, and the soil should be a mixture of the best loam, decayed manure, and leaf-mould obtainable, with a little coarse sand or crushed charcoal. Gloire de Dijon would, doubtless, be most easily succeeded with—at least, as far as growth is concerned—though this variety is sometimes too apt to make growth instead of bloom under glass; but is well worth a trial, and with plenty of room would probably do well, and flower after a year or two, if not just at first. Maréchal Niel is more delicate aud difficult to establish; but once it makes a start is more floriferous and useful, and a plant or two of Niphetos, in good-sized pots, might be succeeded with as well. Get the sturdiest plants obtainable to commence with, encourage a strong growth by liberal treatment, and, above all, keep them constantly and perfectly clean by some means.—B. C. R.

—— A considerable residence in Kensington enables me, I think, to say safely that Roses cannot be grown there with any degree of success, even under glass. The air is not pure enough, nor is the light sufficiently intense so near town to maintain strong growth, without which all chauce of decent flowers from the Rose is hopeless. If the querist cares to make the experiment, the two varieties mentioned may be tried, and they will, no doubt, give some bloom during the first season; but afterwards, as the delcterious effects of their surroundings begin to tell upon them, they will not be likely to do much good.—K., *Southend.*

FAVOURITE FLOWERS AND HOW TO GROW THEM.—VI.

The Garden Pink.

Like the Carnation, this is au old garden favourite, and altogether a hardy plant. It was cultivated by the Romans, having been introduced to Rome from Spain iu the time of Augustus Cæsar; and, according to Pliny, it was named Cantabrica, from the part of Spain, Cantabri, whence it was introduced. Turner, an early writer in our own country, calls it Cantabrica geloner. He says: "The garden Geloners are made so pleasant and sweet by the wit of man, and not by nature." It is not difficult to recognise a drawing of a Pink in Parkinson's "Flower Garden," edition 1656, page 313, No. 12; it is the only double variety with smooth edges to the petals; its name is Mr. Tuggie's Rose Gilloflower. Carophyllus plumarius, the reputed parent of the garden Pinks, has been described by Parkinson as the parent of the Feathered, Jagged, and Star Pinks; but they are figured as single varieties only, while C. sylvestris is stated to produce both single and double flowers. Miller, the author of the "Gardeners' Dictionary," writes much on the Carnation, but sums up the culture of the Pink in a few lines. He says they may be grown in the same way as the Carnation, but with much less care; that they need not be potted like the Carnation, but may be grown in borders, "where they make as elegant a show during their season of flowering as any plant whatever, and afford as agreeable a scent." The varieties mentioned are the Damask Pink, White Stock, Scarlet, Pheasant's-eyed Pink, and Old Man's Head. The Pink was greatly improved during the years from 1832 to 1852. In that period Pink shows were the rage. I remember the late Mr. John Keynes, of Salisbury, telling me that they had six Pink shows in that city in one year. Indeed, it is related of that ardent florist and excellent cultivator that Pinks were the first flowers grown by him, and to obtain his collection of plants he had to leave his watch at a pawn-shop. Many persons of taste, and with an intimate knowledge of these favourite garden flowers, prefer the Pink to the Carnation or Picotee. I cannot say that I agree with them. I have, however, before me an excellent article on the Pink, written by the Rev. George Jeans, in which he says: "There are not a few humourists—and I am not ashamed to confess myself one of them—who, after all, hold to the Pink as their favourite." There is one advantage attending the cultivation of the Pink, and that is the ease with which it can be cultivated in any garden. I can scarcely recommend the rough and ready way in which they are cultivated in the fields near London to produce flowers for market; they are, however, a very profitable crop, and one large grower told me that they paid better than growing Cabbages. The varieties grown for market are of a very common type, the principal part of them being the common fringed White, which may have been grown a century ago. The favourite hardy garden Pinks are those that produce what are termed laced flowers, and to grow these beautiful and sweetly-perfumed kinds in the highest state of perfection a certain routine of culture is necessary. They should be

Propagated about the end of June from "pipings," that is, the slender growths formed round the base of the stems should be slipped off, and be inserted in fine sandy soil. When a boy at school, I was very successful in propagating the Pink in our cottage garden at home without any bell or hand-glasses. My plan was to take off the pipings on a wet day, and insert them at once in a shady place, so that they never had a chance to flag. If sunny, dry weather set in after, they were shaded by day where the sun shone on them. In this primitive manner, I would obtaiu at least 90 per cent. of plants from the cuttings. This was in the south of Scotland; in the more hot and dry atmosphere of the south of England I use boxes of any convenient size, say 3 inches or 4 inches deep, and about 9 inches wide. I place the boxes in a cold frame behind a wall, and they can in this way be sheltered from drying winds. The boxes may be filled with fine loam, leaf-mould, and sand in about equal portions. Remove a few of the lower leaves, and dibble in the pipings merely by the pressure of the fingers. When they are rooted, plant them out-of-doors in nice friable soil, about 4 inches apart, to be replanted in the beds where they are to flower, about 8 inches apart. This ought to be done early in October, in order that the young plants may become established before the winter. Ordinary garden soil does well to grow them in, if it is not a heavy clay; but they will grow in this if it can be lightened by mixing with it road scrapings, leaf-mould, sand, or any material that will keep the clay particles open. Pinks of this class are not valued by the fanciers unless they are laced, and they will not be likely to produce perfect flowers unless they are established where they are to flower, before the winter. If planted in the spring, most of the flowers will produce merely dark centres with no lacing, and if they are not well established, alternate frosts and thaws will throw the plants out of the ground in winter. Even with the best culture this will happen, and it is necessary to look over them sometimes and to press the plants in with the fingers.

The plants are frequently eaten over, as if by an unseen enemy during the autumn and early winter months—sometimes plants are shorn off close to the surface of the ground. Rabbits are very fond of them and may have done it, but most likely it is that troublesome pest of the gardener and amateur—the leather-coated grub—a nasty, dusky, tough-skinned pest, which must be watched for by night, and should be destroyed when feeding. Slugs may also be found feeding on the leaves, these can also be picked off by the aid of a good lamp. If good flowers are required for exhibition, the ground ought to be mulched over the surface with short, rich manure in April, and if the weather is dry water freely. Some varieties have a tendency to burst their pods; these should have the pods tied round with thread or a strip of matting before they do burst. New varieties must be raised from seeds, and the flowers ought to be fertilised with a small camel's hair brush. Only the very best varieties should be used as seed and pollen bearers. Nothing more is required than to carry the pollen from one flower to another with the brush. The seeds may be sown early in April, and will flower well the year following.

A few of the best laced Pinks are: Annie, Bertram, Boiard, Brenda, Clara, Device, Emily, Excellent, Freedom, George White, Harry Hooper, Lady Craven, Jessica, John Ball, Modesty, Mrs. Howarth, Pandora, Reliance, Rosy Gem, Rosy Morn, Sarah, Shirley Hibberd, Tottie, Victory, and William Paul.

Jas. Douglas.

BEES.

SEASONABLE NOTES.

The winter, so far, has been very favourable to the bees, long spells of cold weather having kept them within their hives, and prevented the consumption of a large amount of stores. The careful apiarian now begins to make preparation for the busy time coming, and provides himself with the necessary quantity of hives, sections, supers, feeders, comb foundation, and so forth.

Spring stimulation.—The Snowdrop and Crocus, first harbingers of spring, will soon appear, stimulating the bees to activity, and the queens to breeding. This is, however, a very trying time, for, influenced by the income they obtain, though but trifling, the rearing of brood is commenced, though at any time sharp frost may occur, causing the bees to condense their cluster to the smallest compass, and leave the brood to perish, while oftentimes many bees will also become chilled, and die from their natural unwillingness to desert their brood. It is, therefore, strongly to be advised that the activity of the bees, for the present, be not encouraged, but that hive entrances be shaded from the rays of the sun, and that the bees be kept as quiet as possible in order to prevent undue activity.

Feeding.—Hives, properly provisioned in the autumn, will not require feeding at present; but where feeding is found to be necessary to prevent starvation, the food should be supplied in the evening (in mild weather), and only as much given as the bees can take in a few hours, so that they may become quiet before the morning. If fed during the day-time, the excitement caused by the supply of food will induce them to fly abroad in search of a natural supply, and many will never regain their hive. Candy and barley-sugar are both good as winter food for bees, or a good feeding syrup may be made as follows:—To three pounds of boiling water gradually add ten pounds of granulated sugar, keeping it stirred with a wooden spoon till all the sugar be dissolved; then add half a teacupful of water in which has been dissolved a teaspoon, level full, of tartaric acid, when, after stirring a moment longer, remove from the fire. This syrup, when cool, is of the consistency of ripe honey. The tartaric acid prevents the syrup becoming candied. It should be supplied, just warm, in a feeder placed on the top of hive, the whole being well covered with some good heat-retaining material. Another kind of food is made by mixing liquid honey and finely powdered loaf sugar together to the consistency of putty. This can be laid upon the frames in the form of a cake, and is readily taken by the bees. In the case of straw hives, it can be introduced at the feed hole. By this manner of feeding no disturbance is caused to the colonies.

Dysentery.—This disease is caused through cold and dampness of hive, by partaking of food which disagrees with the bees, and by their being kept long within the hive through stress of weather. All unnecessary manipulation and disturbance of bees during winter months causes excitement within the hive, and

an undue consumption of food, which tends to bring about this evil. Unripe or fermented honey will also cause dysentery. Hives found to be foul from dysenteric discharges should have the combs and bees transferred to fresh, clean hives, all soiled frames being scraped and washed over with a weak solution of carbolic. The transferred bees should be supplied with a cake of candy, or a comb or two of sealed stores, the division moved so as to reduce the size of the hive to the number of combs covered by the bees, the spaces filled up with chaff or Cork dust, proper ventilation given, the hive protected well from cold, and the bees disturbed as little as possible.

Clearing floor boards.—It is a wise precaution to search, with a bent wire, all floor boards for dead bees, and thus keep entrances clear. Bees take every favourable opportunity during the winter of casting out of the hive their comrades that have died from natural causes. Some carry them away and drop them at a distance from the hive, others do not carry them far from home, but simply throw them out, and in cold weather oftentimes get them only as far as the entrance, which, thus becoming blocked, stops free ventilation. The searching wire should be strong but thin, and long enough to reach all round the floor board, having the hook only of a length to permit of easy withdrawal through entrance.

Boxworth. S. S. G.

BIRDS.

QUERIES.

15858.—**Skylarks.**—Will any kind reader explain how I may recognise cock skylarks—not young birds, but birds about two years old?—Reader Five Years.

15859.—**Californian quail.**—Can any reader afford information as to the usual nesting place of this bird? Here they lay quantities of eggs, but have so far never attempted to make a nest.—V. V.

15860.—**Cardinals and canaries.**—In reference to "G. H. D.'s" valuable information in Gardening, Jan. 23, I should be glad if he would kindly inform me if it would not be dangerous to keep cardinals and Pekin nightingales with canaries at breeding time *i. e.*, would they be likely to kill the young?—G. H. A.

15861.—**Mopish canary.**—I have a cock canary which was a good songster, but now has ceased to sing; he pants, looks mopish, and huddles himself as if cold. He eats, but does not use his bath, and has twice suffered from what seems to be a fit. I should be glad to learn what is the matter with him, and what I ought to do.—W. Tippetts.

REPLIES.

15741.—**Sick parrot.**—On no account should the poor bird be kept without water, as "S." suggests. All parrots should have pure, clean water with the chill off; certainly not meat, or milk, or any fatty food. If "Erin" will consult Dr. Green's "Parrots in Captivity," or Herr Russ's "The Speaking Parrots," she will see how greatly they both condemn the absurd practice of depriving parrots of water.—E. C.

—— Seeing an inquiry about a sick parrot answered by advice to give it no water, I am impelled, in the interest of humanity, to say that it is both cruel and unnatural to confine any bird or beast, and such as parrots, rabbits, &c., and give them no water. I have a grey parrot which has been in my family for over twenty years, and is in perfect health and plumage. I give him warmth (temperature from 50 to 60 degs.), cover him at night, and give him any food he likes, water being always kept in his cage, which he drinks and enjoys dipping in. He has Hemp-seed always, and daily toast buttered on one side, any vegetables in season, eggy puddings of all sorts, and cake, all of which he enjoys in turn, and is a great talker, and a most intelligent bird.—J. L. P.

15648.—**Birds for open-air aviary.**—Many thanks to "G. H. D." for reply to above query, which was, perhaps, not fully put. The aviary in question is capacious, well-constructed, and evidently well suited for any but birds from very warm climates. There is a house for them to live in, nicely warmed, to which they have free access night and day; it also is well-furnished with live and dead perchings and resting-places, in addition to the outside compartment (about 20 feet by 20 feet by 7 feet high). Canaries seem to be quite at home, breed freely, and are so hardy and vigorous that they quite prefer the open air to the warm house, even during the coldest winter's day (not at night) and it is most interesting to see them picking about amongst the snow, or singing merrily while it is falling. Green paroquets seem as happy as the canaries, live in the open air during the day time, but, so far, do not breed. The African waxbill thrives and is happy, but the St. Helena waxbill has died out, so has the siskin, and so has the Java sparrow; the latter bird is not liked, it does not sing, and its ugly bill gives it the appearance of a bird that could "eat a fish;" as a matter of course, goldfinches are quite at home, and are amongst the prettiest of birds as well as being sweet singers. Greys, or redpoles, are quite in clover, and others outside come and ask to be let in. The bird, however, is not either a singer or handsome, and what are wanted are birds of bright and varied plumage—the smaller the better, and if songsters, so much the better—which would be likely to conform to the conditions stated and to breed. Most of the finches abound in the garden and are very tame, and it is not desirous to shut up any bird which can be enjoyed in its liberty, and if "G. H. D." would kindly add a few particulars regarding the red-crested cardinal, Pekin nightingale, or any of the others he mentions, which at all conform to the requirements of the case—*i.e.*, plumage, food, nesting-places, &c., I should esteem it a favour. Can he also afford particulars as to the usual nesting-place of the paroquet?—V. V.

POULTRY.

QUERIES.

15862.—**Mandarin and Carolina ducks.**—Do these usually breed in this country; if so, under what conditions? And can any reader state as a fact that a pair of either bought, say from a London dealer, were ever known to breed at all?—V. V.

15863.—**Poultry for profit.**—In his letter on p. 675 "Amateur" makes no allowance for proportion of cost of buildings for the poultry, nor for rent of ground occupied, nor for attendance. Would not this considerably reduce the profit of £7? I am anxious for a reply. Can any readers give estimates for poultry keeping and its results on a more extensive scale, suitable for—A Practical Farmer?

REPLIES.

15732.—**Sex of guinea fowls.**—To ascertain this is a somewhat difficult task, especially for inexperienced fanciers. As a rule, the cocks are larger than the hens, and the horny peg-like appendage on the head of the male is also more prominent than on the female. The wattles of the cock are also larger, and of a bluish tint, whilst those of the hen are red. The sex may also be distinguished by the cry of the birds. The female alone gives utterance to the well-known "Come back," the cry of the cock being a kind of chatter. The cocks, too, are often inclined to fight. If the querist intends to keep his birds for breeding purposes, he must take care to provide himself with an equal number of cocks and hens, for guinea-fowls mate in pairs, and even then a large proportion of the eggs are infertile.—Doulting.

15733.—**Irregular laying.**—It is hardly possible to give a reason why your hen has not laid regularly. It may be a question of food, warmth, or health. Fowls kept under ordinary circumstances, as a rule, stop laying very soon after cold weather sets in. Again, overfed fowls never lay well, and eggs cannot be expected from sick birds. The hen, having commenced to lay, ought certainly to have continued; and I am inclined to lay the blame on a defect in the management somewhere. With reference to the second portion of the query, fowls may be said to be full grown when they attain the age of twelve months. True, most birds fill out considerably after that time, and, on the other hand, pullets less than a year old seem quite as big as their mothers. But for all practical purposes the above-mentioned age may be taken as correct. There is no recognised method of ascertaining the age of fowls after they get a year old. They then begin to assume an adult appearance, and after the next moult it is almost impossible to speak with any certainty as to their age. I advise the querist to read the reply on this subject to which the Editor referred in his foot-note a fortnight ago.—Doulting.

15864.—**Minorcas and Black Hamburghs** *(G. B. F.).*—Both the breeds you mention rank very high as egg-producers, and are non-sitters. The Minorcas are the best layers of the Spanish breeds, and the chickens are tolerably hardy. In the south-west of England the breed is a great favourite, and those who want a good non-sitting breed in that part of the country cannot do better than give it a trial. It is true that Minorcas do not occupy a high position as winter layers, but I am of opinion that with judicious breeding and great care this defect can be removed. They will not be out of place in a roomy pen, but when kept under such circumstances their wants must be attended to. The Black Hamburgh was originally produced by crossing with the Spanish, but now breeds true to points, and for many years has had a class of its own at our leading shows. Their eggs are small when compared with those of the Minorca, but are exceedingly numerous, and larger than those of any other variety of Hamburgh. The breed is a profitable one, for if the eggs be small the birds are small eaters. They cannot easily be kept confined, for they fly like birds, and require a very high fence indeed to keep them from straying. They will, however, bear confinement, but kept under these circumstances require more care than any other breed, and must not be so thick upon the ground. Where half-a-dozen Brahmas will thrive, only four Hamburghs must be kept. I am no advocate for keeping fowls in confinement, but if it be necessary to do so the wants of the fowls should be carefully studied in every way. The ground on which they run should be kept sweet, either by sweeping or repeated diggings; a supply of grit or old mortar rubbish and a dry dust bath provided; green food plentifully supplied; fresh water always within reach of the fowls; and last, but not least, do not try to keep too many birds.—Doulting.

15685 and 15686.—**Best egg-producing fowls.**—I know of no better fowls to suit "Station-master, Essex," than silver Dorkings. I have kept them for eleven years on much the same sort of run as described, and for several years have given up keeping any other breed. They are showy, handsome birds, and to me, at least, have proved very profitable for exhibition, for table, and as layers. They are very hardy, for the situation here is 800 feet above sea level. I never use any precautions, save keeping my hen-house clean and well limed, and free from draughts.—Longformacus, *Duns.*

Smithfield market, Evesham.—List of prices realised Jan. 28, 1886:—Brussels Sprouts, 2s. 6d. to 4s. 11d. per pot; Carrots, 1s. 6d. to 2s. per cwt.; Cucumbers, 8d. to 1s. per doz.; Onions, 4s. to 4s. 6d. per cwt.; Parsnips, 3s. to 3s. 4d. per cwt.; Potatoes, 1s. 6d. to 2s. per pot; Savoys, 4d. to 11d. per doz.; Sage, 1½d. to 2d. per doz. bunches; Turnips, 1s. 3d. to 1s. 6d. per pot; Apples, 2s. to 6s. 6d. per pot; Pears, 2s. to 3s. per pot.

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GARDENING ILLUSTRATED.

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FAVOURITE FLOWERS AND HOW TO GROW THEM.—VII.

THE CINERARIA.

IT is interesting, instructive, and highly amusing to turn over the pages of some of the old illustrated periodicals of about fifty years ago, for the purpose of comparing the flowers then in cultivation with the improved varieties now grown in our gardens. The Cineraria is one of the flowers that affords material for useful suggestions. The original species has been exhibited frequently during the last few years, with the improved varieties obtained from it. The species itself has pretty reddish flowers with narrow strap-shaped petals; but it is evidently very sportive in its character, and very soon after its introduction numerous garden varieties had been obtained by the raising of seedlings. It was introduced from the Canaries in 1777. When the horticultural exhibitions were so popular at Chiswick, some forty years ago, the Cineraria was a very popular exhibition plant, and was exhibited so late as the second week in May. The varieties exhibited were all named, and had been propagated. Eighteen plants were required, and when some half-dozen exhibitors came forward to claim the prizes, the effect of the numerous brightly coloured flowers would be very beautiful in the mass, even if they would not have such well-formed flowers as are now to be seen on the specimens exhibited at the Royal Botanic Gardens, Regent's-park. The Cineraria was a much more popular exhibition plant a quarter of a century ago than it is at present. Indeed, I well remember having something to do with the growing of some first-prize plants quite thirty years ago, and can recall the intense interest with which the development of the plants was watched, and also the production of the flowers; and shall never forget the disappointment we had with a splendid lot of exhibition plants of the very best and newest varieties. The plants were of large size and of perfect development, when, just as the first flowers began to open, one branch after another died off, until most of the plants were pitiable to behold. It was some time before the cause of the calamity was ascertained, but it was ultimately traced to the use of manure water, obtained by soaking sheep's droppings in a tank of rain water. This, if it had been used very weak, would have been beneficial, but it was used too strong and killed the roots, which was evident as soon as they were examined. The varieties grown at that time did not produce very large flowers, but the plants were of excellent habit, dwarf and compact, producing a regular head of bloom. There were beautiful blue selfs, such as Sir Charles Napier. A beautiful variety, named Brilliant, had pure white flowers with a bright blue edge, very pretty. There were rich bright red and purple varieties, and many forms white, with rich margins of various colours. But their names are of little consequence now, for even if they were in cultivation, and could be obtained, they would not be worth growing in comparison with the better varieties that might be raised from a packet of the best seeds, purchased for a few shillings. The Cineraria is one of the very best greenhouse plants we have to produce brilliant flowers for the decoration of the greenhouse or the conservatory during the first four months of the year. I would not recommend the purchase of a collection of named Cinerarias, because they are not to be obtained so good as those which anyone having a knowledge of plants could produce from seeds; but I intend to describe the best way to produce plants by offsets, so that anyone wishing to propagate particularly good varieties of his own raising, or otherwise, may be enabled to do so.

THE PRODUCTION OF PLANTS FROM SEEDS is very simple, and much more interesting in its details than that of any other method of procedure. To produce very large flowering specimens the seeds ought to be sown about the end of May, and for successional plants of smaller size about the end of June, or even a month later. For instance, as soon as the seeds are ripe they ought to be sown in some light sandy loam and leaf-mould. A pan or pot, 6 inches or 7 inches in diameter, would produce as many plants as would fill a large greenhouse. The seeds may be thinly sown, and even then the produce from good seeds would be over a hundred plants. As soon as the plants have formed two leaves other than the seed leaves they may be planted out to the number of 6 or 8 in 60-sized pots. During the summer months the seed-pans or pots may be placed in a cold frame, the back of the frame to the south, so that it faces north. When the plants are potted off they will do better in this frame than anywhere else during the months of July, August, and September. When the plants have grown so as to quite cover the soil in the pots they may again be potted singly in small pots. After this they grow very freely, producing healthy, deep green leaves, which are in themselves very beautiful, owing to the rich purplish colour underneath. The object of the cultivator is to preserve all those outside leaves, and this can be done by not letting any of the plants suffer from want of water at the roots. They need not have any water over the foliage. Another cause of the destruction of these outer leaves is the plants becoming pot-bound before they have been placed in the pots in which they are to flower. I flower the largest plants in 8-inch, and the smaller ones in 6-inch pots, but they will not be large enough to be placed in these while they are in the frames. The potting soil used for the plants when they are in small pots is finer than that used for the flowering specimens, but it is the same as regards its constituent parts: four parts good loam, one leaf-mould, one cow-manure, and one sharp sand. In potting, press in the compost moderately firm with the fingers.

PROPAGATION BY OFFSETS OR CUTTINGS is an easy and simple method of increasing the stock of any choice varieties. The plants intended for this purpose should be cut over when they have done flowering, but do not cut them down too closely. The best place for the plants is a frame behind a north wall. Offsets will be produced from the base of the stems and from the axils of the lower leaves. The offsets may be removed as soon as they are large enough, and be potted carefully in small pots. These offsets are better than cuttings, although when a large stock of plants is required cuttings may also be encouraged to form roots. We grow the offsets in hand-glasses, which are placed for the purpose on the north side of a wall or fence, and a low wall is better for the plants than a high one. They do not take long to fill the small pots in which they are placed with roots, and good culture consists in repotting them as soon as they require it, which may be in four or six weeks. If potted in good compost, they grow very rapidly when once they have made a good start, and during the summer months they will grow and thrive well in ordinary garden frames, the lights of which ought to be removed whenever the weather is favourable. Indeed, they merely require protection from heavy rains and very high winds, either of which would materially damage the leaves. Except from the damage likely to result from exceptional weather, the plants might be left in the open-air night and day all through the summer and autumn months. In fact, I have seen a splendid lot of plants produced by planting out good offsets in July in the open ground; they were large healthy specimens when they were taken out of the ground, and planted in the pots that they were to flower in about the end of September. There is considerable risk in leaving the plants out in the open air after September, as they are easily injured by frosts. January is a good month in which to finally pot any plants required to flower as larger specimens in April. By that time the plants will be of considerable size, and the centre growth should be pinched back; indeed, that ought to have been done in November, or at least in December; but they must only be stopped once. If the shoots are stopped a second time the growth will be very weakly, and will not produce first-rate specimens. As growth progresses, the shoots ought to be tied out to a wire fastened under the rim of the pot; and if the leaves are too numerous they must be thinned out, so that those remaining may have free space to develop themselves. The plants must not be placed too near each other, and they should have plenty of light by being placed near the roof glass; and, whenever the weather is favourable during winter, air ought to be admitted freely, protecting the plants from high winds, which rapidly dry up the juices of the plants, and cause some of the larger leaves to flag. When they do this to a considerable extent they never recover, and have to be removed, which spoils the appearance of the plants. A good cultivator is always careful to preserve the foliage of the plants under his care in a good healthy growing condition, undamaged by accidents or insect pests.

The Cineraria is subject to the attacks of mildew, during autumn and winter especially. It can be destroyed before it does any injury to the plants by puffing fine flowers of sulphur amongst the leaves. When the disease is first observed on a few plants the whole collection should be slightly dusted over, but not so much as to disfigure the leaves with yellow powder. Green fly is also very troublesome; it crowds closely under the flower buds, and does much damage before it is observed, unless the plants are closely watched. It is a good plan to keep such troublesome pests out of the house by fumigating. Whether they are present or not

the house should be fumigated when the plants are taken in from the frames in the autumn, and in a month fumigate again. This will probably keep the plants clean, which is much better than destroying the insects after they have injured the plants by sucking their juices. Black thrips are sometimes troublesome during hot weather in summer; they increase rapidly on the under sides of the leaves, but are seldom seen on plants that are grown in a cool place during summer.

Named varieties.—Although I advise the culture of seedlings rather than of named varieties, it is only right to say that there are now some good named varieties in cultivation, and these I have obtained in the usual way of trade. A few years ago a splendid variety was certificated by the Floral Committee at South Kensington named March Past, and, later, Victory and Mr. Cullingford. Other good sorts, not certificated, were Dr. Masters, Excelsior, James Douglas, Mrs. Burt, and W. E. Gladstone; Mr. J. B. Alston was certificated. These were exhibited by Messrs. Cannell and Sons. Fine as the above are, they have been surpassed by the productions of that ardent florist and good cultivator, Mr. J. James, of Farnham Royal, near Slough. After a quarter of a century or more of skilful culture and judicious selection of varieties, Mr. James has at last distanced all competitors in the production of named varieties of high-class quality. Last year he received no less than nine first-class certificates for Cinerarias. However, as none of the seedlings raised by Mr. James are to be obtained through the trade, the names are not of sufficient importance for publication. The double varieties of Cinerarias have now taken an important position as beautiful decorative plants for the greenhouse and conservatory. They are certainly not such elegant plants as the single varieties, but they can be obtained from seeds, although I must say that a batch of seedlings contains many plants that cannot be tolerated in any greenhouse. Named varieties can be propagated readily in the same way as the single. A few of the best at present are A. F. Barron, Ada, Hernica, Mr. Thomas Lloyd, Mrs. R. Vertegans, and Professor Henslow. J. Douglas.

WINTER GARDENS.

When Bacon wrote his memorable essay on gardens, and regretted that fine gardening was so much more rare than good architecture, it was, without doubt, to open-air gardening that his allusions were made. A well planted garden is interesting and cheerful at all times and seasons, but winter is after all the true test and touchstone of the gardener's art. More especially is this true in the case of town parks and open spaces wherein a desert of bare earth but too often succeeds the flowers of summer. In spring and autumn we have greenery and the brightest of flower-colour everywhere, but just "now is the winter of our discontent," when fresh leafage or jewel-like glints of colour here and there are as precious as is the sunshine itself of these wintry days. After all, there are many plants in our gardens which will pass through our worst winters unscathed, and even were we confined to our native shrubs alone, we have Hollies and Ivies of kinds many and varied, and a judicious use of these, unaided by exotics, would at least give an air of cheerfulness to the beds and borders which are, alas! too often left desolate and tenantless from November until February. As a fact, we have hardy plants by the hundred with which to bridge over that period of desolation which begins with the fading of the Chrysanthemum and only leaves us when the "golden Crocus crowns the green."

Of all horticultural truisms, that particular one of Cowper's, "Who loves a garden loves a greenhouse too," is, perhaps, the most self-evident in our gardens to-day. You see hothouses or greenhouses everywhere, and far be it from our intention to deprecate their right and proper employment, since only by their aid can we ever hope to enjoy to the full the grace of tender Ferns or the delightful delicacy of tropical Orchids in our northern climate. But the glasshouse, with all its excellences and comfortable conveniences, brought in its train some evils, not the least of which was that it rendered possible the expulsion of those dear old flowers which our great grandmothers loved as children. That it also opened the way for that era of gaudy bedding plants, a mania the excess of which all true gardeners deplore, is, of course, well known. Then, as we have before said, the eagerness to be employed under a glass roof has actually demoralised our gardeners as a class, and so brought about an evil it will take years of good teaching to remedy. But the pleasure of a true and vigorous *renaissance* is ours, for not only have we brought back to the quaint and cosy country houses all the old favourites of Gerard and Parkinson—in a word, the flowers of Shakespeare's epoch—but so strong is this reviving love, that hundreds, if not thousands, of the beautiful wild flowers of Europe, Northern Asia, and of America, never before cultivated, are now to be found in English gardens. What now seems to us most necessary is some well-directed efforts towards enlivening our gardens during the dullest portion of the year, using for this purpose plants that are perfectly hardy and beautiful in leafage at least, even if not in blossom. It is so easy to "paint the Lily," or, in other words, to make the garden gay in summer time—Nature does that; but to do so in winter is a far greater triumph.

A double Cineraria. (See article on page 707.)

Outdoor gardening, in a word, is like fine sculpture. We appreciate it only after having passed through the "valley of humiliation" of art. So also must the artistic gardener struggle through the flashy triumphs of hothouses and stoke-holes, of bedding plants and glass roofs, ere the noble simplicity and ever-growing beauty of open-air gardening is revealed to him. Given a deep rich soil, well drained, of course, and its potentialities are as infinite as clay in the modeller's hands. It is the canvas on which may be painted a living picture of ever-changing beautiful things. We must have evergreen shrubs for groups on the Grass and drapery for tree trunks or bare walls. In smoky districts, or near towns, Conifers of all kinds are perfectly useless, and one must mainly employ glossy-leaved Hollies, Ivies, Aucubas, Euonymuses, and perhaps Rhododendrons in bold groups. The large-leaved golden Ivy is especially warm and bright in tone, and should be largely employed in suitable positions on walls or pillars, where its glowing colour may remind one of "sunshine in a shady place. Beside it for contrast the Coral Thorn or Pyracantha may be planted for the sake of its winter harvest of bright red fruit, as recommended by Parkinson 250 years ago. So also the oval-leaved Garrya may be employed, since even now its soft grey tassels dangle in the breeze, reminding one of the Willow catkins or Palms of early spring. The golden Japanese or winter Jasmine is also a most valuable shrub, and an Ivied wall bespangled with its golden stars is now a pretty sight. Then for varieties we must have the Japan Allspice, the waxen buds and bells of which already glisten on its ash-grey shoots and exhale a perfume beyond description. The strawberry Arbutus also has every shoot tipped with clusters of pale waxy bells, and the round red fruits glisten warmly from among the last year's leaves. A few rich brown or vivid golden Wallflowers are peeping here and there, and the smaller blue Periwinkle is in flower, and by looking closely one may perceive the points of the Snowdrop and the broader tips of Daffodil leaves peering in groups among its trailing stems. On sunny mornings you may catch the breath of Violets and the magic perfume of dying Strawberry leaves, and the scent of Rosemary and the aromatic odour of Box and of golden Thyme is abroad. During the short dark days indeed every floweret, every fragrant green leaf, is appreciated at its true value, and at no other time of the year are the results of good gardening so acceptable as at the present season, and after all there is no reason why our parks and gardens should not be cheerful and interesting, even if not absolutely showy, during winter. We can have columns of the golden Ivy before mentioned; the crimson shoots of the Dogwood may gleam here and there near to water margins in contrast with the slender wands of the golden Osier. We can have clumps or beds of the Christmas Roses, of which there are three or four noble varieties, each and all of them finer in leafage and in blossoming than is the common wild type now most generally seen. Of Yuccas, which are really great evergreen Lilies of noble appearance at all seasons, we have a dozen species all good, and all of which may be well grown in London gardens if once well planted in beds of rich, good, well-drained soil. But to obtain beautiful effects all the year round in a garden demands much thought and some experience;

and, after all, gardeners capable of the highest effort in this direction are so much like the poets, that they must be born rather than made.

F. W. B.

INDOOR PLANTS.

GREENHOUSE BIGNONIAS.

The different species here treated of are climbing or twining plants, and are suitable for greenhouse or conservatory decoration, for roof-climbing, for covering back walls, or growing round pillars. So managed their natural habit is seen to advantage, as a portion of their shoots can be allowed to hang in graceful festoons; and grown in this way they are very effective even when not in flower. They can be arranged to drape the wood or ironwork of the building so as to take off the objectionable straight lines without shutting out too much light from the general occupants of the house. This is a matter that cannot be too forcibly impressed upon those who have the charge of plant structures of this description—that where roof-climbers are allowed to form a complete thicket up to the glass, they exclude the light from the plants that occupy the lower stages, so that the latter can only drag out a miserable existence.

Roof-climbers have an elegance that cannot be imparted to ordinary trained pot specimens; but to allow the comparatively few plants that can be accommodated a roof to monopolise the whole house, so as to render the cultivation of everything else attempted to be grown an impossibility, is as great a mistake as can well be committed. In this, as in most other things, a medium course is the best; the roof of a conservatory can be sufficiently draped with climbers to answer the purposes required, without making the body of the house a mere living sepulchre for the unfortunate plants placed therein. Subjects for furnishing the roofs in this way can either have their roots kept confined in pots proportionately large to the size of the plant, or, as is more usual, be planted out; the latter system has many advantages, not the least of which is that the plants will last much longer so treated, but the space thus apportioned to the roots should always be sufficiently confined to prevent the plants getting too rampant. Nor should plants intended for growing in this way ever be turned out in beds whilst they are very small; in many cases, unless naturally strong growers, they do not do well, as when the roots are few in quantity they cannot lay hold of the soil before it gets sour, and rarely afterwards do satisfactorily. Therefore, if the plants are small, it is generally better to grow them on in pots until stronger, and afterwards to put them out. Climbers are often grown for sale and kept with their roots confined in small pots until they get so stunted as to prevent their growing freely; it is much better to start with such as are young and free in growth, than with those that may be larger yet not in so good a condition. Greenhouse Bignonias can be

Increased by root cuttings, or layers of the shoots; the former should be made of bits of medium strength, cut into lengths of about an inch, and treated generally as for shoot cuttings. Layering, however, will usually be found the safest way of propagation in private gardens, and it may be carried out at different seasons. If done towards the end of summer, some 6-inch pots should be filled with a mixture of peat, loam, and sand, and such of the current season's shoots as spring sufficiently near the base of the plant to be convenient for operating upon should be layered singly; the joint that is to be inserted in the pot should be notched and secured with a small hooked stick, and covered with soil. Press the soil firmly, and keep it moist; in this way the shoots must remain until well-rooted, which will be during the ensuing summer. Then sever them from the parent plant and keep through the winter in an ordinary greenhouse temperature. They should be potted on in April, and be given a 3-inch shift. All the kinds here treated of will succeed in a mixture of turfy loam and fibrous peat in equal proportions, to which should be added enough sand to keep the whole porous; do not make the soil too fine, and pot moderately firm. In most cases it will be better to confine these Bignonias to a single stem until they have attained a considerable height; consequently they will not require the leading shoot stopped, but should be encouraged to extend in length. For this purpose three or four long sticks should be inserted in each pot, round which the plants ought to be kept regularly trained, but the shoots should not be allowed to twine about them so as to make the work of undoing them difficult. Through the spring and summer encourage growth by syringing overhead every afternoon, and keeping the atmosphere moistened in very bright weather, during which a thin shade will assist them. When the roots get well hold of the soil give them plenty of water and admit air freely, to keep the growth strong; towards the close of summer dispense with shade and the use of the syringe, so as to harden them up. Keep during the autumn and winter in an ordinary greenhouse temperature, with just enough water at the roots to maintain the soil in a medium state of moisture. Before growth commences

In the spring they should be turned out into the border wherein they are to be grown. This ought to be well drained with 5 inches or 6 inches of broken crocks or pounded bricks, over which some fibrous material from the soil should be placed; on this put 10 inches or 12 inches of good soil, consisting of a mixture of peat, loam, and sand, similar to that already advised. In planting, a portion of the roots, such as are at the outside of the ball, should be loosened and spread out in the border; in this way they will soon begin to grow and occupy it. Syringe them regularly overhead every day all through the growing season; on a free use of the syringe in this way a good deal of success depends, as insects are kept down. All the after-treatment required will be to keep the shoots trained to the wires that are to support them, and, when the space they are intended to fill is covered, to regularly use the knife, so as to keep them in due bounds. In time the soil becomes exhausted; to remedy this a couple of inches should be taken off the surface each spring without injuring the roots, and its place supplied by new soil, to further assist which liberal applications of manure-water may be given during the growing season.

The following varieties are deserving of cultivation:—B. capreolata, flowers scarlet, blooms in June and following months—it comes from North America; B. grandiflora, flowers from July to September—this fine species is from Caracass; B. speciosa, a pink-flowered plant from Uruguay—blooms in the spring; B. Tweediana, a yellow-bloomed kind that flowers in the summer—it is from Buenos Ayres; B. unguis, orange-coloured flowers, blooms in the autumn—a native of South America. Red spider will live upon them, but must be kept under by a free use of the syringe. Scale can be kept down by frequent use of sponge and brush.

T. B.

PLANTS SUITABLE FOR BASKETS.

Many kind of plants are well adapted for growing in baskets, and have a graceful appearance when suspended from the roofs of conservatories, stoves, corridors, or other available positions. Such baskets are best made of galvanised wire, commonly known as 5 size. If this wire is used they last a long time, and have a neat appearance prior to being covered thoroughly with the plants. They should be made in different sizes, I foot 6 inches in diameter and 9 inches deep being a useful size. They can be made by any handy man. A coat of paint is useful—in fact, necessary—to prevent the stems of some plants being injured through coming in contact with the galvanised wires.

Lachenalia pendula is specially suited for baskets; its pendent foliage and flower-spikes, its orange, red, and yellow blossoms, and beautifully mottled-green leaves render it one of the most useful of basket plants. Presuming the plants to have been previously grown in pots, and to have had their annual rest, as soon as they commence to grow again they should be taken out of the pots, all the old soil should be shaken off the roots, and then they may be placed in the baskets. Proceed by placing some Moss (common green Moss, such as that which grows in woods, answers well) in the bottom; over this put some soil, consisting of loam, peat, and leaf-mould in about equal parts. To these add some bonedust charcoal, and silver sand; place thereon [illegible] of the bulbs about 2 inches apart, with the points protruding through the bottom of the basket, and proceed with layers of Moss, soil, and bulbs until the basket is filled; cover the top with Moss, give a good watering to settle all in their places, and hang the basket up in any cool house, where its contents will soon start freely into growth. When the flower-spikes are showing, weak liquid manure, copiously supplied, will prove beneficial. During March, April, and May they will bloom profusely. After blooming, water should be gradually withheld until the foliage turns yellow and falls off. They will then require no more water till they again commence to grow. During the resting period they can be stored away in any shed free from frost.

Double tuberous Begonias are well suited for growing in baskets; in fact, I think they show to more advantage in baskets suspended from the roof of a conservatory or greenhouse than they do when grown in pots in the usual way. Their habit generally is drooping; therefore, in a basket the flowers show themselves off to the best advantage. Presuming these likewise have been grown in pots previously, as soon as they begin to grow in spring, they should be placed in the basket, using soil composed principally of good turfy loam; with this mix a good sprinkling of charcoal, half-inch bones, and bonedust, with some sand added. First line the baskets all round with Moss, which serves the double purpose of preventing the soil from being washed out and covering the wires. Water should be sparingly given until the plant is growing freely, when copious supplies will be needed during the summer, alternated with weak liquid manure. The branches will soon extend long enough to hang down to be tied close into the basket, or they may hang in a natural manner, as the cultivator may desire. A cold greenhouse during summer suits them better than being coddled up in a plant stove.

Achimenes.—This class of plant is particularly well adapted for baskets, owing to its long pendulous habit when allowed to grow at will. When the corms have had their annual rest they should be taken out of the soil in which they had previously grown, placed in pans thickly, and given a little bottom-heat, if available, when they will soon commence to grow. As soon as shoots 2 inches long are made they are ready to transfer to the baskets. Proceed, as in the case of the Lachenalias, to place them in rows, using the same kind of soil as for the Lachenalias. The colours can be mixed at will, or one variety only can be used in each basket. This the cultivator can please himself about. Place the baskets, when filled, in a plant stove, a vinery at work or anywhere where a temperature averaging 65 degs. is maintained, giving them plenty of light, but shading from sunshine. In this position the plants will grow rapidly. When coming into bloom they may be placed in a house a few degrees cooler, but they must not be placed in a position where they will be in a direct draught—say between two open ventilators. When grown thus they continue to bloom several months, and will be much admired in the conservatory or greenhouse, and may occasionally be taken into the dwelling-house, and suspended from the roof of the hall, or any other convenient place.

Abutilon megapotamicum variegatum almost anyone may grow in a basket, as it requires scarcely any heat. Procure a strong plant or several small ones, place them with the shoots protruding through the wires, or, if a large plant, the shoots will hang down and conceal the wires. The basket should be covered inside as usual with green Moss, as on this the golden variegated foliage and orange-red flowers show themselves off to better advantage than otherwise. This plant must not suffer for want of water during summer, and it must be well syringed overhead occasionally with clean water. This will assist in keeping down insects with which it is sometimes infested, notably red spider and thrips.

Adiantum farleyense flourishes particularly well in a basket; its pendulous habit fits it well for the purpose. The soil used should be rough loam principally, and a little old mortar and charcoal to keep the whole open. Water should be carefully supplied when first placed in the basket; afterwards a free supply should be given. A temperature of from 60 degs. to 70 degs. suits it well during the growing season. Ivy-leaf Geraniums are easy plants to grow, and

suitable for baskets in any cool greenhouse, requiring very little attention beyond freely watering during summer, and carefully in winter. Both single and double kinds bloom freely. Fuchsias also are easily grown, and do well in baskets; choose those which grow freely and have a naturally drooping habit; water freely at the root and overhead during summer.—E. M.

Fuchsias.—Few plants can excel the Fuchsia for graceful beauty or for the length of time during which it is in bloom, for with good culture and liberal feeding a plant will keep growing and flowering for six months. As a pot plant, whether as small or large specimens, the Fuchsia ranks as one of the very best, and those who have a good stock of old plants that have been stored away in any cool place to rest should now take them out, and, after cutting out the dead wood and shortening the tips of the last year's wood, give them a good soaking of water, and set them in a light house, with a gradually progressive temperature. As soon as fairly started into growth re-pot them, using rather rich soil, for on the amount of nutriment within their reach will depend the length of time the plants will continue to flower. Large old specimens in 10-inch or 12-inch pots make splendid objects in the conservatory or for exhibition, as, if kept well supplied with liquid manure or some of the fertilisers now so much in use—just a pinch put on the surface of the soil once a week—they will continue to grow and flower all through the summer. Young plants that were struck from cuttings last autumn, and grown on gently through the winter, will now need shifting into flowering pots; 5-inch and 6-inch pots are most serviceable for vases or dinner-table plants, and if kept pinched in close during the earliest stages of growth, so as to get a well-balanced head of shoots, they are most effective when in bloom. For pillar plants in corridors or conservatories the Fuchsia is indispensable, as when planted out in good soil they make very strong growths, and, unlike many plants, the more they grow the more they flower. I have seen old plants of a very strong-growing kind called Carolina, that covered the entire roof of a conservatory, made very effective by inarching several of the light-flowered kinds on to it, and especially some of the white corolla'd sorts, like Madame Cornillisson, the inarching being done like grafting on the soft young shoots of the current year's growth; and on the dark-flowered kinds good large bunches of distinct kinds looked novel and pleasing. As outdoor bedding plants, Fuchsias, especially the small-flowered kinds, are most effective; and any plants that may not be considered good enough for pot culture may be hardened off and planted out when the danger from frost is past. A very good way of utilising Fuchsias is to plant them out at wide intervals in beds, on a groundwork of some dwarf-growing plant, like Violas, as such graceful habited plants need to grow entirely in their own way, with plenty of room to spread out their gracefully drooping branches, which, when loaded with bloom, hang down pendulously, swaying with the slightest breeze. As regards varieties, I must still give the preference to small-flowered kinds, as they are not only so much more floriferous, but, as a rule, are of better habit of growth, and the very large, heavy-flowered kinds are only adapted for pot culture under glass. But, as novelties, a few plants of such kinds as Phenomenal, with blooms as large and double as the Oleander, are strikingly effective; and the variegated-leaved sorts also, of which Sunset is a good example, look well either as pot or bedding plants.—J. Groom, *Gosport.*

Forcing Lilacs.—Few flowers are more appreciated when forced early into bloom than Lilac, and during the winter months great quantities of bloom are imported from France, and form one of the chief features in wreaths, bouquets, &c., that are made up by Covent-garden florists. The French, for many years, had the entire monopoly of the trade in this valuable flower, for they were in advance of English gardeners in discovering that with well-ripened flower-buds there was little difficulty in forcing this plant into bloom at a very early date; if the little sunlight there is during the darkest days of winter be excluded, the blooms of the purple varieties become perfectly white, and as the demand for white flowers is at all times so much in excess of that for coloured flowers, the value of the blooms was doubly enhanced. Now, many might say, why not grow the white-flowered kind? But when we consider that the purple kinds are so much more floriferous than the white kinds, the reason for the blanching process will be at once apparent. There may not be many amateur gardeners who have the convenience for forcing Lilacs at a very early date, but anyone with a glasshouse can get them to bloom several weeks before they open out-of-doors, and anyone with surplus bushes which they can lift with good roots and transfer to any warm structure will be rewarded with abundance of bloom. In large forcing establishments where the demand for cut flowers is very extensive in spring, I have had large bushes tied up like faggots with a cord to keep the branches together to economise space, and they were then set in the back part of plant or forcing fruit houses, and a few mats put over them to exclude the light, and by keeping the tops and stems syringed until the bloom was

Greenish-flowered Snowdrop (Galanthus virescens). (See article on page 713.)

ready to burst, and then keeping them dry, usually every bud would expand a fine bunch of bloom. For pot-plants, young bushes are grown in any open, sunny position where the wood will get well ripened, and kept cut down low to form a bushy head, as the greater the number of twigs that can be got with plump buds, the better the head of bloom that will result. Great quantities of specially-prepared plants are imported from the Continent, but beyond the extra amount of sun-heat that favours the ripening of the wood, there is no reason why we should not grow just as good plants at home. The large-flowered variety, called Charles the Tenth, is the one that Continental growers excel with, but the old-fashioned Lilac of our shrubberies is a very good one, and for quantity of bloom the small-flowered Persian and Siberian Lilacs are most useful, and in pots or tubs, a moderate-sized bush, with every pendulous spray loaded with bloom, is a most pleasing object for setting in the conservatory, or for supplying cut-flowers, as even without the blanching they are deliciously fresh, fair, and fragrant. After they have done flowering they must be gradually hardened off by keeping in a cool house until April, when they may be planted out-of-doors for a year's rest, and, when well furnished with flowers buds, may again be lifted and forced; and by having a few young plants always coming on to replace worn-out ones, a supply of this most useful flower may be enjoyed every year. I find a spray of Lilac out of season is as much prized as any of the most costly exotics.—J. Groom, *Gosport.*

REPLIES.

15748.—**Rochea falcata.**—This is a succulent plant, and a very beautiful one it is. It may be safely wintered in the warmest end of an ordinary greenhouse, but both winter and summer it wants plenty of light and exposure to full sun. It is not a strong-rooted plant, so that it must not have a large pot, but plenty of drainage, and during the winter it should be sparingly watered. The proper time to repot it is early in March, using a fairly heavy soil with a lot of sand in it. The plant makes plenty of offsets, which should be taken off when they have made roots and grown on in single pots, as much the largest heads of flowers are given when a single plant is grown in a 6-inch pot. Drip during the winter is very injurious to this plant.—J. C. C.

15702.—**Culture of Poinsettias.**—As "M. M. C." does not say whether the Poinsettias were grown in a high or low temperature, I presume they were kept too cool; they would thus lose their leaves, and would not develop their showy bracts. As we annually grow upwards of 400 plants, I will briefly describe our treatment. The plants intended for cuttings have now done flowering; they are stood in an intermediate house where the temperature does not go below 55 degs., water is withheld, and they are thus allowed to go dust dry. An occasional syringing is all the moisture they will require until early in May when they will be well soaked with tepid water, and syringed twice daily. At the same time we prepare a hot-bed composed of leaves and manure, large enough to take a two or three-light frame. As soon as it is settled down 6 inches of sawdust is added for plunging the pots. By this time (about a week or ten days after the plants have been watered) the first batch of cuttings will be ready; these we take off with a heel when about 3 inches in length, and insert singly in thumb pots. Great care must be taken that they are not allowed to flag at any time; sprinkle them two or three times daily, and thickly shade with double mats. Continue to increase the stock as the cuttings are ready. The last batch may be put in as late as the middle of July, and these will make short, sturdy plants about 1 foot in height, with bracts about 9 inches in diameter. The earliest struck cuttings will have stems from 18 inches to 30 inches in length, and bracts from 15 inches to 20 inches in diameter. As the cuttings are rooted they are removed into other frames, chiefly on spent hot-beds. After being potted they are shaded for a few days; afterwards they are grown in the full sun. They are kept in the frames until the cold nights in autumn, when they are removed to an intermediate temperature, which is never allowed to go lower than 55 degs., the day temperature ranging from 60 degs. to 75 degs. Admit air on all favourable occasions, and keep them as near the glass as possible. The Poinsettias are not particular as regards soil; two parts loam and one leaf-soil, and a little well-rotted manure, will suit them admirably. Should the loam be heavy, a little sand should be added. When the pots are filled with roots, they are treated liberally with manure-water. —G. S., *South Yorkshire.*

Flues.—A friend of mine would like to know how "W. C. C." (page 668), built his coil boiler. I have had no experience in flues since 1865, and care not if I never see a flue again. Knowing what it is to force both vines and Peaches for early work, I do not forget the disadvantages of such flue; can well remember in sharp nights having to fire hard, and then in an equally sudden change having to reduce not only fire but temperature also, and this is a difficult matter. Fancy in long houses the flue at one end hot, and at the other comparatively cold. I have seen, and my friend has, two coils at work which are right while you are at them, but to leave them for eight or ten hours is a very different matter. He makes the best of his and grows Cucumbers, Grapes, Roses, &c., fairly well, but a little boiler would do the work better with less expense of fuel, and certainly less labour.—Stephen Castle, *West Lynn.*

FRUIT.

Pruning in midwinter.—The longer I live the more I am convinced that very little, if any, harm is done to trees or plants by pruning in midwinter. To further test the matter, last winter I pruned a portion of my Grape vines during an excessively cold spell, and the remainder in mild weather. No apparent difference could be detected in the two lots, either in growth or fruit. I know it has been asserted that the so-called "bleeding" or wasting of sap, when Grape vines are trimmed late in spring, is of little moment, but I believe, from experience, that it is far more damaging to vitality than winter pruning. For several years I have pruned fruit trees without regard to the state of the thermometer, and I think they usually do as well as others in my vicinity. The fact is, if trees are trimmed regularly the work will be very slight each year, with no large limbs to cut. There is a great deal of logic in the advice to "use a sharp knife," as a ragged edge is very difficult to heal. —*New York Tribune.*

Spring protection for Pears.—This fruit is very acceptable during the weeks that intervene between Christmas and the commencement of the Strawberry season, and its failure is often quite a disaster. Any plan, therefore, of spring protection that is economical and that will be of real service is acceptable at this particular time. In the majority of cases where provision is made for the spring covering of Peaches, Nectarines, and Apricots, no thought is given to the Pear, an omission that may, perhaps, arise from two causes—namely, the question of cost, and also the thought that its later blooming season may enable it to resist with impunity any weather which it is likely to experience. Certainly, when the length of season and time of ripening of the Pear are taken into consideration, it must be ranked first in value of all outdoor fruits, and if we are to secure a crop in the future some provision must now be made for protection. With a view to this end I have purchased a wooden coping that will project when in position nearly a foot from the top of the Pear wall at about an angle of 60 degs., and thus enable tanned netting when fastened to it in spring to swing clear of the trees. A stout board, 1 inch thick and some 5 inches or 6 inches wide, is fastened to the top of the wall, and from that the projecting board swings, secured by some stout hinges, and by underneath brackets fastened to it in such a manner that they come flush to the wall when the board is down. The boards are in 10-foot lengths, and can easily be pushed back by a short pole, falling back in this case on the top board to which they are fastened, and in such a position keeping no rain or dew from the trees. Both surfaces of the projecting board, being exposed at different times to the weather, are necessarily painted. The boards are easily and quickly fixed, and with an occasional coat of paint will stand for years. I hope that, with a double thickness of tanned netting suspended from them, they will help us to secure some good crops of Pears in the future.—B.

Easter Beurre Pear.—This is one of the good old kinds that do not seem likely to be superseded by newer varieties for some time to come. In its season there is such a dearth of really good dessert fruit, that it is difficult even in the largest gardens to have any fit to put upon the table; therefore, if Easter Beurré received the attention which it deserves, I feel sure it would greatly help us in times of need. As a rule, Apricots, Peaches, and other autumnal fruits monopolise all the sunny aspects on walls, and only half-shaded ones are devoted to late Pears that really require all the sunlight we ever get to bring them to perfection. Where a south aspect cannot be accorded them they would be better grown as bush or pyramid trees on Quince stocks, for, like many other Pears, I find that what they lose in appearance they gain in quality when grown on bushes fully exposed. This is especially noticeable in the case of such kinds as Marie Louise—that from walls is frequently but third-rate in flavour, while from standard and bush trees it is sweet and luscious. I feel sure that if prizes were offered for dessert fruits at spring meetings of horticultural societies, the Easter Beurré would stand in the front rank of really edible fruits. Some late-keeping kinds of Pears are only valuable for appearance sake, while this is equal to the majority that ripen when fruit is plentiful.—Hants.

Culture of Melons.—Of all the commonly grown fruits none, except Grapes, show such different results from different modes of culture as do Melons. Many keep their plants dwarf and do not aim at strong, vigorous growth; but in good-sized span-roofed houses, say 12 feet high in the centre, with plenty of light and air circulating in them, the stronger the growth the better. The best Melon growing I ever saw was in a house of this kind. Tan had been placed round the pipes for bottom-heat, and upon the tan was laid a ridge of soil—the top spit of a rich meadow off a subsoil of chalk. A plant was allowed to each rafter. The growth was extremely rapid, and before the plants were half-way up the house fresh soil had to be added, as the roots were protruding in every direction. A quantity of soil had to be added yet again, a great part of the last instalment being removed from an old Mushroom bed. The female flowers were carefully set, and numbers of fruits began to swell quickly without the slightest check being made to the growth. The laterals were allowed to reach a good length before being pinched, and the plants were only beheaded when close to the top ventilators. Some idea may be had of the vigour of these Melons when I say that the stem was nearly double the thickness ordinarily seen, and the crop of good-sized fruit, averaging 3 pounds in weight, was enormous. Four on each side of a plant was by no means uncommon, and one ripened ten fruit, the largest just failing to reach 6 pounds. Even to the end fresh shoots and flowers kept on showing themselves. This experience seems opposed to two or three recognised canons of Melon culture, but nevertheless it is a proof that a magnificent yield of fruit can be obtained from what many would have called rank growth. The flavour was excellent, and one fruit—Victory of Bristol—was awarded the first prize at a Crystal Palace show.—M. C.

15802.—**Sowing Apple seeds.**—If you have only a few seeds to sow, you had better sow them at once, in pots filled with fine soil, and keep the pots in a cold pit or frame for one year; but if you wish to raise a good number of plants the simplest way is to prepare a place for the seeds in the open. Choose an open, sunny spot, and make the soil fine; then sow in drills 1 inch deep and 6 inches apart. The only attention the plants will want is to be kept free from weeds. The plants should remain in the seed-bed two years before being transplanted.—J. C. C.

Canker in Apple trees.—In my remarks on the canker insects forwarded to me by Mr. Hiam (page 703), I said, or at any rate meant to have said, that certain mites were 1-100th of an inch long, and about 1-200th of an inch in width. I, however, am made to say 1-100th of an inch long, and about that in width; this would make the number 10,000 in a square inch instead of 20,000, the number which I gave, and which is the correct one.—G. S. S.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

***, *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Gilo.*—Pteris cretica albo-lineata.——*C. A. M.*—Acacia Farnesiana.——*M. C.*—1, Nephrolepis tuberosa; 2, Asplenium flaccidum; 3, A. lucidum; 4, Pteris cretica albo-lineata; 5, Asplenium bulbiferum ——*Lover of Ferns.*—1, Pteris longifolia; 2, Lastrea aristata variegata; 3, Adiantum cardiochlæna; 4, Asplenium cicutarium; all excellent specimens of remarkably well-grown plants.——*Mrs. J. M. A.*—The Fern, whose fronds are usually sold in quantities under the name of "French Fern," such as sent, is Asplenium Adiantum nigrum or Black Maiden-hair Spleenwort, found plentifully in Devon, Cornwall, Somersetshire, Berkshire, Hampshire, and other places in England.——*Adeent.*—Flower is Libonia floribunda; the Fern is Adiantum cuneatum. You are apparently giving too much manure water to your Ferns.——*J. S.*—Leaf of Hellebore sent appears to be that of H. orientalis.——*C. Gibson.*—1, Dendrobium Pierardi; 2, Comparettia falcata (intermediate house).

Names of fruit.—*F. L. S. C. C.*—1, Cox's Orange Pippin; 2, (oval) not recognised.—*Enquirer.*—Kindly send us another specimen.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, scale, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

15865.—**Fuchsias for exhibition.**—Will some grower of Fuchsias kindly tell me the best dozen Fuchsias, double and single, for exhibition?—Fitzroy.

15866.—**Begonia.**—I should be glad to learn what is the best Begonia for planting in a small bed under a south wall.—Norfolk.

15867.—**Ridge Cucumber.**—Will any grower of these for exhibition kindly tell me what is the best variety for the purpose?—Young Exhibitor, *Chard.*

15868.—**Dyeing dried Grasses.**—Will anyone kindly tell me how I can dye dried Grasses to give them a nice green appearance?—Constant Reader.

15869.—**Odontoglossum Pescatorei.**—Would some Orchid-growing correspondent describe the cultivation suitable for Odontoglossum Pescatorei?—A Would-be Orchid Grower, *Tadcley.*

15870.—**Good King Henry.**—I have had some seed given me of the Good King Henry or Mercury, but I do not know how to treat it. Will any readers tell me how to raise and grow it? If they can also tell me how to cook it I shall be glad.—A. M.

15871.—**Quick-growing Creeper.**—What quick-growing Creeper could I grow on a 6-foot wire netting fence around a lawn-tennis ground—evergreen, and blooming, if possible, and one that a cow would not be likely to damage?—K. H. W., *Shepherd's-well.*

15872.—**Early Potatoes for light soil.**—I shall be much obliged if some correspondent will inform me what are the best kinds of early Potatoes to grow in a very light sandy soil, which dries out very much in the summer; and what is the best treatment for them?—R. R., *Hants.*

15873.—**Chrysanthemums for exhibition.**—Will some grower of Chrysanthemums kindly tell me some of the best sorts for an amateur to grow for exhibition in November? I want Japanese, incurved, Pompon, Anemone, and reflexed kinds; about a dozen of each.—Fitzroy.

15874.—**Nova Scotia Apples.**—At the Autumnal Fruit and Flower Show at the Crystal Palace last year I was much struck with the exceedingly fine display of Nova Scotia Apples. Can any reader inform me of the name and address of the exhibitors, as I wish to communicate with them?—Gar Hart.

15875.—**Fuchsias.**—Would any reader kindly give me the names of six or nine good zonal Pelargoniums and six or nine good Fuchsias? I am not particular as to new sorts, but such as an amateur can grow easily. I want only a few, but they must be good.—E. Ford. *** *You will find a list of zonal Pelargoniums on p. 625, Jan. 2nd.* —Ed.

15876.—**Fixing coil in greenhouse.**—Will "W. C. C.," who on page 668 wrote a note under this heading, kindly give particulars of his coil, which he says is so set that he puts sufficient fuel on to last three days and nights without attention? His plan of setting would be of great advantage to those who, like myself, are putting in coils.—G. B. M.

15877.—**Plants for shady border.**—Will any readers kindly inform me what plants I can grow in a border about 12 inches wide, with large trees at the back of border, and near north wall of house. Would Pansies or Violas be suitable, and what other plants would go well with them? I wish the border to look gay from the time the spring flowers (of which there are plenty) are over, until the late autumn. The county is Wilts.—St. Ann.

15878.—**Growing Tomatoes.**—I have a greenhouse 18 feet long, 9 feet wide, lean-to; it is heated with hot water. In the front there is a bed the whole length of house, 2 feet wide, 1 foot deep, with four rows of pipes underneath (I can turn the water off). I want to grow Tomatoes in it. Would they be best planted in the bed or in pots, and what is the best way to train them? How many would the house hold?—G. R. Turner, *Chesterfield.*

15879.—**Wintering Geraniums and Fuchsias.**—I have a cold frame in which I endeavour to winter some of my plants, such as Geraniums, Fuchsias, Pansy cuttings, &c., but have, to a great extent, failed. Following out suggestions, I had set it on a bed of ashes, and first of all in the winter of 1884 and 1885 stood the plants on the ashes. Out of about three dozen plants I think I managed to save six, which was not encouraging; all the rest rotted and died right off. This winter I stood the plants on a wood bottom, and the same thing seems to be taking place, for nearly all of them appear to be affected by mildew, and are gradually rotting off. I tried flower of sulphur; but this seemed to have little or no effect. During frosty weather I burn a paraffin lamp, and I find this sufficient to keep out the frost; but the damp seems my great enemy. Can any reader suggest anything to remedy this, or how could I put the frame to better use?—T. H. P., *London.*

15880.—**Bleaching Pampas Grass.**—Although several answers have been given in reply to this question, none, apparently, bear a satisfactory solution of the matter. The question is how to bleach them after they have been fully developed on the plant, and have become soiled by the weather? My experience is that cutting the Grass before development is a mistake, if fine plumes are wanted. I am told the plumes seen in florists' shops are Canadian, and have been bleached. What many are anxious to know is how that result can be obtained.—J. WALLER, *Brockley, S.E.*

15881.—**Growing Indian Corn.**—I should like to grow a little Indian Corn this year, and shall be glad if some readers can give me their experience. Will the common flat or round sold at the corn-dealers' answer for seed? I have some of the variety known as "Pop Corn," which I brought from America, where I saw it growing, and tasted the ear, which is very good cooked when green. My garden is on a slope facing the sea, and almost everything grows well.—BUCKLEBURY, *Dorset.* "*In America there are certainly earlier and better kinds of Indian Corn than the common one; but this is so little grown or thought of in England that probably some kind American reader could best help*" *Bucklebury.*"—ED.

15882.—**Failure of Hyacinths.**—I should be glad to be told the cause of the failure of one or two out of a number of Hyacinth bulbs in a cool greenhouse heated by a coil of pipes and oil stove. The few bulbs referred to have advanced all right to a certain stage, leaves have grown, and the flower has developed, in the green unopened state, to about an inch in height, when suddenly the top half of the flower has rotted away into a brown pulp—a squashy mess, while the lower half remains in a natural condition. This unfortunate state of things has been preceded by a slight purpling of the leaf-tips and flower; but there has been no mildew. The house has had plenty of air, but stands on clay soil, and has no paved floor.—THOS. COOPER, *Willesden.*

15883.—**A question between landlord and tenant.**—I shall be very glad if some of the readers of GARDENING who have legal knowledge would give me some information as to what I can do in the following matter: In 1877 I took a portion of land, about 2,400 yards, and on this plot I removed a portion of the soil, and erected a greenhouse, 20 feet by 12 feet, fitted up with hot water, so as to increase my business as a salesgrower and florist, the greenhouse being an old one that I had before I took this land. In 1878 I made an addition, 20 feet by 12 feet, all of wood, and immediately I had got it into working order my landlord, who is a tenant farmer, claimed more rent. Now, I agreed verbally to take this land and a cottage at a yearly rent to be paid quarterly, either party to give or take a six months' notice, the rent to remain the same as long as I elected to hold possession. In 1878 I distinctly gave him to understand that I should not pay any more rent, and that if he was not satisfied he could give me a six months' notice, and I would remove; this he declined to do, saying that I ought to give him notice. Now on the 22nd December, 1885, he gave me a written three months' notice to deliver up possession on the 24th of March, 1886. My tenancy commenced on the 16th day of October, 1877. When does my tenancy legally expire, and can my landlord compel me to quit on the 24th of March? If so, can I claim compensation for any loss I might sustain in having to remove? My stock consists of bedding-out and other plants, including Roses in pots, Ferns, &c., also a quantity of Gooseberry and Currant trees. Can I remove my greenhouse by making the ground as good as when I took it? I have done a good trade in cut flowers this last two or three years.—FLORIST.

15884.—**Hardy plants for Northumberland garden.**—I should be much obliged to "J. D.," or any other correspondent, if he would give me some advice as to what hardy flowers would be most likely to thrive in a very cold garden in a bleak part of Northumberland. I believe it to be the coldest garden in England; everything in it was killed last summer by a hard frost (10 degs.) on August 31st; nothing escaping, I believe, but some Stocks, Gaillardias, and Potentillas, and, as there were frosts nearly every night up to the end of June, my garden could hardly be called a success. I have made a new bed about 60 yards long by 3 yards wide at the foot of a south wall, 4 feet high, which I wish to plant with the hardiest and showiest perennials, and fill in with annuals and a few bedding plants in the meantime. A list of hardy plants was given in GARDENING on October 3rd last. Would any of them thrive in such a garden as I describe, and when would be the best time to plant them? I contemplated planting last autumn; but, with the exception of a quantity of bulbs, I put off till the spring, and I am glad I did so, as I fancy few newly-planted things would have withstood this severe winter. The soil is a beautiful peaty loam, in which really hardy things thrive well, such as Lupines, Larkspurs, Columbines, Rockets, Pæonies, Day Lilies. These I have and a few more; but I should like the names of others as showy and hardy as these. I may say that I have frames for wintering Pentstemon, Calceolaria, Carnation, and other cuttings, in. With regard to Columbines, are Aquilegia glandulosa, canadense, cærulea, and Skinneri as hardy as the old common blue kind? I have also made a Rose bed, and should be glad to learn the names of some of the most suitable hybrid perpetuals, and when to plant them.—M. F., *Northumberland.*

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15885.—**Ornamental Grasses** *(Mrs. Udal).*—You should be able to get them from any good house.

15886.—**Culture of Potatoes** *(B. M. L.).*—In No. 302 you will find an article dealing far more fully with the subject than we could in a short note.

15887.—**Worms in potting compost** *(J. Ashton).*—Sprinkle a little lime over the soil, and that will soon get rid of the worms.

15888.—**Evergreen plant for greenhouse wall** *(Chemicus).*—Camellias grow admirably in such positions in a cool house—planted out in the border, of course. In such places they thrive much better than in pots.

15889.—"**Day Lily**" *(Norfolk).*—We have never heard this name applied to Alstrœmerias, which are sometimes called "Herb Lilies." The Day Lily is Hemerocallis.

15890.—**Rose growing in an attic** *(Beginner).*—No; you are not likely to be successful in growing Roses in your attic, and we doubt, indeed, that you can grow any plants in it.

15891.—**Milla biflora and the White Musk Mallow** *(Constant Reader).*—The Malva is a first-rate flower in every respect, very easily grown, and one that will not disappoint you. The Milla is not a good plant for cutting.

15892.—**Raising ornamental-foliaged Begonias** *(E. Ford).*—These—we presume you mean Begonias of the Rex section—are not generally raised from seed, as they are so easily propagated from leaves. You can propagate them by pegging down leaves in the soil in a warm frame.

15893.—**Orchids in bloom.**—"V. C." wishes to know the best time to visit an Orchid collection which he has obtained permission to view. The best time would be from March till the end of May. He will probably find the greatest number of species in bloom about the middle of April.

15894.—**Christmas Roses** *(Rose).*—If you know nothing about the plant's culture you had better not divide it, for at least a year or so; divided plants require particular attention and a knowledge of their requirements. You will find that the Hellebore does best in a partially-shaded position in good, deep, ordinary garden soil, neither too dry nor too damp.

15895.—**Lily of the Valley degenerating** *(M. P. P.).*—If they are too thick, as we suppose, they ought to be separated and replanted in single tufts in good soil in an open situation, when the plants, having plenty of room and air, will make good growth and strong flower buds. The plants that you do not want might be put about in woody places or shrubberies, where they will cover the ground, and bloom, perhaps, after those in the open garden.

15896.—**Growing Grapes** *(Jones).*—You will find Gros Colmar a Grape that "takes" well in the market, although those who know what fine flavour in Grapes is would not eat it in preference to such as Lady Downes or Muscat of Alexandria. Unless you are a thorough adept at raising vines we should advise you to buy them. The expense of a few shillings for a vine would be amply repaid by the start you would thus get; and if you go to a first-rate house you may pick out getting thoroughly ripened canes.

15897.—**Draining pots** *(Amateur).*—We believe there is an improved pot that does away with the supposed trouble of drainage; but we think most people would prefer the old plan, even if it does take a few minutes longer to accomplish, and it is the most effectual. There is no necessity for smashing up pots to get drainage; you will find that pieces of cinders or gravel will do as well, but do not forget to put a good layer of Moss or some such material on the top of the drainage before you put the mould upon it. This will prevent the drainage getting clogged.

15898.—**Filling flower beds** *(Lanark).*—We think your selection too restricted for your country, which is cold and late, and we should strongly advise you to fill your beds with hardy plants that you know will grow well in the district. For instance, the Pansy is excellent in your district, and there are splendid varieties of it to be had from nurseries near you; Stocks, also, and annuals do admirably in Scotland, and we have never seen them do so well anywhere else. Therefore, depend mostly on such things and a few bedding plants of a bolder, hardier nature that you know will flower well and live long in your district. By using the Pansies and other things freely you can have bloom long before you could venture to put out your bedding plants.

15899.—**Sowing seeds of single Pyrethrum** *(E. G. S.).*—Sow in pots or pans, and place them in a hot-bed or forcing-house. If they are pricked out and grown on in frames until May they will flower in the autumn.—D.

15900.—**Potting Cypripedium acaule** *(E. G. S.).*—Pot them at once; they might have been potted in December. Use turfy loam with a little peat and plenty of drainage. Most of the species of hardy Orchids will grow in this compost.—D.

15901.—**Grafting Plums on Cherry stocks** *(R. P.).*—It cannot be done. The best plan would be to dig out the Cherry trees, trench the ground, and plant with good sorts of Plums, such as Pond's Seedling, Victoria, Orleans, &c.—D.

15902.—**Broccoli for succession** *(S. F. W. B.).*—The following are good, and will follow in succession as named: For September plant Veitch's autumn-grown Cauliflower, Veitch's Self-protecting, Snow's Winter White, Cooling's Matchless Leamington, Carter's Champion, and Sutton's Late Queen.—H.

15903.—**Cucumbers over flue** *(Yorkshire).*—The boxes in which they are planted should be 4 inches or 6 inches off the flue. Plant them in a compost of three of loam to one of decayed stable manure. When the roots have well grown into the soil the plants may receive some weak manure water; they are also much improved by rich surface dressing.—D.

15904.—**Pears shrivelling** *(Cymro).*—A frequent cause of shrivelling is gathering before they are ripe. Late Pears should be left on the trees till they part freely from the stalk, and then, after they have been laid in the fruit room a fortnight or so, pack them in drawers or boxes away from the air. When their season comes round, if they are not melting and good, place them in a warm cupboard for a fortnight.—H

15905.—**Culture of Roses** *(W. H. H.).*—Pulling off the leaves to make the buds swell is a mistaken practice. The plants should be allowed to rest until the leaves fall of their own accord. Forcing Roses to grow in November is not an easy operation. The plant may need potting; but of that one cannot judge without seeing it. Even experienced gardeners fail to flower Roses satisfactorily in January and February. The plant was evidently not strong enough. Repot it, and grow it on well for next year.—D.

15906.—**Peaches dropping** *(Cymro).*—The Peaches dropped during the formation of the stone, a most critical time. The tree was probably overcropped, and an expression used by "Cymro" in his letter, that the trees were covered with fruit two years ago, leads us to think that the tree was weakened by previous over-cropping. Work in some good turfy loam round the roots, and, if the soil is not a calcareous one, add some lime. Be content with a small crop, and when the tree gets fairly into growth mulch as far as the roots extend with rich manure.—H.

15907.—**Carnations and Picotees for outdoors** *(Nemo).*—All the strong growing varieties succeed well out-of-doors. It does not so much matter whether they are flakes or bizarres. The best scarlet bizarres are: George, Fred, Arthur Medhurst, and Rayner Johnson. Crimson bizarres: John Simonite, Rifleman, Thomas Moore, and Shirley Hibberd. Pink and purple bizarres: Mrs. Barlow, Squire Llewellyn, William Skirving, Unexpected. Purple flakes: James Douglas, Mayor of Nottingham, Juno, Squire Whitbourn. Scarlet flakes: Figaro, Bailey Junior, Henry Cannell, Matador. Rose flakes: Jessica, John Keet, Sybil, Lord Chelmsford. Picotees: Dr. Epps, J. B. Bryant, Emily, Mrs. Bower, Thomas William, Mrs. Chancellor, Rev. J. B. M. Camm, Zerlina, Clara Penson, Jessie, Mary, Constance Heron, Mrs. Payne, Royal Visit, Liddington's Favourite. All the above are selected for outdoor culture. The self coloured kinds are much better adapted for outdoor culture. When any of the bizarre or flake varieties sport, as they sometimes do, to selfs, the sports grow much more vigorously than the parent from whence they spring. We recommend the culture of seedlings for out-of-doors; the quantities of flowers produced from a single plant are truly astonishing. All the varieties of Pinks succeed out-of-doors in the borders.—D.

15908.—**Building lean-to greenhouse.**—"Bucklebury" should make the brickwork of the front wall of his proposed lean-to house 2 feet high from the ground, and on that set a front framework also 2 feet high (outside to outside), consisting of top plate 4 inches by 3 inches, bottom ditto 5 inches by 3 inches, connected together by 13 posts of 3-inch by 2-inch stuff, to take 12 lights, which will each be 3 feet 1 inch by 1 foot 6 inches, or nearly so. These are, of course, to be hung, and act as ventilators. Fix the back plate on the wall 8 feet from the ground (to its upper edge), and, taking the house as 7 feet wide, from face of back wall to outside of front plates 8-feet rafters will just reach; 29 of these will be required, giving a space of 15 inches between each, or 16 inches apart, with two end rafters of 3-inch by 2-inch or 3-inch by 3-inch stuff. The bars for the roof should be full 3 inches by 2 inches, but that for the end may be slighter—2½ inches by 1 inch, or thereabouts. Allowance is made for five roof ventilators, each 4 feet 2 inches by 3 feet, and these at 5s. each would cost 25s. (unglazed); the 12 for the front, say at 2s. 6d., would be 30s.; also unglazed; door, 10s.; 400 feet glass at 15s. comes to £3; paint, putty, nails, hinges, &c., about £2; and the woodwork brings the total up, according to our reckoning, to £12 2s. With these dimensions, and the pathway sunk 1 foot, there will be nice head room, even in a 7-foot house; but we should strongly recommend a width of 8 feet. The roof glass should be 15 inches wide, and, if in pieces, 20 inches long; five will just make up the length of the bars The ends may be the same; but that for the front will have to be smaller to fit the sashes. If the path cannot be sunk the height of the front, brickwork or framework, of course, must be increased, and the back plate also put 1 foot higher. The thousand bricks will be nearly enough to build the front and end walls 2 feet high.—B. C. R.

UNANSWERED QUERY.

15471.—**Fern-case lining.**—I am about making a Fern-case, and wish to know if a zinc or lead lining in the soil trough would be detrimental to the Ferns (Ivory), which I intend planting in it, as a plain wood trough is apt to leak? There will be good drainage, and a vent for surplus water. Any information on the subject will be greatly esteemed by—AMATEUR.

TO CORRESPONDENTS.

Notice to correspondents.—*We must remind readers that we cannot undertake to forward letters to correspondents whose communications appear in* GARDENING; *nor can we answer questions by post.*

Amateur.—You might have been spared the trouble of writing had you looked in any dictionary. The word abnormal simply means "not conformed to rule," or "unusual." When the organs of a plant have a greater number of parts than the regular number they are said to be abnormal, and it is in this sense that the word is used in the article that you refer to.——*Jane Godley.*—We do not know. You should consult the advertisement columns of journals devoted especially to the subject.——*J. K. Frost.*—We cannot do what you suggest, but shall be glad to help you in the usual way.——*Anxious.*—A book on the subject has been published at 171, Fleet-street, E.C.——*Norfolk.*—There is a paper called *Popular Gardening*, published in Buffalo, N.Y. (202, Main-street). We do not know where it is to be obtained in this country.——*J. Patrick.*—Received and forwarded; many thanks.

Books received.—*Sulphate of Ammonia as a Manure.* By Dr. H. Church, M.A., F.C.S., F.I.C. Sheffield: George Slater, West-court.

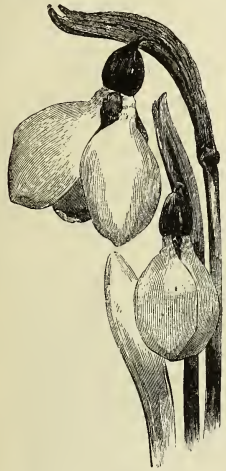
Catalogues received.—*Vegetable and Flower Seeds.* James Yates, 29, Little Underbank, Stockport.——*Vegetable, Flower, and Farm Seeds.* W. Crossley, 13, Vicar-lane, Leeds.——*Garden, Flower, and Farm Seeds.* David Toyne, 15, Bridge-street, Hull.——*Chrysanthemums, with treatise on their culture for exhibition.* James Guyton, Station-road Nursery, Belton, Great Yarmouth.——*Garden Seeds.* William Fisher, Horninglow Cross, Burton-on-Trent.

15703.—**Destroying wire-worm.**—To get rid of wire-worm, particularly round roots, I strongly recommend, from practical experience of its efficacy, the use of petroleum. Pour a table-spoonful of petroleum on a common brick, and put the latter in two gallons of water, pour this on the ground and refill the can again; repeat this operation so as to soak the ground, but not when there is frost.—THE MIDLANDS.

OUTDOOR PLANTS.

THE SNOWDROPS.

FEW have any idea of the great variety to be found amongst Snowdrops. Under ordinary circumstances, only the single and double varieties of Galanthus nivalis are grown, not a thought being bestowed on the many other beautiful forms that belong to the genus. Many may be surprised to hear that in ordinary seasons I have Snowdrops in bloom each month from October to April, all being in the open ground and without the slightest protection. First comes G. octobrensis (October and



Elwes's Snowdrop (Galanthus Elwesii major).

November), then G. præcox (December and January), G. nivalis, and the various forms of Elwesi, Imperati, and plicatus in January, February, and the early part of March, and last of all comes a late form of G. nivalis, which I had from Gusmus, and, therefore, call G. Gusmusi, which lingers on into April. In my notebook of the past year I find the following memorandum: "April 7, G. Gusmusi on north bank still good." Besides the extended season of blooming belonging to the Snowdrops, there is very great variety in foliage and the form and size of the flower, as well as in the markings of the flower. Some of the varieties have the interior petals very heavily marked with green, whilst in others the green markings are very slight. There is one variety that has faint green spots on the exterior petals, and there is another that has these outer petals almost entirely green. In the case of some sorts the foliage is barely a quarter of an inch in breadth, while in that of others it is 1½ inches wide. G. latifolius and some of the nivalis forms are very small and dwarf, whilst the best forms of Imperati and Elwesi are giants. Snowdrops require but little care in their cultivation; they will grow in almost any soil or situation. They do well under deciduous trees and also in Grass if it is allowed to remain uncut until the foliage of the Snowdrop begins to turn yellow.

For the last seven or eight years I have paid special attention to Snowdrops, and by purchasing, exchanging, and the kindness of generous amateurs, I think I possess every variety at present in cultivation. I have paid as high as 7s. 6d. per root for new kinds, but for the choicest and rarest forms I am indebted to the kindness of the late Rev. Harpur-Crewe, M. Max Leichtlin, and Mr. Sanders. I find that in nivalis, plicatus, Imperati, and Elwesi there are many forms, so I am constantly purchasing from fresh sources and then making selections from them when in bloom. My experience is, that Snowdrops suffer but little, if at all, from being transplanted when in full bloom. In addition to this I am raising seedlings every year from my best varieties, and have no doubt I shall ultimately be rewarded for my trouble. Only those who have a passion for flowers have any idea of the intense pleasure there is in raising seedlings, and watching their progress up to the flowering period. It is hard, though, to wait for four or five years for the first bloom, but when you are once "in the swim" time is not much noticed, as during every season some of one's seedlings will be "coming out." I have a few young seedlings from G. Shaylocki and G. virescens. Will these maintain the characters of their parents, make a new departure, or revert to the typical nivalis?

G. OCTOBRENSIS usually blooms at the end of October, and the flowers appear before the foliage. It seems to be a variety of G. nivalis, but is most interesting on account of its blooming in the autumn. I am indebted to the late Rev. Harpur-Crewe for this choice bulb, and he obtained it from Lord Walsingham. It appears to have been a chance bulb collected by his lordship near Scrofitza, or Conchi, in Albania, some fifty or sixty miles north of Corfu.

G. PRÆCOX OR CORCYRENSIS.—This was also a gift from Mr. Harpur-Crewe, to whom it was sent by the Rev. Mr. Hughes, chaplain at Corfu. This variety blooms at the end of December, and appears to be a form of nivalis. It is small in all its parts, and I find it more delicate than any other Galanthus I grow. It requires a light, sandy soil, and a sheltered situation.

G. SHAYLOCKI has two peculiarities, viz., a pale green spot at the tip of each outside petal, and two long spathes, which give to the flower a very singular appearance. With me G. Shaylocki grows very freely and increases rapidly. Mr. Barr kindly procured this variety for me from one of his clients.

G. LUTESCENS is another very peculiar form, in which all the usual green markings of the flowers are of a rich yellow, and this extends even to the seed-vessel. I admire this variety very much on account of its delicate beauty. It requires more care than ordinary Snowdrops, and is somewhat slow of increase. This variety was found, a few years ago, in an old farmhouse garden in Northumberland by Mr. Sanders, of Cambridge, who kindly sent me some bulbs.

G. VIRESCENS is quite an oddity, having the outside petals green, tipped and edged with white. This variety is very late, and the form of the flower is often imperfect. It is valued for its singularity rather than its beauty. I am indebted to M. Max Leichtlin, of Baden-Baden, for this kind.

G. LATIFOLIUS has foliage like a Scilla, and will not bloom until thoroughly established. The flowers are small, but look very pretty peeping out from the short, broad, grass-green leaves. I have one bulb of this kind with a stronger habit and a larger flower than that of the type, and the foliage is somewhat glaucous. This is the only sport from the type that I have seen or heard of.

G. IMPERATI, if you get the true variety, is very fine, but many of the bulbs supplied by the trade are poor as regards the character of their flowers. The true variety was introduced by the late Mr. Atkins, and I was so fortunate as to obtain a few bulbs of it from that veteran horticulturist, Mr. George Wheeler, of Warminster, shortly before his death. G. Imperati varies very much, and the flowers are often deformed, but by careful selection one may get some lovely strains of it. There is a substance in the flowers unlike that of other kinds, and the long slender pedicles by which the blooms in some of these strains are attached to the stem give them quite a character of their own.

G. PLICATUS is now well known. This kind also varies considerably, both in foliage and flower, and one form that I have selected blooms with the earlier sorts—Elwesi, nivalis, and Imperati. I have some with very narrow leaves, and others the leaves of which are 1½ inches broad. One of my selections, which I have named G. plicatus breviflos, has the petals very much shortened; it is peculiar, but not beautiful. This variety requires careful selection.

G. ELWESI is the largest of all the Snowdrops, and by many is considered to be the best, but I cannot endorse that opinion. The long, floppy leaves often get torn and soiled in rough weather, and the flowers, although large, often have the appearance of tissue paper. This kind also varies very much, and many of the strains are utter rubbish. Last season I selected two or three varieties, which, if they retain their characters, may win my good opinion, as they had size, form, and substance, together with a dwarf habit.

G. NIVALIS, the common Snowdrop, the one Snowdrop of the boyhood of those of us who are now in their second half century, has long been a symbol of hope and promise, of darkness giving place to light. It is the dove sent out of the ark in winter by Nature to test the possibility of reclothing the earth with beauty. In G. nivalis we meet with great variety in the way of size and form, so that to one like myself, it is quite impossible to tell where G. nivalis ends and G. Imperati begins. I fancy the latter is nothing more than the aristocratic branch of the same family. The double form of G. nivalis is highly valued by some, but in simple beauty it is far behind the single one. Some of the strains of nivalis are giants and some are pigmies, but all are more or less beautiful. They will grow in any spot where it is possible to get a little soil to nourish them; in Grass, under deciduous trees, in woods, on banks—anywhere and everywhere. It is impossible to have too many of this lovely and chaste little flower.

G. POCULIFORMIS, raised by Mr. D. Melville, Dunrobin Castle, is a form of nivalis with the interior petals nearly as long as the exterior ones, and without the usual green markings. A perfect flower of this kind is very beautiful, but, unfortunately, a large proportion of the blooms are deformed.

I understand that in New Zealand the Snowdrop will not thrive; in fact, it pines and dies away in a year or two. What is the reason of this? Amongst the numerous variations in the Snowdrop, I have never yet come across one with perfectly-formed flowers having *the interior petals entirely white.* I fancy this must exist somewhere, and should much like to get it. As the Snowdrop season is just commencing, perhaps my notes may induce some of your readers to observe more closely the peculiarities of the kinds which they grow. Should they discover

Neapolitan Snowdrop (Galanthus Imperati).

any form that appears to be new, I should esteem it a favour if they would kindly send me, by parcels post, a root or two, with the flowers attached. This would enable me to examine and report on them.

JAMES ALLEN.

Park House, Shepton Mallet.

Schizostylis coccinea.—I am sorry to see that a "Lincolnshire Rector," page 688 has again failed to get this plant to flower, as, under the same treatment as I advised, it flowers with us abundantly, and I could at the present

time send him an armful of dead and fading flower stems. I do not believe that climate has anything to do with it. I would further suggest a drier position where the soil is not so rich. Surely it cannot be that Montbretia Pottsii is confounded with this plant, as in some points they resemble each other?—J. C. C.

—— In answer to a "Lincolnshire Rector" (page 688), I beg to say I have grown the above six years and never found it any trouble to flower. I generally pot a few roots about October, but in October, 1884, I neglected to do so, and, the winter being so mild, the blossoms opened and lasted right up till Christmas out-of-doors without the least protection. For five years I grew it in stiff clay soil, but this last year on light soil, and I find no difference in its blooming. Through press of work in moving, it was shifted in anything but the right time, but this autumn, as usual, it bloomed abundantly, both those that were lifted and those left in the ground. Just as these were nicely in bloom, the frost spoilt them, but those in pots lasted till after Christmas—splendid spikes of bloom. —G. C., *Tichfield Common.*

Carpeting hardy bulbs.—One of the difficulties attending the cultivation of hardy bulbs that are best left in the ground all the year round, or, if transplanted, returned to the soil without further delay than is absolutely necessary, is to find a position where they are secure from spade or fork in winter, for, as a rule, herbaceous borders require more or less rearranging every year, and at the best season for dividing and replanting most herbaceous plants the bulbs are just making active root growth, and to disturb them is to half ruin the chances of a good bloom. After trying several different plans I have found the following to answer best of any. Beds about 5 feet wide are set out with alleys between them. They are solely for hardy plants to supply cut flowers. They are planted in rows crosswise, sufficiently wide to allow of free growth, and a row of bulbs between each row of plants. These get on capitally together, as the early flowering bulbs produce their blossoms, ripen off their foliage, and are gone to rest before the other occupants of the beds come into flower. I need not enumerate all the plants which we find well adapted for this double cropping system. The following will illustrate my meaning: Beds of Carnations, Cloves, Pinks, Irises, Phloxes, Delphiniums, &c., have intermediate lines of Daffodils, Hyacinths, Tulips, &c. These get no staking, such as they do on bare soil, as splashing the blossoms with dirt, even if they get blown down, is almost entirely prevented, and by a little care in arrangement many useful combinations may be thus formed.—J. G.

Shallow v. deep bulb planting.—In this I have found a sort of compromising plan to be most useful. Of late nearly all my bulbs have been set in raised beds or borders. I like to adopt this method with nearly all flowers. Since I began it all such bulbs as those of Scilla, Chionodoxa, Muscari, Ornithogalum, and even Crocus, Tulip, and Snowdrop, have shown a marked improvement in their floriferousness, but more especially in the quality of the flowers. Larger bulbs, such as those of Daffodils, by this system have not only the advantage of being well covered, but the superficial soil seems to afford that freedom from too much moisture, which is, doubtless, beneficial after growth has stopped, and still the feeding roots when at work get into the natural soil; these, we know, die off annually, and if the bulbs have been planted so as not to be lower than the superficial portion of the soil of a raised bed, they are, practically, "chambered" when such natural severance takes place. The importance of such or similar management is obvious if bulbs really do require a season of comparative dryness, for it is to be feared that many would not care to be at the trouble of lifting and replanting annually. Perfect drainage is, perhaps, of itself ample, but it is too rarely carried out, and, unfortunately, ground pests, such as grubs, are very destructive to tunicated bulbs, between whose wrappers they lodge. Manure imperfectly rotted in contact with bulbs is an evil, whilst if sand from the roadside, which has become pure from the action of the sunshine or frost, were more freely used in completely surrounding bulbs, they would probably make such a vigorous start as to be able to resist all their enemies until such time as they needed thinning out.—J. W.

REPLIES.

15757.—**Quick-growing climber.**—"Irishwoman" would find the Crimean Convolvulus a very good climber for her arch. It is very hardy, grows thickly and rapidly, and flowers very fully. The blossoms, which are very large and beautifully white, last only one day; but the creeper continues flowering until late in the autumn. It requires no special soil.—L. B.

15753.—**Plants for gate vases.**—As you want a hardy, lasting plant, I know of none so suitable for your purpose, as the green form of the large-flowered Periwinkle. Planted fairly thick, in the first place, in a good loamy soil, it will last for several years in good condition, if fairly well watered in dry weather. In such a position the habit of this plant is very graceful, and as it is always evergreen, it is especially valuable.—J. C. C.

15701.—**Prize herbaceous plants.**—The following are eight of the best plants selected from the prize herbaceous lists that I gave on 21st November last: Cypripedium spectabile, Iris germanica alba, Delphinium Madame Henri Jacotot, Lychnis chalcedonica vespertina, fl.-pl., Orchis foliosa, Gladiolus cardinalis, Anemone Honorine Jobert, Harpalium rigidum. These are very fine, and easily grown in good ordinary garden soil. Put the Cypripedium and Orchis in a mixture of peat, and in winter slightly protect the Gladiolus with leaves and a bell-glass above, and the others will take care of themselves.—A. Sweet.

15695.—**Annuals for competition.**—The following annuals have all been in prize stands, and are easily grown with the aid of a frame: Cosmidium Burridgeanum, Gaillardia picta Lorenziana, Godetia Lady Albemarle, Malope alba, Nycterinia selaginoides, Phlox Drummondii splendens, Salpiglossis, Sweet Scabious, crimson, dark; Schizanthus Grahamii, Senecio elegans, Sweet Sultan, yellow; Zinnia elegans, double. Put up in neat, well-made bunches of a good size, those having the largest sized flowers put in the back row, and see that there is plenty of water in the tubes, or they quickly flag and lose in appearance at a show.—A. Sweet.

TREES AND SHRUBS.

15604.—**Plant for grave in shade.**—A very pretty evergreen, and ornamental, I think, as its flowers are very showy and abundant, is the Berberis Darwinii. I have it growing beautifully under the shade of large Apple trees. Also the pretty Pernettyas, which do well with some shade, and, what is very pretty on a grave, is the small growing Ivy. I saw one lately completely covered with the Ivy, and its evergreen character is an advantage. Primroses and Blue Bells, the wild Hyacinth also, would do well.—E. J. Lett, *Enniscorthy.*

15754.—**Scarlet Elder.**—In reply to your correspondent, "Perthshire," as to the method of planting or starting the cuttings of the above plant—no special kind of preparation is used. We take off strong cuttings in November, about the thickness of a man's finger, cut these into lengths of from 18 inches to 2 feet, and insert with a dibble, about 9 inches, into well dug and manured ground, and almost every cutting grows.—J. Davison.

15699.—**Cost of boiler.**—In answer to "H. W.," a small saddle boiler with the amount of piping mentioned might cost £7 or £8, with fixing extra; but the best plan would be to get an estimate from a maker, as prices vary, of course. So much as 60 feet of 4-inch pipe would, however, hardly be required for heating a house 15 feet by 8 feet, unless it is wanted for forcing purposes.—K., *Southend.*

15372.—**A chemical question.**—The water from a coal pit, where iron pyrites abounds, is always strongly acid with sulphuric acid, derived from the oxidation of the sulphur in the pyrites. The soil in "Perplexed Vicar's" garden is no doubt rendered unfertile by the presence of this acid. The oxide of iron which accompanied the acid is not the cause of the barrenness. The best treatment would be to dig in a good dressing of lime, which will neutralise the free acid, and soap-suds and slops from the house would act beneficially in the same direction. After the acid is neutralised, nitrate of soda might be used with advantage. —M. J.

AN AMATEUR'S FLUE FOR SMALL GREENHOUSE.

I have been very much interested in the correspondence which has appeared in Gardening on the above subject. Perhaps my experience may be of value to some of those readers who, like myself, belong to the working class. I live in a town and have built a small greenhouse (7 feet by 6 feet) in a recess in the back yard of my house. On the approach of cold weather, I purchased—second hand, though in perfect condition—an oil stove, which, when the pinch came, miserably failed. I then tried gas on a plan of my own, and that failed also. I then decided to build a flue, which answers every purpose, and only requires a few minutes' attention twice a-day. The furnace is built on the ground. The ash-place is two bricks high (as bricks are laid), one and a-half bricks long, and 7 inches wide. The furnace is five bricks high from the fire-bars, 1½ long, and 7 inches wide. It has a small door in the usual place for convenience in cleaning out and lighting; but after the fire is lighted, it is fed from the top, where there is a small hole, which, when the furnace is filled up, is closed with a damper. The top of the flue at its commencement is three bricks above the fire-bars, and as the top of the furnace is five bricks above the fire-bars, there is a clear space two (which could be made as many more) bricks high, for holding fuel in reserve. The whole of the furnace and flue is built inside the house, but the firing is done outside. The flue itself is built of all brick, and the top, which gets the hottest, is covered two bricks thick, which causes the heat to be more regular, and, should the fire go out, retains the heat for a long time. It runs along one side and one end of the greenhouse, and the smoke-pipe—a 6-foot length of 3-inch down-spouting, socketed on to a piece of the same, about 9 inches long, built into the brickwork, and projecting about 3 inches above it—goes through the roof. When the pipe wants cleaning it is lifted off and replaced without trouble, and is perfectly smoke-tight. Inside the pipe, just above the socket, I have placed a sheet-iron disc, exactly fitting the pipe, which is fastened on to an iron axle or shaft, which goes right through the pipe crosswise, so that it —the disc—can be turned round. When the disc is turned across the pipe—in other words, when it is closed—no draught is possible, so that by opening it little or more the draught can be regulated to a nicety. Although my furnace will burn any kind of fuel, I mostly use what is locally known as "rattle-jacks," an inferior kind of coke, which can be purchased at the gas-works here for one shilling and eightpence per ton. When the furnace is filled with rattle-jacks it will burn twenty-two to twenty-eight hours, but at the end of this time it will have to be re-lighted, as, although the fire will be all of a red glow, immediately it is touched it falls into a white ash. I, therefore, fill up about every twelve hours. I have had the fire in day and night during the frost, and find the cost a trifle under twopence per week. A neighbour of mine has had his flue altered to this pattern, and his difficulty now is, not how to heat his greenhouse, but how to cool it. He has not yet fixed a regulator in his chimney. Disc.

15763.—**Scale.**—It is not so strange as it would appear at first sight, that scale insects should attack similar kinds of plants, though at a considerable distance apart, while intermediate plants of different descriptions should escape, when it is remembered that many insects are very particular as to what plants they will feed on; some entirely confine themselves to one kind, and will starve rather than feed on another. I shall be very glad to give "M." further information about this insect if he will kindly send me specimens on a twig. Should there appear to be two kinds of scale I should like to see both, as the males and females are often very much unlike one another. As I am studying these insects I should be truly obliged to him for specimens. There are several insecticides which will kill these insects; but whatever is used, the scales which are sheltering eggs or young should be removed. Such scales are dead, but their bodies would protect their progeny from any ordinary application.—G. S. S.

THE COMING WEEK'S WORK.

Work in the Town Garden.

Verbenas.—Among the very best of all town plants for bedding are Verbenas, when properly grown and planted out in a suitable soil and position. I have seldom found these succeed to more than a very moderate extent when raised from cuttings in the usual way; but when seedling plants are employed, growing them on liberally throughout, and planting them out in good rich soil, a really grand mass of foliage and bloom is the almost inevitable result, however smoky the air may be. Certainly seedling Verbenas possess a vigour and strength that is very seldom seen in plants from cuttings, and do not seem to suffer from the crippling attacks of green or black fly that so often occur when hot, dry weather sets in after planting out; and, provided the seed is of good quality—*i.e.*, carefully saved from really fine varieties—the trusses of bloom will be of a very high quality, as well as numerous and large. The seed should be sown at once, or, at any rate, before the end of the month, and the earlier the better, as a rule. We always sow in shallow boxes, about 14 inches by 10 inches, and 2 inches to 2½ inches deep inside; drain well, and use a roughish mixture of loam, leaf-mould (or peat), and sand, covering the seed only slightly.

Snowdrops on root-work. (See article on page 713).

Place the boxes in a genial warmth of 60 degs. to 70 degs. (a little bottom-heat, as well, being advantageous, but not indispensable), and keep the soil moderately moist. If the seedlings come up thickly, they must be pricked off 1½ inches apart, when strong enough, into other boxes, and subsequently potted off into thumb-pots, or "small 60's," from which they may be planted out during the last few days in May, or early in June. If germination takes place rather scantily, however, which is sometimes the case, unless the seed is thoroughly fresh and good, the plants may be potted straight from the seed boxes or pans. Use good, rich, loamy soil throughout, and the soil of the beds must have been got into good condition by working in plenty of decayed manure, leaf-mould, and rotted turf, any or all of these being suitable. Seedling Verbenas need not be planted so closely as the cutting plants, for a single one will generally cover considerably more than a square foot of ground. To ensure plenty of stems take the points of the shoots out from the earliest stages, now and then; but when they are fairly in growth in the beds, they will generally branch very freely without stopping, and, if the growths are occasionally arranged and pegged down to the soil, this will shortly be quite hidden with luxuriant foliage, and this, again, freely crowned with flowers. In country places, any surplus seedlings may be potted on into 6-inch or 7-inch pots, and, if grown for a time in a cold frame or pit, will make beautiful conservatory plants during the summer and autumn; but, never having been able to succeed with Verbenas as pot plants in town air, I could only recommend this plan for country gardens, or quite outer suburbs.

Cornflowers.—The lovely and many-coloured varieties of Cornflowers (Centaurea Cyanus minor) are so admirably amenable to town culture, and so bright, as well as useful for cut flowers, that, though they are among the hardiest of annuals, and will bloom freely if sown one, two, or three months hence in the open borders, it is well worth while taking a little extra pains to secure a long succession of their gay blossoms. So, if there is a cool frame, or part of one to spare, or a foot or two of a greenhouse shelf, sow now one or more boxes of the seed; this will quickly germinate, and, if thinned out a little, or pricked off presently, and transplanted, when thoroughly strong, to where they are to bloom in open beds or borders—say, about the early days of April—will come into flower very early, and the succession should be kept up by making subsequent sowings, in the open ground, in March, April, and May. A sunny position should be chosen for these pretty annuals.

Helichrysums and annual Chrysanthemums.—Two other very desirable annuals are the Helichrysums (Everlasting flowers) and the many varieties of annual Chrysanthemums, both of which succeed remarkably well in town air, and are very bright and useful. We sow seed of these towards the end of March in boxes either in frames or a sunny greenhouse temperature; prick off once into other boxes, placing five or six dozen plants in a 14-inch by 10-inch size, harden off, and plant out at the end of May in the same manner as Asters. The "Monstrosum," "dwarf double," and "Fireball" classes of the former make handsome plants, or groups of three, and produce plenty of large and perfectly double blooms of many shades—white, yellow, crimson, &c. Of the latter the single tricolor, and "Lord Beaconsfield," and "Sultan" strains are the most showy; some of the double forms are good, but apt to grow too strongly sometimes.

B. C. R.

Glasshouses.

Achimenes.—These easily-managed and free-flowering plants are not so much grown by those who have warm houses as they deserve to be, as they are so useful for decorative purposes after the principal part of the spring-blooming subjects are over. To make the most of them the roots should be started into growth at two or three different times, a portion about the middle or end of the present month, with others to follow at intervals of a month or so. To those who have not grown these plants, it may be well to give a few details about their general management. The scaly roots are easily broken, and care should be taken to avoid this, as, except where the stock of any particular kind is limited, and there is a desire to increase it as much as possible, the roots ought to be kept intact, for though small pieces will grow, still the plants from such are weaker than when the roots are potted whole. The best way of proceeding is to drain and fill some pans with soil consisting of sifted loam or peat, with a good portion of leaf-mould, sand, and rotten manure, that will form a light compost, from which the plants, when they have made 2 inches or 3 inches of growth, can be transferred to the pots in which they are to be grown on and flowered, without the breakage which will occur if heavy, adhesive soil is used. Fill the pans to within 1½ inch of the top, and then distribute the roots about 1 inch apart over the surface, covering them with 1 inch or so of soil, pressing it down slightly. Place the pans at once in the stove, and as soon as the shoots appear above the soil stand them as near the glass as they can be got, as, if the shoots get at all drawn, their subsequent appearance will be worse. When they have attained the height named, move them into pots of whatever size is best adapted for the houses they are to occupy when in flower. It is a mistake to crowd the plants too closely in the blooming pots, as often done, as they get drawn up weakly and flower indifferently. The soil in which to grow them need not be so light or open as that in which the roots were started, but it should contain sand enough to allow the water to pass freely through it.

Celosia pyramidalis.—This is one of the best of all annuals that can be grown in pots, alike for conservatory and greenhouse decoration, as for the production of cut flowers, in which state they last well, while their form adapts them for associating with most other flowers. A good strain of seed should be secured, as there is much difference between good and indifferent varieties in the form of the flowers and their colours; the latter should range from yellow to pink and the brightest red and crimson. To give the requisite succession, three sowings are necessary, and the plants can be had in good condition up to near the end of the year. The first sowing ought to be about the present time. A good-sized pan should be drained and filled with soil similar to that advised for starting the Achimenes, pressing it down slightly, and making the top quite smooth; distribute the seed evenly over the surface, not too thickly, or they will become drawn and weakly before they are large enough to pot. Cover the seeds very slightly with some of the finest of the soil, and press it down moderately. Lay a sheet of glass over the top to keep the soil from drying, and stand in a moderately warm house, where the seeds will soon vegetate; then keep them near the glass until the young plants are 2 inches or 3 inches high, when move them singly to 3-inch pots, or put two or three together into 7-inch or 8-inch ones.

Cutting-striking.—More cuttings should be put in of stove fine-leaved plants as soon as they can be had in condition. They should include the following: Aralias, Cissus discolor, Crotons, Cupanias, Cyanophyllum magnificum, Dieffenbachias, and Terminalia elegans. Such of these as do not produce young shoots that are tolerably firm at a joint should consist of the young growths made by plants that have been cut in or headed down, and have made shoots long enough to form into cuttings. Take them off with a heel, by which means most things that present any difficulty in striking through the wood being soft will form roots. Cuttings of strong wooded plants, with large leaves, are in most cases better put singly in small pots, whilst such as are of an opposite description to this may be put several together in larger pots, say 5 inches or 6 inches in diameter.

Potting autumn-struck cuttings.—Cuttings of such stove plants as were advised to be struck in autumn should now be potted, turning them out of the pots or pans they have occupied, and disentangling the roots with no more breakage than cannot be avoided. Give pots proportionate in size to the nature of the plants, whether quick or slow growers, the former requiring more room than the latter; but in no case over-pot, as it is much better to give additional room as it is needed. As soon as growth commences stop the points of those plants that are required to be grown bushy, confining to a single stem those that look best when so managed.

Marantas.—Large plants of the different kinds of Maranta that require reducing in size should now be divided. The extent to which this is carried will be ruled by the size of plants most useful in each particular case. Large specimens may be reduced to two or four, or single crowns if desired. The best way to proceed is to turn the plants out on the potting bench, and to separate them to the desired extent with a knife, disentangling the roots so far as can be done so that only few may be destroyed. Break the new soil up by hand, reducing it, more or less, according to the size of the plants; in the case of good sized masses of such things as these it is better not to make it so fine as where the plants have been reduced to single crowns; add some sand to the soil, and in potting make it moderately firm in the pots. Large-leaved plants, like Marantas, want a good deal of water, and to meet this want see that the pots are well drained; but give no more water to the soil than is sufficient to prevent its being too dry, until the roots have begun to move, and some top growth has been made.

Caladiums.—Plants that were allowed to die down in autumn in the usual way should now be started. If they have remained in the soil in the pots that they were grown in last summer, they should be turned out and placed in others, proportionate to the size of the tubers and the respective varieties grown. Such sorts as the little C. argyrites require much less root room than the larger kinds, like C. bicolor, C. Chantini, and others of a similar description. In the case of large roots, they may either be placed at once in the pots they are intended to remain in, or put for a time in such as will fairly admit them, and then be moved on later into others larger. Where there is plenty of heat to push them on quickly into growth the former course may be adopted; where less warmth has to suffice, and the roots' progress consequently will be slower, the smaller pot method may be followed. Whatever description of soil is used, peat or loam, see that it contains enough sand, for these plants when in full growth require much water, and if the soil becomes adhesive the roots will not keep healthy. Until the young fibres have begun to move freely the soil will be better for being no more than slightly moist. The small-growing C. argyrites is for general use the most desirable of all the kinds, as not only can the plants be used in many ways that the larger growers are unsuitable for, but its leaves are amongst the best material for mixing with cut flowers. When to be employed in this way the plants must not be grown in an atmosphere that is too warm, or overcharged with moisture, neither must they be kept too far from the glass, or the leaves will be wanting in the strength and solidity required to enable them to stand without flagging when cut.

Alocasias should shortly be repotted, as most of the kinds do not thrive well if the material in which they are grown is at all adhesive. Such kinds as A. metallica. A. Lowii, A. Veitchii, and others of a like character, seldom do well unless the compost is of an open nature, something similar to that required for most Orchids; fibrous peat, chopped Sphagnum, and rotten manure which has been dried—like that which has laid on the surface of a vine border, or an Asparagus bed—with sand and broken crocks, suits them in every way; but even open material of this description should be wholly renewed every year—just before growth commences is the best time to repot. Whatever division of the crowns or separation of the suckers is required should be effected at the same time, giving pots proportionate to the size that the plants are required to be grown to. In the case of all the plants above advised for repotting or division, if possible, they should have a little more warmth—a rise of 4 degs. or 5 degs. will make a great difference in helping them to start into growth, especially in getting the roots to move so as to be in a condition to support the top growth that will shortly be in motion.. Thomas Baines.

Outdoor Garden.

Climbers and creepers.—Honeysuckles, Clematis, Jasmines, Roses, and other wall plants should have the necessary trimming and training now before growth begins. Walls for creepers are better wired, employing stout galvanised wire for the purpose, fixing it diagonally about far enough from the wall to admit of the ties being easily made. If the main branches are securely fixed now a good deal of liberty may be allowed to the summer growth of wall plants. There should not be any untidiness or roughness, but every shoot need not be fixed with mathematical precision. Flowering shrubs are often successfully employed in furnishing low walls or walls of only moderate height. Berberis Darwinii and B. stenophylla are very good subjects, and flower early, and have a cheerful appearance in summer. The Laurustine is another valuable plant for a low wall, flowering freely in winter; and very often, when growing against a wall, the plant fruits freely, and the dark, glossy berries are ornamental when numerous in summer. Other handsome winter climbers are the naked-flowered Jasmine and the Pyracantha. I saw a sheltered wall, 30 yards long, and perhaps about 15 feethigh, covered with this Jasmine a short time ago, and I thought I never saw anything so beautiful. The wall had been wired, and, to a great extent, the plant had trained itself by clinging to the wires, and it was the free, graceful growth, studded with blossoms, which made it so attractive. On the other hand, the Pyracanthas should be trained neatly and closely. This shows that the character of the plant should be taken into consideration in the pruning and training.

Common bulbs in masses.—The Snowdrop, the Crocus, Aconite, and Daffodil are always beautiful in spring; but, to make the most of them, have them in masses. A good-sized, bold mass of Daffodils, or Aconites, or Snowdrops has more character about it and makes a deeper impression upon us than when they are frittered away in thin lines. I have no desire to see the light of the common Blue-bell extinguished in our woods, but a good blaze of them in the home shrubbery would be very effective, and they transplant easily. All our hardy common bulbs transplant safely when in blossom, or just before the flowers open. But if they are moved any distance or kept any length of time out of the ground they will suffer.

Turning walks.—Worn paths may be put into good condition now, by simply turning the gravel over with a fork or spade, putting it into shape, and rolling it down firm. A sprinkling of fresh gravel, either now or in the spring, will put the walk in good condition for the summer.

Hot-beds.—Make up a hot-bed now for raising seeds and striking cuttings. Shake and mix the materials well together, and water any dry spots. Make the bed 4 feet high at back, and 3 feet at front. A small bed, if well-made, so as to keep up a genial temperature, will raise a great many plants.

Fruit Garden.

Good late Pears.—After Christmas good Pears are always scarce, and there is frequently a degree of uncertainty about their condition. For instance, I have had Beurré Rance excellent one season, and perhaps the next it would be very inferior on the same tree. Late Pears are more influenced by the character of the season than early or mid-season kinds; and then, again, if grown on a wall, aspect has a good deal to do with quality, and the fine late Pears will pay as well for the best positions as Peaches or Apricots. On a good Pear soil (a deep dry loam) the fruit is often better and richer flavoured from espaliers, cordons, or pyramids growing in an open situation than from trees on an eastern or western aspect on the wall. At this season Pears now turning in, such as Ne Plus Meuris and Beurré Rance, are often improved by being placed in a warm cupboard for a week or two. A temperature of 60 degrees brings up their flavour, and tends to make the fruit more melting. The following are half-a-dozen good late Pears:—Easter Beurré (a warm, sunny position), Bergamotte d'Esperen, Ne Plus Meuris, Beurré Rance, Winter Nelis, and Prince Albert.

Lime for fruit trees.—All trees carrying heavy loads of fruit, but especially stone fruits, use up a good deal of lime. I am convinced that this is often forgotten in the management of the fruit tree border. This is a good season to apply a dressing to the borders, forking it lightly in. Another way of applying it is, when the trees are damp on a dull morning, dust them with quick lime, scattering it pretty thickly in a cloud over all the branches. This will have a healthy effect upon the bark, and help to eradicate moss, and free the bark from any inert secretions which tend to check the circulation of the sap.

Sheltering the blossoms.—The buds at the present time are very quiet. There has hitherto been no weather to excite movement; but when they do start, the motion will be all the faster for the long period of quiescence. Therefore the materials should be held in readiness to protect the blossoms of wall and other trees so far as is possible. The Apricot is usually the first to open its blossoms. Then comes the Peach and Nectarine. The cheapest and simplest way of protecting the blossoms of fruit trees is to cut a lot of feathery sprays from the Yew and Box trees, and place them among the branches of the fruit trees by inserting the thick end of the sprays of the Yew under the branches of the fruit tree, permitting the feathery portion of Yew branches to project outwards a little with a drooping tendency, to precipitate any moisture which may collect on the branches. When the Yew branches are all carefully fixed hang a fishing-net over the whole to keep them in position.

Vegetable Garden.

Onions.—In many gardens this is an important crop, and much effort and pains are frequently taken to thoroughly prepare the beds. Usually in gardening the result is pretty much what we make it—those who thoroughly prepare the site of any crop generally have their reward. The land for Onions should be heavily manured and trenched or ridged up roughly in autumn, or at least before the turn of the days come. Then about the middle of February the ridges are forked and the surface left loose and open for the purpose of receiving the full benefit of full exposure. And about the 10th of March, or as soon after as the weather will permit, the seeds are sown. Soot is always a beneficial application for Onions, and it may be given either just previous to sowing the seeds, or during the early growth of the plants. A mixture of nitrate of soda and guano, in equal parts, sown in the drills with the seeds, at the rate of seven or eight pounds to the rod, has had a very marked effect on the crop, and will be profitable under almost all conditions and circumstances. On porous soils salt may be used with advantage in moderate quantities, not exceeding one pound per square yard. Plant Shallots and Garlic in an open situation. Prepare the land as for Onions, and plant the bulblets by pressing them into the ground in rows 12 inches apart, allowing 6 inches in the rows. Cover each plant with a handful of charred compost, or wood ashes. Sow small salading, such as Mustard and Cress, in a frame, or wherever it can be sheltered by an old light, or a handglass. After so much cold weather good Lettuces in the open will be scarce. Considering how cheap glass is, and how valuable good Lettuces are from this time until they can be had in the open air, the wonder is that no one really makes a specialty of forced Lettuces. Scarcely anything forces with less trouble. Seeds of the Paris Market Cabbage, and any good White Cos, sown now in boxes, and placed in the hot-bed, will be up in a few days, and as soon as they are large enough to handle make up a hot-bed of leaves, and prick them out 6 inches apart. The late sown plants of Brussels Sprouts last year did little good, in consequence of the drought. Sow now in a box, and place in the greenhouse. E. Hobday.

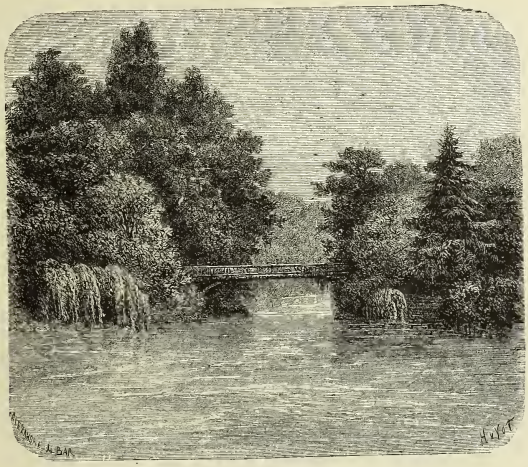
15764. — **An amateur's troubles — Fumigating.**—As an amateur myself, I would wish to say a few words in reference to the above. In the first place, I think "Puzzled" used too much paper to smoke his house. Half-a-pound ought to smoke a house of that dimensions four times; that is about what I use in a house that I am in charge of—20 feet by 12 feet. Again, the smoke from the coals must have done some harm, or the cold chill brought on by drawing off the lights. How he could draw off the lights of a greenhouse I cannot see, but perhaps he means opening the ventilators; in either case, more cold air must have got in than was good for the plants. I would

advise "Puzzled" to use a fumigator, or, if he cannot procure one, he might substitute something else. The blaze of a candle would ignite the paper. Get an old lantern, for instance, put the candle in the bottom, and place three or four pieces of wire across over the candle; place the paper on the wire, and take care to have the paper covered, or it would blaze and not smoke. Light the candle, and the paper will burn gradually away.—Amateur, *Kilkenny*.

—— While I cannot help your correspondent with information as to plants which die down and those which do not, it may be of service to him to know that the plan I followed in fumigating a greenhouse, about the size mentioned, was to place the Tobacco paper on the top of red-hot ashes, taken from the stove and put on the floor of the greenhouse, and I found the plan entirely successful. Care must be taken not to allow the paper get into a blaze.—Amateur.

BRIDGES IN GARDENS.

Bridges are not, generally speaking, ornamental features in gardens, but here is an engraving of one which, being gracefully planted with Weeping Willows and various other trees, has a very good effect. Unlike many garden bridges, too, it has a real use in connecting two bold islands; there is nothing of which we have a greater horror than the plan so often followed of making a bridge where none is wanted, for the mere sake of making it.



Rustic Bridge between Wooded Islands.

15800.—**Profitable stock-keeping.**—My advice may not be altogether satisfactory to "E. R. H." I think, however, he will find it the most profitable to follow in the end. It is this: Unless the buildings can be used for the purpose for which they were originally intended, let them remain as they are. The stable, it is true, may be as useful for cattle as for horses, but the querist, it seems, has nothing for the latter to do, and objects to cows, as being likely to cost too much in labour to be profitable. Even if the labour question were not taken into consideration at all, it is extremely doubtful if the scheme would answer, so far as cows are concerned, for the food produced at home would not go far, and very little profit must be expected if an amateur cowkeeper has to rely entirely on purchased fodder. The same objection holds good as regards pigs, or perhaps it would be more truthful to say that the loss will be still greater, for pig-keeping is not a paying business, even in practised hands, when everything in the shape of food has to be bought. "E. R. H." may certainly increase his stock of rabbits; but even this kind of stock cannot be kept in large numbers without the expenditure of considerable time and money. If the querist be really anxious for his buildings to contribute something towards the rent and rates, why does he not try to let them? In many parts of the country a good stable and coachhouse would be eagerly sought after for storehouse purposes, if for nothing else. I do not think it possible to turn them to better account.—Doulting.

ROSES.

§ 15750.—**Pruning Marechal Niel Rose.**—Unless your Rose has grown beyond the limits allotted it, or there is no further room for it to extend, it does not want any pruning; but if it has exceeded its space you may cut it back to the point you intended it to fill. If you cut away now any but the weakest points from the growth you will remove flourishing wood. Save in very exceptional cases this Rose is pruned too much.—J. C. C.

Pruning Roses near towns.—A great mistake is very commonly made in heading back Rose trees, standards especially, in suburban gardens, and as the time is now approaching when this operation has to be performed, I wish to draw attention to the subject, and can assure growers of all classes that much better results will follow a more moderate use of the knife or scissors than is usually practised. If the growth of any variety of Rose planted in a suburban garden, where the air is more or less smoky, and the soil often unsuitable, is compared with that made by a similar plant set in rich loam and in pure country air, it will be found that the former is not more than half or a third as great, either in length or substance, as the latter; yet the practice of most gardeners is to cut the shoots back equally in both cases, thereby most decidedly "cutting the life" out of them, as well as the bloom too, in many cases. Again, only Roses of strong constitution and vigorous habit, such as Gloire de Dijon, Magna Charta, Paul Neron, John Hopper, General Jacqueminot, Victor Verdier, and Baroness Rothschild should ever be planted in suburban gardens, and it is well known that such varieties must not be pruned nearly so severely as those of weaker growth; yet growers generally persist in cutting a small head back close to the old wood, no matter whether its growth be naturally vigorous or weak; whereas if, instead of two or three, six or eight buds were left, not only would there be more flowers, but the foliage would be much more abundant, enabling the struggling plant to breathe more freely, and encouraging the formation of more root fibres. Of course, if fine, large blooms are required, hard pruning must take place (or, what I believe to be preferable in many cases, thinning of the buds); but suburban growers must not expect to get exhibition blooms, and, as a a rule, do not want them; and, anyhow, this is not the way to get them. I found out years ago that a large allowance must be made, and by merely shortening the main shoots a little, and cutting out, of course, all weak and dead wood, I have often had blooms where there had been none for years under the usual treatment.—B. C. R.

THE KITCHEN GARDEN.

CAUSES OF FAILURE IN MUSHROOM CULTURE.

Mushroom culture, though generally interesting and pleasurable, is not unfrequently a source of much anxiety to those engaged in it. Failures will occur, and that, too, at a time when perhaps Mushrooms are in great request; but why they should occur appears inexplicable, seeing that there has been no appparent deviation from the usual successful routine. The manure is sometimes considered at fault; in others the spawn is condemned; and doubtless rightly so at times in both cases. The quality of the manure obtained from stables where many Carrots are regularly given to the horses, is generally admitted to be inferior, or unsuited for making into Mushroom beds; neither do experienced growers care to use manure when the horses are in ill health. Personally, I have never had good cause to complain of ill effects attending the latter occurrence, as it rarely happens that all the horses are under medical treatment, and I believe that when the manure is properly fermented and prepared, much or all that might prove obnoxious is evaporated. Where all or the majority of the horses are being fed on Carrots, the droppings are not sufficiently cohesive and durable, and though this may be obviated somewhat by retaining a considerable quantity of short, strawy litter with the manure a profitable crop of Mushrooms cannot reasonably be anticipated. There are, however, other causes of failure, and as I have been responsible for a few, my experience should prove instructive. According to my experience, more beds are spoilt from over-anxiety to succeed than from any other cause. Those in charge of the Mushroom house are frequently in the habit of doing too much, especially with the syringe. One or more cans of water are daily distributed over the beds and about the house, and occasionally one of the beds that ought to be in full bearing gets an extra dose. When the manure retains its heat, little or no harm, perhaps, is done, but should it have become comparatively cold, there is no evaporation going on, and the soil gradually becomes cold and much too moist, the result being the destruction of both the spawn and the embryo Mushrooms. The latter may, perhaps, attain the size of a marble, then become soft and brown to the no small consternation of those in charge. In the majority of cases I am confident there is no necessity for these daily syringings. A dry heat would certainly be injurious, but if the fire-heat is kept, as it ought to be after the first bed is in bearing, at about 55 degs., or even less, there is little danger of the walls and floors becoming too dry, or at the most twice a week is quite often enough to damp them. A high temperature with or without much moisture is most injurious, and should, therefore, be carefully guarded against. In order to further lessen the need of syringing so frequently, and also to better preserve the heat of the beds, it is a good plan to cover them closely with shutters, or, directly after they are spawned and soiled, with dry loose hay. We use the latter, and nothing could answer better. Cold draughts should be carefully guarded against, this, in fact, being more necessary than the exclusion of light. When the beds are becoming rather dry, we at once heavily syringe them with warm water, sufficiently to moisten them again, the hay being carefully returned and always kept dry. One person only should have anything to do with the beds after they are once formed, and he should also gather the Mushrooms, as he best knows where to find them every day without upsetting all the litter.

Other causes of failure that I shall touch upon are, I believe, much less frequent, but are yet of sufficient importance to merit discussion. The old custom of spreading the droppings thinly in an open shed, in order to thoroughly dry them prior to the formation of the bed, is still persisted in by some, the droppings becoming so dry and hard as to remain intact even

after the beds are broken up. Manure prepared in this manner contains sufficient moisture to generate heat, and it may be taken possession of by the spawn, but the crop of Mushrooms is certain to be poor, both as regards quantity and quality. The proper way to prepare the manure is this:—It should be collected daily or as frequently as possible, and not allowed to remain in the heap of litter, where it is liable to be much injured, or perhaps spoilt, in a very short time, from over-heating. It should be stored rather thinly in an open shed, and, when sufficient is collected to form a bed, it should all be thrown into a heap. Directly it is found to be hot, and before the centre has heated dry, the heap should be turned inside out. This should be repeated three or four times, and in this manner the whole will be sweetened, and yet be fairly moist. Thus prepared, the beds when well rammed down need not be more than 9 inches deep in front and 12 inches at the back; but, with inferior or dry and partially exhausted manure, which some growers have unavoidably to deal with, I would increase the depths of the beds by at least another 3 inches. The aim should be to secure a good, lasting, but not violent heat, without which the crop will either be very thin, or a complete failure. Where inferior or badly prepared materials are used, the heat of the bed is apt to decline to below 60 degs. before the mycelium has taken possession of the beds, and whenever this happens with us, we form a hot-bed, where practicable, with rough stable manure directly under it, and this is renewed when necessary. We also adopt this plan when we are anxious to hasten a crop, and it never fails, neither does it injure other beds in the same house. We spawn our beds directly the heat has declined to about 80 degs., and usually mould over at once, this raising the heat considerably, though not to an injurious extent. The longer the beds retain their heat, provided they do not become dry, the better will be the crop and quality of the Mushrooms. When the beds are formed before the manure has been properly prepared, or when it is prepared in the open, and unavoidably becomes wet and cold, there is sure to be much steam generated directly fermentation commences, and in this case unless great care is taken the spawn may be easily spoilt. In my time I have formed, according to orders, several beds with moist manure, and the spawning being also carried out at the stated time and in the usual manner, failures were the rule. Now, if I found much steam abounded, the manure would either be again formed into a heap till some of it had evaporated, or holes would be dibbled over the bed, and this would allow much of it to escape, spawning being deferred for about a week.

Spawning and soiling the beds are two details, the carrying out of which materially affects the value of the crops. Many still form the holes for the pieces of spawn with dibbles, or, at any rate, if they are not used, the change has been effected within the past six years. With tolerably dry manure no harm may accrue, but when much steam is given off, these very holes which the spawn stop, but does not fill, are naturally outlets for the steam, this proving most destructive to the spawn. We find it the safest plan to make shallow holes, either with the hands or with a trowel, and use lumps of spawn about 2 inches square, disposing them about 5 inches apart each way. From such pieces of spawn we obtain fine clusters of Mushrooms, frequently ranging from a dozen large ones to double that number of smaller ones. Larger pieces of spawn produce too many Mushrooms, one piece 4 inches square, put in by way of experiment, having resulted in the production of a cluster of fifty buttons. More also depends upon the nature of the soil used for surfacing the beds than many are aware of. At one time we were obliged to use poor clayey loam, but lately we have been fortunate in procuring much lighter and better soil, and we, in consequence, have been much more successful with our Mushrooms. What suits Cucumbers also suits Mushrooms, but good Melon soil is usually too poor and heavy. Where possible, it should be procured from high and naturally well-drained pasture land, and taken from immediately below the thinly-pared turf and used at once, or the turf itself may be cut and stacked for several months in common with the potting soil. When used it should be broken up finely, be kept fairly dry, and placed in the Mushroom house, if very cold, in order to warm it somewhat. We prefer to use a good thickness of it, not less than 2 inches when it is beaten down, and never water the surface as it is beaten in order to make it run together, as I consider this practice both unnecessary and injurious. Neither do I approve of waiting a week or more after spawning before we soil the beds, but prefer to do it directly after spawning, and thus avoid any disturbance to the bed and the interruption of the spread of the spawn. It should be borne in mind that the spawn takes possession of the soil, and a good thickness of it—being less liable to become injuriously dry—also insures the production of larger Mushrooms.

W. I. M.

Shallots.—Few vegetables are more neglected in private gardens than Shallots, though few are more valuable. There are no uses to which Onions can be put for which Shallots may not be substituted with advantage. By many they are considered to be even superior to the Onion in flavour, and they keep better after being stored. As a pickle they will be found equal to any Onion. Where the object is quantity, Onions may beat Shallots; but if flavour be what is most regarded, Shallots will be preferred. Their cultivation is by no means difficult: dress the ground heavily with rotten stable manure, digging it deeply and mixing the manure well with the soil; then firm it well by treading it with the feet, and rake it level. Procure strong bulbs with a large portion of embryo offsets attached to them. Stretch a line, and plant with a dibber 6 inches from bulb to bulb and 4 inches deep, allowing between the rows from 12 inches to 15 inches. When once planted they require no further attention beyond keeping the ground free from weeds and the surface open, which will be found to be advantageous to the crop. When the leaves turn yellow and die down, the crop is ready to be harvested. Dig the bulbs up with a small fork, put them into a basket, and place them in an outhouse or open shed to dry. Drying may be hastened by spreading them out thinly and turning them over several times, and when perfectly dry they should be freed from soil, and all loose offsets should be removed. Use first those bulbs to which the fewest offsets are attached, and lay the others in the seed room. Towards autumn or early in the spring the latter may be planted; some prefer autumn planting, and I agree with them, as the bulbs have plenty of time to root well before they show signs of producing green tops. When planted late in spring, *i.e.*, when the bulbs show signs of growth, they form tops before the roots get established, and the produce is often smaller than that from autumn-planted ones. I have known one pound of bulbs produce from six to seven pounds of good strong produce.—W. C.

Making Asparagus beds.—May I offer one or two remarks on this subject on points where I differ from "Mr. Groom" (page 677)? Seaweed is a magnificent manure for Asparagus, but it is a mistake to bury it under the plants. It melts away completely, and would drain into the subsoil long before the roots of the plants could get down to it. If you put a foot deep of Seaweed at the bottom of the trench, the bed would soon sink to that extent. It is as a top dressing, to be put on after the haulm has been cut off, that Seaweed is most useful. I have put it on a foot or more in depth in November, and in February following there was nothing to rake off—the weed had dissolved and soaked into the bed. After three months cutting, the haulm grew to an average height of 7 or 8 feet, and some stalks were fully 10 feet high [!] As to the number of rows to each bed, a saving of space is effected by putting four rows, not three, as recommended by "Mr. Groom" and most books on gardening, for the facility of cutting the crop without treading on the plants. Say they are required to be 18 inches apart—9 + 18 + 18 + 18 + 9 = 72 inches, gives four plants in a 6 foot bed, and no plant is further from the edge than 27 inches—the same distance as with three plants in a 4-foot 6-inch bed, 9 + 18 + 18 + 9 = 54 inches. But perhaps in porous, well-drained sandy soil, such as your correspondent describes, the best plan is to dispense with beds and plant in rows 2 feet to 3 feet apart. I intended to remark above that bones ought to be a good and permanent manure for a crop that stands for many years in one position. In ground that I am now preparing for Asparagus, I am putting a layer of ½-inch bones at a good depth, and plenty of old stable manure above.—J. B. S., *Hants.*

Leeks.—Will "Mr. Thomson," whose article on page 674 I have read with interest, or any other reader inform me where the Lyon Leek and Renton's Monarch were at Edinburgh International Show? If the Lyon Leek and Renton's Monarch are said to be the best in the market, why did they not prove it at the Grand International Show, Dundee, 1884? I may say that I have grown for years all the Leeks mentioned here for competition, and had them planted alternately so as to give them all the same chance, but never could manage to get them to the size and quality of Mr. Dobie's. Certainly, the Lyon Leek and Renton's Monarch are good for general use, but they are not to be compared with Dobie's Champion and Conqueror for competition, and this last has carried off more prizes than all the others in the market combined.—Pudle.

15743.—**Onion for exhibition.**—I consider Rousham Park Hero the best for spring sowing. I have grown it for two seasons along with other good sorts, and find it much superior. I have never been beaten with it in competition in this locality.—Gone Away, *Edinburgh.*

15744.—**Beet for exhibition.**—Pragnall's Exhibition Beet grows to a medium size, and is excellent in colour, and in other respects quite unsurpassed.—J. C. C.

—— In answer to "Tally Ho," I find Pragnall's Exhibition and Dobie's Purple Beet the two best to grow for competition.—Gone Away, *Edinburgh.*

15697.—**Stamped zinc labels.**—I cannot inform "A. H. O." where stamped zinc labels can be obtained, but I should recommend him to purchase a set of punches with numbers on them, which can be obtained through any ironmonger, and with which he can stamp any number he likes on his label. The label should be laid on a block of soft wood or a thick piece of lead, and the punch should be sharply struck with a hammer. Lead labels are in some ways better than zinc ones; they can be wound round a branch, and will give way as the branch swells.—G. S. S.

15727.—**A gardener's working hours.**—The answer given to this question is that it is usual during the winter to work on from 7 a.m. until dinner time with no interval allowed for breakfast. I do not agree with this; as an old gardener, allow me to say that I have always had half-an-hour for breakfast and an hour for dinner, all the year round. I should consider it a great hardship if I had to keep about until midnight and sometimes later (and all gardeners who have the charge of fires have to do so in frosty weather), if I could not have time to get a bit of breakfast at the usual time. It is too much the practice to ignore altogether the time that a gardener has to devote to the care of fires to keep out frost after the usual working hours. With respect to men who have no fires to attend to, I have nothing to say against the answer given.—J. C. C.

A crimson Calla.—Mr. Peter Henderson gives the following account of a crimson Calla in the *American Florist:* "Of this Calla (Arum palæstinum) I became the fortunate possessor a few years ago. A lady called on Messrs. Young and Elliott, seedsmen, of New York, and stated that she had a crimson Calla in bloom, and she wanted to sell it to them for £20. Mr. Elliott suggested that she bring it down to one of his auction sales, and let it be sold there. This she agreed to do, and down it came in full bloom, crimson sure enough. Mr. Elliott expended a wonderful deal of eloquence in trying to get someone to bid £20 for it, but was obliged to take my first bid of 4s., which was gradually run up to £2, and I became the possessor of the crimson Calla. I then secured all the remaining stock from the lady, consisting of about a dozen small plants, and grew it till I obtained over a hundred plants, but in some way, by running against the grain, I lost the whole stock of it. I do not know to-day if there is a plant of the crimson Calla in the country, although if it could be grown easily it would be a most interesting plant. It is of a rich crimson-maroon, nearly as large as the flower of the dwarf Calla, and, unlike most other plants of the Arum class, it has a rich fragrance, somewhat similar to the Violet."

EXHIBITIONS v. USEFULNESS.

"Common Sense" (page 661) only gives expression to what is but too plain a fact as regards the real utility of horticultural exhibitions, for they cannot, as a rule, justify their existence on that score—in fact, their use to educate the public is never thought of. They are got up, as a rule, as a commercial speculation, and if they do not pay, they are soon dropped, like any other unprofitable speculation. The only way to make them pay is to make them sufficiently attractive to draw the thousands who pay their gate money, and who come to be amused, as, so long as it is a fine day, and the tents are well filled with productions and spectators, and the balance-sheet shows a good balance, the whole thing is pronounced a grand success; yet, it must be patent to everyone who knows much about horticulture generally, that if its progress had depended on the knowledge diffused by exhibitions, we should still be groping in the dark, for the professional exhibitor tries to keep every one else in the dark as to the mode by which he attains success. We are more indebted to the spread of cheap gardening literature for the rapid spread of horticultural knowledge than to all the exhibitions in the kingdom. In the first place, it is impossible to say what sort of gardening may prevail in any garden from which the finest dish of fruit or plate of vegetables is sent, for it is like sending a brick as a sample of a house; no one can tell, without seeing the house, whether it is good or bad; nor can they tell by half-a-dozen fruits whether the crop of a certain tree has been good or bad, for, in the ordinary course of events, a tree that is nearly fruitless will beat all those with a good crop. And, as regards plants, why, it is a commercial speculation. Every one knows the huge monsters, as well as the names of the owners who are going to take them on a round of shows, like veritable white elephants; and there is always a crowd round any extraordinary large specimen, without the slightest reference to whether it is good, bad, or indifferent. It is of no use blaming the judges, for they can only give their verdict on the productions set before them, and the managers of the show cater to the public taste, and know that they must have something sensational to draw the masses. Now, in some of the counties that I have lived in, there have been gardeners' societies, where anything that was in season was brought to the monthly meetings, and its merits or demerits freely discussed, and, in a quiet, unobtrusive way, a deal of useful knowledge was spread amongst the members, for I would defy the most ardent seeker after knowledge to imbibe it readily with a brass band, roundabouts, and the ordinary adjuncts of a flower show around him. Then we had prizes for the best kept and cropped gardens and allotments, to be inspected at no stated period, so that they might be seen in their usual working order. But it would weary readers to enumerate the reason why flower shows act as the preservators of old and useless garden customs, and miss a grand opportunity of advancing the usefulness of gardens and their productions. J. G. H.

Persistency of bloom.—I can give a more remarkable instance of the persistent way in which Geraniums will sometimes flower than that mentioned by "E. H. R." (page 678). I was residing in 1876 in Philadelphia, United States, for some months, and made a box to grow plants in for my window, which looked nearly north. On the 1st of May I bought four scarlet Geraniums, which were just coming into bloom, and planted them with some other plants in the window-box. They flowered very freely and continuously till the 9th of November. I am sorry I cannot give the names of the variety. To "cold air, the absence of sun, with just sufficient root moisture, no more," "E. H. R." attributes the constant flowering of his Geraniums. I cannot in any way attribute the flowering of mine to the same causes, as the weather during the summer was remarkably warm. A maximum thermometer outside the window, on which the sun never shone until quite the evening, registered, except on three days, 80 degs. Fah. and above from 1st of June to the 26th of August, and from the 25th of June to the 20th of July 90 degs. Fah. and above, except on two days, when the thermometer felt to 88 degs. True, the plants got little sun, but they were freely watered. The box stood on the window-ledge outside usually during the day and often at night, but at times it was brought in at night. I had the great satisfaction one day to see the flowers visited by a humming-bird, which hovered over them for a few minutes, or rather seconds, and then departed, and, as far as I know, never returned. During the summer many persons planted out in their gardens plants which we should not dare to remove from our hothouses. One garden in particular, I remember, had a number of Pothos and other fine foliaged plants, here only grown under glass, in the open air for some months, and the effect was very good. I had not the good fortune to know the owner, so was only able to admire it from the road.—G. S. S.

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXXVI.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Pastry.

The many different kinds of pastes for making pastry are almost as numerous as the "first stocks" for various sorts of soups and sauces. We purpose, therefore, to give the recipes for those varieties of pastry most commonly used in the home circle. Almost everyone who desires to excel in cookery is ambitious of making good, light, and digestible pastry. To do this, particular attention must be given not only to the ingredients used, but also to the manner in which they are manipulated. Be careful to have the right proportion of each material. If the least thing be neglected, a failure will almost inevitably be the result. Butter, lard, oil, suet, or dripping may be used, but it is absolutely essential that they be sweet and good. Flour should be of the best quality, dry, and free from lumps; and in some cases it should be passed through a sieve before using. In order to acquire excellence in this branch of cookery a considerable amount of practice is necessary, and lightness of touch is indispensable. The pastry should be prepared in a cool place, on a marble slab if possible, and everything used should be very cold. Handle the ingredients very little, and mix them lightly with the fingers, so as to take as much cold air as possible into the paste; do not nip it with the palms of your hands as they are generally warm. Use a thoroughly clean and heavy rolling-pin, but do not go over the edges of the paste while rolling, as by so doing you are apt to burst the air bubbles already formed in it. The main object should be to keep in as much cold air as possible. Sometimes eggs are used to help in making the paste light, but a careful cook will require nothing to assist her in making good pastry, when once the lightness of touch is acquired. Pastry is always better for lying a few hours after being made before using it, for whatever purpose it may be intended. When kept for only a little time it should be covered with a basin or cloth to prevent the surface from becoming dry; but if the pastry is not required to be used until the next day, it should be wrapped in a damp cloth and put into the cellar or some cool place. When thus treated, pastry will invariably be found lighter than when made and used directly. If baking-powder be employed in making pastry too much alacrity cannot be displayed, for directly the flour, &c., containing baking-powder is wetted effervescence commences, and unless the paste comes in contact with heat before this ceases, the crust, instead of being light, will become heavy and indigestible. After the pastry is prepared all trouble is not at an end, for great pains are necessary to cook it well. While bad pastry will not improve in the baking, good pastry, however well made, will be spoilt if badly baked. Success will depend largely upon the temperature of the oven. If too hot the top of the pastry will become scorched and black before the centre is warmed, and if too cold the pastry will become dull and heavy. The proper temperature of the oven can only be known from experience in the use of it. If, on opening the door, you can bear your hand inside for some moments without its being scorched, the heat is not sufficient for pastry. A good plan, therefore, for an inexperienced cook is to try the heat of the oven first with a small piece of pastry; the heat should be strong enough to cause the cold air in the pastry to expand, and so cause it to rise, and to make it set in the form caused by this expansion of the air. The oven door should not be opened for some minutes after the pastry is put in, and always shut as gently as possible, so as not to send in a current of cold air, which would chill the pastry and spoil it.

Flaky Crust.—Take 10 ounces of sifted flour, 6 ounces of butter, the whites of two eggs, a pinch of salt, and a little cold water. For this paste secure dry and fine flour, and pass it through a sieve before using. Beat the whites of eggs to a stiff froth with the salt. The easiest method of doing this is to put them upon a clean plate, and to operate with a broad, long knife quickly. Pour these on the flour, and, with the addition of a little water, form a soft paste, which turn on to a floured board, and knead lightly until smooth. Wash the butter in cold water, and wring it in a cloth, then divide it into six parts. Roll the paste about 16 inches long, then put on one-sixth of the butter in small dabs, fold in three, half turn it, and roll again; add another portion of the butter, fold, half turn, and roll again; and so on until the butter is rolled in. At the seventh time of rolling, sprinkle over a little lemon juice, fold again and roll to whatever size and thickness you may require.

Fruit Nougat.—Take some flaky paste, one tin of Peaches, Apricots, Greengages, or whatever fruit is preferred, four eggs, 5 ounces of pounded sugar, 6 ounces of sweet Almonds, a few drops of ratafia. Line a dish that will stand the fire with flaky paste, and ornament it around the edge according to taste. Put a piece of paper in the middle, containing some Lentils, Beans, or Peas, to prevent the paste from rising in the centre; put it into a brisk oven, and when thoroughly cooked remove the paper, &c., and let the pastry cool. Strain the juice from the fruit and put it into a saucepan over the fire to get hot, while you beat the yolks of the eggs with two ounces of sugar; when the juice is boiling pour it over the eggs, and stir until thick, then mix with the fruit, and put into the dish lined with pastry. Blanch the Almonds by pouring boiling water on to them, and when they have stood a few minutes remove the brown skin, cut them lengthwise, and dry them in a cool oven. Whip the whites of the eggs to a stiff froth, add the remaining three ounces of sugar, the Almonds, and a few drops of ratafia. When the fruit mixture is cool, pile the Almond mixture rockily over them all, place in a cool oven to dry thoroughly the whites of eggs, &c., and tint to a pale brown; sprinkle some sugar over when finished, and serve cold.

QUERIES.

15909.—**Parsnip wine.**—Will someone favour me with a good recipe for making Parsnip wine?—Nemo.

15910.—**Lemon cheese.**—Would any reader be kind enough to give me a receipt for making Lemon cheese?—J. C.

BEES.

15911.—**Bees under roof of house.**—Will "S. S. G. kindly inform me what to do with a swarm of bees which established themselves under the roof of my house the summer before last? They are within reach of observation, though not very easy of access. I wish to remove them safely into the garden, and should be glad to know the best time and mode of doing so, and, at the same time, of securing the honey.—J. K. S., *Southampton.*

15912.—**Dead bees.**—I have a hive of bees. I kept them safely through the winter of 1884 and 1885. They did not swarm this year (or rather last year); but at the end of the season I drove them, and took 16 lb. of honey—this in a London garden. I placed them in a straw hive, and fed them up as per instructions in Gardening, and before the severe weather set in I made an outer hive of wood to protect them from the cold and wet. On Saturday I went to see if they wanted feeding, and noticed two or three dead ones on the alighting board, and attributed this to their coming out and getting chilled with the cold; but on looking inside I perceived that the entrance was blocked with dead bees, and on taking these out I counted thirty dead ones. Is there anything extraordinary in this? If so, will "S. S. G." suggest the cause, and tell me what I can do?—T. H. P.

15745.—**Eradicating Yarrow from lawn.**—I should advise "Fernside" to dig out the Yarrow with a large knife if it is objectionable, which I do not think it is. If I had a dry bank to cover I should prefer the Yarrow to Grass, as it is much less likely to get browned in hot, dry weather.—J. C. C.

POULTRY.

QUERY.

15913.—**Preserving eggs.**—Being captivated by an interesting article which appeared in Gardening Illustrated in March last, and signed "J. T. P., Bromley, Kent," I was tempted to try the method of egg-preserving as recommended—simply by placing them in 14-inch holes on shelves, with the small end down. I am sorry to say that success could not be reported of the trial I made, and I should be very pleased to learn from any of your correspondents who have tried the above method whether, before placing them on the shelves, the eggs are submitted to any form of treatment, such as a besmearing of salt, lime, or anything else in that way, and whether they are left exposed to the air; and if they should be turned at stated times, or whether, having been placed on the shelves as they come from the hens, they are left there in that way without any further attention until required?—Julius.

REPLIES.

15914.—**Plymouth Rocks** (*L. M.*).—I am unable to help you, and do not think you will gain much by making known your wants unless you can give more information respecting the strain to which your first bird belonged. If you cannot do this, perhaps the best plan you can adopt is to visit a good show, and carefully examine the birds exhibited, in order to ascertain whether your present stock are purely bred or not. The first hen, as you say, was not pure. The fact that she was such a good layer strengthens this view, for Plymouth Rocks are looked upon as good all-round fowls rather than first-class layers. You must remember that this breed of fowls, like all others, is now bred solely for feather, at least by exhibitors, and by the Plymouth Rock Club faults in the plumage are considered greater defects than want of size. If the useful qualities of Plymouth Rocks are to be encouraged, the breeder must pay no attention to incorrect markings, so long as the birds answer his requirements in other respects. I advise "L. M." to breed his own stock in future. Even if his poultry-yard be not adapted for chicken-rearing, it may be possible for him to get some eggs hatched within easy distance of his residence, and the young birds reared until large enough to be drafted into the runs. In this way the egg-producing capabilities of a strain may be greatly developed.—Doulting.

15915.—**Brahma Dorkings** (*Western County*).—Try the St. Leonard's Poultry Farm, Ringwood, Hants, or the manager of the Amateur Model Poultry Farm, Hutton, Essex, and carefully state your wants. Your best course would be to buy three or four large Brahma pullets and a strong Dorking cock, and then breed from them. You would then get plenty of chickens at very little expense. It would be useless going to any great outlay for crossing purposes, nor is it necessary to do so. Plenty of cockerels and pullets not up to show form, and, owing to some defect in plumage or other points, unfit to breed pure stock from, may be obtained at little more than ordinary fowls would cost. If the replies you get are unsatisfactory, and you have no accommodation for a breeding pen, you had better advertise.—Doulting.

15916.—**Andalusians** (*E. J.*).—I have never heard that the fault you speak of (hens laying away from home) is peculiar to this breed, but expect your birds adopted the habit in their younger days, and that it has increased with age. It is difficult to suggest a remedy. All that can be done, in my opinion, is to make the house intended for laying purposes as attractive to the hens as possible. By this I mean that the house should be clean, in a quiet situation, and be supplied with secluded nests containing china eggs. You must also have plenty of patience, for the habit will not be broken all at once. It is quite likely that nothing will alter the existing state of things. Your present stock, however, will not last for ever, and if you prepare the way for your next batch of pullets, as recommended above, it is very probable they will give you no trouble. Keeping the hens confined until they lay is, I consider, next to useless, for they do not lay regularly like ducks. 2. The Dorking is the best large breed to use in crossing for table birds, only, as you are aware, the situation is not fit for it. Brahmas would be more likely to stand the climate, and, at the same time, make a useful cross. 3. I cannot speak from experience as to the merits of this cross (Malay-Brahma), but I have seen it recommended as one likely to produce first-class table fowls, the flesh of the Malay being of excellent quality and of great delicacy.—Doulting.

15799.—**Covering a poultry run.**—I have had no experience of galvanised iron as a covering for a poultry run, but I know that it makes a place almost unbearable in warm weather. I do not think the suggestion made by the querist would mend matters, for the current of air would be too high to be felt by the birds. Felt is a more suitable material for the purpose, and, so far as I know, no objection can be raised to its use. It is, moreover, inexpensive, and if tarred every year will last a considerable time. The Willesden paper roofing, too, would be of service and is also cheap.—Doulting.

15917.—**Cockatoos.**—Will someone kindly tell me the name of a good book on cockatoos, their treatment, &c., and if they ever breed in the confinement of a cage?—Grey and Pink Cockatoo.

15761.—**Pigeons in gardens.**—"A. O. F." asks whether pigeons are injurious in a garden. They look very pretty on the lawn, and may be of use there in destroying grubs, as they seem to find plenty of objects to peck at, but I have found them most troublesome in the flower garden, tearing and eating many plants. A row of fine show Pansies they completely destroyed, and Stocks suffered severely.—B. B. B.

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HOUSE & WINDOW GARDENING.

WINDOW GARDENING IN TOWN AND COUNTRY.—XVIII.

Hardy flowers.—There are many kinds of these which, if they cannot be grown throughout the year in the dwelling, may be employed to gladden it when in bloom. Primroses and Polyanthuses, for instance, which every one loves, bloom beautifully in a window; often, indeed, better than in the open ground, because the flowers are protected from wind and heavy rains, which in our fickle spring climate so often disfigure them. They do remarkably well in a north window, and for some years we bloomed some choice Polyanthuses in such a situation; and early in the year, when the weather was cold and dreary, and long ere they came into bloom in the open, they expanded their charming flowers, lasting for several weeks in full beauty. There is a freshness about Primroses and Polyanthuses which renders them very delightsome, and as they do not require a very light or sunny window they will make many positions gay some months before they can be beautified with the usual run of flowering plants. For windows the plants should be potted up in the latter end of October, and if there should exist the convenience of a cold frame they should be stored therein until they begin to show flower, leaving on air night and day, except in frosty weather, unless the other occupants of the frame are of too tender a nature to allow of this, when air must be given whenever the weather permits. They will do, however, very well in an unheated room through the winter, but must on no account be kept in a living room, or they will become so weakly as to be incapable of throwing up their flower trusses in a satisfactory manner. The choice show Polyanthuses may be grown in this manner, and they exhibit so much symmetry of form, richness, and delicacy of colour as to be as well worthy of a place in the dwelling as any plant in cultivation. Immediately after blooming they must go into the open air, the shady side of a wall or hedge being the best place for them. A good place is under Gooseberry or Currant bushes, or, indeed, any place where they are screened from drying winds and hot sun. It is not absolutely necessary that they be repotted every year; they may remain two years in the same pots, but a change of soil of course benefits them. They make more vigorous growth, and the flowers are correspondingly finer. The best time for repotting is in the beginning of September, when the cooler nights and moister weather generally has an exciting influence on them. Shake away all the old soil, and in repotting let the crown come rather under the surface of the soil; if it is quite hidden it does not matter. This is an important point, as both Primroses and Polyanthuses make fresh roots from the crown, and this, in the course of a year or two, rises above the level of the soil, thus preventing their formation. As upon the annual growth of these crown roots the health and longevity of the plants depend, it stands to reason that when they can no longer push forth decay sets in. Alpine Auriculas may also be grown as window plants in the manner above indicated. They are very pretty, and should be potted in good loam, with plenty of sand in it. The small-flowered kinds of Chrysanthemums may be bloomed in the dwelling, but they must, of course, be grown outside; and this remark applies to a number of hardy flowers, which, grown wholly in the open air, may be used in the adornment of the house when they come into flower. The following will succeed well as pot plants: Campanula persicifolia plena, C. garganica and pulla; Anemones, the ordinary kinds, also A. fulgens and the autumn-flowering A. japonica; Double Daisies; Gladioli, such as the early-flowering kinds, not forgetting the lovely and chaste "The Bride," and the splendid Gandavensis hybrids; the Gentianella; hardy Cyclamens of several kinds, and many others too numerous to mention here. Pansies and Violas make charming pot plants, the best way to grow them being to take cuttings or sow seed in July, putting the young plants into 4½ pots in September.

In the case of all hardy flowers intended for blooming in pots, the best way is to plunge the pots to the rims in an open situation during the summer, giving plenty of water and liquid manure occasionally. As before mentioned, a frame is the best place to winter them in; but where this convenience does not exist, they may be plunged to the rims of the pots at the foot of a wall or in some sheltered position, moving them out into the sun again in spring, and taking them into the house to bloom. In this respect, those who possess but a small garden can make it help much in the adornment of the dwelling. From the above list, the Christmas Rose was unintentionally excluded, this should be grown by all who love flowers, for it is easily grown, and comes naturally into bloom at a time when few other flowers can be had in the dwelling. This charming hardy flower loves a rather shady place in summer and to be sheltered from rough winds, and it should be brought into a cool room early in November. There it will open its pure white flowers by Christmas, and will continue in beauty all through the winter and long spring. The great point is to encourage good growth by giving plenty of water and food in early summer. A plant may remain in a 6-inch pot for several years, annually increasing in flower blooming capacity, if well attended to in this matter. BYFLEET.

Miniature hothouse.—I have in use an apparatus similar to that required by "Urbs," page 689. It is built like a small frame and fitted with a water-bath. By its means I get (with a very small lamp placed under the frame) a nice, moist, uniform heat, which can be regulated between 50 degs. and 80 degs. Fah. I have employed it principally for germinating half-hardy annuals, single Dahlias, Nicotiana, Canna, and Castor-oil plants. The pots are plunged in Cocoa-nut refuse, which keeps the heat well. It was made by a dealer in the Camberwell-road, London, and cost 15s. It stands conveniently in a frame or small greenhouse. Of course the idea might be adapted to any size.—HEAT.

EXHIBITIONS v. USEFULNESS.

PERHAPS the following will throw a little light on the bearings of this important question. With respect to the improving the breed of any of our domestic animals, I presume that the first thing to be settled is: What is our conception of improvement in the question at issue? This point settled, the next concern should be to select individuals of the kind to be improved on which possess qualities that approach most nearly those which it is our aim to acquire. From among the progeny of these should be sought improvements on those desirable qualities possessed by the parents, which, if obtained, would give a step onwards towards the desired end. By thus selecting the best from the best the highest attainable degree of perfection is attained, each generation having a diminished tendency to go back to the original state. If whilst the work was going on it was observed that every advance in improvement was accompanied with a corresponding modification of an outward and visible mark, then this mark could be taken as a trustworthy index of the degree of excellence arrived at. But, supposing that at the starting it was decided that there should be associated with the primary point an arbitrary point which had no natural connection with it, this decision might enormously lessen the chances of success that would have obtained if only the first point was required. Let us suppose, as an illustration, that only this first point was required, and that the chances of success were as 1 to 100 (*i.e.*, out of 100 to select from there would be on the average but one that was an improvement), and let us suppose again that the chances of obtaining the arbitrary point was also as 1 to 100. Then the chances of obtaining those two points in the same individual would be as 1 to 10,000. Further, the chances of obtaining the two points in conjunction, by taking indiscriminately one that possessed the arbitrary point, would be as 1 to 1,000,000. If an additional arbitrary point, with chances of 1 to 100, as before, were added, and it had no naturally modifying relation to either of the other two, then the numbers representing the chances of success corresponding to the two above would be 1,000,000 and 100,000,000 respectively, which, practically, might be considered as none at all.

May I suggest that if there prevails dissatisfaction with the rules and machinery of the existing competitive exhibitions, and it is thought desirable that steps should be taken to encourage the improvement of domestic animals and cultivated plants in those useful qualities for which they were originally taken under man's protection and control, the best course would be to leave entirely out of consideration these existing societies and the awards of their judges, and endeavour to form a society that shall have for its object the furtherance of these desirable ends.—L. C. K.

—— There is a distinction to be made between prize cattle and prize poultry. Did any one ever hear of a prize ox being adjudicated a cup on the score of the perfection of his skin alone without taking into consideration other important points? And yet that is invariably the case with regard to poultry. The feathers, and the shape according to the feathers, become the

standard. And yet what does every one know? The breeder is obliged to have a distinct cockerel breeding pen, and another distinct pullet breeding pen, in both of which he must have wit and experience to enable him to decide how to produce a particular result. These results are, in fact, hybrids; and like all, or most, hybrids they become sterile. There was a gentleman at Woolwich who produced the most exquisite light Brahmas conceivable; they were a perfect mass of beautiful fluff, but the ensuing season he could get no eggs at all. Week after week passed, and now and then an egg was laid, the shell of which was so thin that it was immediately broken on being set. Are cattle bred upon that principle—are sheep bred for wool only, to the exclusion of all other valuable properties? Yet poultry are bred for feathers alone. It ought to be regarded as an axiom that the refuse birds of a prize strain (and they are nine-tenths of the strain) are good for nothing, neither for feather nor for laying qualities. When that is learnt there will be reformation, and sickly prize stock will soon cease to be distributed over the land at exorbitant prices, resulting in the foreign importation of eggs, increasing year by year in almost a geometrical progress'on.—Captain, R.N.

Garden birds.—The jay.—Mr. Miller, in his interesting notes on "Garden Birds," lately published in Gardening omits any mention of the jay. This bird, though probably unknown to town and village gardens, is yet a frequent and dreaded summer visitor to those situate in the wooded districts of the country. The jay is one of the most beautiful of British birds, and his brilliantly-coloured feathers, particularly those of the wings, which are barred blue, black, and white, are much sought after for making artificial flies for fishing. On this, as well as other accounts, he has many human enemies, and, therefore, to avoid them he usually makes his home in the woods, where in winter he picks up a precarious living, consisting chiefly of Beech-nuts and Acorns. In spring the eggs of partridges and pheasants, and even the young of these and other birds, fall a prey to his voracity. Hence he becomes a special object of attention to the gamekeeper, who strives to keep the tribe in subjection, but the wariness of the bird often defeats the vigilance of the man. One harsh and discordant cry of alarm at the sight of his enemy, and the bird disappears in the thick woodland maze, so that three or four armed men, stationed in different parts of the wood, are necessary to destroy him. The nest of the jay is built in the dim recesses of the wood, near the summit of some tall sapling, and is formed of the dead twigs of Birch or other trees, with a lining of fine fibrous roots. The eggs, five or six in number, are a dull grey, thickly sprinkled with brown spots. Like the magpie and jackdaw, his relatives, the jay, when kept in confinement, soon learns to repeat words and short sentences that he hears spoken. It is at the time when they have a young family to support that the old birds visit the neighbouring gardens, and this happens to be when the early rows of Peas and Beans are becoming fit for table. These form their favourite food, and the celerity with which they open and devour the contents of the pods is something to be provoked at. For some years past the gardens in this locality, my own included, have been infested with these birds, so that in chronicling their misdeeds I speak from a bitter experience. Last season my "Pride" (of the Market) was sadly humbled, my "Stratagem" rendered abortive, and my "Leviathans" swallowed up by monsters more terrible! These birds frequently pass over whole fields of Beans and Peas, preferring the more delicately-flavoured ones of the garden. The chief attack is effected in the quiet of the early morning. They are bold, but wary, birds—as difficult to trap as they are to approach with the gun. All kinds of scares are treated with contempt, so that their attacks can be prevented or ended only by the use of nets or constant watching. The Cherry appears to be the only garden fruit the jay cares for, and he will risk much for the sake of this. He is quite unknown to fame as an insect destroyer, and does not, indeed, possess one redeeming quality. He may, therefore, justly be set down as the most voracious and destructive in the whole list of garden birds.—J. Martin, *Worcester*.

THE KITCHEN GARDEN.

GLOBE ARTICHOKES.

Artichokes are somewhat neglected with us; many people do not use them at all, and those who do often fail to give them the attention they deserve. There is no such care in the distinction and selection of kinds as is used abroad, and we think that they might easily receive more attention, particularly from the cook. Gathered at the right time, and nicely cooked, they are a delicate and useful addition to our vegetables; they give a pleasant variety to the table, and we think them none the less valuable because they require a little more time and care in eating than the ordinary pappy vegetable, which can be consumed in quantity. Abroad this is such a very important vegetable that there are many local varieties most extensively grown. Among them are the following: The large Green Paris Artichoke (A. gros vert de Laon), vigorous, comparatively hardy, and most extensively used in the neighbourhood of Paris, and the best for yielding heads every year of its cultivation; Green Provence, medium height, much esteemed for eating raw, with pepper sauce; Purple Provence, very productive, but

The De Laon Artichoke.

yielding abundantly only in spring, and somewhat impatient of cold; Flat-headed Brittany, tall, heads large. Other good varieties are: Copper-coloured Artichoke of Brittany, Grey Artichoke, and the Black English Artichoke.

Culture of Horse-radish.—A correspondent gives the following method of growing Horse-radish, by which he claims to have produced in ten months sticks that measured from 5 inches to 8 iuches in circumference: During February take small straight pieces of the roots about the size of, or rather smaller than, the little finger. From these remove all the side shoots and roots, and form them into straight sets from 8 inches to 14 inches long. Prepare a piece of ground by deeply digging and well-manuring it, and plant the sets in it in rows 3 feet apart and from 12 inches to 18 inches in the rows. The sets must be planted in a slanting position, and must not be more than 2 inches beneath the surface. The ground at all times must be kept free from weeds, and should be well watered in very dry weather. Planting the set in an angle—in fact, in nearly a horizontal position—is no doubt the great secret of success; for being so near the surface it has the full benefit of the sun's heat, which causes it to make rapid growth long before that which is planted according to the old method—*i.e.*, from 18 inches to 20 inches deep, and in a perpendicular position—reaches the surface. I am certain that want of success is to be attributed to this alone, and that the experience of any one who may think fit to adopt my plan will be the same as my own." Mr. Bradley, Preston Hall, grows his Horse-radish by placing a common round drain-tile with it, sunk 2 inches into the ground, filling the tile with fine earth, and planting a set near the top of the tile and 10 inches above the surface. He says it is an admirable plan—digging for the product is saved, and a fine clean stem is the result. Mr. R. Gilbert says that when he places leaves or litter on the tops of Horse-radish crowns, 2 feet or so thick, the plants grow through them in the course of the summer, making small white roots the thickness of one's finger, which are as tender as spring Radishes and a great step in advance of the tough stringy stuff often supplied with our roast beef. During the winter months a supply of Horse-radish should always be at hand, stored away in sheds, and covered with the soil or sand in the same way as Carrots, &c. Horse-radish is not grown to a very great extent in London market gardens, but when it is found in them it is always in deep, rich, open soil. Crowns such as are not marketable are planted deeply in trenches 2 feet apart; the plants stand 1 foot asunder in the row. Manure is then applied on and about the crowns, which lie in a slanting position in the bottom of the trench, and they are at first not deeply buried. Early in spring, after they have started fairly into growth, the ridges between the trenches are levelled down lightly, and a crop of Radishes is sown on the surface; by the time the Horse-radish appear in full row the Radishes are cleared off the ground, which is hoed and afterwards kept clean. Covent-garden is, however, now chiefly supplied with Horse-radish from Holland.—*The Vegetable Garden.*

REPLIES.

15815.—**Grub in Onions.**—At least three months before cropping the ground should have a good watering with sulphuric acid, diluted with about twelve times its bulk of water. This is expensive, as the acid is about threepence per pound, but it is effectual, as it will kill every living thing in and on the soil, both animal and vegetable. Nitrate of soda should be applied at the rate of 4 cwt. to the acre, or, for safety, rather less than that quantity, but not more than three times in the season, and only when the foliage is dry. If just before a shower, so much the better, otherwise it should be watered in. Wherever nitrate touches a wet spot on the foliage it burns or shrivels it. Soot and salt, applied in the proportion of 2 cwt. of salt and 40 bushels of clean soot to the acre as a broadcast dressing, will tend to prevent the fly, but it should be done early in the season. After the Onions are attacked they cannot be saved, but by destroying all infested plants the second crop of grubs will be prevented. We once applied gypsum, at the rate of a ton to the acre, during dry weather, and the cure was effectual, but the ground had to be hoed after the first rain. It is a cheap remedy if it be found to answer generally; but as to this we cannot speak, as we had only one chance of using it. The grubs were all dead in the plants about a couple of days after the application. Soap-suds, soot and lime, common salt, and other remedies are used with varying success by different persons. The above are, however, as good as any in our experience, and, therefore, we should advise those troubled with the fly to try them before others. (From "Garden Pests, and their Eradication.")—Celer et Audax.

—— Your Onions were attacked by the grubs of the Onion fly (Anthomyia ceparum), which is a most destructive insect to Onions. The insects are now in the pupa or chrysalis state, and are buried about 2 inches below the surface of the soil, where the crop grew. Your best course now is to trench the ground deeply and bury the top spit, in which the chrysalides will be, at the bottom of the trench. When the flies try to emerge they will be unable to make their way through such a thickness of soil; but if the ground is to be cultivated before May care must be taken that the chrysalides are not again brought near the surface. The first brood of flies come out in April. This operation should have been carried out in the autumn, when the ground should have been well manured and the manure well buried. The soil should be made firm before sowing, and rolled afterwards; sow thinly to avoid the necessity of thinning. If your Onions are again attacked, as soon as possible spud up all the infested roots, taking care not to leave any grubs in the soil, and put them into a basket, from which the grubs cannot drop out, and burn them; if the plants are carelessly pulled up and thrown about anyhow, comparatively few of the grubs will be destroyed. By this means the second brood of flies and grubs

will be prevented. Sprinkling sand, saturated with paraffin oil, among the Onions, and then watering them with a fine-rosed water-pot is useful in keeping off the flies and killing the grubs.—G. S. S.

—— Give the land intended for Onions at once a good dressing of gas lime and soot on the surface. In March rake it well and deeply, sowing the seed in drills.—R. Gilbert, *Stamford.*

15804.—**Celery for Yorkshire.**—The best kind of Celery for Yorkshire is Major Clark (red).—R. Gilbert, *Stamford.*

—— The best Celery for your district is the Manchester Red, as it is very hardy and grows to a good size.—J. C. C.

THE COMING WEEK'S WORK.

Work in the Town Garden.

Pelargoniums for bedding and other purposes, as well as any Fuchsias or similar plants that have been wintered in store-pots or boxes, may now be potted off singly, supposing that they can have a little extra warmth for two or three weeks subsequently. If there is only a cool greenhouse, which cannot very well be kept close or warmer than usual for a time, it will be advisable to defer this operation till about the first or second week in March, when the sun will have gained greater power. Any fairly good soil of a loamy nature will do for potting off. Do not leave the soil either too loose, or press it more than moderate firm, and give water sparingly for a week or two after the operation, especially should the temperature be low, say 50 degrees or less.

Cinerarias, Calceolarias, Pelargoniums, and Fuchsias for late spring and summer flowering may still be potted on into flowering pots, which are usually 5 inches or 6 inches in diameter, and those that have been already shifted must be constantly attended to, and kept supplied with a regular and sufficient amount of moisture at the root, with rather frequent sprinklings overhead on bright days. This will greatly encourage growth, and if insects are kept at a distance by prompt measures, in the way of fumigation with Tobacco, or dipping in some effective insecticide on the first appearance of even a slight affection, satisfactory progress and an ultimate good display of bloom will be assured.

Propagation.—Keep on propagating Lobelias, Dahlias, and anything else likely to be required, as fast as cuttings can be got. Both these will strike freely in a steady heat of 60 degs. at this season, though a few degrees more, of course, expedites the process. Use sandy soil and well-drained pots, and in the case of Dahlias, especially, remember that the more thickly the cuttings are inserted in the pots, the better chance of success they have. It is also a great mistake to keep these and similar cuttings just inserted too dry. If there is any reasonable amount of heat, and the drainage is good, they will do much better kept constantly moist, but not wet, than kept at all dry. In propagation, however, of nearly all kinds of stuff, a little practice is worth far more than a great deal of theory, and varying conditions make different modes of procedure necessary. Geraniums (zonal) of all kinds can now be propagated readily by inserting the cuttings either singly in "thumbs" or several together in larger sizes in the usual manner, and placing them on a rack or stage over a hot-water pipe or two. Keep them rather dry for a week, and then water sufficiently to keep the soil always moist. These will make very nice little plants for bedding-out, &c., often looking better than the autumn-struck, though, as a rule, they do not bloom so freely, unless soil, situation, and weather combine to afford the conditions most favourable to success.

Repotting Ferns, Palms, &c.—A general repotting of Ferns, Palms, and other fine-foliaged plants of more or less tropical character must shortly take place; so prepare a quantity of suitable compost, which, as a rule, should consist of about equal parts of loam and peat, with a little leaf-mould and sufficient coarse sand and crushed charcoal to ensure porosity and sweetness. This should be got under cover, so as to be when required neither wet nor dry, and at a moderate temperature, for plants growing in warm houses do not by any means appreciate being placed in a mass of soil at the freezing point, or but little above it. Where these things are grown in a rather warmer house than usual—*i.e.*, in something like a cool stove or intermediate temperature, in which case signs of fresh growth may already be perceived—this repotting may be commenced forthwith. I have previously advocated the adoption of a house of this character, and I would again call attention to the fact that where the surroundings are unfavourable, and a good interior effect at all seasons is more of an object than the production of bedding plants, cut flowers, or any other particular matter of this kind, a house well filled with fine-foliaged subjects, and a rather warm, close, and moist atmosphere maintained within it, will frequently prove a greater success than a greenhouse, properly so called. All kinds of Ferns, including almost all those usually cultivated in the stove, will flourish here to a remarkable extent if judiciously cared for, and when to these are added many varieties of Palms, Dracænas, Marantas, Musas, and Ficus, as well as the Aspidistra, Cyperus (which attains stately proportions when allowed plenty of room under such conditions), Cureuligo, Phormium, Arundo, Bambusa, many Aralias, as well as a host of sub-tropical annuals and perennials, a very fine effect may be produced at a slight expense after the first cost has been defrayed. B. C. R.

Glasshouses.

Jasminums.—The different kinds of Jasminum that require warm treatment are much esteemed for their agreeable perfume, which by many is preferred to any other. The flowers of the kinds that need to be grown in a warm house are white, and, although not so large or imposing in appearance as those produced by many plants, they can be used in any arrangement of cut flowers, such as bouquets, buttonholes, or for filling small stands, baskets, or vases. Half-a-dozen flowers will scent a room, and the distinct character of their perfume is immediately detectable in any stove where the plants happen to be in flower. The long season they continue in bloom is not the least of their merits. J. Sambach flore-pleno and J. Duchesse d'Orleans are climbers, but do not attain a large size or require very much room. The shoots can be trained round a trellis, or a few sticks inserted in the soil just within the pots. J. gracillimum is the best of the genus, and is bushy in habit. It flowers more profusely than the others named; lateral shoots are produced from almost every joint of the stronger branches, each of which yields a large truss of flowers, which keep on in succession through the autumn up to the end of the year. Jasminums are easily grown and suitable for cultivation by those who from inexperience do not like to attempt growing plants that are difficult to manage. Cuttings of the sorts named should be put in to strike now; select young shoots when about 3 inches long, such as are produced after the plants have flowered, and put six or eight together in 5-inch or 6-inch pots in sand. Kept close and warm they will soon form roots, when put singly in 3-inch pots, using good fibrous loam, to which add a little finely-sifted rotten manure and some sand. These plants do not require nearly so much room as stronger growing things; a 9-inch or 10-inch pot will usually be found large enough for a moderate-sized flowering specimen. Ordinary stove treatment in the matters of heat and moisture, with a little shade in bright weather when the sun gets powerful, is all they require; the shoots should be stopped to induce them to branch out.

Amaryllis.—It often happens where collections of these plants exist that the whole are treated so as to have them in flower about the same time; in this way a more effective display for the time being is secured, but if the stock is so managed as to give a succession of bloom it will generally be found the more useful method. The ordinary seedling varieties of Amaryllis now in cultivation, though what may be termed spring bloomers, can have the time of their flowering accelerated or delayed by being started into growth by a brisk heat, or by letting them come on later in a lower temperature. If a portion of the plants be now placed in the stove or forcing-pit, with others to follow in a month, and some allowed to come on with little more than greenhouse warmth, a succession of flowers will be secured that will be found much more useful for general decorative purposes in greenhouses and conservatories than a large number in bloom at the same time. If bottom-heat can be given those that are first started, by plunging the pots in a bed of fermenting matter, the flowers will come on quicker; but after growth has commenced the plants must occupy a position where they will get plenty of light, or both the flower-stems and the leaves will be long and weak, a condition which it is necessary to avoid.

Plumbago rosea.—Cuttings of this pretty late-blooming plant should now be in right condition for striking; the young shoots produced after the plants have done flowering make the best cuttings. They will strike when from 3 inches to 6 inches long, several together in 4-inch or 5-inch pots, in sand, treated in the ordinary way in stove heat. This plant is much inclined to grow tall and straggling; to correct this the cuttings, as soon as rooted and ready for potting, should have their points pinched out.

Sericographis Ghiesbreghtii. — This is another of the best winter-flowering plants, and does not attain too large a size for a small stove. This is a matter of importance to those who have not the convenience of a large house; yet it frequently happens that little thought is given as to whether a plant is suitable or otherwise until after the trouble has been incurred of growing it up to a flowering state, when it is found too big for the structure, in which case the labour and room have been sacrificed. The plant does best when the cuttings are struck early, so as to allow plenty of time for them to attain a useful size before autumn. Cuttings put in now will soon root, when move them singly into 3-inch or 4-inch pots, giving them good soil, made rich with rotten manure, and a little leaf-mould, pinching out the points, as this again is a somewhat straggling-habited plant.

Hibiscus sinensis.—The different varieties of this Hibiscus are very accommodating plants, as they will produce their singular and attractive flowers in a 6-inch pot, or they may be grown so as to form a large bush, or cover the back wall of a roomy house. They strike freely from cuttings put in from this time onwards through the spring whenever shoots in the right condition are obtainable. They root best when about 4 inches or 5 inches long; such as are produced from the stronger branches that have been cut back are the best. If taken off with a heel they will root quicker. Put them singly in small pots, and treat like the two last-named plants.

Early-flowering Pelargoniums. — Few spring-flowering plants are more attractive or generally useful than this section of Pelargoniums, which, in addition to being the freest of bloomers, will bear moderate forcing. Where a house or pit is available that can be kept at a temperature of about 50 degs. in the night, not many plants will give a better return through the late winter months. The house should be such as will afford all the light possible, and, with the object of the plants receiving the full benefit of this, they should be kept well up to the roof. Manure water ought to be given every other time the soil requires moisteuing, care being taken not to apply it too strong; this is a matter that cannot be too much impressed upon those who have not had much experience in plant growing, and it is always better to err on the right side, as, when any stimulant of this nature is given in an insufficiently diluted state, the young feeding roots are sure to perish, and the season's work is lost, as plants so affected, even if they recover, will not flower well.

Zonal Pelargoniums.—There is less demand for the flowers of the high-coloured varieties of these plants than there was some years ago, white and pale shades being more in fashion; consequently more of the softer-tinted varieties are grown. Where there is the means of keeping them in a temperature similar to that advised for the last named section, few things will give so much bloom, and none a more continuous supply; but to have them in the winter season, either in the right condition or in such quantity as they should be, the plants must have a dry atmosphere and enough heat to keep them moving freely, for the flowers open at a rate proportionate to that of the growth which is made. Weak manure water from time to time will much assist the production of bloom.

Large-flowered Pelargoniums. — These plants will now begin to make more growth, and, consequently, will require a little more moisture; but care must be taken to let the soil get drier before water is given than with most things, as any excess in this direction will cause them to make long, weak growth, and interfere with the free development of the roots, which always seem to make the most progress in winter when the soil is kept drier than most other plants would bear. They should be stood as near the glass as it is convenient to have them; if this is not attended to they always get tall and leggy. Let them be regularly trained, with enough stakes and ties to keep the plants in the requisite form; as, if the shoots are allowed to crowd each other, the lower leaves will not get enough light to preserve them in a healthy state through the flowering period, in which case much of their appearance is destroyed.

Fancy Pelargoniums require to be treated similarly to the last section, but in their case it is necessary to be even more careful that too much water is not given, as they are among the most impatient of cultivated plants to any excess of moisture in the soil; their slower growth and less robust nature makes them, even when growing freely, always require cautious treatment in this respect. The stock should be carefully looked over from time to time to see that they are quite free from aphides; whenever these parasites are discovered the plants should at once be fumigated; if they get numerous much more labour and cost in material will be necessary to get rid of them, and, in addition, the dirty condition they soon reduce the leaves to can never be thoroughly set to rights.

Thomas Baines.

Outdoor Garden.

Pictorial trees.—I am not going to give a long list, but only to mention a very few trees which occur to me now as being adapted for conspicuous situations on the lawn, or in the shrubbery. Very few Conifers are adapted for general planting, unless one has a wide range of hilly country to select sites on. In the modest villa garden of moderate extent only those which have been proved to do well in similar situations should be planted. For general planting there is no Conifer superior to the Cedar of Lebanon, either as a single tree or a group on the lawn. Among the Silver Firs (Picea) I should select Nordmanniana and Pinsapo as being reliable and sure to give satisfaction. The Wellingtonia is a handsome tree where it succeeds. It does well everywhere in a young state, in sheltered situations; but when it gets up into the wind it very often becomes rusty and shabby. Still, I have seen some very handsome specimens of large size. The finest trees I know of are in Devonshire, one being at Killerton—Sir Thomas Acland's—growing on the side of a hill in a sheltered situation. One of the handsomest trees in a young state is the Deodara Cedar; but after twenty years or so, if it is still alive, its beauty and grace depart. Still, I do know of some very handsome old trees; they are mostly growing in hilly districts, in sheltered situations. Among the smaller Conifers there is a wide field of selection. The Lawson Cypress and its numerous varieties are exceedingly handsome and reliable. Thujopsis dolabrata and T. borealis are strikingly handsome and very hardy. The first-named species comes from Japan, and will, I believe, prove perfectly hardy. The largest specimen that I know of is growing in the grounds at Battle Abbey; another very handsome specimen is at Killerton. We have it here in the Midlands, and it has gone through several very severe winters. As a rule, the Japanese Cypress (Retinospora) has not yet established its claim to be planted everywhere in the same degree as its Californian relative, the Lawson Cypress. I think it requires good soil and shelter. We have several species here, but they don't grow fast enough. Among

Deciduous trees for conspicuous situations, the Tulip tree, where the soil is good and deep, soon makes its mark. The Maiden-Hair tree, under like conditions, is both interesting and ornamental. Where there is scope for large trees there are many things among the Maples, Poplars, and Oaks worthy of the planter's attention. The Weeping Birch, the White-leaved Weeping Lime, the Purple Beech, Flowering Ash (Fraxinus Ornus), the Snowy Mespilus (Amelanchier grandiflora), and Paul's Double Scarlet Thorn, are all worthy and reliable things, sure to make a mark.

Rose notes.—Any choice new kinds that we may have a wish to propagate may be increased very easily by root-grafting on the common Brier by-and-bye, with the aid of a hot-bed. The grafts or scions should be taken off the plants now, and be laid in on the north side of a wall, where they will retain their freshness till the stocks are slightly on the move. In the country, Brier roots in quantity may often be obtained from the hedge bottoms. Pieces of root with a fibre or two attached will do, and the part on which the graft is placed should be at least as thick as the graft. If it is large the graft should be placed on one side, the bark of both stock and scion to meet and be bound firmly together. Cut a slice off the root which forms the stock, and a corresponding slice of the scion; fit and bind the two together. Pot in small pots just large enough to cover the part operated on, and plunge in the hot-bed, keep close and shade. If the conditions are suitable, 90 per cent. will grow and make blooming plants by August.

The propagation of softwood plants for the flower garden may be pushed forward now. Those who do anything with sub-tropical plants may sow seeds in the hot-bed of Castor Oils, Wigandias, Cannas, Ferdinanda eminens, Solanums of various kinds. The blue Gum tree of Australia has an ornamental effect in a young state.

Fruit Garden.

Planting young trees.—The sooner this is finished now the better. In most positions I should prefer to plant maiden trees—*i.e.*, trees one year from the graft or bud—before they have been cut back. When you buy such trees you can guide their future as you please, and they are very much cheaper. It sometimes happens, when the removal of an exhausted or worn-out tree becomes a question of spending from 5s. to 7s. 6d. on its successor, that we decide in these times to wait another year, and give the old trees another chance; but if we buy maiden trees at from 1s. to 1s. 6d. each, and train them ourselves, and always have a few in training, the old tree can be removed as soon as its uselessness appears evident, and the place is immediately filled with a young tree in a bearing condition, which has been waiting for such an emergency. I think, too, everybody should learn to graft fruit trees. Some people regard grafting as a mysterious thing, but it is exceedingly simple—anyone can do it, and any right-thinking gardener will give his neighbours a lesson. Nurserymen will lose nothing by anything which tends to popularise fruit culture, and gardening generally will benefit from it. All scions of fruit trees intended for grafting should be taken from the trees, and be laid in a cool position free from sunshine.

Protecting blossoms.—Have all the material ready for protecting the blossoms of fruit trees. The Apricots will need it first; up to the present time every bud seems dormant, but we know they are not absolutely quiet, and the first week of soft winds and sunshine will bring them out. All pruning should be finished now. It is a good plan to leave as much young wood as there is room for in both Plums and Apricots. It invigorates the tree, and the blossoms, being near the wall, are easily sheltered. In pruning Peaches thin the wood so that the young branches are 6 inches apart. Very often the wood is too crowded for healthy growth. With vigorous trees there is no fear with moderate protection about a crop setting. Wash the trees with an insecticide as soon as the pruning is done, before they are trained; Gishurst compound, five ounces to the gallon of soft water, is an excellent wash.

Vegetable Garden.

The routine work must be fetched up to date, as March is one of the busiest months in the year, and no digging or manuring should be in arrears now, except, it may be, a plot or so from which winter vegetables have been removed. Cover up a further supply of Seakale and Rhubarb, if they are forced on the ground, or place a fresh lot in the forcing pit if the roots are taken up for forcing; simply covering Rhubarb now with pots will hasten it without any warm manure. The last bed of Seakale should be covered with ashes, or burnt earth, or something light to blanch it. Chicory and Dandelions forced in the dark will be useful now as salads. I may reiterate what I said last week about the value of a bed of leaves to bring on a few early Lettuces. The Paris Market is an excellent forcing variety. Mushroom beds, to succeed those made in autumn, should be made up now. They will succeed very well in the open air. Shelter the manure from heavy rains whilst it is accumulating, and as soon as sufficient has been secured make up the bed, adding a proportion of loamy soil, according to its freshness, thoroughly intermixing it. If the manure be fresh add one barrowful of loam to four of manure, and less in proportion if the manure has been allowed to heat. Make the bed up in the form of a ridge, packing it firmly together. Put in a watch stick, shelter with mats and litter, spawn when the temperature becomes steady at about 75 degrees or 80 degrees, and earth when the spawn is running among the manure nicely. Seed Potatoes should now be brought to the light, and spread out thinly in a frost-proof place.

E. Hobday.

FRUIT.

BLACK CURRANTS.

The Black Currant requires a rather cool moist soil, and for that reason it does not object to be grown in partial shade. Shade is not a necessity, but those who have to grow this fruit in a poor sandy soil will find it do all the better for a little shade. In gardens where the staple inclines to clay, where the roots are mostly in a cool medium, wonderfully fine fruit, both in size and in quantity, may be grown, if, before planting the trees, the land is trenched up 2 feet deep, and well manured; but in any case a rich soil is indispensable, for the Black Currant is among fruit trees almost alone in its capacity to endure rich living. For bearing its fruit, as it should do, when judiciously pruned, on the previous year's growth, it requires to live sumptuously to enable the trees to mature a crop of fruit, and at the same time provide strong wood for the production of fruit the next year. An experienced eye will tell at a glance at the end of the season's growth what the character of the next year's crops will be by the condition of the growth. If the young wood is vigorous, and the bark clear and bright, the succeeding crop will be large and abundant, if climatic conditions are favourable; but if the young shoots are weak and crowded, the fruit may be plentiful in numbers, but it will be small in size, and most of us know how much more large fruit is valued than small. The necessary conditions of growth can be secured only in a suitable soil, which means that it must be both rich and deep, and I advise all who are about forming new plantations of this fruit to act on this hint. When planting young trees amateurs are too much given to crowd them by thick planting, which is a mistake. If the trees are to stand in a single line they ought to be planted 6 feet apart, and if in double lines the rows should be 8 feet apart, for one large tree which has plenty of room for its branches to extend all around will produce more fruit of a better quality than three small ones where they are crowded. Black Currants may be safely planted up to the end of February.

Pruning.—It is not too late now to deal with existing trees if there should be any requiring attention, and generally this is the most neglected of all fruit trees. If there are any trees that have not yet been pruned, and the branches are crowded, let them be attended to without delay. The finest fruit is borne by the young wood. This indicates the way, then, that we should prune. Old exhausted growth should be cut away to make room for the young, and this, in a few words, is the proper way to prune these trees. How much of the old wood should be cut out in individual cases, each must decide for himself; but I say, by all means clear out the middle of the bush of all branches that are crowding each other, for unless light and air can reach the rising young shoots, they will be weak, and the next crop will suffer in consequence. In our own practice we cut down a few trees every year—that is to say, we

cut off all the branches to within one foot of the main stem. This severe heading back results in all the old stems sending out two or three strong young shoots, so that at the end of two years the trees are quite made up of young wood, and will go on for several years increasing in size and vigour, and bearing good crops of fruit. Trees dealt with in this way, and the roots well cared for, will last a great number of years. In regard to the management of the roots, there ought to be a standing order in every garden that neither fork nor spade should be allowed to go nearer than 3 feet of the stem, for this tree forms such large masses of fibrous roots near the surface that it is impossible to move the ground anywhere near the stem without mutilating the roots.

To maintain a high degree of fertility in the soil it is necessary to lay on the surface a thick layer of well-rotted farm-yard manure early every winter. The manure should be laid on in good time, that the winter rains may wash down to the roots the manurial matter it contains. I like to rake on one side the surface soil an inch or two in depth, and when the manure is laid down to put the soil back on the surface. The dressing should extend quite 3 feet around the stem, and cow manure is the best of all stimulants for Black Currants, as it is cooler in its nature than that from the stables. J. C. C.

REPLIES.

15810.—**The best Raspberries.**—No variety that I know can compete with the Black Woodward and Prince of Wales.—R. Gilbert, *Stamford*.

15807.—**Gooseberries.**—The best kinds for picking green are Crown Bob and Old Whitesmith, and the best for picking ripe is good old Warrington.—R. Gilbert, *Stamford*.

15802.—**Sowing Apple seeds.**—Sow them in pots, standing them in a cool window indoors. When 6 inches high plunge the pot outside. Let them stop in this position until October; then plant them out in good rich land. —R. Gilbert, *Stamford*.

OUTDOOR PLANTS.

Omphalodes Luciliæ.—Of the many hardy gems that grace our flower and alpine gardens few surpass in loveliness this exquisite little flower. Its leaves are glaucous and smooth, those nearest the root furnished with a footstalk, and those near the end of the shoots sessile. Its flowers are of a bluish lilac or mauve colour, marked with white, and about half-an-inch in diameter. It succeeds admirably in a sandy loam, enriched with leaf-mould, in a partially-shaded warm situation. Though essentially a rock garden plant it abhors being planted on a dry stony mound, which so often passes under the name of a rockery. It must have a good depth of soil to grow in, but this must be well drained so as to keep the plant dry during winter—its most critical season. Failing a well-constructed rockery, it would be better grown in a flat border; indeed, some say this is the best place for it. We saw the other day a whole border full of fine plants just pushing up their new foliage, yet not a stone was near them, the border being flat and, if anything, below the ordinary level. True, the bed was protected by a glass light to throw off excessive rain. In this case we were assured that this Omphalodes would not thrive in the rock garden, though it luxuriates hard by in the border. The finest plant of O. Luciliæ we have ever seen was grown at Bradfield, in Berkshire. This was fully a foot across, one compact mass, and was grown in an ordinary raised border lying well up to the sun. Here used to grow numbers of other "miffy" alpines that are generally thought to require an elaborately made rockwork. In such a position a long succession of flowers from the 1st of May onwards may be looked for. In early spring or in autumn the plants may be increased by division and by seeds sown any time after they are ripe or in the spring. The two other cultivated species of Omphalodes are also important garden plants. The best known is the common little Creeping Forget-me-not (O. verna), whose clusters of tiny turquoise-blue flowers are so lovely in spring midst their luxuriant carpets of green foliage. The other species, O. linifolia, is an annual, a pretty plant, growing about a foot high and having silvery foliage and creamy-white flowers, similar in shape and size to those of O. Luciliæ.

THE LILY OF THE VALLEY IN THE WILD GARDEN.

The Lily of the Valley is often seen in the garden in a starved state, because it has all the ground—rich ground, too—to itself, and enjoys it so much that, like the population in certain parts of the world, it gets so thick that the means of living becomes scarce. A very pretty thing to do where there is a chance, and the spare suckers of this free rooting thing have to be cast out from time to time if the garden plants are to be kept in health, is to plant them in shrubberies and hedge banks and waste places to grow. Having often preached this doctrine, we were agreeably surprised to find it carried out in a very poor, Heathy soil—where we did not think the plants would grow at all—with a charming result. Having to fight its way among the Grass, Heath, &c., in a poor soil, shaded by Pine trees, it seemed to develop a sturdy independence that one does not often see in the garden, and it grew in little isolated tufts, and actually had handsomer foliage and habit than those plants that are crowded together in the well-known beds in the kitchen garden. The flowers, too, in this condition were very pretty and graceful, whereas often, from starvation and crowding, in the garden proper they are not worth looking at. It would be a graceful act to naturalise this plant in every parish in England. Most people have the opportunity of doing something towards this from the spare plants in their gardens, and the flower should be made as common as the Wild Rose and the Hawthorn.

The Lily of the Valley in the wild garden.

REPLIES.

15813.—**Propagating Virginian Creeper.**—Put in the cuttings under a handlight in September. Let them remain until well rooted, and plant out carefully.—R. Gilbert, *Stamford*.

15814.—**Sedum glaucum flowering.**—The plants of this Sedum which flowered with you were too large and too old when you planted them out; there is no difference in the behaviour of this class of Sedums in this respect. I have used many thousand plants for carpet bedding in my time, but they never flower when I treat them properly. To secure plants that will not flower you must raise your stock from small side pieces; in fact, they want putting in as cuttings in the same way as you would any other plant. The cuttings must be dibbled into pans of fine sandy soil, and grown on in a warm, close house, and in due time hardened off as other bedding plants are usually treated.—J. C. C.

15826.—**Christmas Roses.**—You did wrong in planting Geraniums amongst the Christmas Roses, as the plants did not get sufficient light and air to become strong enough to produce the required amount of buds. Christmas Roses are grateful for shelter from rough and parching winds, and from the sun at midday, but they require an abundance of light and a free circulation of air around them when growing. Do not plant anything among them, but mulch with decayed manure, or something similar. Do not disturb them for several years, and you will get plenty of bloom. The decayed appearance of the foliage is due to the severity of the weather. We have some in a similar condition which are in an exposed position, while others which enjoy partial protection from the overhanging boughs of trees look as fresh as they did three months ago, and the blooms are earlier and finer. These latter are well screened from northerly and easterly winds, and those who want to see their Christmas Roses retain their good looks up to blooming time, should plant them where they will be thus sheltered. When the foliage is preserved intact it forms a natural shelter for the blooms, which lose much of their beauty if associated with blackened or with partially withered foliage.—J. C. B.

—— Having been successful with Christmas Roses I shall be glad to tell how I treat mine. After flowering, I cover with manure (not cow manure), and then from May till the flower-buds appear I water once a week with liquid manure. Last year I had 70 blooms on one root, and on the same root this year I have already picked 94, and more are coming. When the flower-buds appear I cover well over with silver sand, and put a square of glass over the plant, supported by sticks, which preserves the flowers from injury from the rain. I may add that the treatment I have adopted is entirely from hints given at different times in Gardening Illustrated. I quite agree that it is better not to disturb the roots, as the first year mine were moved I had no flowers worth mentioning. The plant I mention is well protected from the north wind, but is not under trees.—E. C., *Uxbridge*.

ROSES.

15824.—**Insects on Rose trees.**—"L. P." is no doubt right in imagining that the insects which bore into his Brier stems, and those alluded to by your correspondent "M.," are the so-called carpenter wasps, though some of the small wild bees have the same habits, and it is not improbable that they may be the culprits. These insects usually select dead Bramble or Brier stems, but in "L. P.'s" case they seem to have chosen living wood; is he sure that the tops of the stems and the buds were not dead before the insects burrowed in them? No doubt a dab of tar or paint would prevent the insects attacking them. These insects ought to be encouraged in gardens, for they are wonderfully useful in killing caterpillars, grubs, aphides, and various small insects, which they collect in large numbers to store their burrows with as food for their grubs. In some cases 60 or 70 small insects have been found in one cell. There are several kinds of bees and small wasps which make their cells in dead stems, decaying posts, &c. These so-called wasps are not really wasps, but are nearly allied to them; there is one great difference between them—true wasps have a fold in their upper wings, which these have not. Wasps also are social insects, these wood-boring wasps are solitary.—G. S. S.

15120.—**A meteorological question.**—As I see the monthly parts of Gardening Illustrated, and not the weekly, I have only just read the remarks of "L. C. K.," on page 627, in reply to my observations on page 594. My statement is something more than a theory. It is laid down in the text books, and, as Mr. Scott says in his "Elementary Meteorology," it enables gardeners to form a fair estimate of the probable minimum temperature on the ground during the night. It has, besides, a weight of authority in its favour which cannot be gainsaid.

When the why and the wherefore is understood, and the reasons of the rule are explained, it will be found that "L. C. K.'s" illustrations are scarcely applicable. It is a contradiction of terms for him to speak of "a drying March wind," and at the same time, as if they co-existed, of "air near saturation point." With a drying March wind the air obviously cannot be near saturation point, but quite the opposite. In explanation of the rule referred to I will now quote verbatim from Mr. Buchan's "Handy Book of Meteorology," as follows: "The ascertaining of the dewpoint is of great practical importance, particularly to horticulturists, since it shows the point near which the descent of the temperature of the air during the night will be arrested. For when the air has been cooled down by radiation to this point dew is deposited and latent heat is given out. The amount of heat thus set free being great, the temperature of the air is immediately raised. But as the cooling by radiation proceeds, the air again falls to, or slightly under, the dew point; dew is now again deposited, heat liberated, and the temperature raised. The same process continues to be repeated, and thus the temperature of the air in contact with plants and other radiating surfaces may be considered as gently oscillating about the dew point. For if it rises higher, the loss of heat by radiation speedily lowers it, and if it falls lower by ever so little, this liberation of heat, as the vapour is condensed into dew, as speedily raises it. Thus, then, the dew point determines the maximum temperature of the night." In another place he says: "The raising or depressing of the dew point during the night by a change of wind, is the only circumstance that can happen to interfere with the predictions (of frost or otherwise) founded on the hygrometer." During cloudy nights it is well known dew is not formed, as the clouds prevent radiation, and if there be much wind, as Mr. Scott says, the air does not remain long enough in contact with the soil for any material reduction of its temperature and condensation of its moisture to take place. It is for these reasons that the wind blowing or a beclouded sky tends to prevent frost, as stated by "L. C. K."—W. L. F.

FAVOURITE FLOWERS AND HOW TO GROW THEM.—VIII.

The Auricula.

I have been looking up some of the old books to see if it might be possible to trace the improvements made in the garden Auricula; but it is evident that it was not nearly so popular as the Carnation three hundred years ago. Gerarde figures a plant in his second book of the history of plants, which is evidently Primula Auricula. It is described as Auricula ursi flore lutea, yellow Bear's-ears. It was a green-leaved variety. He further states that these and other Primulaceous plants figured "grow naturally upon the Alpish and Helvetian mountains; most of them do grow in our London gardens," and flower in April and May. Not a word is said about any plants resembling our garden varieties at present in cultivation. Parkinson, in his "Garden of Pleasant Flowers," treats the garden flowers of his time more in detail than Gerarde did, and describes several varieties of Bear's-ears, which are evidently forms of Primula Auricula. The prevailing colours of most of them were yellow or straw colour. Here is a specimen of this quaint author's description, selected from twenty-one varieties, as it has one of the shorter names:—"Auricula ursi major lutea folio in cavo—The greater yellow Bear's-ear. The greater yellow Bear's-ear hath his leaves larger, and more mealy or hoary than the last, or any other of these kinds; the flowers are not so many, but longer, and not so thick thrusting together as the first, but of a deeper yellow colour, without any eye or circle in the middle." Violet, blood-red, and white varieties are described, the mealy leaves suggesting the same parentage. The early history of the florists' Auriculas must be traced to the Flemish weavers, who were driven from their country during a religious persecution, and settled, amongst other places, at Rochdale and Middleton, in Lancashire, about Gerarde's time. They brought with them, it is said, the Tulip and the Auricula. The Rev. F. D. Horner read a very interesting paper on the Auricula in 1881 at South Kensington, in which he traces the edged varieties of the Auricula back to the year 1757; but it is evident that named varieties of the Auricula were cultivated many years previous to this because Philip Miller in his "Gardener's Dictionary," published in 1741, alluding to the Auricula, says, "To enumerate the diversities of this plant will be almost endless and impossible, for every year produces vast quantities of new flowers, differing in shape, size, or colour of the flowers, and also in the leaves of these plants there is as great a variety; so that the skilful florist is oftentimes incapable of distinguishing the particular sorts thereby." Indeed, Miller was the first to publish the properties of a good Auricula, and all that did not possess those properties were "rejected by every good florist." He says: 1. The stem of the flower should be lofty and strong. 2. The footstalk of the flower should be short that the umbel may be regular and close. 3. The pipe, or neck, of each flower, should be short, and the flowers large and regularly spread, being no way inclinable to cup. 4. That the colours are very bright, and well mixed. 5. That the eye of the flower be large, round, and of a good white or yellow, and that the tube or neck be not too wide. Mr. Miller also gives elaborate directions to cultivate the plants in pots, and to place them on shelves one above another, and covered on the top to preserve them from wet.

Mr. James Hogg, of Paddington, wrote an excellent treatise on the Auricula more than half a century ago, and at that time numerous varieties were in cultivation which have been handed down to us. Hogg says the prevailing colours of the Auricula are brown and purple of different shades, red, crimson, rose, violet, blue, yellow, &c., with white and yellow eyes. The green, grey, and white-edged varieties were distinguished from each other by the colour of the edges or margins of the petals. Ninety-five edged varieties are named, and thirteen selfs. Amongst the edged varieties still grown and greatly valued are Freedom, Lady Blucher, Ringleader, Colonel Taylor, Champion, and Glory. These were the best in their various classes, and usually stood highest on the prize list. Hogg has a good deal to say about the diseases of the Auricula, and states that whole collections were swept off in the course of a few weeks by disease. It would have been a wonder if the plants did not die off wholesale, considering the mixtures made up, in which to pot the plants. Mr. S. Curtis considered loam unnecessary for potting Auriculas, and recommended two-thirds rotten dung from hotbeds to one-third of bog earth and sand in equal portions. As a specimen of the mixture prepared by one of the best cultivators of the olden time I have selected that of Mr. Maddock. Here it is: One-half rotten cow manure, two years old, one-sixth sound earth of an open texture, one-eighth earth of rotten leaves, one-twelfth coarse sea or river sand, one-twenty-fourth soft decayed willow wood, one-twenty-fourth peaty or moor earth, one-twenty-fourth of the whole ashes of burnt vegetables. Here we have seven ingredients mixed with the precision of medicine in a chemist's shop, the loam being in the proportion of Falstaff's half-penny worth of bread to the large quantity of sack. Indeed, it is safe to say that the system of culture recommended fifty years ago was sufficient to kill in time the strongest plants. It may be interesting to know something of the history of these pretty alpine plants, but the details of culture can only be made known to be avoided. The Auricula as it is known to us has been divided, for practical garden purposes, into five divisions: 1. The Green-edged; 2. Grey-edged; 3. White-edged; 4. Selfs; 5. Alpines.

The green-edged section is usually placed first in schedules and catalogues, for no other reason except an old-established custom. It is very difficult to obtain good varieties of this section, even by careful hybridising of the best varieties. The seedlings have a much greater tendency to come with a grey than with a green edge. The edge of the flowers should be quite green, without any spots of farina on it, although very few indeed are quite free from farina, those that are free being more valued than such as are only slightly marked. The edge of the petals ought not to be serrated. The ground colour, which is usually a rich dark maroon, although a few have violet and plum colours, comes next to the green edge. In the "model" Auriculas, sometimes seen in illustrations, the ground colour is pictured as in a solid ring; but this does not happen in the real flower. The ground colour always strikes or flashes as it were into the edge, but the fanciers say the less these flashes are observed the better. The inner edge of the ground colour is quite circular, and inside this circle is the pure white centre, which is very thickly dusted with farina. The circular form is the best, and is certainly most effective. An angular paste is a fault, so, also, is it, when slight indentations are scolloped out of the ground colour. The best of the old green edges is Colonel Taylor, already alluded to; good plants of it were frequently sold for five guineas, but it is very seldom good enough now for exhibition, although when it does come with a sufficiently large truss, it is very pretty. Champion some years ago was a free-growing and very popular green edge, but it is very seldom vigorous enough now. Prince of Greens is one of the most popular varieties. It has a most vigorous constitution and good habit. The Rev. F. D. Horner has been successful in raising some very good green-edged varieties, which have been exhibited in London, but they have not yet been sufficiently tested. Mr. B. Simonite, of Rough Bank, Sheffield, has raised and sent out a variety named the Rev. F. D. Horner, of great merit, quite as vigorous in habit as Prince of Greens, but superior to it. Talisman, sent out by Mr. Simonite, is a much smaller plant, but when well grown produces beautifully-formed flowers.

The grey-edged kinds have the margin of the flowers thickly dusted over with farina, so that the green ground is nearly hidden. Except in the colour of the edge, the ground colour, white centre, with a yellow eye, is the same in this, as also in the next class. The most perfect Auriculas yet produced are found in this class—to wit, George Lightbody (Headley), which was not surpassed until the Rev. F. D. Horner brought up to London in April last year a seedling variety named Greyhound. If it is as constant as Mr. Headley's celebrated variety, it will certainly take the lead in the grey-edged class. Lancashire Hero (Lancashire) is also a very perfect grey-edged variety, which will sometimes come with a green edge, from autumn-formed trusses which continue to develop slowly during winter, and flower at the usual time in April.

The white-edged class contains some very beautiful varieties. The white is produced by a very thick coating of powder almost as dense as that on the centre; but the ground colour between the two should be quite free from powder. John Simonite, raised by a gardener named Walker, is the most celebrated variety in this class, and has been very difficult to obtain up till now. It has a very pure white edge, dark ground colour, white centre, and rich orange tube. Conservative, raised by myself, is likely to be a popular variety; the flowers are of excellent form, and the plants of good habit. It obtained the premium prize as the best Auricula of any class, and has received several first-class certificates. Acme (Read) is another very beautiful white edge, and has all the properties of a first-class variety. In this class also Mr. Horner has raised some very choice varieties, so also has Mr. Simonite, but until they are placed in commerce it is needless to comment upon them.

The self-edged class are very distinct from either of the above; there is no other marginal colour except that of a purple, maroon, violet, or purplish maroon outside the white centre. This class has been very much improved by the numerous seedlings raised during the last few years, and here again Mr. Horner and Mr. Simonite have been triumphant; the first named gentleman having raised Herione, by far the best self yet produced. One of the most interesting details of the culture of Auriculas is

Producing seeds and raising seedlings, and the interest is intensified when the parentage of the plants is carefully noted, and the subsequent results of growing and flowering the plants made a part of the daily duties of the cultivator. In selecting parents, plants of good habit and vigorous constitution should be chosen, but they ought also to be the best that have, up to the present time, been produced. In the green-edged section I have had very numer-

ous disappointments, through trying to obtain good varieties from Colonel Taylor. It has most of the good points which constitute a green-edged variety, but it is neither a good seed nor pollen bearer. The best varieties from which to save seeds are Prince of Greens and Rev. F. D. Horner; an improvement on either of these would be a great gain. When it is intended to save seeds of any variety, it is necessary to cut off the anthers with a pair of sharp-pointed scissors, before the flowers open, holding the flower in an inverted position to prevent them from falling into the tube of the flower. In two or three days the stigmatic portion of the flower will be ready to receive the pollen. It is best not to mix the classes, and to choose only the best varieties in each class to cross with each other. The seeds will ripen in June and July, and may be sown at once or be kept in the pods until very early in the following year. The young plants will not all appear about the same time, but as they form the first or second leaves, they should be carefully removed from the seed-pans, and be potted, a dozen plants in a small 60-sized pot, where they will remain until the leaves meet together, when they are again repotted, this time three plants in a small 60. These again after a time are repotted, one plant in a small 60, and these are again planted in large 60's or small 48's, where they will produce their flower trusses in the second season after they are sown.

The propagation and culture of the show Auriculas cannot be said to be difficult; but many admirers of these charming alpine flowers have been deterred from attempting to grow them, owing to the supposed difficulties attending their management. I do not find any trouble in keeping the plants perfectly healthy all the year round by attending to the following simple details. Propagation is effected by offsets, and these may be taken off at any time in the year, except perhaps the three last months. I fancy the last week in January, or the first weeks in February, are the best times to take off and put in the offsets, using thumb pots and fine sandy mould. They never flag, nor do they suffer from damp, if they are not watered for two or three weeks after they are put in. I merely place them in hand glasses out-of-doors, and leave them alone for some time. Mats should be thrown over the glasses on frosty nights, and if frost is kept from them they speedily form roots, which grow freely in the fine sandy loam and leaf-mould. With careful management these small offsets will form good flowering plants by the end of the season; but to obtain this result, they should be potted on carefully during the season, so that by August they may be potted into small and large 48 sized pots, in which they are to flower. The potting soil I use is turfy yellow loam four parts, one part leaf-mould, and one part decayed cow or stable manure—or a mixture of both is preferred; some sand must also be added to keep the compost rather more open. Drain the pots well, and place over the drainage some turfy fibre, from which the loam particles have been shaken out. The old-established plants are repotted once a year in May, June, and July, and this also affords an excellent opportunity to remove the offsets and to treat them in the same way as those taken off early in the year. Most of the exhausted soil should be removed from the roots of the old plants; and if there is any of the white aphis (Trama Auriculæ) on the roots, wash it off with soft soapy water; and in order that this may be done effectually all the loam particles adhering to the roots must be washed off. After potting, the plants should be kept in a close frame for a week or two, admitting air very freely afterwards. Green fly is also a troublesome pest, and makes a sad mess of the leaves, if it is not destroyed in time. The best way is to fumigate the house or frames where the plants are with Tobacco smoke. If there are but a few plants the aphis may be removed with a camel-hair brush. I have also used Tobacco powder to kill them.

Alpine Auriculas, when grown in pots, require very similar treatment to the show varieties. They are more hardy, and require very little glass protection. I leave the lights off night and day during the summer and autumn months. They differ from the show varieties in having the leaves quite destitute of farina, as also are the flowers. The centres are either yellow or creamy white, and the edges are of one colour, but shaded. That part of the outer margin nearest the centre is darkest, shading to a paler colour at the edge. This section of the Auricula is well adapted for planting out in the open garden, and the plants are charming as rock garden subjects. Groups of them should be placed in a part of the garden where the sun does not shine upon them at noon.

Our Readers' Illustrations: Pergola, or garlanded way. From a photograph sent by Miss Mary Cross, Clarkson-road, Wisbech.

Varieties.—The following is a list of the best show and alpine Auriculas, which I have confined to six varieties in each of the show classes, and twelve alpines; those that are sent out only. *Green-edged:* Rev. F. D. Horner, Prince of Greens, Freedom, Apollo, Colonel Taylor, Champion. *Grey-edged:* George Lightbody, Lancashire Hero, Silvia, Mrs. Moore, Alexander Meiklejohn, Dr. Horner. *White-edged:* Acme, John Simonite, Conservative, Smiling Beauty, Frank Simonite, True Briton. *Selfs:* Pizarro, Blackbird, Negro, Mrs. Douglas, Sapphire, Garibalti. *Alpines:* A. F. Barron, Amelia Hardwidge, Diadem, King of the Belgians, Philip Frost, Mrs. Llewellyn, Unique, Mrs. Meiklejohn, Queen Victoria, John Leech, Selina, and Beatrice. Jas. Douglas.

OUR READERS' ILLUSTRATIONS.

PERGOLAS, OR GARLANDED WAYS.

Our illustration shows a description of pergola, or covered way, which might with advantage be oftener found in our gardens. It offers many advantages in the growth of climbers—Roses and the like—as by its aid the plants can be seen at many different angles—on each side, and falling from above—and thus their graceful form can be better shown than on a wall or flat surface. Then again, in sunny and warm places it gives partial shade to a frequented walk, and, further, it may be used to conceal hard walls and other surfaces which, unshrouded in some way, would have an unpleasant effect from certain points of view. We know a garden wall which was disagreeably prominent, and where the defect was completely cured by raising rough square stone pillars, as the Italians do, corresponding in height with the wall, and laying oak branches from the pillar to the wall; and climbers are then trained up the pillars and across the timber. A very good effect can be had in this way, and in many country places the expense would not be very great, as the masonry is such as the roughest workman can do. In Italy slabs of stone are often raised; but iron is cheaply obtained in this country, and strong iron posts are good, if not pretty. It would take a long article to enumerate the many beautiful plants that may be grown on such erections, which are suitable to every kind of garden. Of course such things should, for the most part, be devoted to the finest hardy plants, both evergreen and summer-leafing, flowering climbers particularly, and also the hardy vines, which are charming.

The Monkey Puzzle.—The Chili Pine (Araucaria imbricata) is not a largely planted tree, but, nevertheless, many fine specimens are to be found. A very handsome tree (one of the largest of its kind in the kingdom) is growing at Ballynatsay, co. Waterford, Ireland. It is 60 feet high, the circumference of the trunk at 3 feet from the ground is 6 feet 6 inches, length of lowest branches 21 feet, and space of ground covered by the spread of its branches 90 feet all round. It is growing on a sloping declivity in part of the flower garden, in loose sandy soil; the subsoil is of a gravelly nature. It has a southern aspect, and a row of large trees some distance off shelters it from high winds. It was planted in 1836, but did not cone until 1882. Since then it has borne a fresh supply each year. The trunk from the ground to the height of 1 foot is encircled by bands or rings of its bark to the number of six, 2 inches between each ring, and ¾ inch in thickness. It is a splendidly formed tree, cone-shaped throughout.—M. C., *Cork.*

15809.—**Name of Dahlia.**—The name of the white dwarf Pompon Dahlia that is largely sold in London nurseries is The Guiding Star.—L. C. K.

—— There is a Pompon variety of Dahlia named Blanche that is grown by the west-country growers for wreath making, and a charming one it is, as the flowers are small, well formed, and pure white in colour.—J. C. C

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor of Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

15918.—**Dark red Roses.**—I should be glad to know the names of some dark red Roses, almost black?—Chudleigh.

15919.—**Rose, General de Bourg.**—Will any correspondent tell me where I can obtain a small but very sweet old-fashioned Rose called General de Bourg?—M. B.

15920.—**Fuchsias and Heliotropes for winter blooming.**—What treatment do these require to produce blooms through the winter in a greenhouse?—H. Howard.

15921.—**Calico-glazed frames.**—In making calico-glazed frames is ordinary calico used, or would drab canvas be better? What oil should I use—raw or boiled linseed oil?—C. N. P.

15922.—**The Chenaar tree.**—A writer in a religious journal speaks of sheltering under a fine Chenaar tree in Cashmere. Can any reader give the proper name of the tree?—C. B. and M. C.

15923.—**Clematis.**—Will someone kindly give me the names of a few Clematis that would do well in the North-west Riding of Yorkshire? The situation is nearly due west; soil rather stiff.—F. D.

15924.—**Grubs on Black Currants.**—Will anyone tell me what to do with my Currant trees, the shoots of which are infested with grubs? The trees are three years old and growing in sandy loam.—M., *Gosport.*

15925.—**Roses for greenhouse.**—I should be glad to learn from good growers what are the best Roses suitable for an unwarmed glasshouse. I should like 24 varieties, also four of the best climbers.—J. P. K.

15926.—**Potting Chrysanthemums.**—Will any good grower of these plants tell me when they ought to be potted so as to get a good show in the conserva ory? Is soot water good for them and other plants?—Chudleigh.

15927.—**Shading greenhouses.**—I should be glad of hints as to the most suitable arrangement for healthy shading of greenhouse, 24 feet by 12 feet, facing south-west. Are the thin wood-lath blinds of any value for the purpose?—Sheerwell.

15928.—**Rabbits and young fruit trees.**—I have painted the stems of young fruit trees with a mixture of soot and cow dung, but the rabbits have gnawed the bark all the same. Will some readers kindly tell me what I can do to prevent this?—J. H. B.

15929.—**Flowers for altar vases.**—I should be glad to have a list of flowers suitable for altar vases that I could bloom during January, February, and March in a greenhouse not heated above 60 degs.; also hints as to their culture.—Westmoreland.

15930.—**Plants for porch.**—Would any readers tell me what good hardy evergreen plant I could use for a hanging basket in a porch? I intend in the summer to insert some flowering plant in it. The basket is to hang near the outside of the porch.—B., *Aberdeen.*

15931.—**Culture of Eucharis.**—Will anyone who has successfully grown these plants kindly give me a few hints as to their culture? I have had a number of plants in a stove for two years, and not one has flowered. Is there anything in the bulb being too deeply set?—B. J.

15932.—**Climbers for different aspects.**—I should esteem it a favour if some reader would oblige me by giving me the names of a few good climbers (flowers) for the following situations: South-west, south-east, and north-west; locality, North-west Riding of Yorkshire.—F. W.

15933.—**Plant for sitting-room window.**—Will any window gardener tell me what plant I can grow in my sitting-room window to answer the following requirements: Height about 3 feet or 4 feet, nearly hardy, bushy and spreading, to retain foliage all year? South aspect, partly shaded. Foliage required more than flowers.—C. N. P.

15934.—**Management of cold frame.**—I should be glad if any readers could give me a few practical directions as to raising seeds of half-hardy flowers and such things as Vegetable Marrows, &c., in a cold frame. I should also be grateful for any instructions with regard to the management of such a frame, whether it should be placed on the ground and partially filled with fine soil in which to sow the seeds, or whether the seeds should be sown in pots and seed-pans and sunk in fine ashes. I should also like to know the earliest date at which it would be safe to sow, and whether a three-quarter span roof or ordinary garden frame would be better for this purpose? I have no greenhouse and dislike hot-beds. Exposed situation north of England, 800 feet above the sea.—R. B.

15935.—**Grafting Pelargoniums.**—Will some reader who has experimented in this direction tell me whether an Ivy-leaved Pelargonium (double) would grow if grafted on a branch of a zonal Pelargonium and placed in heat? If so, what is the best time and sort of graft to use?—H. G., *Devon.*

15936.—**Culture of Dahlias.**—I should feel very grateful if some reader of Gardening would give me a little information as to the culture of the Dahlia. I have grown it for several years, but have never succeeded in bringing it to the standard I should like to. Blooms have been large enough, but very flat.—F. W.

15937.—**Flue in Cucumber-house.**—"Constant Reader" is having a Cucumber-house built. Would any reader kindly inform him how the flues should be placed? It has a southerly situation, the length is 44 feet by 14 feet broad, back wall 8½ feet high, brickwork at front 3 feet, and 1 foot of glass on top of front wall; ventilation front and top.

15938.—**The use of sewage.**—In my garden I have a cesspool with pump for liquid manure. Will readers of experience kindly say whether this sewage can be used with advantage for vines, Peach trees, and Roses? I should feel much obliged for any hints as to the proper use of sewage as manure in the garden generally. The soil is of a light sandy nature.—Amateur, *Devizes.*

15939.—**Cut flowers for winter.**—Will any of the readers of Gardening Illustrated kindly tell me what are the best plants to get to supply cut flowers during the winter months, say from end of November to March? I have a plant house and vineries in which to grow them; Melon house is also available at this time of the year. I should like plants of fairly easy culture.—F. N. G.

15940.—**Australian plants.**—As I notice in a recent number of Gardening some notes on Australian seeds, I venture to think I also may receive an idea as to whether the following Australian seeds are worth raising by one whose accommodation is limited:—Phyllocea australis, Telopea speciosissima, Antigonon leptopus, Eriostemon salicifolia, Bignonia australis. I should be glad of information.—M. C., *Wisbech.*

15941.—**Plants for draughty greenhouse.**—Will some reader kindly furnish names of a few plants for a glass structure which has been built to break the wind from the back door of dwelling-house? It is open to entry at one end, gets plenty of ventilation—too much, in fact; in winter cannot be heated. I prefer plants which will retain foliage through winter, and make the place look always furnished. High ground, Stafford-hire.—C. N. P.

15942.—**Obtaining Anthracite coal.**—In your issue of January 23rd "Clifton" gives such a good account of Anthracite coal for greenhouse work, that I have made up my mind to give it a trial. I have made inquiries but cannot obtain it in this district (Isle of Wight). Would "Clifton" kindly tell me what colliery it comes from, or perhaps some South Wales readers would say where it can be obtained? The information would probably be useful to others beside.—Trial.

15943.—**Gas for greenhouse.**—My greenhouse, 12 feet long by 8 feet broad, span roof 5 feet to eaves and 8 feet to ridge, contains 32 feet of 2½-inch piping heated by a gas boiler about 18 inches high by 9 inches, with Bunsen burner. During November I maintained a temperature of between 45 degs. and 50 degs., and the amount of gas consumed averaged 15 feet per hour. As a beginner I shall be glad to know if the consumption of gas is expensive or otherwise.—Novice.

15944.—**Pelargoniums for winter flowering.**—Will any reader kindly advise me as to the treatment necessary in order to bring these into bloom during the winter?—H. Howard, *Burton-on-Trent.* *** *"H. Howard" and many other correspondents in their queries frequently speak of Pelargoniums and Geraniums. It is as well to point out to these readers that what are commonly called Geraniums are really Pelargoniums, although they belong to a different group known as the zonals. Geraniums proper are for the most part hardy plants, natives of various parts of Europe, and some grow wild in this country.*—Ed.

15945.—**Cultivation of Camellias.**—Can "T. B." (whose article on p. 694 I have read with pleasure), or any other reader, help me out of my difficulty? We have Camellias planted out in the front border of a large conservatory. The border is 3 feet wide, 2 feet 6 inches deep, with 6 inches of brick rubbish on top of drain-pipe; the soil is good turfy loam; the plants are from 4 feet to 6 feet high. They make good growth and look healthy; but every year as soon as we begin to shut the house up at nights the buds drop off. The plants are syringed once or twice a-day when making their growth until the buds are set—not after. The house is kept as cool as possible; it faces south, and the glass is washed over with thin linewash during the summer. The border is watered with hard water from the waterworks.—D. S.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

15946.—**Lanky Heliotrope** *(J. S.)*—Cut it down now as you propose, and it will then branch out.

15947.—**Evergreen climber for greenhouse** *(S. S.)*.—Clematis indivisa would suit your purpose.

15948.—**Classification of Roses** *(B.)*.—You will find an article on this subject in Gardening, December 5th last.

15949.—**Pruning Jasmine and Heliotrope** *(R. J. C. E.)*.—Cut both of them now without further delay.

15950.—**Utilising night soil** *(C. N. P.)*.—Mix it with plenty of light garden mould and you can then use it with safety.

15951.—**Planting fruit trees** *(Dubius)*.—Your trees ought certainly to thrive in a soil composed of 2 feet of good loam.

15952.—**Iris germanica** *(Weeping Willow)*.—Yes; you can plant this in the spring, and, in fact, at almost any time of the year.

15953.—**Killarney Fern** *(Querist)*.—Your Fern would do in such a greenhouse as you mention. Peg it on to a turfy piece of peat.

15954.—**Evergreen Veronicas** *(C. N. P.)*.—V. speciosa. Apply at the nurseries for shrubby Veronicas, which are all evergreen.

15955.—**Snails in garden** *(A. Hubittemore)*.—Scatter lime around the plants to protect them, and kill all the snails you can find.

15956.—**Hardy Carnations** *(A. T. S.)*.—See answer to query 15907 on p. 712 (Feb. 13th), and the articles on Carnations published recently.

15957.—**Rat's-tail Cactus** *(C. N. P.)*.—We doubt that this is hardy enough to survive in an unheated glass structure in a very exposed locality.

15958.—**Eradicating Daisies from lawn** *(W. S. P.)*.—Lawn sand is said to be useful for this purpose. The best way would be to spud the plants out.

15959.—**Raising Lobelias, Asters, &c.** *(C. N. P.)*.—You can raise these plants with the protection of calico glazing if you defer the work until April or May.

15960.—**Double Cineraria** *(D. T.)*.—Certainly the double Cineraria is worth propagating from; it is one of the brightest and best doubles we have yet seen.

15961.—**Quick-growing evergreen screen** *(C. N. P.)*.—Good plants of the Irish Ivy will grow more rapidly than any other evergreen that we can recommend.

15962.—**Dearborn's Seedling Pear** *(Gwendraeth)*.—This is an early Pear, ripe in August. The fruit is small, very juicy and melting, sweet and pleasantly-flavoured.

15963.—**Tarry water and plants** *(F. E. C.)*.—We advise you not to make use of it. Its effects may not, as you say, be visible in two or three days, but it will in time do injury.

15964.—**Forcing Roses** *(Niphetos)*.—Do not feed them until they get a little further advanced, and let them come on as slowly as possible. Do not attempt to force too rapidly.

15965.—**Culture of Horse-radish** *(Amateur)*.—For your information we print in another column an extract from the "Vegetable Garden" relating to the culture of this plant.

15966.—**Evergreen shrub** *(J. P. K.)*.—Your letter is not quite clear, but we presume you mean the shrub to be grown indoors. If so you can have nothing better than the Camellia.

15967.—**Keeping fowls in greenhouse** *(Beta)*.—It would not suit plants to have fowls about them, and fowls could not with advantage be kept in the atmosphere that plants delight in.

15968.—**Plumbago leaves turning yellow** *(Chudleigh)*.—We presume you mean the common blue Plumbago (P. capensis), and that what you describe is only the natural decay of the foliage.

15969.—**Cabbage Palm.**—There are several plants mentioned in Miller's "Dictionary of English Names of Plants" as bearing this name, and as you say nothing of its character it is impossible to identify it.

15970.—**Poinsettias** *(C. Gullet)*.—The scarlet leaves which form the head of Poinsettias are botanically called bracts. Poinsettias have no sepals; their flowers are inconspicuous little knobs in the centre of the head.

15971.—**Blackberries** *(Fred)*.—We should not recommend you to use the wild Blackberry; it is hardly worth while to do so, as there are other sorts so much better to be obtained, more productive and bearing larger fruit.

15972.—**Christmas Roses** *(Chudleigh)*.—To get your Hellebores to bloom by Christmas they should be potted in September or October, and about the beginning of December placed in a slightly heated frame or house.

15973.—**Growing Cucumbers and Tomatoes** *(Cavalier)*.—Yes; you can grow both Tomatoes and Cucumbers in your cold frame, but do not plant them out until April or May, when all danger of frost is over.

15974.—**Hyacinths after flowering in glasses** *(M. E. Mann)*.—A few weeks hence you may plant the bulbs out in a warm place in light soil, where they should be left permanently. They will then yield flowers annually.

15975.—**Frame with oil stove** *(Amateur, Worcestershire)*.—We should say there would certainly be some amount of risk in heating in the way you suggest, and think your present plan of heating by manure is preferable.

15976.—**Window gardening** *(A. Hubittemore)*.—A series of articles is now being published in Gardening dealing fully with the subject of house and window gardening. In there you will find all the information that you ask for.

15977.—**Duration of bloom of Tigridias** *(Clavendon)*.—The individual flowers of Tigridias do not last more than a day, but the flowers succeed one another, so that the plant may be said to remain in bloom for three or four weeks.

15978.—**Scale on Aucuba** *(T. P. P.)*.—We recommend you to burn the plants, which are badly infested with scale and other insects. We doubt if there is enough vigour left in the plants to break strongly even if you cut them hard back.

15979.—**Gazanias** *(Querist)*.—Gazanias are, as a rule, raised from cuttings; but they can be raised from seed. The plants require to be kept free from frost. Silver-leaved Pelargoniums would look well with them, and you could also use Iresine Lindeni.

15980.—**Using woollen "waste" in garden** *(Fred)*.—We think it would take quite as much time to dig it in and trench it as to dig in the material in the ordinary way, and it is much more effectual to spread it and dig it in in the usual way.

15981.—**Tuberous Begonias in border** *(Thornes)*.—Put the plants about a foot apart, and, if of a strong-growing strain, they will fill up the intervening space in the course of the season and make a good mass. You can easily estimate the number required.

15982.—**Failure with Potatoes** (*H. W. J.*).—You say your Potatoes were almost entirely destroyed. Lime and soot, the use of which you suggest, would probably do good, though as you give us no information as to what the pest was it is difficult to advise you.

15983.—**Lanky Pelargoniums** (*J. S.*)—If you have a greenhouse which you can keep at a nice genial temperature put the plants into it, so as to induce them to make healthy growth, from which you may take cuttings and propagate during the months of April and May. Your old plants will probably do for bedding.

15984.—**Raising cuttings in garden frame** (*Perplexed Amateur*).—You cannot raise cuttings without artificial heat until the weather gets warmer, and we do not see how you are to heat a frame by a lamp unless you build a structure for the purpose. By far the cheapest and most effectual way would be to heat it by manure.

15985.—**Ranunculus seeds** (*Q. E. D.*).—Sow the seeds now in boxes very thinly, and place in cold frame. Let the seedlings remain in boxes to complete their growth; but place in cool position and encourage with liquid manure. Plant next February in prepared bed in the open air, and possibly some of them may flower, if liberally treated.—H.

15986.—**Mushroom growing in house cellar** (*W. Kent*).—In our opinion it would be most objectionable to carry on Mushroom culture in a cellar beneath living rooms. Mushrooms cannot be grown successfully without stable manure, and this would have an unpleasant effect. We doubt if you will succeed in growing any other class of plants in such a position.

15987.—**Clematises for cold greenhouse** (*J. P. K.*).—You do not say whether you want the common large-flowered Clematis of the Jackmanni or lanuginosa type, or an evergreen one like indivisa. The varieties are so numerous that your best plan would be to decide what colours you like best, and select varieties from a trade catalogue. Kindly read our rules as shown at the head of query page.

15988.—**Dracæna** (*Mrs. P.*).—This plant will succeed out-of-doors from May till October, planted in the ground. Turf it over, and then you need not trouble about watering it, except in very dry weather. The fact that the leaves die off at the top we should attribute to dryness at the root, particularly if the plant is pot-bound, as in that case it requires a deal of water to keep the ball constantly moist. Try the effect of plunging the pot in a tub of water for 24 hours.

15989.—**Ants in conservatory** (*H. Brunel White*).—It is asserted that ants are as injurious as aphides, though it is not clear how they hurt the plants. If you wish to get rid of them try traps. Place half-picked bones here and there on the shelves and wherever the ants resort, and visit them an hour or two afterwards. They will then be covered with ants, and should be dropped into a bucket of boiling water. Sponges dipped in treacle-water are also good traps.

15990.—**Potatoes for plot of land** (*Young Inquirer*).—The quantity of seed required for your plot (170 feet by 22 feet) will be about 6 pecks. This estimate is only approximate, as much depends upon the size of the sets and the kind planted; but the quantity named will be found near the mark. On clay soil we should not plant late kinds. We should recommend 1 peck of Earliest of All (Carter's), 1 peck Myatt's Prolific, 2 pecks Sutton's Early Regent, and 2 pecks of Schoolmaster. Plant in drills, and work in some manure compost, if possible.—H.

15991.—**Propagating plants** (*J. S., Waterloo-park*).—You give us no information as to the kind of plants you wish to grow, and, in the absence of any such guide, we can only advise you to consult the notes under the heading "Coming Week's Work" in each issue of GARDENING. If you place the pots on the hot-water pipes you will run the risk of drying the soil excessively and of too rapidly forcing the seeds to germinate. This rapid germination will induce sickly, weakly growth. We shall be glad to give you any information you desire.

15992.—**Seedling Peach and Damson trees not bearing** (*A. Hubittemore*).—The chances are that as the trees have been raised from stones they have an excess of root. They have, perhaps, never been transplanted, and therefore the tap root has got too deep into the soil. In all probability, as they were raised from seed, the variety is not worth much, and if you have a good position—a nice warm wall—in your garden, it would be worth your while to purchase either Plums or Peaches, and plant them, allowing 14 feet space for each. Please read our rules.

15993.—**Camellia buds withering** (*Bothered*).—In GARDENING for February 6th you will find a long article on the culture of these plants, which you should read. Your Camellias seem to be in the right temperature, provided the house is well ventilated. The period when the flower buds are forming is a very critical time for Camellias; too much water will cause them to drop off, and over-dryness and bad ventilation will have the same effect. A soil composed chiefly of loam suits the Camellia best, it being a strong rooting plant; but it is usual to mix a little peat with it to keep it open. It is better to err in giving pots too small than to fall into the opposite mistake, particularly when close attention is not paid to watering. The roots can be brought near the surface if this is stimulated with artificial manure, as is frequently done in cases where the plants become pot bound—this is what gardeners call bringing the feeding roots to the surface.

15994.—**Azalea mollis** (*G. B. M.*).—These are so easily grown as pot plants, if they receive the right treatment, that anyone with a fair knowledge of plants should be able to grow them. As the roots of the plants referred to "never looked flourishing" one may infer that the peat has not been good. The treatment up to the end of May seems to have been right enough, when they were placed out-of-doors in a grotto partially shaded by trees. This was an error; they ought to have been placed quite in the sun, with the air blowing freely around them, without shade of any kind. We pot our plants in turfy peat, torn up by the hand; they are repotted once in two years. We advise purchasing seedlings; good flowering plants can be obtained at a very cheap rate. Pot them in the autumn, and plunge in Cocoa-nut fibre refuse out-of-doors. A few plants are placed in the forcing house at one time for succession. When the flowers commence to open place the plants in the greenhouse, so that the blooms may open there; they last longer than if they are allowed to open in heat. The plants must be kept under glass until danger of injury from frosts are over, when they are again plunged in an open place out-of-doors; there they remain until it is time to force them again.—D.

TO CORRESPONDENTS.

C. W. B.—Your question is not at all clear, and we do not know what information you require. There is a plant called Sweet Cicely (Myrrhis odorata); is it this you refer to? Write again more fully.——*E. M. Ll.*—1 (Carnation), any good nursery; 2, Anthony Waterer, Knap-hill Nurseries, Woking;——*S. S.*—Fawkes' "Hothouse Building."——*South Northumberland Fell-sider.*—Thanks for your note; but the querist desired to know simply where the article could be purchased.——*M. C.*—1, See note in this week's issue; 2, See query column. We could not name the plant from the seed; but there was no seed enclosed in your letter.——*Curlow, Car.*—Carter, of Holborn, or Hurst, of Houndsditch.——*T. P., Chichester.*—Apply to makers.——*Muir.*—You must get plants; try any good nursery in your own neighbourhood.——*J. H. L.*—Your question is quite out of our way. Why not try some of your local dealers?——*Amateur, Salisbury.*—You had better glance through the advertising columns of GARDENING or consult the catalogues of different firms; you would then be able to judge for yourself which would suit you best.——*B. Fielder.*—We cannot insert the article.——*Weeping Willow.*—You may sow the seed; but we should not ourselves like to depend upon it.——*Ignoramus.*—1, Next week; 2, W. E. Boyce, Verbury-road, Upper Holloway.——*F. H. C.*—Send us the letter for the correspondent in question, and we will forward it.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

*** *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* EDITOR, *37, Southampton-street, Strand, W.C.*

Names of plants.—*Tilgate.*—1, Withered; send another specimen; 2, Croton angustifolium; 3, C. Baron Rothschild; 4, Pteris serrulata.——*C. Bowlker.*—Euphorbia splendens.——*J. Simpkinson.*—Adiantum Capillus-Veneris.——*T. Redford.*—Looks like one of the large-leaved Senecios, probably S. Ghiesbreghtii.——*F. S. P.*—Begonia argyrosipila.

15821. — **Plants for photographic studio.**—I would suggest that "G. C." should try Fuchsia Earl of Beaconsfield, Grevillea robusta; Palms, such as Phœnix reclinata and Latania borbonica. Ferns, such as Pteris cretica and P. serrulata, are particularly suitable to such a place. Spring-flowering bulbs would doubtless succeed well, and some Chrysanthemums grown out-of-doors and brought inside the first or second week in October will make a grand display in November.—URBS.

15823.—**Management of propagating frame.**—The fault that "Fagley" complains of is very easily rectified in more ways than one, and probably arises from the false bottom being too thickly perforated with holes, thus allowing too much steam to pass into the frame. But even if more fibre, or whatever the material used may be, cannot be put on the bottom, which would materially check the rising of the vapour to some extent, it is very easy to partially cover the perforated bottom with pieces of plain sheet zinc or tin, and it is evident that this might be carried out to the extent of preventing almost entirely the entrance of damp or vapour from below. Again, if the surface of the frame is pretty well covered with boxes, or pans of seedlings, &c., these must (and do) of themselves prevent all but a very small amount of moisture from rising into the frame. Of course "Fagley" does not keep the frame constantly closed. In the case of any arrangement with a moist bottom-heat, the light should be almost constantly drawn off, or tilted, more or less, to allow superfluous moisture to escape.—B. C. R.

Catalogues received.—*Seeds, Plants, Florists' Flowers, &c.* Andrew Braid, 259, High-street, Kirkcaldy.——*Vegetable, Flower, and Farm Seeds.* John Turner, North-street, Wetherby, Yorks.

Book received.—*All About Blackberries.* By Viccars Collyer and A. W. Crews. Leicester: J. Fleming and Co., 112, Wellington-street.

INDOOR PLANTS.

MAIDEN-HAIR FERNS.

THE genus Adiantum is the one which undoubtedly commands the most extensive cultivation, on account of the two-fold usefulness belonging to the majority of the plants of which it is composed. No other section of Ferns could boast of so many kinds of subjects so useful for the decoration of our plant-houses, and none produce a foliage so highly valued for mixing with flowers, for bouquets, table decoration, "button-hole" making, for adorning ladies' hair, or, indeed, for any other purpose where grace and elegance are required. The Maiden-hair Ferns proper are very numerous, and being native of countries situated a long distance apart, and possessed of very different climates, require also different treatment. Those kinds which come from South America are mostly distinguished by their broad and more or less rhomboid pinnules; the most prominent and deservedly most popular among them being A. trapeziforme, cardiochlæna, macrophyllum, peruvianum, and Sanctæ Catharinæ. All these and several others of the same type strictly require in the winter a minimum temperature of 60 degs., without which no good results can be anticipated; for these kinds, a warm and moist atmosphere is indispensable all the year round, even during the winter months, when they appear to be at rest. They are all strong growers, and delight in a compost of two-parts of good fibrous peat to one of fibrous loam coarsely broken up, with a good sprinkling of sharp silver sand; and the same remarks also apply to the East Indian strong-growing species, whose pinnules however do not partake of the rhomboid form, the A. Scutum, or Ghiesbreghti, tenerum, and the lovely and general favourite A. Farleyense, which for the decoration of our warmhouses has no equal. This latter species, when grown rapidly in a mixture of fibrous peat, loam, and good leaf-mould in equal parts, and kept close to the light in a temperature never below 60 degs. in the winter, produces young fronds which, before they attain the pea-green colour which is particular to the species, pass through the most lovely tints imaginable, first beginning with a rosy pink, then assuming a light purplish and exceedingly pretty and attractive hue, which they retain for an unusually long time. Syringing overhead is not advisable at any time in the case of Maiden-hair Ferns, unless it be indeed that the house in which they are grown is very lofty and airy. All the plants belonging to the broad-foliaged section of Adiantums are very liable to the ravages of garden pests, especially of thrips, the propagation of which must be carefully kept in check by a vigilant look-out, as these plants do not stand dipping or washing in insecticides sufficiently strong to destroy insect life, and as a fumigation which would be fatal to thrips will also gradually, if not instantly, affect and destroy their constitution.

It is very different with the kinds whose fronds, of a more or less triangular outline, are furnished with small and numerous wedge-shaped pinnules, and borne on shining, black, slender stalks. These sorts, which, like the elegant and deservedly popular Australian A. formosum, are seldom, if ever, attacked by insects other than green fly, require a great deal less heat during the winter months than has been recommended for the South American and East Indian species. If not quite so ornamental in the planthouses, they are much more useful for indoor decoration and for producing a constant supply of cut fronds, which quality deserves a special consideration. The typical plant of this section, which comprises several species, such as A. decorum, Æthiopicum, venustum, &c., and varieties issued from these, seems to be the common, but yet unsurpassable, A. cuneatum, of which enormous quantities are annually grown by some of our London market gardeners—some for sale in pots, but by far the greater part exclusively for cutting. Among the several places where Maiden-hair Ferns are best cultivated for that purpose, that of Messrs. Hawkins and Bennett, at Twickenham, occupies a most prominent position. There the Adiantums are grown by themselves in houses entirely devoted to them, in which they are so arranged as to get a maximum of light all the

year round by being placed on a wooden stage or on inverted pots close to the glass. In these houses, instead of their being, as is often the case, crowded together or amongst other plants, a sufficient space is left between them to allow for a free circulation of air, which has for result the furnishing of the fronds with a substance and texture which they do not otherwise acquire. It is not always convenient, of course, in a private place to devote a special structure to these plants, however useful they may be; but from what precedes it will be seen that if in a plant house the Adiantums are placed as near to the light as possible, stood on brackets for the purpose—as we often notice them in different places and notably in Mr. Treadwell's houses at Leigham Court, Streatham-hill, where, in comparatively small pots, they are grown in perfection—their fronds will acquire a degree of hardiness which will enable them to stand much longer when used for mixing with flowers; whereas, the plants themselves will, at the same time, greatly benefit and not show that languishing and spindly appearance which is much more frequently the result of overcrowding, or of bad treatment, than of the want of heat, to which cause their sickly appearance is often erroneously attributed. For the plants belonging to this latter section—that is to say that of Adiantum cuneatum and its numerous forms, such as the lovely and delicate A. gracillimum, the elegantly drooping tasselled grandiceps, the compact growers, but exceedingly useful A. mundulum, Pacotti, deflexum, and others—a winter temperature averaging between 50 degs. and 55 degs. is quite sufficient to maintain them in a green state; and when kept in a greater heat at that time of the year, and in constant vegetation, they seldom produce in the spring such abundant and healthy foliage as when treated to a partial rest, during which time, however, they should never be allowed to get dry at the roots, although most of these plants generally get into a bad state through overwatering at a time when they absorb but very little of the water, which in many cases is injudiciously given to them. The mixture of soil which suits the stronger kinds of Maidenhair Ferns will also be found to answer well for these, but should the loam to be employed be of a somewhat close nature it will be found more advantageous to replace it by the same quantity of leaf-mould, a material in which the fibrous and much more minute roots of these smaller growing kinds greatly delight.

Our British Adiantum Capillus-Veneris, and its varieties, magnificum and daphnitis, although generally treated as hardy Ferns, luxuriate best under the same treatment as that recommended for those of the cuneatum section, but being provided with creeping rhizomes, whereas the others produce their fronds from a compact crown only, they are the best adapted for planting against walls which they eagerly take possession of and cover rapidly. Although these do not suffer so much from water over their foliage, they are best kept with a liberal supply of water at the roots only, as in that case their fronds, though perhaps not produced so plentifully, are of a much more sturdy nature and last much longer. S. G.

Strelitzia planted in greenhouse.

A FINE GREENHOUSE PLANT.

Few readers have room for the larger class of fine-foliaged plants in their greenhouses, but those who happen to have it do not always know what to plant in the way of fine-foliaged plants of permanent value. Among those least seen is the tall Strelitzia augusta, which thrives perfectly well in ordinary garden soil if planted out in a high greenhouse. There is, or used to be, a very fine specimen in the Regent's Park Botanic Gardens, planted out in the pathway, which kept on growing for many years in fine health. We admit that it is more of a botanic than an "ornamental" garden plant, but, at the same time, the rarity of species equally useful justifies allusion to it. It thrives under very easy culture—in fact, finds its own living planted out in ordinary soil, and roots in the pathways, producing its strange flowers occasionally, but its chief value being in its great Banyan-like leaves.

Late Chrysanthemums.—A little more than a week ago we received a really fine gathering of Chrysanthemum flowers from Mr. Guytou, a florist of Belton, Great Yarmouth. These were as fine as any we have seen, for February flowers, and it is really encouraging to see that Chrysanthemums can be induced to bloom for so long a period, and be procurable at this season. About a dozen sorts were sent, and the best of these were Boule d'Or, Peter the Great (a very fine clear yellow), Christmas Number, Fair Maid of Guernsey (a good late white), Thunberg (a good yellow), Jardin des Plantes (a well-known yellow incurved, which, like Julie Lagravère—also sent—is not commonly seen so late in the season), Meg Merrilies (a white Japanese sort with shaggy heads of bloom), and Kri Kang.

Spiræa japonica for forcing.—I don't know if I have been more unfortunate than other people when purchasing this Spiræa for forcing, but I do know that I have not had any imported roots sent me that equalled those of my own raising. For that reason I have discontinued purchasing the so-called imported roots, and rely entirely on those of home growth for both early and late supplies. We are now preparing our stock for next season's use, as I prefer to do it before other work presses too much. The way we manage our plants for forcing in pots is very simple. We take up a few plants from the open ground and divide them into various-sized pieces. As we want a good number we use pots varying in size from 6 inches to 10 inches. The smallest size does for table decoration and for vases, &c.; the larger ones come in for various uses as well as to furnish cut flowers. The compost we use is a good turfy loam, to which is added a fair sprinkling of silver sand. In selecting the pieces I like to secure those with half a dozen crowns for 6-inch pots, choosing larger pieces for larger pots. When potting, the compost is pressed rather firmly about the roots, and when finished the pots are placed in a cold frame, where they remain until the end of May. They are then taken out of the frame and stood in a shady place, where they remain all the summer. At the time they are placed in the open a large saucer is placed under each pot, and is kept regularly filled with manure water as often as it gets empty. The soil in the pot is also watered from the top when it gets dry. This plant is such a strong-rooting subject and requires so much root moisture that without the assistance of the saucers it would be almost impossible to keep the roots supplied with all the moisture they want; but the saucers not only keep the roots uniformly moist—they keep them well supplied with stimulating moisture, as the water we fill them with is strongly impregnated with manurial matter from stable manure. The only other attention they get during the summer is to cut down the flower stems as fast as they rise, as we do not allow the plants to exhaust themselves in the production of flowers; the strength we like them to reserve for the following year. Early in the autumn the saucers are taken from under the pots, and the plants stood on a hard bottom in the full sun, where they go quietly to rest, when they are ready for forcing as early as may be wished. Under this treatment I have counted as many as thirty flower spikes in a pot 7 inches in diameter. Directly they are taken to the forcing-house we place the saucers under them again and keep them filled with the same description of water.—J. C. C.

Primula floribunda.—This pretty little Himalayan Primrose should, when better known, become a universal favourite, as in a greenhouse temperature it flowers continuously throughout the winter. Some specimens of it in pots here so treated have been in bloom since October, and are still as good as ever, the earlier flower-spikes having been when over replaced by others, which in their turn, will be succeeded by those visible in the centre of the plant. In general appearance it reminds one of P. verticillata sinensis, but the leaves are in no way mealy, as in that kind, while the flowers, though about the same size, are of a beautiful deep rich golden colour. Though not very large indi-

vidually, they are, as the specific name implies, borne in the greatest profusion; even a small specimen will throw up several spikes, each of which in its turn bears a large number of blooms arranged in four or five tiers, so that during the dull days of winter, if the atmosphere of the house be kept free from damp, a single spike from the expanding of the first flower to the last will remain in beauty more than a couple of months. This Primula is of the easiest cultivation, doing well in a light part of the greenhouse, kept free from stagnant moisture. A compost, such as that in which the varieties of Primula sinensis delight, just meets its requirements. It is increased readily enough by means of seed, which should be sown as soon as ripe, otherwise, in common with many Primulas, especially those with whorled flower-spikes, it is sometimes liable to remain a long time in the ground before germinating. Along with the variety just named we have the almost perpetual flowering mauve-coloured P. obconica, recently illustrated in Gardening.—H. P.

WINTER-FLOWERING FLAX (LINUM TRIGYNUM).

The merits of this plant are well known; yet, strange to say, one seldom sees it thoroughly well grown. The small attenuated specimens often to be found amongst a miscellaneous collection of warm house plants in no way give a true idea of the value of this fine winter-flowering subject, for this yellow Flax, well grown, forms a dense mass of lustrous foliage, and good specimens carry from 12 to 20 fine heads of flower. In this condition it is very ornamental, and may be employed with admirable effect, either in the conservatory or amongst fine-leaved plants in stoves or intermediate houses, the bright yellow blooms contrasting finely with Marantas, Ferns, Palms, and similar plants. Whoever would wish to see Linum trigynum at its best—in full perfection of leafage and bloom—must plant it out where the roots can enjoy a free run in suitable soil, where nourishment and moisture never fail, and where light and air are freely admitted to ensure perfect maturation. Accorded these conditions, this Flax in the course of two or three years' careful culture develops into a good-sized bush—assumes, in fact, a sub-shrubby habit; and if pains have been taken to keep it free from the attacks of its one great enemy, red spider, it will be clothed with foliage almost to the soil, and when in bloom will form a very striking object indeed. Red spider is less to be dreaded where planting out is resorted to than in pots, as this pest cannot so well fasten upon leaves that are well nourished, and full of sap as on such as, through want of food, are more or less flimsy in texture, and therefore not only keenly feel the attacks of insects, but are most liable to be assailed by them. We may, therefore, conclude that, whether planting out or pot culture is practised, a very generous diet is absolutely necessary to keep this plant in health and vigour. Many think that Linum trigynum delights in a close warm atmosphere throughout the summer, and therefore keep it growing all the season in a stove, among heat-loving subjects that will not bear anything approaching a brisk circulation of air around them. This is a mistake. The great point is to give the plants a good start in early spring, growing them freely, but strongly, which will be the case if they are near the glass, get but little shade, and get a tolerably free admission of air when the outside air is not too keen. I once had good proof that this Linum will thrive well under quite cool treatment, as, looking through the conservatory of a small private garden some years ago in, I think, the latter end of November, I was quite surprised to see two large specimens in a fine blaze of bloom growing in a border. The house was a light one, not very high, and only shaded from hot sun; and here, in company with Camellias—growing, in fact, in the same soil with them—was a plant of this Flax in such luxuriance and amplitude of foliage, perfection and profusion of bloom, as I had never seen it exhibit before. The person in charge told me that it was pruned in April, and, the house being kept rather close while the Camellias were making growth, it came along with them, apparently enjoying the treatment which they received. Later on, when it was a question of ripening their wood, much air and full light was, of course, admitted to them—advantages which were equally favourable to the Linum, and by which it profited to the extent of thoroughly maturing a strong growth, thereby enabling it to produce later on many flowers of high quality. I am convinced that such a course of exposure in early autumn is indispensable if one would see this Flax to its greatest advantage as a winter-blooming subject. For pot culture I prefer plants grown on from cuttings struck in March. They may be grown in a warm house until the middle of June, after which they are most at home in cold frames until mid-September. Fibrous loam, some leaf-soil, and a little rotten manure form a good compost. J. C.

Lapageria leaves dying at the tips.—I often hear complaints as to the leaves of the Lapageria becoming brown at the tips. I have found that sudden atmospheric changes will cause the points to wither. Indeed, in nine cases out of ten I fancy this would be found to be the only cause of their doing so. Lapagerias appear to be peculiarly sensitive to a sudden rise of temperature accompanied by much aridity, and in houses where this is often likely to occur they will not, I think, be likely to thrive with any great degree of vigour, and will become denuded of foliage at the base. Where a hot, dry atmosphere prevails during a great portion of the day the plants have a weary, suffering look, and the leaves quite lack the lustrous hue, similar to that of the Laurel, which they possess in a perfect state of health. Several years ago I became possessed of a small plant of the white variety, and attempted to grow in a small lean-to greenhouse in a south exposure. It made roots very freely, and pushed up every spring several strong shoots from the base, but, although they grew very vigorously for a time, the points invariably turned yellow during the first period of hot weather at the latter end of May or June, and the tips of the leaves withered, the oldest ones dropping off. In the past season the young growths were stronger than ever, but the summer was very parching, and they absolutely refused to move after the beginning of June, ultimately going blind, and the whole plant looked so bad that I feared it would die. I then turned it out into the open air in a position where no sun shone on it and where Ferns grew well. The change was marvellous. The leaves immediately took on the hue of health and it broke anew into growth, which continued until late in autumn. The leaves were perfect—not a sign of decay in them—until I re-housed the plant, when a few hot days came and the tips of many of the leaves went brown. This showed me pretty conclusively the true cause of the Lapagerias thus suffering; they cannot bear the sudden change from comparative humidity to aridity which they experience in many glass structures.—B.

Nephrolepis exaltata.—This plant is generally supposed to require a stove temperature, but I myself have grown it for years as as a cold greenhouse Fern with considerable success. I may add that my greenhouse has the frost just excluded, and this Fern remains evergreen, and throws up fresh fronds throughout the winter. It also adapts itself not unsuccessfully as a window plant.—J. Waller, *Brockley, S.E.*

REPLIES.

15805.—**Raising India-rubber plants.**—The only way of propagating these is by means of cuttings, and the quantity of them obtainable will naturally be in proportion to the amount of old plants possessed. Those who grow for market keep a number of old specimens, either planted out or in large pots, from which shoots are taken all the year through, so that young plants in all stages of development are coming on. The India-rubber plant grows rapidly, and if some young, thrifty plants are shifted along, and kept in a growing atmosphere during spring and summer, they will run up to a height of 4 feet by autumn. The tops may then be taken off and struck, and the plants grown along the following season will be furnished with several strong shoots, which will supply a considerable amount of cuttings. The tops make the best, but the growth made the preceding season may be cut up, leaving one eye only, with its attendant leaf, to each cutting, for it is not necessary to cut to a joint, as is done in propagating most other plants. Insert these "eyes" in sandy soil singly in small pots, and plunge them in bottom-heat at any time from the middle of November onwards. In about six weeks they will be rooted, and about the end of February they may be shifted into 2½ pots. By striking them in the winter the growing time will be lengthened by a month or two.—J. C. B.

—— These are principally propagated from eyes by nurserymen, though in cutting up plants the tops are also made use of, and struck in the ordinary way. To obtain a good stock of this Ficus, it is necessary to have one or more large old plants, and where they are grown in quantity, as in some market nurseries, very large stock specimens are often seen planted out at the end of a rather warm house, or in some such position. These become in time very bushy, and every now and then they are cut up rather severely, and stems cut into pieces with an eye, a leaf, and about an inch of the wood to each. These are slightly dried, and inserted singly in either thumbs, or small 60-sized pots, according to the size of the leaf, which is tied upright to a small stick, to keep the cutting firm. Sandy porous soil is used, and the pots are fairly well drained. They are plunged in a bottom-heat of 80 degs. to 85 degs. in a close warm house, where they very shortly make roots; the eye then extends and forms a vertical shoot, and the plants are grown on, still in heat, and potted as required. If the growths employed are neither too young and soft, nor too old and woody, a large proportion of the eyes make plants. Spring or early summer is the best time.—B. C. R.

15812.—**Aralia Veitchii.**—If the plant is cut down in spring it will throw out fresh shoots from the portion of the stem which remains. After cutting down, the soil should be kept on the dry side, as a slight overdose of water at that time will cause the most delicate fibres to perish. A method commonly practised in the case of overgrown Aralias and Dracænas is to make a longitudinal incision in the stem, taking a piece clean out of it, and Mossing the whole of that particular part of the stem. If the Moss is kept quite moist roots will be emitted, and then the head taken off forms a new and dwarfer plant, whilst the lower portions are retained for propagating purposes.—J. C. B.

1574S. — **Rochea falcata.** — This plant requires the same treatment as other succulents—viz., to be potted in a light mixture of loam, peat, and sand, with a little crushed charcoal, mortar rubbish, and leaf-mould, if this is to be had. Pot in spring, and make the soil firm. Water rather freely while growing, when a high temperature will be beneficial, though not absolutely necessary. A light, sunny position, however, suits these plants admirably, and ventilation should at all times be moderately free. Keep the soil almost dry during the winter, and the plants safe from frost. Do not sprinkle overhead, except when growth is taking place.—B. C. R,

15820.—**Violet Comte de Brazza.**—In the west of England this Violet does not flower freely in cold frames during the winter; therefore, it is not likely to do so with you in the midland or northern counties. We have picked a few flowers from it from our frames all the winter, but they have been small in size. The plants are now full of flower buds, so that we hope, with warmer weather, to get a good supply. Undoubtedly, Swanley White and Comte de Brazza are the same. Our stocks of both are now mixed up together, and I can see no difference in growth or flower—in fact, I do not know which is which.—J. C. C.

15882. — **Failure of Hyacinths.**—The condition of the Hyacinths referred to in this case must not be attributed to the management. We have several bulbs in the same condition, and it appears to me that the injury was done before they came into my hands. I believe the injury took place at the close of the growing season, either in the form of dry rot or an excess of moisture reaching the flower spike in its embryo condition. The weak character of the growth of the leaves on these particular plants points clearly to a want of vigour, which I think is sufficient to show that all the energies of the bulbs have been weakened from some cause not connected with the present season's growth. To speak more definitely I should say the injury is caused by the growth being suddenly arrested before the season of activity had closed. Hence the deformed and immatured flower-spike.—J. C. C.

15879. — **Wintering Geraniums and Fuchsias.**—To success in wintering half-hardy plants in a cold frame, three things are essential, viz.: 1. The plants well established in their pots or boxes, and thoroughly hardened by plenty of sun and little water in autumn. 2. Perfect drainage in the site of the pit or frame to allow wet to pass away rapidly. 3. A free and constant supply of air. The lights should always be tilted, even at night, except during frost; they can easily be arranged so as to keep out rain. These precautions will prevent damping, which, as "T. H. P." remarks, is the great enemy. Frost is kept at bay by careful covering; the lamp should be lighted only when the cold is severe.—J. F. R., *Southampton.*

15819. — **Propagating Ferns from spores.**—Replying to "Rusticus's" question, the box should be of wood, not tin, and the rough boxes that are used are 13 inches by 11 inches, and 4 inches deep. The bottom of the boxes, not being waterproof, do not require drainage holes; in fact, these would be a source of danger, as they might allow the extreme heat of the water to ascend too rapidly, and thereby destroy the spores. "Rusticus" should not paint the box, because the hot water would soon remove it. The spores are obtained gratis from friends, and if there is a botanic garden in "Rusticus's" neighbourhood, the curator may be relied upon to help him.—TOM.

—— If hardy Ferns are meant, sift coal ashes, putting them 1 inch thick under a north wall. Sow the spores when ripe, which will be about September. The mode is simple, merely taking the frond and brushing off the dust-like spores with a feather on the smooth surface of the coal-ash. No covering up is needed.—R. GILBERT, *Stamford.*

BEES.

15995.—**Bees in straw hives, &c.** *(Subscriber).*—Honey is obtained from straw hives without destroying the bees by the process called driving, which is performed in the following manner: The hive to be driven has first a little smoke puffed into the entrance to alarm the bees and cause them to gorge themselves with honey; the hive is then turned bottom upwards, and an empty hive placed over it, rim to rim, an iron skewer is next pushed through the edge of the empty hive into the side of the hive to be driven, so as to form a kind of hinge; then the top hive is fixed up like an open lid by two pieces of wood having a nail at each end, or driving irons may be used. The bees, being gorged with honey, are peacefully inclined. The sides of the lower hive are then rapped upon with the open hands, the blows being smart enough to jar the combs, but not sufficiently heavy to risk breaking them from the hive. After a minute or two a loud buzzing is heard, and the bees are seen rushing helter-skelter up into the empty hive. If it be wished to secure the queen, sharp watch is kept while the bees are running up, when she can mostly be picked out from among her crowd of subjects. It is well for the beginner to wear veil and gloves while performing this operation. The driven bees are usually joined to other stocks, or are put two or more lots together into one hive and fed liberally.—To obtain surplus white comb section honey from straw hives, crates of sections are placed upon them, when honey is being gathered plentifully, each section being removed as it becomes filled, an empty one taking its place. The price of strong stocks of bees in straw hives is now 15s. each and upwards. As to the best kind of bee, there is a good deal of difference of opinion among bee keepers. A cross between Ligurian and common black is very good. There are many things offered in the price lists of hive manufacturers and dealers in bee furniture not necessary to the keeper of one or two hives; a vessel for standing honey in to ripen is one of them. It would not be wise to dig the ground around the hives in bright weather, when the bees are on the wing, unless veil and gloves were worn, but in dull, cool, weather it could be done with perfect safety. There are, unfortunately for the bee keeper, many days (even in the height of the honey season) in which bees are unable to leave their hives, through stress of weather.—S. S. G.

15996.—**Condemned bees** *(Alton, Yorks)*—Doubtless the amount of syrup your two hives of condemned bees appropriated in so short a time appears large, but it must be remembered that as they were put into empty hives at the end of the honey season a large proportion of the syrup was used in the manufacture of wax, for comb building, consequently the amount stored in the cells was not so large as might appear at first sight. On the first mild day it would be well to make an examination of the hives. If the bees be found at the tops of the combs, immediately under the quilts, feed at once, as this state of affairs will indicate that stores are nearly, if not quite, exhausted, as bees consume their stores from the lower part of the combs first, and work upwards. If weather does not permit of an examination of the hives, it would be a wise precaution to place a cake of candy upon the frames of each hive, and cover up warm and snug. The bees will consume the candy as they need it. Later on in the season, syrup may be given, sufficient to supply their daily needs, but not in large quantities, lest combs should become full of stores, and the queen be hindered in her production of eggs from lack of sufficient empty cells in which to deposit them. Still, hives in actual need should be fed up quickly, a few pounds at first, afterwards slowly, as above stated. Your feeder appears to have answered well for autumn feeding, but would hardly be suitable for spring stimulation. The kind of hive meeting with great favour among many advanced bee keepers is the combination hive; of great length from front to rear, holding some twenty frames, which are placed parallel with entrance, as in hives of this description stocks can be gradually built up by adding one frame at a time. The frames being placed across the hive, any number can be appropriated to a swarm near the entrance, a division-board at their rear enclosing them, and they can be added to or reduced in number as contingencies arise. When the brood-nest has been formed, a frame of queen excluder can be put behind it, and in rear of the excluder frames of sections can be placed, and the whole closed up by the division board. The sections in this position will be taken to and filled with great readiness, it being well known that bees store their surplus honey, as a rule, at the farthest point from the entrance of the hive, also that very often bees will not work in supers at all. The combination hive meets these contingencies in the readiest way. You cannot, however, do better than follow the teaching of "Modern Beekeeping" in the matter of amateur hive making.—S. S. G.

15825.—**Remedies for thrips.**—Procure half a peck of lime, fresh, and a quarter of a peck of soot. Put the same, well mixed, into a tub; add three gallons of water; mix all well up with an old broom; afterwards fill up the tub with clear water, which should be thirty-five gallons. Let all stand until it clears, then skim it. The mixture should be about the colour of pale sherry. Syringe any kind of plants or fruit trees every evening or afternoon. The soot and lime make the leaves distasteful, and produce a dark green healthy foliage.—R. GILBERT, *Burghley-gardens, Stamford.*

—— The various species of thrips live upon plants and have the power of springing a great distance. We have found that these, like the red spider, are best held in check by the free use of the syringe and clean water, and that the same general conditions favourable to red spider are also favourable to thrips. When they obtain a firm hold on the plants much difficulty is found in getting rid of them, and it is a very great advantage to keep them down as low as possible, and not let them get too strong before they are attacked. *Insecticides.*—The liquid preparation sold for the purpose of killing insects will generally clear off thrips if applied at intervals of about ten days, the successive broods being then killed. *Tobacco.*—Fumigation with Tobacco, Tobacco paper, cloth, or cord, if repeated once or twice, will clear off thrips, but some plants will not stand the smoke. Moderately strong Tobacco water, to which about 2 oz. of dissolved soft soap or Gishurst's compound has been added, makes a good distinctive medium, either for syringing or dipping plants. It should be used in dull weather, and washed off in from twelve to twenty-four hours. *White Hellebore.*—We have never seen this advised, but we have ourselves used it and found it very effectual. We once took charge of a garden belonging to a wholesale druggist, and as the Gooseberries were infested with caterpillars he brought us a quantity of Hellebore freshly ground at his manufactory. As we knew this was really fresh we thought it would probably kill the thrips on some Fuchsias and other stuff, and it had been a question whether it would not be better to burn the plants, for never before had we seen any so infested. We put 8 oz. of powder into a gallon of water, and boiled it for a few minutes, keeping the cover of the pot closed. This decoction we put into about seven gallons of cold water, and dipped the plants at once. The next morning they were well syringed, and the result was the complete destruction of the enemy. We have often since simply mixed an ounce of the powder to a gallon of cold water, and either dipped or syringed infested plants, and always with the same result. *Various.*—Sulphur and clay applied to the pipes or on hot bricks, as for red spider, will kill thrips, as will sulphur dusted on the foliage while it is damp. Snuff or Tobacco powder will also rid plants of them. We have, however, found that a fairly moist atmosphere and liberal frequent syringing will keep thrips away, and therefore they need not be troublesome at any time. A hot bath or immersion for ten minutes in clean water, or soap-suds, or Gishurst water, at a temperature of 100 degs., is also a good cure.—(From "Garden Pests and their Eradication.")—CELER ET AUDAX.

—— Might not the thrips have been introduced with the Cucumber plants? I cannot imagine it possible that they should have been in the fresh soil, as they lay their eggs on the undersides of the leaves of plants, and do not assume a quiescent pupa state and become chrysalides. Try painting the pipes with 1 pound of fresh lime, 3 pounds of flowers of sulphur, mixed with sufficient water to form a thick paint; then make the pipes as hot as possible; the fumes of the sulphur will kill the thrips. This operation should be repeated in a week's time, and again a week later, for neither this method nor fumigation will kill the eggs. The latter remedy does not seem to have answered. Was the house closed properly, and was a proper amount of smoke used? Tobacco smoke is generally an effective remedy. Wash the plants with 1 pound of soft soap, dissolved in two gallons of soft water, and add 1 quart of strong Tobacco water; wash well with clean water before the plant is quite dry. Or try syringing with ¼ ounce of sulphide of potassium in 1 gallon of water. This is said by some to be a good insecticide, and quite harmless to the plants.—G. S. S.

—— Syringing with clean water two or three times a day, or as often as the plants will bear it, and gentle and continuous fumigations with Tobacco, are the best remedies I know to destroy thrips. You should fumigate your house on three successive evenings, then leave off three, and repeat the application the same number of times. If this treatment is persevered in you ought to get rid of the pest. Fumigating with Tobacco will also destroy all the living white fly on your Tomatoes, but it will not kill the eggs or brood. This is how it is you get a repetition of the pest after you have once smoked the house.—J. C. C.

15657.—**What are the best labels?**—The above question is well answered on page 613 by "J. C. C." The Stratford labels are out and out the best, but I think I have a better mode of using them than any of those suggested, as my plan is as near imperishable as anything we are likely to get. I procure rods made of stout galvanised wire, about the thickness of an ordinary round lead pencil; these are slightly flattened at one end, and perforated with a hole just large enough to pass a piece of copper wire through; the rods are then bent, so as to form a hook (thus ⊃), and the label is attached to the rod by a piece of copper wire twisted. The hook forms a convenient handle to insert the rod into the ground at the foot of the Rose bush. The cost is very small, and they can be procured of any of those wire-workers who make the eyes for wiring walls. I use them about 2 feet long, and they cost three halfpence each, but shorter ones can be procured for half this price, and they last for years.—A. J. D.

Garden Stocks.—"D. K." (p. 700) will get excellent seed of East Lothian Stock from Stuart and Mein, Kelso, N.B.—A. Z., *Torquay.*

—— I have had good East Lothian Stocks from Wheeler and Son, Gloucester.—FRED.

TREES AND SHRUBS.

HONEY LOCUSTS.

Honey Locusts are very beautiful trees which people seldom plant. One of the finest specimens that we know near Loudon is a very tall specimen in Professor Owen's garden in Richmond-park, the grace and dignity of which are not surpassed by any tree that we kuow—Fern-like leaves, fine habit, stately trunk, it is indeed a charming object. This is the common variety, Gleditschia triacanthos; but there are various species, and among them that here figured, which is G. Bujoti, rather a new one. We are inclined to think that our readers pay so much attention to flowers that even those who have the opportunities do not care enough for beautiful deciduous trees; the undue place, too, as we think, given to Conifers for many years past, has pushed not only fine kinds but even whole families of importance iuto the background.

A new Weeping Honey Locust (Gleditschia Bujoti).

RHODODENDRONS.

The Rhododendron forms its roots in such compact masses that it is quite safe to transplant later in the spring than is possible with some other evergreens. I do not prefer spring to autumn planting, but none of us are able at all times to do what we know to be the best, and this may be the case with some amateur readers of these pages; therefore, where the planting was neglected in the autumn, it may be done now with every prospect of a fair measure of success being secured, if there is no further delay; or, to be more definite, the planting ought to be completed by the middle of March. Many amateurs are slow in recognising the merits of Rhododendrons as decorative plants. This arises, no doubt, from the fact that they are known to be somewhat particular as to the nature of the soil; but, to a certain extent, this is an errouous view of the case, for they often thrive in places where one would think the character of the soil was altogether unsuitable. So far as my observation goes, the only soils that I would avoid for the better forms of hybrid Rhododendrons are chalk and also that which inclines to clay, as in neither of these staples do I think they will thrive. However, they do in some cases adapt themselves to places where they were least expected to grow, so that I certainly advise all to give them a trial who have not already done so, provided the soil of their gardens does not partake of either of the characters above mentioned. These plants are so well known to thrive in a peaty soil that I need not stop to advocate its selection in preference to all others when it is available. I shall do greater service perhaps in directing attention to other mediums in which they are known to do well. In this respect, perhaps, the most noteworthy is a kind of mellow loam that is quite destitute of any fibrous matter whatever. Such is the character of the soil in which they are grown on the estate from where I write, and in no case have I seen these plants in finer health or longer lived than here. From observation here and in other parts of the country I feel fully persuaded that these plants will do well in many places, providing the staple is naturally fine in its composition—by which I mean that it is necessary that the whole mass be made up of fine particles, for the roots of Rhododendrons are of a naturally fine and delicate nature; they have not the capacity to grapple with hard and crude lumps of earth. Any medium that contains a fair proportion of sand generally suits them, and in many cases they are known to do well in a compost prepared from turfs cut from a pasture field and laid in a heap for some few months before they are used. The Rhododendron is a much more suitable subject for forming single specimens on Grass than the managers of gardens of limited extent appear to be aware. At any rate, we do not often see them so used; yet, when we consider that they are evergreen, and that when in flower they are highly attractive, one cannot but wonder how it is that they are not more oftcu seen in such positions, and their suitability to plant in masses is every where recognised.

In making a selection of varieties suitable to form single specimens it will be necessary to have regard to the character of growth of the different sorts, as some of them are too loose in habit to form handsome plants. Amongst the newer sorts which we have planted for that purpose, the following are taking a compact and suitable form of growth: The Queen, James Mason, and Kate Waterer; of older varieties suitable for single specimens the best are: Blandianum (crimson), Brayanum (scarlet), Delicatum (blush), Lucida (light purple), Mrs. John Waterer (rosy crimson) Minnie (white); these, as a matter of course, are also adapted for massing, but more particularly for planting in the outside row of large beds or lines. Add to these Lady Eleanor Cathcart (bright rose), Ne Plus Ultra (purple), Concession (rose), Rosamond (pink), and Voltaire (scarlet), and the owner will be in possession of a selection second to none that could be made. I can remember the time when Rhododendron beds were made chiefly above the surface, under the impression that the plants could not endure a constantly moist soil; but that view of their requirements soon proved to be erroneous. Then some few went to the opposite extreme, and made the beds as much below the surface, which ended in signal failure. All are now pretty well agreed that, given a suitable soil, these plants do not require different treatment from others; but I advise all who have made new plantations recently to see that they do not suffer for the want of root moisture during the first summer after planting, as they will be likely to do so in long periods of dry weather.

J. C. C.

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* 15801.—**Propagating Sweet Bay.**—Take the cuttings, which may be about a foot long, from the outside of the tree, cutting them off square at the bottom, with a heel, and planting them thickly in nursery rows in a sheltered situation. Should the winter be severe protect them with a little long stable manure, or, what is better, Bracken.—R. Gilbert, *Stanford.*

HOUSEHOLD.

VEGETABLE AND FRUIT COOKERY.—XXXVII.

(By Annie M. Griggs, Edinburgh School of Cookery.)

Pastry (continued).

Rough puff pastry.—This pastry is most commonly used for covering ordinary meat pies. It will also serve quite well for patties and tartlets in common use. The ingredients required are: One pound of good flour, half-a-pound of sound, sweet butter, a pinch of salt, the juice of half a Lemon, and some cold water. Carefully rub the flour with your hand to ascertain that there are no lumps, if it feels at all thick or heavy then pass it through a sieve. Wash the butter in cold water, then press it free from moisture in a soft cloth, put it into the flour, and break the butter when it is covered with flour into pieces about the size of a shilling; mix the salt with these, and make a hole in the centre, into which pour the lemon juice and enough water to mix into a smooth paste with your hand. Make the whole of it into one ball without leaving any pieces sticking to the sides of the basin. Turn this on to a slightly floured board, and with a heavy rolling pin, slightly floured, roll the paste to the length of 2 feet, taking care not to let the roller fall over the edges; lift the paste from time to time, to be sure that it is not sticking to the board. Whenever any flour is sprinkled upon the board or paste, pass your hand lightly over it, so that there may be no patches left on either. When the paste has been rolled to the desired length, fold it in three, as evenly as possible both at sides and ends. Half turn it, so that the sides that were may become the ends, and roll again to the same length, fold again as before, and continue to do so as first directed four times. If at this stage the butter should still be visible the paste must be rolled again. At the last time of rolling let the paste be made rather larger than the dish it is to cover, and not more than half an inch thick.

Beef steak and kidney pie.—Take one pound of good stewing steak, half an ox's kiduey, or two sheep's kidneys, one tablespoonful of flour, one teaspoonful of salt, a quarter of a teaspoonful of pepper, one small Onion, two hard-boiled eggs, about a teacupful of stock (or, failing it, then use water); flatten the steak and cut it into strips about three inches long and one broad; divide the fat into small pieces; remove skin and fat from the kidney, and cut it into dice. Mix the flour, pepper, and salt on a plate or piece of paper; toss each piece of steak in this; lay upon it one piece of fat and one piece of kidney; roll it up, and put each piece as it is completed into the pie-dish, observin that this, like all other pies, should be highest in the centre; parboil the Onion, chop it small, and sprinkle over the top; cut the hard-boiled eggs in slices, and lay them here and there on the meat; pour over these the stock or water. Wet the dish, and lay some strips of rough puff paste round the edges; then cover it over with

paste, and seal it at the edge; make a good-sized hole in the top before trimming the edges; ornament round the edge by slightly pulling the paste with your left thumb, while you cut gashes with a knife in your right hand, about an inch distance between each; brush over the top with a beaten egg, if you have one broken; if not, use some milk. Decorate with leaves of paste, &c., according to taste, but take care to leave the hole free, so that the steam from the meat may escape freely; bake in a brisk oven for the first half hour, then put the dish in a cooler part of the oven for one hour to finish cooking the meat. On lifting it from the oven put a funnel into the hole, and gently pour in about a gill of stock.

Dripping crust. — This is an economical paste, and will serve quite well for ordinary pies and tarts. Great attention must be given to the dripping, that it may be properly clarified before it is used for this purpose, or the paste will be spoiled. This may be done by pouring the dripping when melted into warm salt and water, stir all together, and put aside to get cold; then lift the cake of dripping from the top of the water, scrape away all discoloured parts, which will have sunk to the bottom, and it is ready for use. If the dripping has been kept long, or is in any way tainted, put a piece of charcoal or very dry toast (nearly burnt) into the warm salt and water, and pour the dripping on this. It will help in removing any strong or objectionable flavour which may be in the dripping. To prepare the paste, put one pound of flour into a basin, with 6 ounces of clarified dripping, one teaspoonful of baking powder, half a teaspoonful of salt; rub the dripping and flour together with the tips of your fingers and thumbs until the mixture is of the consistency of bread crumbs; then add sufficient cold water to enable you to mix the whole into one lump, and turn it on to a floured board; roll it out once, and use immediately for whatever it may be required; put it into the oven as soon as possible. Whenever you are using dripping crust prepare everything that you will require, savoury or sweet, before adding the water to the flour. When this paste is to be used for fruit tarts or tartlets add one teaspoonful of powdered sugar, and omit half the salt. Milk used instead of water makes the crust still lighter.

Oatmeal paste.—Four ounces of Oatmeal, four ounces of flour, two ounces of bacon dripping, or finely-minced beef suet, half a teaspoonful of salt, and enough hot water to mix into one lump; turn on to a floured board and knead quickly and thoroughly until the paste is quite smooth; roll out once. Do not use it more than a quarter of an inch thick, or it will not get thoroughly cooked before the outside is burnt; bake in a moderately hot oven. This paste is considered very nourishing, and is generally used for covering pies where the meat or fruit has been previously cooked.

POULTRY.

REPLIES.

15552.—**Incubators as profitable investments.**—To be able to get a fair idea as to the value of incubators, the subject must be studied in all its bearings. The ordinary poultry fancier who keeps a moderate stock of hens, principally with a view to egg production, and only requires sufficient chickens in March and April to replace the annual draft of old hens, will never be likely to use an incubator, no matter how perfect the machine may become. In yards of this description there is no lack of sitting hens at the proper season, and therefore no need to resort to artificial incubation. The most enthusiastic advocate of the latter will admit that the machine would be out of place in such yards as these, unless no sitting hens were kept. I know it is sometimes said that under the old-fashioned system large numbers of eggs are spoiled by the other hens laying with and, in consequence, disturbing the sitters, but I am of opinion that this difficulty is more imaginary than real. Again, it is said that more time is wasted in attending to the wants of the sitting hens than would be required with an incubator containing a large number of eggs. This also I consider to be wrong. I have known farmyards where several hens have been sitting at the same time, and in different parts of the homestead, and eggs have rarely been laid in their nests. Nor has any considerable time been devoted to the hens when off the eggs, but they have been simply fed and allowed to return to their nests when they chose. This treatment, I am aware, is scarcely that which writers recommend, and yet the broods have been large enough to satisfy the most exacting breeder. I readily admit that the hens were good sitters; but birds of whose steadiness there is reason to doubt ought not to be used for sitting purposes. But there are other fanciers to whom a good incubator is invaluable—for instance, those who require very early chickens either for marketing or other purposes. In January and February broody hens are hard to find, and accordingly fetch high prices. Later in the season, too, the demand sometimes exceeds the supply, and hens have to be brought long distances, often to be returned, for some birds refuse to sit in a strange place. It is in such cases, and especially when some hundreds of chicken are hatched, that incubators are good investments. The eggs can be placed in them at any time the breeder thinks fit; he need be under no anxiety as to the strange hen leaving her nest, and as soon as one batch of eggs is cleared away, the incubator is ready to start with another. Of course considerable attention is required during the period of incubation, and the chicks need more care than those brought up in the natural way, but in large concerns this attention and care will be forthcoming, for the extent of the business will permit of the engagement of a reliable person, who shall devote his whole time to the wants of the poultry yard. No one, I take it, would care to invest in an incubator, nor find it to his advantage to do so, unless he intended to use it for more than one batch of eggs in the same season. This, then, means hatching one or two hundred eggs at least. If hens have to be purchased or hired for the purpose a large number must be obtained, and on each there is certain to be some loss. The hens will last for one season only; the incubator may be used for several years, and several times in a season. It goes then without saying that if the business is a large one, and a fair percentage of chickens can be hatched from the eggs placed in the incubator, that the machine will pay its way; if, on the other hand, the fowls are kept (as in the majority of cases they *are* kept) merely to supply eggs and a few young birds for the table, and, moreover, there are plenty of hens ready to sit at the proper season of the year, it would, I consider, be unwise to invest in an incubator.—Doulting.

15997.—**Crossing Minorcas or Red-faced Spanish** *(Mrs. P. J.)*.—No satisfactory result would be likely to follow the cross you mention—rather the opposite, for the White-faced Spanish is the more delicate breed of the two. By all means keep the Minorcas pure. You cannot improve them as egg-producers by any cross. I am unable to help you as regards eggs. It will be far more satisfactory for you to advertise your wants. There is no necessity for you to confine yourself to Ireland. Plenty of eggs are sent across St. George's Channel, and, if carefully packed, and not too roughly handled on the way, may be expected to produce good broods, if fertile and fresh at starting.—Doulting.

15998.—**Pekin ducks with cramp** *(Valentine)*.—I think your ducks must pick up something which disagrees with them, for I never knew birds which were suffering from cramp refuse to eat. I advise you to continue the warm baths, and bandage the legs with flannel strips. Then place the bird in a warm house, with a gravel bed covered with soft straw. A teaspoonful of Parrish's chemical food may be given twice daily. Nutritious food should be supplied to the whole stock, and scraps of meat occasionally mixed with the meal. Strong ale added to the food in the same way will also assist the ducks. Another remedy is to rub the legs with hot oil or turpentine, and keep the birds warmly housed at night. Although your letter does not lead me to suspect there is anything wrong, I cannot but think there is something at fault with the management somewhere. Prevention is better than cure, and if you take care to feed well during cold weather, and at intervals add some meat or ale, as advised, I believe you will be troubled very little with cramp among your stock.—Doulting.

15999.—**Fowls in confinement** *(E. C., Brighton)*.—Six birds, or seven at the most, are all that your run can accommodate, and if these are kept considerable care will be necessary to maintain them in health. The yard must be frequently swept, and green food and water plentifully supplied; also some gravel and a dust bath. I should be content with four Minorcas or Andalusians. Both breeds are non-sitters and excellent layers.—Doulting.

16000.—**Niger seed.**—A seed so called was given me the other day for a canary. What is it, and is it to be given as food or as medicine?—J. H. B.

16001.—**Breeding budgerigars.**—"Ignoramus is anxious to breed budgerigars, and will feel obliged by any information respecting them. Will any reader say how to distinguish male and female birds, and whether they require any particular sort of nests?

CALCEOLARIAS (herbaceous), choicest strains procurable, strong plants, 1s. 6d. doz.; extra strong, 2s. 6d. doz.; Margarites, yellow or white do., 2s. doz., free; Nicotiana affinis, 2s. doz.; Double Petunias, choice named sorts, 6 for 2s.; 3s. 6d. per doz.; Heliotropes, double scarlet Tropæolums, Verbenas (very good), 1s. 3d. doz., 7s. 100. Lobelia, best dark blue, 3s. 100. Cineerarias, finest strains, 1s. 3d. doz. All strong plants, free for cash. Send for Special List, free on application.—CRANE & CLARKE, Hillside Nursery, Haddenham, Cambs.

CHRYSANTHEMUMS.—Strong rooted cuttings from a superb collection, 1s 6d. doz. Early-flowering Chrysanthemums, the cream of this class, such as Mdme. Desgrange, Virginia, La Vierge, Pompon, Toulousaine Predk. Peele, &c., 2s. doz., free.—CRANE & CLARKE, Haddenham, Cambs.

TRAINED FRUIT TREES FOR WALLS.—Six well-grown trees in choicest varieties that will soon come into bearing, as follows, carefully packed and forwarded on receipt of 21s.:—1 Royal George Peach, 1 Eruge Nectarine, 1 Moorpark Apricot, 1 Greengage Plum, 1 Ribstone Pippin Apple, 1 Jargonelle Pear. Catalogue of fruit trees, post free.—GEO. COOLING & SONS, the Nurseries, Bath.

HARDY CLIMBING PLANTS IN GREAT VARIETY.—Clematis, Honeysuckles, Ivies, Roses, Magnolias, Wisterias, Virginian Creepers, Jessamines, Passion-flowers, &c. Priced List free.—GEO. COOLING & SONS, Bath.

GRAPES THE FIRST YEAR.—Extra strong fruiting canes of Black Hamburgh, and other vines, that will bear four or five bunches each this season, at 10s. 6d. each; smaller size, 7s. 6d.; strong planting canes at 3s. 6d. each. List post free.—GEO. COOLING & SONS, The Nurseries, Bath

MARECHAL NIEL and GLOIRE DE DIJON ROSES, extra strong plants with long shoots for immediate effect, will flower freely in conservatory this spring, price 2s. 6d., 3s. 6d., and 5s. each.—GEO. COOLING & SONS, Bath.

HARDY CLIMBERS.—Clematis flammula, white; Blue Passion Flower, Japanese Honeysuckle, Old English ditto, White Jessamine, Queen of American Blackberries, Periploca, Vinca elegantissima, Cotoneaster, Pyracanthus (red berried), Virginian Creeper, New Veitchii (clings to wall), Ivies, and Eccremocarpus. All good strong established plants, 2 and 3 years old, 1s. each; any three for 2s. 6d., carriage free.—S. COOPER, Hadleigh, Suffolk.

STRAWBERRIES, first year, strong plants.—Sir Jos. Paxton (early), British Queen, President, and Elton Pine (late), 3s. 6d. per 100, carriage free.—S. COOPER, Hadleigh, Suffolk

THORN QUICKS, 12 to 18 inches high, 10s. per 1,000, 9os. per 10,000; Gooseberry and Currant bushes, 4 years old, strong, 3s. 6d. per dozen, smaller plants, 1s. 6d. dozen; Raspberry Canes, 1s. dozen, 5s. per 100.—S. COOPER, The Nurseries, Hadleigh, Suffolk.

RHUBARB, good roots, Early Albert and Victoria, 2s. 6d. dozen; Seakale, good roots, 1s. and 1s. 6d. dozen; Asparagus plants, Connover's Colossal, 2 years, 2s. 6d., 3 years, 3s. 6d. per 100; Horse-radish, sets, 8d. dozen.—S. COOPER, Hadleigh, Suffolk.

CHRYSANTHEMUMS.—100 Cuttings in 100 sorts, 5s.; 100 cuttings in 25 sorts, 3s.; 100 rooted cuttings, 4s.; 24 Coleus cuttings, 1s. 4d.; 24 Fuchsia cuttings, 1s. 4d.; 24 Geranium cuttings, 1s. 6d. All post free.—W CULLINGFORD, Forest-gate, E.

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GARDENING ILLUSTRATED.

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FAVOURITE FLOWERS AND HOW TO GROW THEM.—IX.

THE CALCEOLARIA.

PERHAPS this may be considered the most showy of our greenhouse plants that may be freely raised from seeds. It would not be fair to place it in competition with the Cineraria, although as an ornamental plant it would stand its own even against that useful plant, if it flowered at the same time. It does not do this, but comes into flower as the Cinerarias go off. About a quarter of a century ago the Calceolaria had been brought to a very high state of perfection, and there were not wanting many eminent horticulturists who satisfied themselves with the belief that it could not be further improved. By comparing the flowers of fifty years ago figured in "The Floricultural Cabinet" for 1835 with those in "The Florist" for 1848 the advance, even in 13 years, will be seen to have been very striking indeed, and it affords satisfactory evidence of the efforts made to improve them. It is not generally known that the best seedlings at that time were selected and propagated by cuttings, so that the amateur who fancied such plants could select particular varieties under names. Between the year 1835 and 1848 Calceolarias were popular exhibition plants, and this, no doubt, gave a certain stimulus to raisers of seedlings. Someone writing in the first volume of "The Florist," says: "Some years back from 1848 Calceolarias formed an important feature of the metropolitan exhibitions, but of late years they have lost their prominent place, and consequently declined in public favour." I remember a time a few years subsequent to this when I had to do with propagating named varieties of Calceolarias for exhibition. The largest proportion of them had well formed flowers of a rich yellow colour and well spotted. Some selfs and blotched varieties were amongst them. Indeed one of the raisers of seedlings at that time is yet amongst us—Mr. Kinghorn, of Richmond, then gardener to the Earl of Kilmorey. Another raiser was Mr. Holmes, Sudbury, Derbyshire. Many good seedlings were also raised by Dicksons, of Edinburgh. One characteristic was the very tall growth of the plants when in flower; it did not detract from the effect produced when they were formed into groups, nor were they less effective as conservatory plants. Those florists who have paid attention to the culture and improvement of the Calceolaria during the intervening years must have paid considerable attention to the selection of dwarfer growing varieties, and their efforts have been very successful indeed. The plants are now of a very much improved habit. They produce a larger head of bloom; the flowers are larger in size, but there is little, if any, improvement in form—it is in colour that the more recent varieties excel. The colours are very rich, and the spotting distinct and beautiful.

PROPAGATION.—Very few persons take any pains to propagate Calceolarias from cuttings now. They find it much easier to raise them from seeds, and a very simple process it is. The seeds are very small indeed, so that they must not be covered over very deep. Our plan is this: The pots or pans in which the seeds are sown we fill to within an inch of the top with ordinary potting soil; over this half-an-inch or more of finely-sifted sandy soil is placed. Make it quite level, sow the seeds thinly over this, and merely sprinkle some white sand or very fine sandy soil over the seeds. The best time to sow it is from midsummer to the end of July, and the best place for the seed-pots or pans is in a frame or hand-light behind a north wall. This can be tested by placing any old plants that are going out of flower in such a position, and leaving them there until the seed-pods burst; the scattered seeds vegetate in abundance without any glass protection. It is necessary to keep the soil in the pots and pans in a uniform moist state, even before the seeds vegetate. Should the soil become over dry while the seeds are in process of germination most of the incipient growths will be destroyed. The tiny plants must be pricked out in pots or small pans as soon as it is possible to handle them—a dozen plants in a sixty-sized pot. When the leaves of these tiny seedlings have grown sufficiently to almost hide the soil, they must again be potted out, either singly into thumb pots, or three plants in a sixty. The cultivator must be careful that they neither suffer for want of water nor are allowed to remain so long in the small pots that they become pot bound. The plants may remain in frames until quite the end of September, and they succeed best if the back of the frame is towards the south; in order that plenty of air may be admitted, a brick on edge should be placed at each corner on which the frame may rest, and besides this the lights should be tilted back and front. The Calceolaria is a much more hardy plant than the Cineraria; but it is not good management to leave the plants in frames after there is danger of frost. They may be removed to any coolhouse sufficiently heated to keep frost out. A low pit answers well. During the late autumn, and also the winter months, they grow very rapidly, and must be potted on as they require it; the largest plants will flower in 8 inch or 9-inch pots; those of a smaller size in 7 inch. When the plants have made a centre stem an inch or two high, pinch the point out of it, above the first pair of leaves; this pinching is necessary to form a good bushy specimen, but no more is required. The plants will grow apace during the winter months, and must have sufficient room to fully develop themselves; if too much crowded the large outer leaves, or, at least, a portion of them, become yellow, and have to be removed. There are no plants more liable to be attacked by green fly or more easily injured by them. They spread on the under sides of the leaves with great rapidity, and cause the leaves to curl up; and when this happens, farewell to the prospects of good specimens. The soil they require is the same as has in previous numbers been recommended for Cinerarias and Pelargoniums; indeed, the treatment of Cinerarias and Calceolarias is very much alike.

LAYERING.—I made some allusions to propagating the best varieties from cuttings; they may also be increased by a process of layering. When the old plants are cut down after flowering, about Midsummer, growths begin to form at the base of the stems, and between these growths and the main stem roots are formed, if any sweet, turfy loam is placed in contact with them. When these roots have taken hold of the turf, the stem may be severed with a sharp knife, and the plant, with the turf attached to the roots, is planted at once into a proportionate sized pot. The cuttings form roots slowly in close hand-lights behind a north wall. Modern growers will say: Why trouble to propagate a good variety?—far better to save seeds from it, and go on producing and selecting better varieties. I admit there is much to be said in favour of this, and the pleasure of watching the development of the flowers upon seedlings of a good strain is very great. It would scarcely be fair in this place to recommend one strain of seed in preference to another. It is sufficient to observe that the principal seed houses spare no expense to select the very best varieties from which to save their seeds, and by saving seeds for their own sowing from a few of the very best in a large collection, improve the strain year by year.

No allusion has been made to the treatment required when the flower stems appear; nor is it necessary to say much; the simple details of placing sticks to the stems as they are required, and regulating them so as to furnish the entire surface of the plant, anyone who attempts to grow plants will speedily find out for himself. The most important thing is cleanliness; green fly must be kept off, and no plant must be allowed to flag for want of water. When the pots are well filled with roots manure water is necessary, but it must be given weak; and it will cause the flowers to have a richer glow, and the leaves a rich dark green, which contrasts so much better with the gorgeous colours of the flowers than the sickly yellowish green of badly grown plants. J. DOUGLAS.

15933.—**Plant for sitting-room window.**—Would not Aspidistra lurida variegata meet "C. N. P.'s" requirements? Its flowers are nothing, but for foliage it is unsurpassed, looks equally well at all seasons, and is of the easiest culture.—J. F. R., *Southampton.*

15881.—**Growing Indian Corn.**—A good way of growing Indian Corn is as follows:—Sow the seed the latter part of May in rich, well-dug soil, in hills 2 feet 6 inches or 3 feet apart each way, five grains in each hill. As soon as the plants are about 4 inches high thin to one or two plants per hill, hoe frequently and deep, and well water in dry weather. "Quarantain," sold by Sutton and Sons, is a good sort to grow in England. Pop Corn is a small variety, and the hills do not require to be nearly so far apart.—KENTUCKY.

—— I take it that "Bucklebury" wishes to grow a little of this to use as a vegetable, not as an ornamental plant in the garden. "Pop Corn" is a small variety used for "popping" when ripe and dry only. That which he tasted is known as "sweet corn," and is cooked when the kernels have swollen but not ripened. When ripe the kernels are pale in colour, round and wrinkled—quite different from the deep yellow and plump seeds sold in the corn shops in England. The round seeds would be known in America as "Northern Corn," and the long, flat variety as "Southern Corn."—A LONDON YANKEE.

OUTDOOR PLANTS.

CLOTHING WALLS.

A garden of creepers! Yes, why not? If any one likes to carry out the idea, a most interesting garden could be made of nothing but creepers, twiners, and climbers. Not a garden of trim formal beds, I grant, as the growth of such plants could not—in fact, should not—be kept within set bounds. What groups and clusters of climbing Roses, Honeysuckles, Jasmines, Clematis, and Ivies one might possess in such a garden! One of the prettiest effects I have seen lately was a Larch with a stout plant of the common sweet-scented Clematis Flammula, or Virgin's Bower, festooning and hanging about its graceful branches. But, apart from the garden of creepers, in the many phases of gardening which the future may develop, creepers are destined, I think, to be more used. The common way of clothing buildings or walls is to plant a heterogenous mixture of creepers, and allow them to blend as they will; the strong growers rambling up to the top of the wall or building, and the weakly plants remaining to fill up the base, being occasionally crowded out during the struggle for life which ensues. For old-fashioned houses this mixture is not inappropriate, as there is a degree of freedom about it which seems to accord with the rambling character.

In a village not far from where I am writing there is a house covered with Pyracantha, and it is without exception the most presentable in the place. Every passer-by stops to look at the heavy masses of bright crimson berries nestling among the dark green foliage. The whole front of another house is covered with the small-leaved gold and silver Ivies, and a very pleasing effect is produced with very little labour, as but little pruning is required, the growth being naturally slow and hugging the wall closely. Another interesting wall plant is Veitch's variety of the Virginian Creeper, its metallic-tinted, close-growing foliage being even more effective than the gold and silver Ivies, with which it associates so well.

In thinking over this matter of the creepers and their uses, those who have not made a study of them may be aided in the consideration of their merits if they group them according to the season in which they are most effective. Cotoneaster microphylla and C. Simonsi are desirable wall plants for winter effect, as well as for training up a pole or planting on the top of a mound of rockwork. Escallonia macrantha, Berberis Darwini, and B. stenophylla are useful to cover walls up to 12 feet or 14 feet. Chimonanthus fragrans should be planted for the sake of the delicious spicy scent of its somewhat inconspicuous flowers in winter, when the foliage is down. Garrya elliptica produces its long catkin-like flowers freely in winter, and will grow from 20 feet to 30 feet high. Ligustrum japonicum (Japanese Privet) is a good wall plant, as is also the Laurustinus. Euonymuses are beautiful, the small-leaved variegated kind (radicans) being specially effective for covering low walls, to which it clings somewhat after the manner of Ivy. It grows slowly, but the effect is very good when the wall is covered with it. Eleagnus pungens variegata, and in warm situations Photinia serrulata, may be so employed. In sheltered places in the south of England, Magnolias are grand-looking plants in winter, their large leaves being so noble; but in many places they require to be protected in severe weather, and therefore should not be used for winter effect.

For the spring we have also a long list. Clematis montana grandiflora, Wistaria sinensis, and alba, the white form, are good for covering high walls, or for training over anywhere where rapid growing creepers are required. Forsythia viridissima and Cydonia japonica are plants of lower growth, but are both very desirable for making out the outlines of panels, or for covering the face of a buttress or pier. The yellow flowering Jasmines, chrysanthemum and revolutum, flower early. All the Vincas are useful for covering low walls, especially elegantissima, and they thrive well in a north aspect; and lastly, the spring offers us a few Roses, for the old pink China or Monthly is the earliest as well as the latest to flower, and Gloire de Dijon generally opens its first flowers early in May.

But it is in the summer when creepers are at their best, for then the Rose, the Clematis, the Honeysuckle, the Magnolias, and the Jasmine are in season; and what visions of sweetness and beauty the mere mention of their names conjure up! Roses alone are capable of transforming the most common-place buildings we see around us by hiding their defects. Besides the plants named for summer there is the Passion Flower (Passiflora cœrulea), but it is only fit for sheltered places, as it is not quite hardy in our coldest seasons; still, if the base of the plant is sheltered with some dry Fern, it will spring again from the base. The Stauntonia latifolia is a very rapid-growing creeper in the south of England. The Birthworts—Aristolochia Sipho and A. tomentosa—are good and useful climbing plants, the last-named having silvery leaves. Then for warm sheltered places the Ceanothuses are very beautiful, producing freely blue flowers of various shades. And, besides the hardy creepers, a long list might be added of summer or annual creepers, bright and effective, such as the Tropæolum, Lophospermum, Mauraudia, Convolvulus, and Ipomœa, in many varieties. In the autumn there is also much beauty of leafage and fruit or berry, if there is less of blossom. The Virginian Creepers are then in all the splendour of crimson and brouze; and the Japanese Honeysuckle is resplendent in its network of gold, with the bright berries of the Pyracantha and the Cotoneaster—most fitting and appropriate autumn decorations. Again, hardy climbers in gardens should, for the most part, be what they are in their native places, trailing over trees, or shrubs, or stumps, or banks, and, in addition, over such artificial supports as railings, rustic work, &c. No plant bears repression and continual pruning so ill as a vigorous climber. In that way, moreover, its beauty can rarely be well seen. The evergreen or other shrub that does not climb is often more amenable to training on walls, as, for example, the evergeen Euonymus, the Pyracantha, and certain evergreen Barberries. The value of the hardy native American and other Vines for covering wall-surfaces, must not be forgotten. We have seen them clambering up forest trees, spreading into huge masses of fine foliage on the ground, and sending out long arms to find out the nearest trees. They clothe with equal and exquisite grace the cottage wall. The flower gardener who works with creepers and trailers cannot well turn his back upon such a rich resource.—*English Flower Garden.*

Winter Aconites.—It is perhaps worthy of note that the only plant that gladdened the eye during the last dreary month was the little yellow Winter Aconite, which persistently bloomed with apparent indifference during hard frost, snow, sleet, and rain. It is remarkable how very little one sees of this hardy plant, which blooms, as I have said, regardless of all weather, and at least a month before the Snowdrop ventures forth. Planted in masses it is very effective, and in window boxes it is a valuable acquisition. It does not seem particular as to soil or situation, as it blooms with me in a damp, shady spot, and heavy soil, also in a sunny place with light soil; the latter, with plenty of leaf-mould, no doubt suits it best. For brightening a town garden during severe winters this is to be depended on, which is more than I can say for the Christmas Rose (Helleborus niger).—J. Waller, *Brockley.*

Himalayan Poppy (Meconopsis nepalensis).—This fine plant is seldom grown, even in gardens containing large collections of hardy plants. As either a rockwork or border plant it is very striking, both when in or out of bloom. When growing it is extremely ornamental, and looks almost like a beautiful bronze cushion from 12 inches to 20 inches across. It sends up a flower-stem from 2 feet to 2½ feet high, according to the strength of the plant, and it is furnished with large sulphur-coloured, saucer-shaped flowers, from 3 inches to 4 inches across. Being a biennial, it should be sown in spring in a pan and placed in a cool frame. When large enough to handle, the young plants should be pricked off into single pots, grown on during the summer, and planted out in autumn where they are intended to bloom. It is very hardy and will grow well in any good garden soil if well drained.—P. T. S.

LARGE-LEAVED SAXIFRAGE IN THE WILD GARDEN.

These fine plants are strong and vigorous enough to take care of themselves in the poorest as well as the richest soils, and those who mass them in groups and colonies in the wild garden will find their reward, not merely in the handsome distinct flowers, but also in the fine foliage, which retains its colour and form all through the winter, and occasionally becomes of a very fine brownish-purple shade. Of the Megaseas, or large leaved Saxifrages, there are about a dozen species in cultivation, and all, with the exception of M. purpurascens, will grow without much care.

Large-leaved Saxifrage in the wild garden.

Pancratiums.—The only really hardy species of this genus of bulbous plants is the South European (P. illyricum), which grows from 1 foot to 2 feet high, and bears in summer a stout flower stem, terminated by numerous umbels of deliciously fragrant and attractive large white blossoms. It thrives best in a warm exposed border of sandy loamy soil, well drained. During winter the bulbs should be protected by a covering of litter or similar material. The plants are better for being transplanted about every third year; this operation should be carried out in autumn, as soon as the leaves are decayed, and the bulbs should be replanted immediately. The Pancratiums may be propagated by offsets from the parent bulbs. The hardiest of the other species are P. parviflorum, maritimum, littorale, and rotatum; but these require more attention, and only succeed well in exceptionally mild localities, and on warm soils. They are best grown in a frame or cool greenhouse.

Christmas Roses.—I send you to-day (Feb. 12) some Christmas Roses from one of two plants, each about 2 feet 6 over, in which the mass of blossom is, even to me, simply "amazing"

in the fullest, soberest sense of the word. I cannot count them—I cannot part them sufficiently to do so—but, putting the hand between some, there is visible an under crop of buds as marvellous as the upper open flowers. I never saw such a mass of bloom on any kind of plant; the leaves, bright and glossy, cannot hide, but just veil, the heap of snow. These make 78 flowers cut since February 1st off the two clumps.—H. A. ASTELL, *Dorchester.*

REPLIES.

15866.—**Begonia planting in small border**—Weltoniensis (pink), Semperflorens, (white), Frœbelli (scarlet), Stem of Beauty (red thick substance), Royal Monarque (double fiery scarlet), Marchioness of Salisbury (bright crimson red, fine).—W. T. T. WIDDOWSON.

15930.—**Plants for porch.**—The best hardy plant for a hanging basket in winter would be a variegated Periwinkle, Vinca major, if the basket be large, V. minor, if small. The leafage and habit are seen to the best advantage in such a position, and they would flower before summer plants are ready.—J. F. R., *Southampton.*

15604.—**Plants for grave in shade.**—"M. T." would suggest "Redcap, Staines," that the Sweet Woodruff would be suitable for the grave, or the small Ivy that grows under trees; but the Woodruff, with a few bulbs of Snowdrops and Crocus dotted about, would be very pretty and require but very little attention.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary for week ending March 6th.

Potting Maiden-hair and other Ferns, and dividing some to increase stock. Potting several dozens into 5-inch pots, that size being useful for room and table decoration. Dividing several plants of Adiantum Farleyense into single crowns. Potted and placed in heat another batch of Gloxinias and Achimenes. Put in cuttings of a number of soft-wooded stove and greenhouse plants to be grown on for winter blooming, including various kinds of Begonias, especially B. insignis, of which we want a large stock, as dozens of young plants in 5-inch pots make a great show. Justicia speciosa, Eranthemum pulchellum, Thyrsacanthus rutilans, Torenia asiatica struck now make nice blooming plants in a short time if well done. They do best in a pit, after being rooted and potted off. Put in cuttings of bedding plants, such as Verbenas, Heliotropes, Petunias, &c. Also sowed seeds of tender annuals for bedding, including Phlox Drummondii, Chinese Pinks, Dwarf German Scabious. Put in a further batch of Pelargonium cuttings, and set the pots on boards over the hot-water pipes in the vinery. They strike quickly in such a position, a dry heat suiting them better than a moist hot-bed, as in the latter position they damp off. Potted off the first-struck Fuchsias—these will make nice plants in summer. They must never become pot-bound till they are as large as we want them. Disbudding and tying down vines, stopping the young shoots two leaves beyond the bunch. Giving the inside borders of both vineries and Peach-house another good soaking of chilled water, having previously sprinkled enough of artificial manure on the surface to lightly cover it. Top-dressed Cucumbers in Cucumber-house, using rough turfy loam and manure, with just a dash of artificial manure mixed with it. Planted Cucumbers in pit—Telegraph and Tender and True only kinds grown. Set the blossoms of Strawberries with camel's-hair pencil in forcing-house, going over them every day about noon. Collecting materials for Mushroom-bed in open air. Made up a hot-bed in pit for French Beans. Planted out Potatoes on a hot-bed in a frame. The sets had been previously started in boxes, and were two or three inches high; the hot-bed was only a slight one of leaves. This is a successional crop to come in after the earliest. Potted a last batch of Lily of the Valley from reserve bed. Brought on more Strawberries from cold frame to forcing-house. Planted Huntingdonian and Hundred-fold Peas. Green Windsor Beans for succession. Planted Myatt's Prolific Potato, to succeed the old Ashtop on early border. Sowed the main crop of Celery in boxes, and placed in a slight hot-bed; the sorts being Turner's Incomparable White, Carter's Incomparable Crimson, and Sutton's Sulham Prize Pink. Sowed Early Horn Carrots, Radishes, and Lettuces on warm border. Pruning and training Peaches and Nectarines on south wall. Turning over gravel walks in flower garden. Rolling lawns. Pruning shrubs that were becoming too large for situation. Looked round the tree guards in orchard, some of which needed reparing.

WORK IN THE TOWN GARDEN. A GRAPE-VINE is about as good an occupant for a town greenhouse as can be found; and, indeed, this valuable and always acceptable subject will, like its distant relation the Virginian Creeper, not only grow, but flourish in any situation, however smoky and confined. But in the case of the vine, whether in or out-of-doors, a sufficiency of sunshine to enable the fruit to set and ripen properly is an absolute necessity where something more than mere growth and leafage is desired; still, there are many situations where even the abundant and beautiful leafage is far preferable to the monotonous aspect of a bare wall, fence, or post, and in any such cases either of the subjects under consideration may be planted with a certainty of success. The first week in March, or, indeed, any time during the month, is a good time for planting either of these, Ivy, or any other hardy creeper of a similar description. Where foliage only is desired, the Virginian Creeper, either in its common form or the small-leaved, close-clinging variety known as Ampelopsis Veitchii, is perhaps more suitable, as a rule, than the Vitis, or common vine. The common Virginian Creeper also usually establishes itself more quickly than the "Veitchii," and also grows somewhat more rapidly, at least during the first two or three years. In purchasing this plant it is well to discriminate between two distinct varieties, one of which has smaller, neater foliage, with a short-jointed growth, and the shoots deeply tinged with pink, towards the points particularly, while the other has a more coarse and a looser habit, with the shoots of a constant greenish-yellow colour. Of the two, the former is much to be preferred, especially for covering wall-spaces, &c. But on a sunny south wall, or trained beneath the roof of a cool or even unheated greenhouse in a warm and sunny position, a good hardy Sweetwater Grape for the former position, or a Black Hambro' or other suitable variety in the latter, will, with ordinarily careful treatment, not only grow, but produce a very fair crop of nice eatable Grapes. Large handsome bunches, or anything fit for competition with country-grown produce, can, of course, hardly be expected, but very fair-sized berries, of good flavour and well ripened, are within the reach of anyone possessing a few feet of glass in a town garden.

No great amount of success can be expected, however, from a vine or vines in a house filled as well with a miscellaneous collection of pot plants, and particularly if these are, as is too often the case, in a neglected and unhealthy condition. During the winter, while the vines are at rest, this is a matter of no consequence; and if they are kept clean, and not too much crowded, a large number of plants may be kept in the house without detriment to the vines until these are as far advanced as to be nearly in bloom. After this point, however, and up to the time that the fruit is all, or nearly all, gathered, or at least ripened, the house should be either entirely cleared, or at most only a few plants allowed to remain, and these, as well as the whole interior of the house itself, must be kept scrupulously clean and neat. With care, good Grapes may be grown in an entirely unheated structure, provided that this is on a south aspect, and receives a large amount of sunshine, but I have found that a little artificial heat is very beneficial in such cases, and also that it is advisable to start the vines into growth rather early—say about the present time—so that the fruit may be ripening while the sun still retains some amount of power; for after the middle of October, at latest, sunshine in town gardens is apt to be but a sickly imitation of the real article. The routine of treatment, pruning, stopping, thinning, &c., is much the same as is ordinarily practised, and the great enemy to be guarded against is mildew, which is chiefly to be prevented by the maintenance of a warm, buoyant, and, in the later stages at least, somewhat dry atmosphere, with free ventilation, and also by maintaining the canes themselves in a healthy and vigorous condition, and the free use of flowers of sulphur directly the pest actually makes an appearance.

SPRING FLOWERS.—A few of the earliest spring-flowering roots and tubers are now beginning to look bright. The earliest of all are the bright golden stars of the Winter Aconite, which should now be in full bloom. This looks best planted in turf, and so, indeed, do Crocuses, Snowdrops, &c.; these last, the "Fair Maids of February," ought also to be peeping up here and there in sheltered corners. The wild blue Squill, or Wood Hyacinth, is, strangely enough, a capital town plant, and may be planted in quantity if roots can be obtained. Common Primroses, in a cold frame, will shortly yield a quantity of bloom. B. C. R.

GLASSHOUSES.

SINGLE PETUNIAS.—So much improvement has been effected in the single varieties of the Petunia in recent years, that plants from seed of a good strain may now be relied on to produce more effective flowers than were obtainable from the named kinds in times past. They keep on flowering as long as growth is made, but to have seedlings forward enough to bloom early in summer it is necessary to begin early, so as to get the plants strong and large enough to make a good display. Seed should be sown at once. All quick-growing plants of the nature of these Petunias, require the seed to be sown in light rich soil, such as fine-sifted loam and well-decomposed leaf-mould, also sifted, to which must be added some sand. Compost of a light nature such as this admits of the seedlings being taken from the seed-pan when large enough to pot, with so little breakage of the roots that they do not receive any check; whereas if the soil in which they are sown is heavy, many of the best feeding fibres get broken. For the seed in question, fill the pots to within about an inch; after the surface has been pressed moderately firm and quite smooth, distribute the seeds about an inch apart, cover with as much fine soil as will just hide the seed, pressing it down a little. In putting in the seed of such plants as these a mistake is often made by sowing too thickly, the result of which is that the little plants are so crowded before they are large enough to pot that they are drawn up weak and puny, and it takes them several weeks to get out of this condition. Stand the pans in an intermediate temperature, putting a sheet of glass on the top of them. This, as before advised in sowing seeds of a like description, should always be done, as it keeps the soil from drying, so that little or no water may be required until the seed has vegetated, as when water has to be given there is danger of some of the seed being washed down too deep. As before said, an intermediate temperature is the best to place the seeds in, but where this is not available a greenhouse will answer.

COCKSCOMBS.—Formal in shape, and devoid of elegance or graceful habit, as this Celosia is, it nevertheless is a favourite with many. But where its cultivation is attempted, the first essential is to secure seed of a good strain—that is, such as do not grow coarse and tall, or produce lop-sided or unshapely heads, as seed from these will almost invariably result in plants that come so deformed. To have the plants in bloom moderately early in summer the seed should be put in at once; an intermediate temperature is necessary to raise them in, or that of an ordinary stove, as the plant is a tender exotic that requires a good deal of warmth to grow well.

GLOBE AMARANTHUS.—This old-fashioned annual is one of the most useful summer decorative subjects for a small greenhouse, and there are many positions in even a large conservatory where its bright crimson flowers are effective. Not the least of its merits is the length of time that the flowers remain fresh and in good condition. Seed sown now will produce plants that will keep in good blooming order for six or eight weeks during the summer. This, like the Cockscomb, requires to be raised and grown on in warmth until the plants are in flower. The white variety is also worth growing.

EGG PLANT (Solanum ovigerum).—This singular annual, with its large, egg-shaped fruit, used to be much in favour with amateurs who had a liking for curious plants; and it may yet be effectively associated with flowering and small-growing, fine-leaved subjects in greenhouses and conservatories during the summer time, when there is much less in the way of bloom than earlier in the season. Seed should now be sown and placed in heat; as soon as the plants are up keep them close to the glass, so as to secure a stout, robust condition of growth.

TORENIA ASIATICA AND PULCHERRIMA.—These pretty summer bloomers are among the best basket plants that do not attain a large size. They are alike suitable for small or large houses. Although warm stove plants, an intermediate temperature will answer for them during the summer. Their natural disposition to bloom is such that, after the plants have got fairly established, they produce flowers from every bit of growth made. The distinct form and colour of the flowers is not the least attractive property they possess. Seeds sown now and treated as advised for the heat-requiring plants above-named will soon vegetate, when they should be potted singly, the shoots stopped, and grown on in the stove, with additional root-room as needed.

PROPAGATION OF AUTUMN AND WINTER-BLOOMING PLANTS.—It is time now to see to the propagation of most of the plants that are grown annually from cuttings for winter-flowering, as when struck in good time the

stock has a chance to attain size and strength to bloom well.

Aphelandras.—Of these A. cristata and A. aurantiaca Roezlii are among the most beautiful. The former blooms in autumn, remaining a considerable time in flower. It answers well in either a small or a large state, spring-struck cuttings producing flowers equally as freely, proportionate to the size that the plants have attained, as older specimens that have been headed back after blooming for several years in succession. A. aurantiaca Roezlii is generally found the most useful in the shape of examples grown in five or six-inch pots. In this state its bright-coloured flowers, set off with ample foliage, are very effective. Cuttings of both these plants should be composed of shoots about four or five inches long, taking them off with a heel, and putting them singly in small pots. Treated in the ordinary way, in a brisk heat, confined under propagating glasses, they will root in about a month.

Eranthemum pulchellum.—This is one of the few blue-flowered plants that bloom in the winter months, and is one of the freest-flowering subjects grown. Every bit of shoot, from the smallest to the strongest, will produce a spike of its cheerful-looking blossoms. It strikes readily in a brisk heat, treated as advised for the Aphelandras.

Euphorbia jacquiniæflora.—The earliest bloomed portion of the stock of this plant that has been kept in a brisk heat should now have made plenty of young shoots that will be in right condition for striking; they are best put in when from five to six inches long. In all cases it is necessary to take the cuttings of this plant off with a heel—if this is absent a larger number usually fail to make roots than succeed, as they damp off through want of solidity at the base. They are best put in small pots filled with sand. The temperature in which the cuttings are to be struck should be quite as high as that in which the plants that have produced them have been kept; in fact, this may be taken as necessary with cuttings of all plants grown in heat.

Thomas Baines.

Outdoor Garden.

The flower garden will now require a good deal of thought to be given to it, especially as regards the preparation of the stocks of plants for summer decoration. Cuttings of anything not held in sufficient quantity will strike freely now in light sandy soil, either in pots, pans, or boxes, in an ordinary hot-bed. Pelargoniums alone are excepted; all of this family succeed best in a warm house, in a position near the pipes, as in a very moist atmosphere, such as furnished by the hot-bed, many of them would damp off. On a shelf near the glass in a house where the night temperature is kept at between 55 degs. and 60 degs., Pelargoniums (including the choice tricolor and bicolor varieties) will strike now with the greatest certainty. Verbenas and all the usual soft things will strike now freely in the hot-bed. Sometimes Verbenas are affected with a disease which seems to settle in the hearts of the shoots, and check and paralyse growth. I believe it is caused by a very minute insect that cannot be seen by the naked eye. I have never failed to stop it whenever I have seen it by dusting the plants with newly slaked lime. In bad cases a second dressing might be necessary, but during the last twenty years I have never known a case that the lime did not cure. Heliotropes are always sweet and nice, so a good stock should be got ready. All the carpet bedding things, if any are used, such as Alternantheras, Coleus, Iresine, &c., may be left till the last; but in most gardens carpet or leaf bedding has gone out of fashion—and no loss either, many will say. Whether the number of beds to be filled in May be small or great, it will simplify matters if a rough plan is made showing the different beds and the number of plants each will require to fill it; and a liberal percentage beyond the estimate should be provided, as some may die, and insects, and in some places rabbits, have to be reckoned with.

Bedding plants from seeds. — A very pretty flower garden may be had without wintering a single plant, if we start now with a hot-bed, and sow such things as Petunias, Verbenas, Chinese Pinks, Double Zinnias, East Lothian Stocks, Phlox Drummondi, Dwarf German Scabious, Single Dahlias, Dwarf French Marigolds, Asters, Antirrhinums, &c. One hot-bed will be enough at first, but as soon as the plants are up, a second, of moderate heat, will be required to give them a start when pricked off. In addition, a few cold lights will be required to receive and harden them off as they come out of the warm frames. Seeds of bedding Pelargoniums sown now in the hot-bed will flower early in summer. Though beds of seedlings will not give us the regular masses we obtain from selected named varieties, still they are bright and cheap, and variety is charming.

Spring flowers are now coming on in considerable force, and are all the brighter for being held back for a time by the frost. Beds of Pansies, Violas, Daisies, and annuals should have the soil stirred freely to encourage growth. If the frost has lifted anything up, firm it again by pressing it down with the fingers.

Lawns.—The mowing machine, if it requires doing up, should be sent to the maker at once. It is a bad plan to allow anyone else to tamper with it. English lawns are cut too close, as a rule; the turf burns up less in a hot summer when the Grass is not cut so short, and it is wonderful how close and thick the turf becomes when the bottom plate of the machine ceases to grind against the roots of the Grass. Top dressings may be applied now to weakly Grass with advantage. Soot, lime, salt, and guano, or a mixture of all combined, may be sown thinly over the Grass, wherever it is weak, selecting a showery time for its application.

Ivy on walls should be pruned close in with the shears, cutting off all growth close up to the wall or fence. The Ivy is an excellent plant to cover bare places under trees where Grass will not grow.

Fruit Garden.

Cordon Pears.—An interesting way of growing these is to set apart a south border for them, and have it covered with wires 18 inches apart, the wires to be 18 inches from the ground. The wall may be given up to Peaches or Apricots, and the border, excepting 4 feet at the foot of the wall, planted with choice dessert Pears. The warmth reflected from the wall would improve the climate, and make it a suitable position for such kinds as are supposed to require a wall for their perfect condition. For such a position I should recommend two-branched cordons and grafted on the Pear stock. The trees may be planted along the front of the border, and be trained across it diagonally towards the wall. This mode of training will give a longer wire than if the direction is straight across. In most cases the border has a gentle rise from front to back, and in training the Pears this may be increased a little. Supposing the wires are 15 inches from the ground at the front, where the trees are planted, they may rise to 2 feet at back. This will add to the appearance of the border, and a good deal of fruit will be produced from a limited space. During cold springs such trees might be easily sheltered. The following are a few good varieties:—Althorpe Crassane, Baronne de Mello, Beurré Bosc, B. d'Aremberg, B. Diel, Bon Chrétien, Doyenné du Comice, Pitmaston, Duchesse d'Angoulême, Glou Morceau, Marie Louise, Passe Colmar, Soldat d'Esperen, Louise Bonne of Jersey. The half-dozen late Pears that I mentioned a fortnight ago, added to this list, would make a good collection for autumn and winter. For summer add Jargonelle, Citron des Carmes, and Doyenné d'Eté. Liquid manure has a very considerable value applied to fruit trees needing support. Last year was a good season for fruit, and the trees bore in many instances very heavy (too heavy) crops. The exhaustion following this heavy load should be met by top-dressings of manure, and, where it can be obtained, liberal applications of liquid manure. In the case of old trees, liquid manure cannot do any harm at any time, and the best way of applying it is to take a crow-bar, and make holes a foot or so deep, 2 feet apart, as far as the roots are supposed to extend, leaving the holes open until the roots of the trees have been reached by the liquid manure, when they may be filled up with good soil. The holes should be filled up daily with liquid manure for a week, or until the operator thinks the soil has been sufficiently manured. There cannot be a better or a simpler way of manuring an exhausted tree than this, as the food the tree so much needs is placed within its reach at once.

Strawberries.—Forwarding Strawberries in the open border may be done now by covering the beds, or some of them, with light glazed frames, that are easily moved from place to place. Everybody who desires to keep in the front rank should have a number of these handy frames. I have often thought when I have seen people building expensive houses for the growth of vegetables, &c., that a good deal more might be done with light, cheap glass frames.

Vegetable Garden.

Asparagus beds should have rich top-dressings, if not already attended to. Three inches in thickness of short, rich manure should be spread all over the beds and be lightly forked in. Top-dressings of salt, ½ lb. to the square yard, may be given in addition in dry porous districts. If one of the beds could be covered with glass shelters, the produce might be obtained three weeks earlier without injuring the beds, providing the cutting was discontinued as soon as the succeeding beds came into bearing.

French Beans.—Plant a bed for succession in a hotbed, as their presence in vinery or Peach house, when the sun gains power, is risky, on account of their liability to the attacks of red spider. Plant an early dwarf kind in rows across the bed 18 inches apart, the Beans to be 6 inches apart in the rows. Cover the bed with 8 inches in depth of light loamy soil.

Cucumbers are now growing fast, and will require light but frequent top-dressings of rich compost. Stop all shoots one joint beyond the fruits to prevent the frame becoming too crowded. Peas and Beans should be planted fortnightly all through the spring. Huntingdonian and Dr. McLean's Best of All are good varieties to plant now. Put sticks to Peas now up to shelter them, and to offer support the moment they need it. Plant Earliest of All and Myatt's Prolific Potatoes. E. Hobday.

NOTES ON DIFFERENT MODES OF HEATING.

15876.—Fixing coil boilers.—In reply to "Stephen Castle" (p. 710), and "G. B. M.'s" enquiries, I would say that the boiler I use is the ordinary coil and round in shape. I purchased it from Messrs. Kinnell, and it is, I believe, called the "Acme" boiler. At the time of purchasing they supplied me with a paper showing how it should be set, which I took as my guide. First of all I dug a deep hole at the side of my span-roofed greenhouse. I then connected the boiler with the hot-water pipes, the connecting tubes running through the side of the house. Having thus found if the hole was of the correct depth, I began the brickwork, forming first the ash-pit. I built all round the boiler to within an inch of it with fire-bricks, fixing, as I went, the furnace and ash-pit doors. As soon as the brickwork reached the top of the boiler I commenced the formation of the chimney, fixing the soot-door with the damper a little above it. The rest of the work is done with ordinary bricks, which may be built up as high as convenient, and finished off with a heavy iron top, which must lie quite flat upon the bricks or the fire will draw off the top as well as the chimney and cause all the fuel to heat. The plan I adopted (which was more by way of experiment than use) for enabling me to put on so much fuel was to build the brickwork some 3 feet or 4 feet above the boiler, as the higher one builds the more fuel it will contain. When the brickwork has been carried up to the top of the coil, care should be taken to have the remainder overlapping the boiler, or the fuel will not let itself down, and the fire must go out. I cut a piece of boarding, the same measurement as the inside circumference of the coil, and built round it, so as to make sure of getting the right size. I can place full confidence in my stove's good behaviour for 18 or 20 hours. I burn a mixture of coke and "breeze," varying the quantity of the latter according to the condition of the weather. I cannot too strongly recommend these brick-set coil boilers to amateurs with small houses. They are made set in iron casings instead of brickwork, but I have not tried them this way.—W. C. C.

THE KITCHEN GARDEN.

Liquid manure for Parsley.—The following is the way I have managed in my garden to overcome the blight which so often destroys this useful vegetable. About four years ago having been engaged in giving liquid manure to some Roses, and having a pail three-parts full left, after having supplied their wants, I was thinking to what I should apply the remainder. My eye was caught by the yellow and drooping foliage of the Parsley bed near at hand, and more to save the trouble of carrying the liquid further than with any idea of doing good I poured the remaining liquid on the part of the Parsley bed nearest to me. In about a week's time the effect of this dose was very marked. The plants which had received the liquid had stiffened up again, and were making nice fresh growth. I at once applied a regular drenching of the liquid to the whole bed, and continued to do this twice a week for about three weeks. That season I had Parsley that was a sight to see and which was a boon in spring to my neighbours as well as to ourselves. I commence this treatment on the first appearance of a yellow leaf or of a drooping plant. The liquid I use is drainings from the cow-shed. If fresh, as I prefer it, I dilute it with six times its bulk of water. If old, dilution with four times its bulk will do. I pour the liquid rather close to the roots on both sides of the rows. If the season is dry I continue the treatment once a week as long as dry weather lasts. I do not pretend to infer that this treatment will be successful on all soils, but it is worth anyone's while to give it a trial. I fancy any liquid containing urine will answer. My soil, being hot and gravelly, is one of the worst for grubs of all kinds. I cannot grow spring-sown Onions or Carrots, but autumn-sown Onions do fairly well if transplanted. I have been on the lookout for the "certain cure" promised us for the Onion grub by a correspondent last summer, but have not noticed it yet.—Crieff, *N.B.*

REPLIES.

15867.—**Ridge Cucumber.**—The following sorts are all good for exhibition purposes: Carter's Best of All, Daniel's Perfection Ridge, and Sutton's King of the Ridge. The first two are grown from 15 to 20 inches in length, and are quite straight. The latter is remarkably smooth and straight, and equal to many frame Cucumbers; it is grown from 12 to 16 inches in length.—Young Amateur, *Basingstoke.*

—— Three good varieties of ridge Cucumber are Long Prickly, Short Prickly, and Stockwood Ridge.—W. T. T. Widdowson.

15870.—**Good King Henry.** — Good King Henry, Mercury, or Perpetual Spinach, are all one and the same thing. We have a large bed in our garden that has been there for many years, and is as good as ever; it has had nothing done to it, but has been kept free from weeds, and had one or two strong manurings, and once or twice lime, in all that time. Sow the seed from February to April (the last week in March being the best time), on well prepared ground, deeply dug and heavily manured, in drills in the same way as Onions, only further—say 12 inches—apart. When large enough, thin first to 6 inches and afterwards to 12 inches apart. A little may be gathered next year. In the autumn manure the bed, and the third year it will be established. This should be eaten young, cut when about 4 inches or 5 inches high, leaves and stalks altogether; clean thoroughly, place in the saucepan in the same way as Cabbage, and in twenty minutes it will be done. I think it is (and others would think the same if they gave it a fair trial) the best early vegetable in cultivation.—W. T. T. Widdowson.

15872.—**Early Potatoes for light soil.**—In reply to "R. R., Hants'," query, I have no hesitation in pronouncing, after trying many early varieties of Potatoes, the American Early Rose as the very best for planting in a light soil. The soil of my garden, though deep from being trenched for years, is light and gravelly, and moreover rests on a subsoil of sand and coarse gravel, so that the heaviest rain soon dries up. Before I heard of the Early Rose the Flounder was the only early Potato with which I could succeed in getting even a tolerable crop, and this at the best produced only three or four very large tubers of inferior quality, and as the season advanced, whatever part of the crop remained in the ground disappeared on the first touch of the blight. The Early Rose, on the contrary, resists the disease almost completely, is a handsome Kidney, with a smooth skin of pale rose colour, and produces a large crop of medium-sized tubers, all of which are sufficiently large for table use. When cooked they are of fine flavour and like balls of flour. They should be planted in drills, in the bottom of which there should be plenty of well-rotted farm-yard manure. The tubers should not be cut into sets, no matter how large they may be, but planted whole, otherwise, as I know from experience, the crops will be a failure.—Y. C.

Cocked-up flower-beds.—Among the less beautiful features of the London parks and gardens, interesting and fine as they are of late years, is the fashion introduced some dozen or fifteen years ago of raising the beds above the general level. It was done, we believe, with the view of getting some extra heat, with the beds of subtropical plants. We are convinced that as a general rule—in the south of England, at all events—it is an ugly and injurious practice. In many parts of the country the rainfall in summer is by no means copious, and the soils are often in want of water. In such cases, and, indeed, in all cases in summer flower gardening, the natural level of the ground, or a little gentle slope above it, such as used to be the rule before these hard and ugly raised edgings were brought in, is sufficient and much more beautiful. There is no reason whatever why the natural and graceful line of the ground should be broken here and there to cock up a flower-bed in this ugly way. When several of these beds are seen, with their false lines and curves crossing each other, the effect is very

A cocked-up flower-bed.

bad to anybody who looks beyond the prettiness of the flowers. One phase of this fashion is making a hard edging to the flower-bed which cracks in the sun and is really distressing to look at, and this may be seen every year in London gardens.

15883.—**A question between landlord and tenant.**—"Florist" is entitled to six months' notice, terminating at the time the tenancy commenced. He cannot claim any compensation for any loss he may sustain in having to remove; neither, unfortunately, can he remove the greenhouse, unless he can prove a stipulation with his landlord empowering him to do so.—L. C. K.

—— Assuming that "Florist" has stated his verbal agreement correctly, and can distinctly prove it, my answer to his questions is that his tenancy will legally expire on a six months' notice given to end on the 16th of October, in any year of the tenancy. The landlord's notice to quit on the 24th of March is insufficient, both as to the length of notice and the time of year at which the tenant is required to quit. "Florist's" best plan will be to inform his landlord that the notice is bad, and that he ("Florist") cannot accept it; for as a yearly tenant "Florist" is entitled to six months' notice, to expire on the same day of the year as that on which his tenancy began, but he need not tell his landlord so. As a nurseryman "Florist" will, on the proper determination of his tenancy, be entitled to remove his stock of plants, but not his greenhouses, if they have foundations let into the soil; if the houses only rest upon the surface they can be removed. Except under special arrangement a nurseryman even is not allowed to remove greenhouses; they become, if let into the soil, landlord's fixtures. It certainly was not incumbent upon "Florist" to give any notice to his landlord.—J. P., *Lancashire.*

The Narcissus Committee.—It cannot be too widely known that the Narcissus Committee appointed by the Royal Horticultural Society will hold three meetings at South Kensington in March and April, for the purpose of examining and taking notes of any new or rare varieties of Narcissus or Daffodil, of which flowers may be sent to them. The dates of the meetings will be March 23rd, April 13th, and April 27th. The committee will be much obliged for any specimens of rare or unknown kinds of the Narcissus tribe, whether found growing in English gardens or obtained from abroad. It is, however, most desirable that the history of each specimen should be given with country or county in which it was found. The best way of sending the flowers by post is to cut them when fully expanded, as they cannot be judged if only in bud, to wrap the stalk in wet Moss and tie round the Moss, waterproof paper that the flower may not get wet, and to secure the stalk to the side or bottom of the box to prevent it being crushed. Tin preserves the flower best, but, unless very strong, is liable to be pressed flat in the post-bag. Stiff paper boxes are good. The flowers should reach London the day before the meetings, in order that they may be revived in water before being examined, and should be addressed to "The Narcissus Committee, Royal Horticultural Society, South Kensington." A letter containing information about the flower should, if possible, be sent a day or two before them, but senders should be very particular to enclose their name with the flowers they send. —C. Wolley Dod.

AN AMATEUR AND HIS FERNS.

In the plant-world Ferns were my first love. Coming into possession of a little town garden made me a gardener, and that garden being a shady one made me a Fern fancier It is one of the many charms of the flowerless tribe that they flourish in just those dark nooks and corners so frequent in urban gardens where house crowds house, and wall overlooks wall. They uncurl their croziers in spring, and wave their plumes in summer, in gloomy recesses where flowering plants, gayer but not more beautiful, would inevitably languish and die. I am referring now to hardy Ferns, but my experiences, however humble, have not been quite limited to them, and I would disburden myself of what I have learnt about them all. It is not much, to be sure, but, such as it is, my failures and my successes, my troubles and my triumphs, are fresh in my mind, and these crude notes may be of greater practical service to beginners than the elaborate treatises of mere accomplished pteridologists. The monitor is often a better teacher of the rudiments than the headmaster.

Beginning where the beginner usually begins, with the outdoor fernery, I need hardly say that rockwork is almost indispensable, for though most of the sorts I shall recommend will grow well enough in the level ground, still the raised and irregular surface of the rockery best suits both their requirements and their appearance. But it must be properly constructed, which is not always the case, though the proper method is simple enough. The site should be shady, of course, but it need not be entirely so; still, the shadier the better. The soil, which, after all, is the main thing, should vary in height here and there, but should never be piled too high. The kind or quality of the soil need not trouble us much, for the strong-growing Ferns, suitable for town culture, will do well, I find, in common garden soil. Should this be naturally of a clayey or sticky character, a liberal admixture of road sand or sifted ashes will put matters right. The more delicate varieties I should hardly attempt out-of-doors, exposed to all the trials of town life, which are bad for both plants and men. But if I had an unusually favourable corner, and felt encouraged to venture, I should provide them with fibrous loam, or peat, or at least improve the crude soil with plenty of leaf-mould. The rocks for the rockery should be mostly large, bold, irregular masses, all of the same kind if possible, for then they will have a pleasing, natural look, very different from the harlequin patchwork we often see. The stones should be well sunk, with good spaces left between, and so arranged as to prevent water from running off instead of soaking in. Let me now review the sorts that I have found to make the best show.

The Male Fern (Lastrea Filix-mas) is one of the commonest, and, luckily, one of the handsomest that is found in this country. It will grow 5 feet high, but a three-foot specimen will

serve well to display its characteristic grace of growth. Each frond arches beautifully, like the heraldic emblem known as the "Prince of Wales's Feathers," and together take the form of an elegant flanged vase. The Male Fern will grow almost anywhere, from the top of a wall to the bottom of a ditch, but to be seen at its best should have a strong, moist soil, and some shade. Very similar to the Male Fern at first glance is

The Shield Fern (Polystichum angulare), but on closer examination the pinnules or ultimate sections of the fronds will be seen to be more sharply cut. The habit is more rigid, and it has a more decided tendency to be evergreen; but this quality, constant in the soft pure air of its native haunts, hardly obtains in the harsh, arkl, draughty atmosphere of towns. Another striking distinction between the Shield and the Male Ferns is to be found in the vernation or uncoiling in the spring, which is exceptionally beautiful with the former, while the rachis or stem of the Polystichum is clothed even more densely than the Male Fern with rust-coloured chaffy scales, the tips of its pinnæ, yet uncoiled, form little whitish balls, which remind one of pearls. This charming feature is not found in the Male Fern, which, again, bears the fructification which appears on the backs of the mature fronds in larger sori or spots than the Shield Fern does. It submits to cultivation nearly, if not quite, as readily, and under the same easy conditions. A great contrast to these is the

Hard Fern (Blechnum Spicant), which has narrow, simply-toothed fronds, seldom more than a foot in length, lying flat on the ground, and often forming a dense mat. These are the barren fronds, for, like some other Ferns, the Blechnum bears two kinds; the fertile fronds are longer, erect, contracted in all their parts, and deciduous, while the barren fronds are evergreen. This Fern is very acceptable for front places on the rockery, not only for its distinct, pleasing appearance, but because it grows like a weed, and can stand a good deal of suu without injury. It also makes a fine pot specimen, but should then be put under glass and in the shade—in a north window, for instance; for busy amateurs should remember that these subjects require, when in pots, a supply of moisture which must at no time be stinted, or they resent it by incontinently turning rusty, in every sense of the word. As the Hard Fern's name aptly bespeaks its nature, so does that of

The Lady Fern (Athyrium Filix-fœmina) fittingly indicate its delicate beauty. Its lace-like texture and tender green have made it a favourite everywhere. Most fortunately, too, it will grow almost everywhere; but, to have justice, should be afforded unbroken shade and unfailing moisture. Sunshine and drought, though they may not affect its health, decidedly spoil its appearance. Average height, 3 feet.

The Broad Buckler Fern (Lastrea dilatata) is a truly noble object. Its fronds are deeply divided, especially at the bottom, and almost triangular in outline, and, with its deep green colour and lax, drooping habit, it has a very rich look. This is, however, a very variable Fern, and my description refers only to its finer forms. I have a specimen in which every part is sharply reflexed, giving a narrow and skimpy effect which is quite offensive. Its cultivation presents no difficulty. Height from 2 feet to 4 feet.

The Hart's-tongue (Scolopendrium vulgare) must, of course, find a place. Its plain, massive, undivided fronds are so distinct as to render it quite indispensable. Besides, it is as easily grown as any. It is useful for positions near the front, as it rarely exceeds 18 inches in height, or, rather, length, for the fronds have an upright tendency only where the soil is dry. If liberally supplied with water, they are broader, greener, glossier, spread abroad, and look ten times as handsome. The foregoing are all natives of these parts, and they possess that invaluable quality in any candidate for the amateur's garden—an invincible determination to live and thrive, anywhere and anyhow; so they should be freely made use of, especially by those who have but little time to replace failures. The next two should be tried also, as here, at least, they are equally common; but I must confess that my experience with them has not been very encouraging. They should, of course, have the most favourable chances in the way of position and soil. I refer to

The Common Polypody (Polypodium vulgare), and the Black Maiden-hair Spleenwort (Asplenium Adiantum nigrum), both dwarf and evergreen, the former with once-divided fronds in the way of the Hard Fern, but broader, blunter, and erect. They grow differently from any of the others mentioned, being sent up singly from a running root or rhizome, which is covered with furry scales. A conspicuous and beautiful feature of the Polypody is the large round spots of gold-coloured spores. It seems to prefer a peaty soil, with less moisture and more exposure than the generality of Ferns. Very different is the Black Maiden-hair Spleenwort, which has tufts of much-cut, semi-triangular fronds, on black stems, the reverses being ornamented with dark-coloured spores, arranged in streaks. Give this sandy loam, shade, shelter, and regular waterings. For pot culture under glass they are eminently adapted, and, so treated, are more likely to repay the cultivator than when exposed to the vicissitudes of outdoor life.

Now that I've brought my reader—if I have one—indoors, I'll detain him there a moment, while I claim his sympathy in a long pent-up grievance and affliction. Why, let me ask, why will the friends and visitors of the poor amateur gardener insist upon making him presents of unsuitable plants? Why will they load him stove subjects when he has but a cold pit, and crush him with a huge Seaforthia or Chamærops, his only accommodation being a parlour window? Then, ever thereafter when they call or write, it is "How is that Palm I gave you getting on?" or "Is that Stephanotis in flower yet?" and the hapless horticulturist, after desperate struggles to keep it alive, is put to all manner of shifts to conceal the ignominious fate of that vegetable white elephant. Much in this way I made the acquaintance of the more tender species of Cryptogams. When I first began gardening, equally destitute of knowledge and accommodation, my friends would bring me greenhouse Ferns and Mosses. It seemed like a conspiracy to torment me. But the beauty of the innocent plants appealed to me irresistibly, and I cast about how I could preserve them. Now, in Shakespearean phraseology, some are (perhaps) born Fern growers, some achieve Fern growing, and some have Fern growing thrust upon them. I was emphatically one of the last. After much rumination and experiment, I finally disposed of them in this wise:—A south window, devoted chiefly to zonal Geraniums, had two corners shady enough for Ferns. Here I stood a pair of the variegated Ribbon Fern, (Pteris cretica albo-lineata), which is handsome and cheerful looking. It is especially well adapted for window culture, as its fronds grow confusedly together. Those kinds in which they are arranged in symmetrical order, get sadly distorted in the one-sided light of a window. One bracket adjoining I also filled with the Rat's-tail Fern, the botanical name of which I have been unable to learn. Its rhizome runs all over the pot, top, and sides, and its fronds resemble the leaves of the Bay. The opposite bracket was devoted to a drooping Spleenwort (Asplenium flaccidum), the leathery, light green fronds of which hang down and show to advantage in an elevated position.

But still there were more; what to do with these I knew not. Wandering about in cogitation deep, my eye dropped upon the sitting-room window, which has a north aspect. True, it was now the consecrated shrine of a Walnut loo-table, at which no one ever played, covered with books, at which no one ever looked; being useless, they were sacred; but with profane hand I banished the volumes to the recesses of the book-stand, and, after a little measuring and cyphering, had the table lowered some inches, and strengthened by three turned supplementary legs, slender and black, fixed in the spaces between the walnut claws of the table, the whole standing on, and fastened together by, a round plate of wood, also black. This stand, which, so completed had, and has, to my eye, a handsome and unique appearance, is designed to support a large basket, something like a waste-paper basket, but larger and shallower, being 18 inches in diameter at the bottom—to suit the top of the table—24 inches across the top, and 10 inches high, with a tin tray or saucer, both being well painted. I planted this with my remaining Ferns and Mosses, introducing through the sides small specimens of the common New Forest Ferns before described. They did well, but as by the end of the season the basket rotted in several places, I shall say no more about that contrivance, especially as I made some mistakes as to arrangement and so forth, which a second attempt enabled me to remedy. This time I had a zinc pan constructed of the same dimensions as the basket, with three rows of holes, 1 inch in diameter, round the sides, and a dozen or so in the bottom. This was painted brown inside and out, and the tray also. When it came home it looked like a Brobdignagian colander. In filling it, I used as much drainage and as little soil as possible, partly to save weight, and partly to prevent the soil turning sour. I started by inverting a disabled flower pot, a 32, round which I built crocks, large at first, then smaller. I also used a quantity of coke, in which, as well as in cinders and coal ashes, I repose great faith. I fancy many plants relish them; anyhow, they root into them freely. As I ascended the "colander," I introduced, as before, small Ferns through the holes in its sides, but I may as well say at once that all these, with remarkable and unanimous celerity, gave up the ghost, and withered away, but their dead root stocks, and the Moss with which I surrounded them, kept the soil from falling through the holes, which were not, I think, pierced in vain, as they doubtless promote the health of those on the top by aërating the soil. As for the said soil, it consists of turfy loam, peat, leaf-mould, coal ashes, wood ashes, charcoal in lumps and powder, brick ditto, cinders, and sawdust. Into this truly composite compost I planted in the centre, a crested Lady Fern, Athyrium f.f. cristata, which is a lovely object for many months, but dies down in the winter. Round this, in a triangle—if Euclid permit such an expression—I placed a frilled Hart's-tongue (Scolopendrium crispum), a Maiden-hair (Adiantum cuneatum), and a Ribbon Fern (Pteris serrulata)—all evergreen, and very distinct from the Lady Fern, and from each other. In the spaces between these I have three of the tall variegated Moss (Selaginella Mertensi variegata); bare places left are carpeted by the dwarf Mosses, Selaginella denticulata and its golden variety, and running about among them all, are those daintiest of British Ferns, the Oak (Polypodium Dryopteris), and the Beech Ferns (P. Phegopteris), the roots of which are rhizomatous, causing their fairy-like fronds to pop up in the most unexpected places, but never where they are unwelcome.

Every one of these has taken nicely to its new quarters, and they are struggling for existence one against the other in the most natural manner in the world. They form a mass of verdure, varied, novel, and beautiful, especially in summer, but almost as much so in winter. They never have any warmth, other than from a rarely-lighted fire, and no regular protection from frost, beyond that afforded by the window and its blind. But nothing can be greener than they are now; and as for the Selaginellas, they have grown steadily throughout the winter, though it has not been a mild one.

The reverse of this has been the fate of the planting of the sides, as has already been hinted, and to remedy this calamity I have inserted round the rim some pieces of the small-leaved native Ivy (Hedera Helix) which are now established, and are being trained round those unlucky bare sides, which they make every promise of doing admirably. Gardening friends tell me that the roots of the Ivy are likely to rob the soil, to the prejudice of the Ferns, but I heed not the warnings of these horticultural Cassandras, having confidence in the virtues of my multifarious compost, which I mean also to reinforce with leaf-mould, and waterings with weak soot-water. This reminds me that the "colander" requires a soaking about once in three weeks at this time of year, and twice as often in the growing season, and is removed for that purpose by a pair of strong handles, and when brought back is generally turned round, to give each a fair share of light, and so equalise the growth.—J. F. R., *Southampton.*

15921.—Calico-glazed frames.—Ordinary unbleached calico and boiled linseed oil.—J. F. R., *Southampton.*

OUR READERS' ILLUSTRATIONS.

THE MAIDEN'S WREATH.

A well-grown plant of Francoa ramosa, whose beautiful spikes of white flowers have gained for it the appropriate name of the Maiden's Wreath, is here shown to our readers as one of the series of "Our Readers' Illustrations." Francoas are of the easiest culture, and are quaint and pretty. Seed may be sown at different times from February to midsummer; perhaps an early date is best, as then the seedlings have all the season before them to gain strength. The seed should be sown in a well-drained pan, filled with peat, kept open by sufficient sand. Before sowing see that the material is moist enough, without being too wet; put a sheet of glass over the top, and stand the pan in a temperature of 50 degs. When the seedlings make their appearance dispense with the glass, give water as required, and stand the plants where they will get a fair amount of light. They should, when big enough to handle, be pricked out in large pans of peaty or loamy soil; at the end of May remove into a greenhouse or frame, keep moderately moist, and give air daily. Before the leaves get crowded place singly in 4-inch or 5-inch pots, and encourage growth. If flowers are wanted, some of the strongest may be allowed to bloom towards the end of summer; but it is better to pinch out the spikes, so as to get strong plants the second year. Before the autumn is far advanced, any plants that seem short of room may be given pots 1 inch or 2 inches larger, and in the winter they will do anywhere out of the reach of frost. In the spring shift those not repotted in the autumn, and in the proper season good bloom may be expected. The application of weak liquid manure at intervals of a week is useful when the flower spikes are about to make their appearance. The seed of the Maiden's Wreath may, if desired, be sown as soon as ripe in autumn, and the plants should be potted off singly in spring. This Francoa is frequently grown in windows—in the south of England, at least. The engraving is from a photograph of a plant grown by Mr. Aldridge (gardener to Mr. Evans, Winterton Lodge, Littlehampton), who states that the height of the spikes is 4 feet 9 inches.

Our Readers' Illustrations: Well-grown plant of the Maiden's Wreath (Francoa ramosa). From photograph sent by Mr. Evans, Winterton Lodge, Littlehampton.

15657.—**What are the best labels?**—In my opinion the zinc ones manufactured by Stephens and Co., Oxenden-street. They are neat, durable, and very cheap. We have used them for several years and avoid any injury to the trees, in the case of Standard Roses by attaching the labels firmly with copper wire to the iron stakes that support the plants, instead of to the branches. We also place to the dwarf Roses small iron stakes, 2½ feet long, each having a hole near the top, to which the label may be readily secured. The wire is best manipulated by the aid of a pair of wire-cutting pliers.—J. Martin.

Arum palæstinum.—At the Royal Horticultural Society's meeting on February 9th, a plant of Arum palæstinum, referred to recently in an American note as the red Palestine Arum Lily, was shown by Messrs Heath, of Cheltenham. It is a handsome plant, but the spathe cannot really be termed red or crimson in colour. It is more of a crimson-black, exactly similar to the colour of the so-called Black Dahlia (D. Zimapani). The surface of the spathe shines like satin, and the spadix is a dull jet black. The leaves are heart-shaped and pointed, about 8 inches in length, and lined with pale veins. It is not a showy plant, but interesting, particularly on account of its being a native of the Holy Land.

NOTES FOR AMATEURS.

I want amateur readers to understand that these notes are written especially for their benefit. Of course, I have no objection to any of the fraternity of delvers reading them, or, for that matter, acting on the instructions they contain; but as I intend to write them both plain and practical, I do not intend to make a point of teaching the adepts anything, so I will plunge at once into business, and my first note shall be

How to grow summer Lettuces.—To secure a crisp, good-flavoured Lettuce, two conditions are indispensable, viz., seed from a good strain, and rich, deep soil. As regards the best sorts: If a large one is required, the Paris Green Cos is as good as any; quite distinct from this, and in every respect equal, is Kingsholme, which is self-hearting, and grows to a large size. Of Cabbage Lettuces the number of so-called varieties is numerous; All the Year Round and Tom Thumb are both excellent varieties. The first sowing of seed should be made at once, on a warm south border. The Cos varieties will not require a large space, as the plants will require transplanting; but the Cabbage sorts should be sown rather thinly over a larger space, as they can remain where they are sown, if they are thinned out, where too thick, when the plants are small. It will be necessary to make another sowing of seed about the middle of April, to keep up a succession; after that it will be necessary to sow a crop every three weeks until the end of July, but after the middle of May it is best to sow the seed where the plants are to remain, as they quickly run to seed if transplanted in hot weather. All the summer crops should be sown in drills, half-an-inch deep, and if there is more than one drill they should be two feet apart, for it is impossible to grow them large if the plants are crowded. The Cos varieties should stand 18 inches apart in the rows, and the others 12 inches. When preparing the ground, incorporate with it, at various depths, plenty of well-rotted manure, and in dry weather keep the plants well supplied with water.

Striking Pelargonium Cuttings.—Amateurs often experience disappointment when attempting to propagate cuttings of choice Pelargoniums early in the spring. This arises from the fact that the growth is often too soft to form roots quickly, and they die away before they make any roots. If they will adopt the following plan they will be almost certain to succeed: Place the plants on a light airy shelf, and then cut halfway through the shoot it is desired to make into a cutting; then get a neat stick and fix it into the soil by the side of the cutting; then lightly tie the cutting to the stick, using sufficient force just to open the wound in the cutting, and let it remain so. In a few days after it will be found that the wounded part is quite dry and firm, and then the cutting may be taken and inserted in the usual way. The advantage of the plan is that the wound at the base of the cutting is healed before it comes in contact with the soil, and, therefore, being less soft and sappy than a new made cutting, it has a much better chance of living. Another plan which I have found useful at this time of year is to make the cutting in the usual way, but instead of inserting it in the soil, make the surface quite firm and let the base of the cutting rest on the soil, keeping it in position with a neat stick and tie. At the end of a week, sprinkle a little fine sandy soil round the cutting so as to earth it up, so to speak; in due time the cutting will form roots. There is not nearly so much risk of the cutting damping off as when a portion of the stem is buried in the soil. The best place for striking Pelargonium cuttings in the spring is on a light shelf in a structure that is heated up to or above 60 degs. Water must be given very cautiously until they have made a few roots, and a good sprinkling of sand should be added to the soil.

Making soot-water.—When made sufficiently strong and used in a clear state there is no other fertiliser, either solid or liquid, that is so well suited for amateurs' use as soot-water, as it is gentle in its action and sustaining in its nature. This is not the case with the majority of concentrated manures, for if they are used slightly in excess, serious consequences are often the result. When a regular supply of soot-water is required there should be two barrels, or other receptacles, in which to make it. A cask holding about 30 gallons is very suitable. Into one of these place one peck of soot, and then fill up with water, and keep it stirred twice a day for a week. In ten days it should be ready for use, but it is necessary that it should be quite clear before using it, or there will be a settlement of the solid matter on the soil. A better plan is to put the soot into a coarse hessian bag and place it in the water. Tie a strong piece of string to the mouth of the bag, and have one end of it fixed on to the edge of the barrel; the bag can then be moved about in the water, for the purpose of mixing it with the greatest ease. As soon as one lot is ready, another should be in course of preparation, so that with a little forethought a regular supply may be obtained. As regards how and when to use it—as an old practitioner, I can only say that when given regularly when the plant is in active growth I don't know the plant that it would harm, but I have known it benefit a vast number. Even

such delicate-rooted plants as Erica and Epacris I have kept in splendid health in the same pots for seven and eight years by the aid of soot-water, and such plants as Callas, Camellias, Azaleas, and Roses, may have regular supplies the whole year round. Such subjects as Fuchsias, Pelargoniums, Cyclamens, Primulas, and Ferns are greatly benefited by it while they are in active growth. Plenty of soot-water, whenever the soil about the roots is dry, will send green-fly and other enemies to the roundabout; therefore I say, use it, and keep your plants healthy and your mind at rest.

Growing the Arum Lily.—I should say there is no plant more prized than this by those who have small greenhouses, or even only a window, in which to grow it, and very respectable examples we sometimes meet with in these cases, while, on the other hand, some fail to get them to flower at all. In the latter case, I am perfectly satisfied that failure is due more to doing too much than too little. It is the natural propensity of some people to be always meddling. If they fancy any plant ought to flower at any particular time, and it does not do so, they must take it out of the pot and examine its roots, and re-pot it, which more often than not defeats the end they have in view. A little more patience would very often result in much better results being obtained. It is just so in the case of this Calla. If its roots are disturbed more than once a year it is not likely to flower. When it is grown constantly in pots it is very desirable to give the roots fresh soil once a year, and this should be done not later than the middle of June. Any that are growing in large pots will not require to be put into a larger size; about two-thirds of the old soil should be taken away from the roots and its place supplied with fresh, and it should be as rich as it is possible to get it. If common garden soil must be used add one quarter of good rich farmyard or hot-bed manure; but a better compost is three parts loam and one of manure. Any plants that are too large may be reduced by having some of the offsets taken off. By far the simplest way to grow this plant is to plant it out in the summer. Early in June dig out a hole in a warm sunny border, put 6 inches of good fat manure in the bottom of the hole, then shake all the soil away from the roots and put the plant down on the manure, filling up with soil so as to bury about 3 inches of the stem, leaving a cavity in the form of a basin over the roots to hold the water. Put a stick to each plant which, with a single tie, will support the leaves. Strangers to this manner of dealing with them will, no doubt, for the first two months, as they go and look at their plants, feel that if they are not already dead they are dying, for the leaves which were so fresh and green when they where planted out will probably be withered up. To such, I must say, have patience; give them plenty of water (liquid manure, if you can) in dry weather, and your plants will be all right in the autumn. The truth of the matter is that although they do not make many leaves in the early part of the summer, the roots are active, and as the cold nights and rains of autumn come the leaves will appear large and vigorous, and all that the cultivator need do to them is, about the middle of September, to take them up and put each plant carefully into a pot without reducing the roots very much. All that it is necessary to say further is that the plant is an aquatic, and therefore the roots must not be allowed to suffer for the want of moisture at any part of the year. Old Delver.

NAMES OF PLANTS.

Naming Plants.—*Persons who wish plants to be named should send good specimens properly packed. By good specimens we mean a complete shoot of the plant with flowers, and, if possible, fruit or any other characteristic by which it may be accurately identified. We do not name more than four plants, fruits, or flowers at one time, and these only when good specimens are sent. We do not undertake to name varieties of florists' flowers, such as Roses, Fuchsias, Geraniums, Azaleas, as these can only be correctly named by a specialist who has the means of comparison at hand.*

**** Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the* Editor, *37, Southampton-street, Strand, W.C.*

Names of plants.—*T. W. Fagg.*—Libonia floribunda.—*T. L.*—Pteris tremula.—*Sunbury.*—Scilla sibirica. —*Woodhurst.*—There are about a hundred varieties of Dracæna, and we cannot name the leaves that you send. Your best plan would be to take them to a nursery where there is a large collection of these plants.—*E. M. S. and Nelly.*—Acacia dealbata. See query columns.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in* Gardening *free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the* Editor *of* Gardening, *37, Southampton-street, Covent-garden, London. Letters on business should be sent to the* Publisher. *The name and address of the sender is required in addition to any designation he may desire to be used in the paper. When more than one query is sent each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that as* Gardening *has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.*

Answers *(which, with the exception of such as cannot well be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in* Gardening *should mention the number in which they appeared.*

16002.—**Plants for London rockery.**—I should feel obliged for names of half-a-dozen small-growing plants (dwarf) for sunny rockery in the smoky suburb of Camberwell.—H. T.

16003.—**Filberts not bearing.**—I have had some Filbert trees for some time, but for several years they have not borne fruit. Will any grower tell me how to treat them, and whether lime is injurious to them?—Pill.

16004.—**Window garden societies.**—I am endeavouring to form a window gardening society in a small village, and would like some rules of any existing society. Will any reader send me a copy, or help me with hints?—J. B. R.

16005.—**Autumn-flowering Pear tree.**—Will any kind reader tell me how to treat a Pear tree that flowers at Michaelmas, so as to get it to flower at the proper season? The bottom is clay, with a good loamy top.—J. M., *Scarborough.*

16006.—**Worms in lawns.**—Some time ago a writer recommended the use of corrosive sublimate (a poison) for getting rid of worms on lawns. Will anyone who has tried it tell me when it should be applied—now or a month or two later on?—Cheshire.

16007.—**Beautifying a pond.**—Can any readers give me any suggestions how to utilise and beautify a pond, about a quarter of an acre, which is now empty, and will be so for some months? There is from two to three feet of good, wholesome mud in it.—S. R. R., *Sussex.*

16008.—**Kitchen garden crops.**—I have a kitchen garden of about a quarter of an acre, and am anxious to know how best to get a rotation of crops, so as to make the most of the land. Will some experienced reader of Gardening advise me?—Ignoramus, *Bury St. Edmunds.*

16009.—**Flowers for cutting.**—Will some reader kindly give me a list of the best plants for supplying cut blooms all the year round—I want them for button-hole work, wreaths, and general purposes—also the best Ferns for the same purpose?—W. M. *** *Please read our rules.*—Ed.

16010.—**Mushrooms in boxes and shallow tubs.**—I wish to grow Mushrooms in boxes or tubs 2 feet deep and the same in diameter, using fresh cow manure, which is the only sort obtainable with me. Will some kind reader inform me of the best mode of procedure? I have a warm dry cellar.—F. P.

16011.—**Wall fruit trees for Yorkshire.**—I wish to know what are the best fruit trees to plant on a wall facing the east—situation, East Riding of Yorkshire, about twenty miles from the sea coast. The soil is strong loam on chalk rock. A list of the best and most suitable kinds will be thankfully received.—H. W. S.

16012.—**Hyacinth growing.**—I shall be glad to have the advice of anyone who, like myself, has not a garden in which to plant bulbs after they have done flowering. My last season's bulbs I planted this season, in spite of advice to the contrary. I was told on every hand that they would not be worth the trouble; but they have quite rewarded me—very fair blooms and lovely perfume. The chief disadvantage is that they have made much more leaf than is desirable. What I want to know is—will they be of any use the third year, or must I throw them away?—W. S., *Southsea.* *** *The bulbs will be of no further use for pot culture, but may be planted in a garden.*—Ed.

16013.—**An Amateur's flue for small greenhouse.**—Last summer I built myself a small lean-to greenhouse, 6 by 6, without means of heating it beyond an ordinary swing lamp, which, of course, is not sufficient to keep away all frost; therefore I have read with great interest the remarks on different modes of heating which have appeared in Gardening from time to time. But before commencing to build such a flue as described by "Disc," on page 714, I should be glad if he would answer the following questions: I cannot quite understand how the damper at top is fixed. Does it slide edgeways, so that the flat part is to the front, as an ordinary door would be? The flue itself is built on the ground, I presume, with a foundation one brick and a-half wide, in order to get the width inside 7 inches. Does it turn the corner square, or on the curve, and what provision is made for cleaning out, or is none necessary beyond hole at chimney and furnace door? The flue at its commencement is three bricks above fire bars; but how deep is it? Is the bottom on a level with bars, or one or two bricks above? The furnace, it is said, could be made higher to hold reserve fuel; but when filled up would it not choke flue, and so stop the draught? And last, but not least, I should be glad to know where "Disc" can buy the "rattlejacks" at 1s. 8d. per ton; the lowest price at gasworks here for coke is 17s.—W. R. Eames, *Tunbridge Wells.*

16014.—**Plants for sunless border.**—Will any reader who has dealt with such a plot of ground tell me what I could plant under a north-west wall, where there is no sun whatever? The soil is good loam and deep. I am advised to put in Rhubarb roots, also Mint.—Novice, *Liverpool.*

16015.—**Plants to succeed spring bulbs.**—Will someone kindly tell me what plants I should use (after bulbs are over) to make a border along the east side of my house gay in summer? Geraniums, Lobelias, and single Dahlias have been tried, but make too much leaf and too little flower, owing probably to the fact that the Roses and Clematis climbing up the house have to be watered daily in summer, the soil being light and very dry, though well manured.—Bournemouth.

16016.—**Chrysanthemums in Madeira.**—How can I grow fine Japanese Chrysanthemums in Madeira, having only plants bearing very small flowers—yellow, maroon, and white? Should I take cuttings from these, and would a greenhouse suit them better than the open, which is warm, but 1,500 feet above sea level and subject to mountain mist? Any suggestions will be gratefully received, as I do not know how far previous remarks on this subject in Gardening would be applicable to this case. —Crux.

16017.—**Ground glass.**—Will any reader tell me what preparation is used on the upper panes of glass in a conservatory to give it an appearance of ground glass?—M. H.

16018.—**Asphalte path.**—Would some of the correspondents of Gardening Illustrated inform me how to make an artificial asphalte or other hard paving for part of garden path?—H. T.

The following queries are briefly answered by the Editor, but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

16019.—**Cockscombs** *(D. A., Fife).*—See note an these in the "Coming Week's Work" in this number.

16020.—**Painting a greenhouse** *(Rose Trees v. Paint).*—Certainly; you had better take out the plants while the work is being done.

16021.—**Ants in house** *(E. M.).*—See reply to query 15989 in last week's number. If you can get at the nest, use boiling water for the destruction of the insects.

16022.—**Prunus sinensis** *(J. B.).*—As a rule, these are propagated only in nurseries. As for its culture, it will grow in what is ordinarily known as good garden soil.

16023.—**Passion-flower** *(J. Arthur).*—There are several Passion-flowers, and, without knowing to which your question refers, we cannot advise you. Send us a leaf of it.

16024.—**Short-bloomed Nasturtiums** *(F. S. H.)*—Yes; without doubt want of moisture would account for the short period of bloom of your Tom Thumb Nasturtiums.

16025.—**Tobacco free of duty** *(E. M.).*—We do not know where you can procure Tobacco free of duty for horticultural or any other purposes. There is one way of getting it—but it is rather risky!

16026.—**Baines's "Greenhouse and Stove Plants"** *(Novice).*—Mr. Baines's book treats of the cultivation of 500 families of plants, and the varieties, &c., mentioned number several thousands.

16027.—**India-rubber plant** *(E. B.).*—No doubt the secondary shoots will affect the symmetrical appearance of the plant, and, therefore, you should rub them off. The plant requires only a moderate amount of water.

16028.—**A ragged Dracæna** *(Dracæna).*—Yes; you can cut off the top and strike it in a propagating frame, and if, you cut the stem in pieces, so as to leave an "eye" to each, you may be able to get a plant from each section.

16029.—**Flowering plants for water tank** *(W. Malcolm).*—Besides the Lilies, you may use Butomus umbellatus, Ranunculus Lingua, Iris Pseud-acorus, I. sibirica, Nuphar advena, and Menyanthes trifoliata (the Bog Bean).

16030.—**Prickly Comfrey** *(P. S.).*—Prickly Comfrey is best grown from what are called "sets," planted in April, a yard apart; but you may raise it from seed if you wish to do so. Any good nurseryman will procure seed or sets for you.

16031.—**Culture of Carnations** *(Miss Jolliffe).*—You appear to have overlooked Mr. Douglas's recent articles, in which the culture of the Carnation was fully dealt with. You will find what you want in the numbers for January 16th and 23rd.

16032.—**Chrysanthemums** *(Procul, Devon).*—Yes; if you want the space you can put your Chrysanthemums outside, but protect them from cold winds and frost until the warmer weather comes, as the young growths, having been formed under glass, are tender.

16033.—**Making window boxes gay** *(Enina).*—The articles of "Byfleet" which have been published during the past year in Gardening Illustrated will give you full information as to the best mode of making your windows gay. See the number for Jan. 30th.

16034.—**Vegetable for virgin soil** *(E. B.).*—What you can grow on the soil without manuring it depends entirely on its nature. Virgin soil may be rich, or it may be of the very poorest kind. It is impossible for us to advise you unless you tell us the character of the soil.

16035.—**Soil for Magnolia** *(Wellington).*—Magnolias will flourish in either a moderately light or a moderately heavy soil. There are, as you are doubtless aware, both deciduous and evergreen Magnolias, which require different treatment. You do not say what kind you mean.

16036.—**Rockwork in window aquarium** *(W. Lewis).*—Coke in Portland cement is but a poor substitute for good stone for this purpose. If you can possibly get tufa you will find it much the best material. It may be purchased in small quantities from dealers in horticultural sundries.

16037.—**Spiræas** (*Greenhouse*)—Spiræa palmata and S. venusta both bear pink flowers, but S. palmata is most generally grown in pots, and is, probably, the one that you refer to. The others you mention, being hardier, are grown in the open border, and are not worth your attention as pot plants.

16038.—**Orange tree from pip** (*Orange Blossom*).—It is not absolutely necessary to graft it; but if you do so, and make use of a good sort for the purpose, you will be certain of not being disappointed. The seedling may turn out worthless. You will get a standard sooner if you graft on a stout healthy stock.

16039.—**Preparing ground for seed** (*Amateur, Dudley*).—You have omitted to mention what it is that you want to sow, and it is, therefore, impossible for us to give you the information that you ask for. Onions, and Carrots, and Parsnips would have the ground trodden as described; but such treatment would not apply to all crops.

16040.—**Gaillardias, Anchusa, Gypsophila, and Rudbeckia Newmanni** (*J. J.*).—Anchusa italica and the Gaillardia are of doubtful hardiness in many places. Our experience of Gypsophila paniculata and the Rudbeckia is that they are perfectly hardy perennials. The Gaillardias, if sown early, may flower the first year; the others will bloom the second year after sowing.

16041.—**Crimean Convolvulus** (*Enquirer*).—We do not know what plant you mean. If it is the same as the common large white Convolvulus of gardens, it can be procured from any good hardy plant nursery under the name of Calystegia sepium. This is a perennial, and very difficult to eradicate when once it has a hold; therefore, it is a good plan to grow it in a pot sunk in the ground, so as to keep the roots within bounds.

16042.—**Peat soil for Ferns** (*W. Lewis*).—There are few plants that will flourish entirely in peat, which affords very little nutriment. Its use in potting is more mechanical as it keeps the soil porous. Loam, on the other hand, affords nourishment, but is apt to become close, and that is why in a potting compost the two are mixed together with sand. Some Ferns will thrive in peat only, but, as a general rule, turfy loam should be mixed with it.

16043.—**Lilium speciosum (lancifolium) rubrum** (*C. H. B.*).—You may, by keeping this in a genial temperature, have it in bloom by the middle of July. There is no difficulty in growing this plant in the ordinary way in the greenhouse or in the window garden. Be sure not to overpot or overwater it, and do not keep it in too close an atmosphere. The Lily is almost hardy, and requires protection only during the time that it is sending out its tender growth.

16044.—**Gladiolus, Anemones, and Lilium candidum** (*Ignoramus*).—You did quite right in planting the Lilium and Anemones; but we are not so sure about the Gladiolus, although there is nothing to fear, as it is tolerably hardy. It all depends on what kind of soil you have. Can you not see if the bulbs have rooted? If they have, leave them where they are, and protect the young growths, when they come up, with a little litter. If they have not, lift them and pot them in sand under glass, so as to remedy any ill-effects of cold or damp.

16045.—**Ismene calathina and Pancratium maritimum** (*Old Subscriber*).—Ismene calathina is a greenhouse plant, but the Pancratium is hardier; in some favourable parts on the southern coasts both have been planted out-of-doors and been flowered successfully. You do not say whether you kept the bulbs dry while at rest; they should have been so kept, and then they would start again with warmer weather. If you have kept them dry, and the soil is dust dry, plunge the pots in a tub of water, and then place close to the glass. You will find a note on Pancratiums in this number on page 736.

16046.—**Geraniums diseased** (*A. L. M. K.*).—As far as we know no satisfactory explanation has hitherto been forthcoming in explanation of the pallid or white disease spots or blisters frequently seen on Geranium leaves. They are probably brought about by some error in cultivation, possibly in the mode of watering or ventilation; but the whole subject requires investigation.—W. G. S.

16047.—**Rooting cuttings** (*Cinchona*).—The best way to root young succulent cuttings of difficult subjects is to mix charcoal dust with the compost in which the cuttings are inserted, to the extent of one-third of its bulk, and to place a layer a quarter of an inch thick on the surface of the pots, making all firm. When the cuttings are inserted, water and plunge in bottom-heat of 75 degs. to 80 degs., keep them evenly moist, close, and shade when the weather is bright.—H.

16048.—**Maiden-hair Ferns** (*A. Osborne*).—You will find the best answer to your question in the article on Maiden-hair Ferns, published in the last number. However, we may add that you appear to have kept your plants in too moist and by far too warm a house during the autumn and winter months, and the action of heat and moisture, combined with the absence of ventilation, has produced an unnatural growth, resulting in spindly, weak fronds, deprived of the substance which they would possess under cooler treatment.—S.

16049.—**Unsatisfactory vines** (*F. N. Priestley*).—The samples when received were much crushed and dried. The vine leaves are very thin and poor, and the bunches appeared to have put forth and then died off from inherent weakness. There was no trace of disease, but the bunches betrayed that tendency to develop into tendrils, common in weak and badly-nourished vines. Try feeding with liquid manure; a sprinkling on the surface of the soil of some artificial stimulant will be beneficial. The temperatures given are right, so the fault does not lie there.—H.

16050.—**Utilising the roofs of sheds** (*Novice*).—The idea is an ingenious one, and well worth trying; but in hot weather we should be almost afraid of the fumes of the tar in the felt, especially if recently constructed. Could a trellis be improvised to keep the plants a few inches from the felt? If so, Tomatoes, Vegetable Marrows, and, possibly, Cucumbers will succeed. Nos. 1 and 2 will be best for the Cucumbers and Tomatoes, and No. 3 for Vegetable Marrows. Each shed will accommodate eight Tomato plants, six Cucumber plants, or four Vegetable Marrows.—H.

16051.—**Ferns for exhibition** (*Blechnum*).—Six best British Ferns for exhibition (species only): Lastrea æmula, Lastrea filix-mas, Osmunda regalis, Polypodium dryopteris, Polystichum aculeatum, Scolopendrium vulgare. Six best British Ferns (varieties): Athyrium filix-fœmina Victoriæ, Lastrea filix-mas cristata, Osmunda regalis cristata, Polypodium vulgare cambricum, Polystichum angulare cristatum, Scolopendrium vulgare crispum. Twelve exotic greenhouse Ferns (species and varieties) best for exhibition: Adiantum venustum, Asplenium lucidum, Balantium Culcita, Davallia Mariesii cristata, Lastrea erythrosora, Lastrea Standishii, Lomaria zamiæfolia, Osmunda japonica corymbifera, Polystichum capense, Pteris serrulata cristata major, Todea arborea, Woodwardia radicans cristata.—S.

16052.—**Acacia dealbata** (*H. M. S. and Nelly*).—Your "Mimosa" flowers are of this plant, which is well known in English gardens both as a greenhouse flowering shrub and as a useful plant for summer bedding, owing to the elegance of its habit and the grace of its fern-like foliage. In the greenhouse it may be treated the same as Camellias and Azaleas. When large it will bear 3 degs. or 4 degs. of frost without injury; but in a young state it is best kept in a greenhouse where the winter temperature does not fall below 45 degs. Grown in pots it may be made to form a handsome shrub; if space can be afforded, it may be planted out in a bed of peaty soil and allowed to form a tree, when it proves one of the most ornamental of the Acacias. It flowers annually about this time. Seeds may be sown now (a seedsman will supply a dozen seeds for a few pence), and kept in a warm greenhouse or in a Cucumber frame. The young plants should be allowed plenty of sunlight, and be kept very moist at the roots.—B.

16053.—**White marks on Cineraria leaves** (*Subscriber, Dublin*).—The white marks on your Cineraria leaves are caused by the grubs of the Marguerite Daisy Fly (Phytomyza affinis). The fly lays its eggs under the skin of the leaf. The grubs when hatched work their way about between the upper and lower skins, feeding on the substance of the leaf. In doing this they make the long mines or tracks in the leaf. They attack the leaves of Marguerite Daisies in the same manner. The best means of destroying them is, as soon as the attack is noticed, to hold up the plants against the light, when the grubs will be seen in their mines. A good pinch at that point will kill the grub. In the leaf you forwarded all the grubs had become chrysalides, from which the flies had escaped. As there are several broods of this insect during the year look out for a fresh attack. The flies are small, grey, and very inconspicuous, and little can be done in trying to catch them. By destroying all the grubs of a brood you would free your plants from attack unless flies from another source visited you.—G. S. S.

16054.—**The vine weevil** (*H. M. S.*).—The grubs that you enclose are the larvæ or grubs of the black vine weevil (Otiorhynchus sulcatus), a most destructive pest, both as beetle and grub; the former destroys the foliage of vines and many other plants; the grubs feed on the roots of many plants, particularly those which have somewhat fleshy roots and crowns—Primulas, Sedums, Cyclamens, &c. They are generally found near or in the crowns. There is no better way of destroying them than picking them from the roots; it would be difficult, if not impossible, to reach them with any insecticide of sufficient strength to kill them without injuring the plant. The beetles hide themselves during the day, and only come out at night to feed. When disturbed whilst feeding they feign death, and drop to the ground. Spread a white sheet under the plant they feed on, and after dark enter the house quickly with a bright light. If they do not fall, shake the plant smartly, and look it carefully over. One Weevil will do a surprising amount of mischief. As regards mealy bug and scale, if your Ferns will bear it, wash with soft soap and water mixed with Tobacco water. Before the plants get quite dry wash them clean with soft water.—G. S. S.

UNANSWERED QUERY

15478.—**Management of Fern case.**—Last October I planted a Wardian case (constructed by myself), 24 inches by 18 inches by 18 inches, with our hardy Ferns—Lastrea Filix-mas, Scolopendrium vulgare, Lastrea montana, and Polystichum aculeatum, with some sprays of Ivy as a ground work. The Ivy seems to be growing nicely; but the Ferns, with one or two exceptions, are not thriving, the fronds becoming shrivelled up at the tips and turning brown, many of them showing specks of white fungus-like growth on the under surface. The case stands in an ordinary sitting-room window, facing north-east. The Ferns have been watered only once since planted, as the soil does not appear to need it, keeping moderately moist. The ventilation seems sufficient. Would some reader of GARDENING who has succeeded with such a case kindly give me the benefit of his experience? Can the failure be due to late planting, and is there a probability of the plants throwing up new fronds if left undisturbed longer? Any hints will be most acceptable to a lover of Ferns. I may add that I have carefully read the recent articles in GARDENING on this subject, but they do not appear to meet my case.—R. A. D., *Dublin*.

TO CORRESPONDENTS.

W. H. H.—The note on p. 706 refers to an answer given by "G. H. D." to a previous query put by "V. V." (see p. 646). We do not know whether "V. V." would show you his aviary.——*C. H.*—Pig keeping is not a subject generally dealt with in GARDENING, and we should advise you to consult *Farm and Home*, to the editor of which journal we have forwarded your query.——*R. B.*—We regret that the question is not one that we can insert.——*Devonia.*—Try one of the Exeter nurseries.——*B. B.*—Put a wineglassful in an ordinary garden pail of water.——*H. Earnshaw.*—Thanks; it shall be engraved.——*W. P. T.*—We are unable to publish any further notes on the plan of heating that you refer to.——*R.*—Such a trellis as you describe would do admirably.——*G. B.*—Any good hardy plant nursery.——*A. M., Edinburgh.*—Seeds of Pelargoniums of any sorts, but particularly named sorts, are rarely sold. You can get plants of the variety you name from any good nursery in your own neighbourhood.——*J. Marcus.*—You will find advice given to another correspondent on the same matter in our query columns.——*H. U.*—For Dahlias about 3 feet or 3 feet 6 inches, for Chrysanthemums a little shorter.——*Amateur (E. B.).*—We shall be glad to see any of the sketches.——*Pattie.*—From any good tree and shrub nursery. A local nurseryman would probably get it for you. About 6d. or 9d. each.——*D. E. W.*—To contain 28 rods your plot should be as nearly as possible 9 yards 1 foot wide.

EXHIBITIONS v. USEFULNESS.

AFTER a careful perusal of the remarks of "J. G. H.," on page 719, with regard to this subject, I do not think it at all unreasonable to assume that he has arrived at his conclusions by a process which will not commend itself to the more thoughtful and less prejudiced among the readers of GARDENING, for I cannot bring myself to regard his letter in any other light than that of prejudice. The process indicated is that of reasoning upon unsound premises, and no argument based upon such shadowy foundations will bear investigation. "J. G. H." tells us that "Horticultural exhibitions are got up merely as commercial speculations, and that if they do not pay they are soon dropped like any other unprofitable speculation." That is one of his unsound premises, for are there not numbers of societies, of no inconsiderable pretensions to importance, whose expenditure is defrayed almost entirely by the subscriptions of those who are deeply interested in their career of usefulness, and whose management is undertaken by gentlemen in the district, who combine with the gardeners and devote much time and are at no trifling expense to encourage an undertaking of the usefulness of which they are convinced? Again, he says that "it must be patent to everyone who knows much about horticulture generally that if its progress had depended on the knowledge diffused by exhibitions we should still be groping in the dark." That is another of his unsound premises. Horticultural exhibitions are not, nor do they pretend to be, the sources sole and simple to which inquiring minds must look for information concerning all that appertains to the culture of flowers, fruits, and vegetables. The excellent garden literature which is at the command of everyone will supply that; but to the eye and to the mind of those who visit them in the right spirit flower shows teach something beyond that. They are unquestionably the exponents of excellence; they collect from all sources the results of unremitting attention and careful culture; they display even to the casual visitor the standard of high quality and beauty, and drive home the lesson thus taught by showing him, close by, mediocrity and worse. To the exhibitor they are a medium for the reward of merit, energy, and perseverance, humblers of self-sufficiency, stimulators to emulation, and correctors of erring judgment; and yet "J. G. H." would persuade readers that they are merely commercial speculations, whose managers cater to the public taste for something sensational, so that they may make a profit. No one would pretend that the great picture galleries of Europe, with their priceless treasures, are mere speculations, and without usefulness; to the eye and mind of those who love the art, and are desiring of attaining to eminence themselves, they breathe inspiration and knowledge. Of course, great pictures themselves will not show a man how to use his pencil and brush—that knowledge he attains elsewhere—but they give him a standard of excellence and beauty without which his previous knowledge was imperfect. Flower shows are not less delightful than useful; indeed, their many attributes are so worthy and commendable that, thinking of them, one cannot help wondering what unhappy combination of conditions led "J. G. H." to such inherently wrong and unjustifiable conclusions.—J. S., *King's Norton*.

15923.—**The use of sewage.**—Certainly your sewage can be made use of for your fruit and other trees. You will find an excellent article on the use of sewage in gardens in GARDENING, June 27th last.—E.

15924.—**Grubs on Black Currants.**—If "M." would send some specimens of the grubs which are attacking his Black Currants to the Editor, I shall be happy to tell him what they are. When he says the shoots are infested with grubs, does he mean at the present time, and are the grubs inside the shoots?—G. S. S.

Catalogues received.—*Chrysanthemums, Hardy Florists' Flowers, Choice Hardy Perennials, Hardy Climbing, Creeping, and Trailing Plants, Roses, &c., and Single and Cactus Dahlias.* Thomas S. Ware, Hale Farm Nurseries, Tottenham.——*Florists' Flowers, Herbaceous and Bedding-out Plants.* George White, Carriage-hill House, Paisley.——*Prize Plants.*—John Jardine, junior, 11, Robertson-place, Kilmarnock.

INDOOR PLANTS.

GERANIUMS (ZONAL) IN TOWN GREENHOUSES.

My greenhouse is within three miles of Charing-cross, and I grow ordinary bedding Geraniums in it. Though I get a fair amount of bloom the heads of bloom are small, and the individual pips also small and lacking substance. If I get some named sorts shall I do better, or, being so near London, is it useless to expect large flowers? I have a double Ivy-leaved Geranium, which bears beautiful rose blooms veined maroon, but it only bears two or three heads each year in June, after which it seems worn out. Is this owing to bad culture, or the sort, and what is the remedy? URBS.

*** "Urbs," in common with many others, finds that the pips and trusses of Zonals grown in his town greenhouse are, comparatively speaking, small and poor, and wishes to know if named varieties would give better results. It is an undeniable fact that a smoky atmosphere, though it has but a slight effect upon the growth of Geraniums, makes a vast difference in the size and substance of the flowers. In fact, there are few subjects that appreciate the benefits of pure air and clear light and sunshine to so great an extent as these plants, and the huge and highly-finished trusses that are frequently seen at exhibitions in London and elsewhere can be produced only in open country situations. Still, a choice of suitable varieties, and the adoption of favourable conditions, as far as may be, will go far towards attaining the end in view; and undoubtedly many of the fine named kinds recently introduced will produce much larger and finer flowers than the old "Vesuvius" and other bedding varieties, which are, as a rule, more remarkable for freedom than for size and substance of flower.

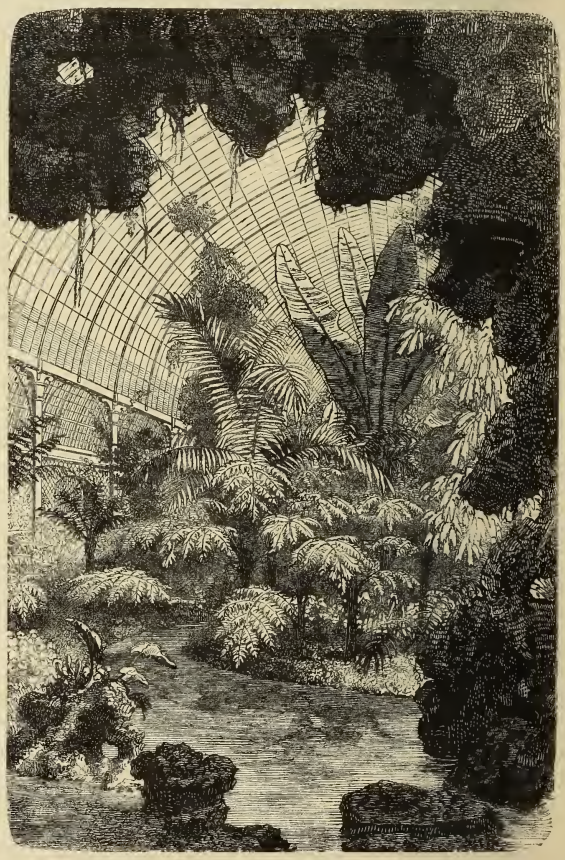
A greenhouse for Zonals should, to do them justice, be in a light and sunny position, and the only shading ever allowed should be a light temporary protection from the rays of a strong sun in summer, only to prevent it scorching or injuring the petals of the blooms themselves. The plants should be placed near the glass, and this at all times be kept clean. Ventilation should be abundant, both at the roof and sides, for weak growth and, consequently, weak and poor blooms must result from a confined or at any time over-heated atmosphere. The plants must be firmly potted in a rich loamy soil early in the season, be allowed plenty of room, be kept at all times perfectly clean, and never allowed to want for water, though they should at the same time never have too much; but if the soil is made as firm as it should be, and is properly porous, there will not be much danger of this last occurring. Only soft or rain water should be used, and if a small bagful of soot is kept in the tank, so much the better. Manure-water of some kind, weak guano-water, or a little sulphate of ammonia, will greatly assist in producing fine blooms; anything of this kind should be given weak and often.

Let "Urbs" procure the following varieties:—*Single*—Advance and P. N. Frazer (scarlet); H. Jacoby and Metis (crimson); Kate Farmer and Lady Chesterfield (salmon); Hettie and Hermia (purplish crimson); Constance or Queen Matilda (pink); F. Kauffer (rich purple); and Eureka and Queen of the Belgians (pure white). *Doubles*—F. V. Raspail and W. E. Gladstone (scarlet); Grand Chan Faideherbe (deep crimson); and Lord Wolseley (deep salmony-red); Mdme. L. Dalloy and Khedive (blush); Charles Darwin and H. Cannell (rich purple); General Farre, or Belle Nancienne (salmon), and Perle des Roses (delicate pink); and La Cygne and Flocon de Neige (pure white). There are newer and more expensive varieties than these, in some cases, but they are little, if any better, and all I have named have grand constitutions, and are very free-blooming.

I have not found the Ivy-leaf Geraniums, as a rule, very easily succeeded with in town gardens. They are shy of flower and slow in growth, so need very careful culture, and a warm, airy, and sunny position. They bloom best when thoroughly pot-bound, and the vigour kept up with liquid manure. A few good ones are Albert Crousse, Mdme. E. Galle, Comte and Comtesse H. de Choiseul, Sarah Bernhardt, Beauté de Lyon, and best of all the new Mdme. Thibaut, which really is very free. B. C. R.

A NATURALLY-ARRANGED CONSERVATORY.

This illustration is suggestive of the natural way of disposing a winter garden or large greenhouse, a way which is very common in continental cities where the ordinary stage and red flower-pots are not accepted as the best expression of the beauty of the vegetable kingdom. With such a disposition one may have great beauty of form, and half the amount of flowers will do that are required when flowers only are depended on. Such a little landscapes, with tropical and sub-tropical forms, and Lycopodium for turf, and a few bed-like hollows for plunging plants in flower, will form a very pretty winter and spring scene.



A naturally-arranged conservatory.

Tuberous-rooted Begonias.—One of the most successful exhibitors with whom I am acquainted tells me that he finds it best to let the tubers rest all the winter in the pots in which they flowered, and that it is not desirable to repot them in the spring until the young growth has grown an inch in length. His reason for deferring the potting is that after they have once started to grow they continue to do so, although they may have been disturbed by being fresh potted, providing the potting is not deferred too long, but if they are shaken out of the old soil before growth commences there is a possibility of the bulbs decaying, or, at least, being weakened, especially if they are potted in damp, cold soil. At any rate, this grower appeared to be quite confident that he got a better growth by re-potting after growth commenced than before. Experienced plant growers will not be surprised at such a statement, for Begonias are not the only plants which bear root disturbance much better after growth has commenced than they do before. In regard to wintering tuberous-rooted Begonias, my friend finds that they keep in good condition when the pots stand on the floor of a cool house all the winter, and the pots in which his specimens are grown being 10 inches or 12 inches in diameter, they require scarcely any water all the time they are resting; but it will not do to allow the soil to remain dust dry for more than a week together. Drip is a great enemy to these bulbs, therefore great care is necessary during the winter, when they have to be kept under plant stages, that water does not reach them from above. The same grower also showed me some bulbs about this time last year that he had covered with sulphur for the purpose of absorbing moisture, as he found that some of the tubers which had hollow crowns were damper than was good for them; this was especially the case with that beautiful single-flowered variety, Madame Stella, which had quite a hollow crown. I was assured that the application of

sulphur sucked up the moisture and prevented the decay of the tuber, which must have resulted if the moisture had not been got rid off.—J. C. C.

REPLIES.

15832.—**Failure of Hyacinths.**—Possibly the Hyacinths have been watered with hard water, and a drop or two has fallen in the flower. Some of mine have occasionally gone off in the same way, and it has generally been traced to water on the bud.—L. D.

—— One of mine has also "gone off" in the way described; the upper part of the spike has become rotten, as though from frost bite, to which it has not been exposed; otherwise it is quite healthy, the foliage being sturdy and deep green. There is nothing "deformed" or "immature" about it as far as I can perceive, so the cause of failure must be different from that which has affected "J. C. C's" plants (p. 731).—J. F. R., *Southampton.*

15865.—**Fuchsias for exhibition.**—Dark Avalanche, White Avalanche, Lucy Finnis, Mrs. H. Cannell, Miss Lizzie Vidler, Magnum Bonum, Beauty of Swanley, Mrs. Rundell, Edelweiss, Wave of Life, Champion of the World, Madam G. Marie—W. T. T. Widdowson.

15820.—**Violet "Comte de Brazza."**—"E. R. T., Malvern," wants to know if this is the same as "Swanley White." Well, all I can say is that it is sent out as such by a good many growers, but I fear they will be disappointed, for Comte de Brazza, if true, is certainly a very superior Violet to the Swanley White, yet many who had stocks of the latter are sending them out as the former. As regards its adaptability for cold frame culture, there can be no question but that it is quite suitable, as Mr. Allan, of Gunton Hall, who exhibited this variety in such fine condition from the cold east coast of Norfolk, grows it in cold frames or pits, and, by means of external coverings, has plenty of bloom all through the winter. But none of the double varieties of Violet will flower in the open air in winter, although they do so fairly well in spring. Still, they well repay the shelter of a glass covering over them. The main point of success with these kinds of Violets is to get young plants in April or May; plant them out one foot apart on well enriched soil, shaded from full sunshine, keep well watered during dry weather, and all the runners cut close off, so as to concentrate the energy of the plant in the single crown, which should in the autumn be full of flower buds. Then lift, with a good ball of roots, and replant in a Cucumber-frame set in a sunny position, and filled with manure and good soil, so as to give a gentle bottom-heat, and keep the plants close to the glass. Ventilate freely, and cover up when frost prevails, and plenty of bloom will reward your labour.—J. Groom, *Gosport.*

15879.—**Wintering Geraniums and Fuchsias.**—To winter these in a cold frame the following precautions should be observed. In the case of Geranium cuttings they should be taken early (say the last week in July), so that the pots or boxes may be full of roots before winter sets in. The whole stock, Geraniums, Geranium rooted cuttings, and Fuchsias, should have little or no water. Air should be given on fine days. If there is any wind the lights should be tilted on the lee side only. Care should be taken that there is no drip from the rains through the lights into the frame. We took our last batch of Geranium cuttings the first week in September, but we have them wintered in a vinery, and ours is pure country air. They have not been watered since they were placed under cover at the end of October, and they do not show the least signs of distress. I think "T. H. P." should trust to thick outside covering to his cold frame, and dispense with his paraffin lamp.—L. C. K.

Culture of Chrysanthemums.—In reply to some queries which have recently appeared in Gardening I may say that I take cuttings at the end of November, or as soon as I can get them. I think the cuttings are stronger about November. Although I have had good results from cuttings taken in February I advise an earlier date in the north, as they seem to get away stronger. I put one cutting in a small sixty, with a nice mixture of equal parts loam, leaf-mould, and sand. I strike my cuttings in a gentle heat, and after they have rooted I pot them in 6-inch pots, at the end of February, using the same compost, but adding a little more loam and some well-decomposed cow manure. I return them to the frames again, keep them close for a few days until they have got nicely hold of the new stuff; then give air when convenient. In fine days I draw the lights off to harden them, so that they can be put out as soon as the weather will permit, say the first week in May. I put them in a sheltered place where I can protect them from frost; we had frost last season up to the end of May. By this time the pots will be full of roots, and I give them some weak liquid manure. I pot them in the second week in June in a good rich compost, using 8-inch and 9-inch pots. I am not such an advocate for large pots as I used to be; I think the wood gets a better chance to ripen in smaller pots, and without this ripening there is no chance of having good blooms. I take the buds in September, so as to have good substantial flowers, and afterwards feed them with liquid manure. I bring them into a nice, light house the first week in October. We had a sharp frost the end of September, but I laid them down close together and put some canvas over them, and they did not suffer in the least. I was rewarded for my care with a good display of blooms.—Robert Charlton, Gardener, *Durham.*

15873.—**Chrysanthemums for exhibition.**—I think "Fitzroy" will find the following very good, as they proved to be with me last season, taking several prizes—*Japanese:* Elaine, James Salter, Bouquet Fait, Fair Maid of Guernsey, Thunberg, Soleil Levant, Aurore Boreale, Comte de Germiny, L'Or de France, Madame Peval, Brise du Matin, Mdlle. Antoinette Brunel. *Incurved:* Mrs. Rundle, Jeanne d'Arc, Alfred Salter, Empress of India, Lord Derby, Golden Empress of India, Golden Queen of England, Mr. Bunn, Lord Wolseley, Queen of England, Nil Desperandum, Princess Beatrice. *Reflexed:* Pink Christine, Golden Christine, Dr. Sharp, Cloth of Gold, Emperor of China, George Stevens, Chevalier Dommage, Golden Hermione, King of the Crimsons, Pearl des Beautés, Annie Salter. *Anemones:* Acquisition, Duchess of Edinburgh, Fair Margaret, Fabias de Maderanaz, Fleur de Marie, Gluck, King of Anemones, Minnie Chate, Mdlle. Cabrol, Madame Goderaux, George Sands, Empress. *Pompones:* Golden Circle, Elenore, Adele Pressette, Atala, Aurora Borealis, Brilliant, Bob, Cedo Nulli, Little Beauty, Cravaction, Duruflet, A. E. Ford, Golden Androreda.—W. North.

15764.—**An amateur's troubles.—Fumigating.**—I do not think the cold chill brought on by drawing off the lights would cause the damage unless it was freezing. For fumigating I get two plant pots, 8 inches to 12 inches deep; place the Tobacco paper in one pot; lay the other pot upside down over the paper, fitting inside the rim. I place both on two half-bricks to allow the air to get through the hole at the bottom, where I light the paper with a match. It should not be allowed to blaze, but burn as a cigar does. As quick as possible after the smoke comes through the hole of the pot placed upside down put your fumigator near the door or low window, that you may watch it from outside. If it does not burn quick enough blow it a little, and make it more open and loose by lifting it up with a stick; if it flames make it firmer by pressing down. It will make you cough on going in and out, but it must be attended to till done; if you go away it might blaze, thus wasting your paper and injuring your plants. The morning after you will find your plants free, and the green fly lying like sparks from burning wood beneath your plants. Choose a calm night, just before dark, for fumigating. If you attend to these few hints, vine leaves and the foliage of most tender plants will be uninjured. With respect to plants that die down and those casting their leaves any gardener in your neighbourhood would gladly inform you.—T. Booth, *Hathershaw.*

White Cineraria.—Mr. A. Milner, Eccleshall, sends us some blooms of a very good white seedling Cineraria.

15874.—**Nova Scotia Apples.**—Messrs. Nothard and Love, of 20, Tooley-street, were the exhibitors of the Nova Scotia Apples at the Crystal Palace last autumn.—M. T.

Garden Stocks.—Referring to "D.'s" paper on these in Gardening Illustrated of the 16th January, and to "D. K.'s" paragraph in the number for 6th February, I have much pleasure in stating that I have had very capital East Lothian Stock plants from Messrs. Stuart and Mein, of Kelso, Scotland, and their seed is sure to give true and fine plants. "D. K." will find Messrs. Stuart and Mein's advertisements in the columns of Gardening Illustrated, the medium through which I became acquainted with the firm some three years ago.—J. P., *Lancashire.*

FRUIT.

PRUNING FRUIT TREES.

Pruning should now soon be completed, as the sap is rapidly rising, and bleeding will take place if the operation is much longer deferred. Vines suffer more in this respect than most things, except Walnuts, which it is best to leave till they have foliage on them; they may then be thinned out or partly headed back with safety. If Vines are cut now it is advisable to touch the parts with styptic, which stops the pores and prevents loss of strength. Apples in orchards are generally left pretty much to themselves, which is a great mistake, as when allowed to get thick with wood it is impossible for them to produce fine fruit; they may and generally do bear profusely, but the Apples are small and poor in colour. In order to expose them to sunshine all branches that are misplaced or crossing others, as well as any that are cankered, should be removed. If the cankering is caused by American blight, coat the bark with lime, which may be effected by using it fresh and hot, as a wash, pumped on by the aid of a garden engine, which will throw it in a regular stream, smother the insects, and make the trees healthy and clean, as the lime will kill and divest them of all Moss and Lichen, however bad they may be in that respect. The same remarks apply to Plums and Damsons, and besides freeing them from Moss, it is always advisable to give them a liming to prevent the buds being eaten by birds. Plums, like Apples, are greatly benefited by judicious thinning, and the object to be aimed at is to have the branches regular and well balanced all over the head. Those on walls that are spurred should be kept as close in as possible, and the same with Cherries, Apricots, and Pears, which every year should have some of the longest spurs reduced, as there is generally more than enough of blossom buds, and the great point is to have these as near the wall as it is possible to get them; if not, their flowers get injured by cold winds and frosts.

Morello Cherries bear on the young shoots, but it is useless having these thick; the same remark applies to Peaches and Nectarines, the proper distance apart for which is from 4 inches to 6 inches, laid in all over the trees. In pruning these, attention should be directed to keeping them well furnished near the base. In the management of Peaches and Nectarines much depends on the summer disbudding and keeping the foliage free from insects. Figs need but little pruning. To get them to bear freely, restrict growth by limiting their root run. This is best done by concreting and brickiug them in, or planting in the hardest and poorest of soils, in which there is a good admixture of chalk, as then they make very short-jointed shoots that become well ripened and studded with fruit. If pruned at all it should be more in the way of thinning than anything else, so as to let in the full light and sun to consolidate the pithy growth which they make; they will then endure sharp frosts.

Gooseberries, when wanted for picking green, may be left pretty thick, as then the bushes yield more fruit; but if required for dessert, the shoots should not be nearer than 6 in. and should be left regular over the bush. Red and White Currants ought to have their branches from 6 to 9 inches apart and be spurred in close, and the leading shoots shortened to about 3 inches, but Black Currants bear from the young wood, and only need thinning. Raspberries should have their canes reduced to from three to five, according to their strength, and shortened to about a yard, a height at which they are more manageable than higher. Half their heads may be bent over from each stool and tied at the points, when they will stand fairly stiff without any stakes. Another way of managing Raspberries is to plant or twist the canes up by interlacing them from bottom to top, and if then tied they will support each other. Double-bearing or autumn-fruiting kinds should be cut quite down to the ground, as a summer crop from them when the others are in is of no value, and it only helps to exhaust them. Forking or digging the ground amongst Raspberries is about the worst thing that can be done for them, as it disturbs and destroys many of their roots, which a good mulching of half-rotten manure fosters and encourages to the great benefit of the plants they are feeding. Instead of disturbing the soil, it is far better to at once spread the

manure and leave it on, as not only does it act in the way referred to, but it keeps out drought, and thus assists in producing fine fruit.

S. D.

To prune, or not to prune.—Many readers of papers relating to horticultural matters have doubtless, of late, been somewhat in a bewildered state as to the right course to pursue in the important part of gardening that comes under the head of pruning. Now, with fruit trees and bushes, pruning is practised not only to induce fruitfulness, but, above all, to increase the size and quality of the produce; and in flowers, of which the Rose may be taken as an example, it is practised to ensure fine blooms; while in forest trees and shrubs a little timely attention is doubtless the means of converting what would prove a worthless and deformed scrub into a fine specimen tree. Now, it is no unusual thing to find stately trees that have never had the saw or pruning-hook applied, while a Rose growing wild is often a beautiful object when seen in a mass, but the individual blooms are small and thin. But it is in fruit culture that pruning plays such an important part, and from time immemorial the pruning of the vine has been looked on as a vital part of its culture: therefore, before we drop the pruning-hook let us be sure that we are going to improve our mode of procedure. New things of any kind have a great attraction for many, and this new-fangled system of fruit culture known as the extension system has the great merit of requiring no exertion, a great thing when work of any kind is being shelved and looked down on as derogatory; for in its widest sense it simply means letting the trees or bushes alone, and those who look at the condition of the orchards in most rural districts will agree that the thing has been already tried, with most disheartening results.—J. Groom, *Gosport.*

15802.—**Sowing Apple seeds.**—I find it best to sow seeds of Apples directly they are taken out of the fruit, for if kept long afterwards they get dry and hard, and do not germinate freely. The plan I adopt is, whenever I meet with an exceptionally good Apple, to take the pips at once and sow them in a pot of light rich soil, and set them in a cold house, where the frost is excluded, but where there is not heat enough to excite growth before spring. The young seedlings will appear about March, or April, and if potted off singly as soon as they have made two or three pairs of leaves, and grown on under glass until June, they may be gently hardened off, and finally planted out in July where they are to remain. If the top of each young plant is taken off in winter, and grafted on to an established stock in spring the fruiting will be accelerated.—J. Groom, *Gosport.*

15801.—**Propagating Sweet Bay.**—Sweet Bay is much more readily propagated by seed than by cuttings, and in this locality, where Bay trees reach a great size and seed is ripened plentifully, the young seedlings spring up plentifully around the old trees; but in colder situations the best plan would be to take cuttings in October, selecting medium sized shoots of the preceding summer's growth, with a heel of old wood attached, and insert them in pots or boxes, or if in large quantities in cold frames. Keep them moist and shut up close, and in winter cover up when frost prevails. Give air in spring when the sun shines, and water more liberally, and by May they will be rooted fairly well, and may be transplanted into an open border. If seed can be procured, sow in open air beds in autumn, and allow the young plants to grow for one year before transplanting.—J. Groom, *Gosport.*

PROPAGATING FRAMES.

Finding ordinary hot-beds both troublesome and unsatisfactory from the difficulty of regulating and retaining the heat, and also from the large number of insects harboured, I propose this year raising my seedlings, &c., in a propagator raised some 18 inches or 2 feet from the ground, and heated by a petroleum lamp. I shall be glad to know whether this plan is likely to be successful, and whether the propagator can be used in the open air, as I have no greenhouse or available window. What plan of heating is the best and least troublesome? Is the smoke from the lamp prejudicial to the plants, and can an ordinary lamp with a glass chimney be used? Of course the lamp would be protected from wind.

Seedling.

*** Having constructed and used, with very good results on the whole, such an apparatus as is described by "Seedling," I will give him the benefit of my experience. Of the three modes that he suggests, the third is totally inadmissible, the introduction of a kettle, or other vessel of boiling water, into even a small frame once or twice a day being barely sufficient to exclude frost, much less to afford the steady heat necessary for propagating. The use of an ordinary paraffin lamp in a chamber constructed is much more likely to be satisfactory, and if to this arrangement is added a rather large flat metal pan, or tank, placed directly over the lamp, and heated by it, the most perfect combination that we are likely to arrive at with these materials is attained. An apparatus of this kind has several times been described more or less fully in the pages of Gardening, and it will suffice to say that both the upper and lower chambers should be as tightly constructed as possible, with a division or diaphragm of perforated galvanised iron between the two. Upon this, in the upper chamber, is placed an inch or two of Cocoa-nut fibre refuse, and on this are placed the pots or pans of seeds, cuttings, &c., covered by a frame-light, or glazed sash, in the usual way. In the lower chamber are the pan of water, placed a few inches beneath the division, and, with the top of its chimney or funnel about two inches below the bottom of the pan, an ordinary paraffin lamp, more or less powerful according to the size of the frame. A plain two-inch wick will usually maintain sufficient heat in a frame 3 feet by 2 feet, or nearly so; for larger sizes a duplex, or two or more separate lamps, must be employed. The great difficulty, when the frame is situated in the open, is the wind, which often puts out the lamp when the door is opened to trim or fill it. I found it impossible to depend upon the contrivance without adding a second low shed, or shelter, at the back of the frame, just large enough to creep into, and by shutting the outer door before opening the inner one, and *vice versa*, preventing the wind getting at the lamp at all. This difficulty overcome, the frame works steadily and well, and both heat and moisture are well under control. Small openings must, of course, be provided to admit air to the lamp, and allow an exit to the fumes. A metal chimney of some kind is safer than a glass one.

B. C. R.

A new garden rake.—The Rev. J. Harding Cole, of Woodview, Innishannon, co. Cork, has shown us a new weeding and hoeing rake, for which many advantages are claimed. Each extreme tooth forms a strong chisel-shaped steel cutter, or grubber, with which weeds can be easily eradicated, and it is, in fact, a combination of rake, hoe, and drill. The measuring points on the back of one of the forms are certainly useful, but the weak point in the tool seems to be that the rake is not necessary in gardens, and we have seen excellent gardens where rakes are not employed at all. The essential thing is the hoe for bringing up the weeds, which would then be left to the influence of the sun. Raking borders smooth, as is frequently done, particularly in Ireland, is, we think, a mistaken practice.

POULTRY.

REPLIES.

16055.—**Hen dying suddenly** *(Gardener, Clapham Park).*—From the description given I should say your bird died from apoplexy. This is generally the result of too liberal feeding, and death is usually so sudden that symptoms of illness are rarely observed. I advise you to reduce the diet of your other birds, or, what would be better, discontinue the Maize for a time. It should always be used very sparingly for birds kept in limited runs.—Doulting.

16056.—**Brahmas not laying** *(H. H. B.).*—The statement you refer to was incorrect. Brahmas commence to lay at about six months old. Some are more backward than others, but unless the weather is unusually severe, or the birds are late hatched, they should begin soon after they reach the above-mentioned age. Probably yours are too fat. For breakfast, give scraps from the house, mixed with Barley-meal or sharps. In the evening, Buckwheat, Wheat, or Barley. A little liver, or meat, chopped fine, promotes laying, and ground red Chillies mixed with the soft food are said to have the same effect.—Doulting.

16057.—**Bad-flavoured eggs** *(South Wales).*—I advise you to change the feeding entirely. Give some sharps and Barley-meal mixed into a stiff paste for breakfast, and for the evening meal Buckwheat and Wheat. I do not think the manure heap has anything to do with the affair. The fowls only search amongst it for bits of horse corn, insects, &c. The eggs from hens which are kept in farmyards rarely taste amiss, yet the birds spend the greater part of their time on the manure and straw beds. Your hens ought not to require much food, for they have an unlimited run, and are able to pick up a great deal. Hay is not a good material for nests, Oat or Wheat straw is more suitable.—Doulting.

16058.—**Fowls for confinement.**—*(A. N. R.).*—Game fowls are not suitable for keeping in a small yard of the size you mention. They are too impatient to thrive under such circumstances, and require plenty of exercise if they are to be kept in good condition and retain their sprightly appearance. The best all-round fowls for the purpose would be dark Brahmas. They do not want to sit so often as to become a nuisance, and are fair eating when done with as layers. They can also be easily kept within bounds. But why do you want all-round fowls at all? You cannot rear chickens successfully in so small a run. I therefore advise you to get a few Minorcas or Andalusians. They will not trouble you with their sitting propensities, and will lay plenty of eggs. Your best and cheapest way to get them is to watch the advertisements in the poultry papers, or advertise your wants. It is not easy nor advisable to recommend sellers.—Doulting.

16059.—**Blue Andalusians** *(H. H. B.).*—You had better advertise your wants, or watch the advertisements in the regular poultry journals.—Doulting.

15800.—**Profitable stock keeping.**—"E. H. R." would probably find it very profitable to keep two or three milch goats. I find the milk excellent and not to be distinguished from cow's milk. The goats give little or no trouble. "E. H. S." can procure from any bookseller a pamphlet on "The Advantages of Goat Keeping," by H. Stephen Holmes Pegler.—Ouidi.

END OF VOLUME VII.

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